Fayette County Public Schools CTE Program BG# 22-167 100 Midland Ave. Lexington, KY BG# 22-167 Bid # 56-22



Addendum 3

Date: 10/21/22

Addendum 3 Items:

Contractor Questions:

- Question 1:
- a) Reference sheet A103b & A726 type HM3 and HM4 are shown @ rooms 310A and 310B are noted as having type GL-6 fire rated glazing, but surrounding walls and doors are not rated? If this glazing is to be GL-6, please provide rating that will be required.
- b) Will a storefront and curtain wall mock-up be required? If so, please provide drawing or specify requirements.
- c) Will a metal plate wall panel mock-up be required? If so, please provide drawing or specify requirements.
- d) Reference 084113 & 084413 specification aluminum finishes are specified as being High Performance Two-Coat Fluoropolymer w/ color and gloss as selected from full range. Is this to include metallic finishes?
- e) Reference sheet A101a aluminum type CW5 has been drawn as a segmented radius, but 084413 2.7 FABRICATION C. 7 states components should be curved to indicate radii. Which will be required?
- f) Reference sheet A103A should frame types HM15 and HM14 above stair E have 1 hr. fire rated glazing?
- Response:
- a) Refer to sheet A726 as noted below, HM3 and HM4 to be changed to be GL-5.
- b) No, there are no mockups required for the storefront or curtainwall.
- c) No, there are no mockups required for the metal plate wall panels.
- d) No, this is not to include metallic finishes.
- e) CW5 is to be segmented and no radii will be required.
- f) No, that glass is to be protected by sprinklers on either side of the glass to achieve the required rating.
- Item 65 Single Door Reach-In Freezer: I was hoping for some clarification on Question 2:

Item A: Ten (5) additional adjustable chrome shelves per section. Will we be providing five or ten additional shelves?

Response:

Item #65 is a single door reach in and requires the KEC to provide (5) additional shelves. For each reach-in refrigerator we specify (5) additional shelves per section, and not (10).

- Question 3: a) Have the Masonry Notes been created that are missing on sheet S0.0?
 - b) Has the 2-year schedule taken into account the potential 60+ week lead time for electrical gear after approvals from the EOR have been sent back?
 - c) Is there any consideration for extending the bid to 11/18 due to the size and details of the drawings? Electrical contractors are worried about getting a true

number from suppliers due to the complexity and size of the electrical portion of the project.

Response:

- a) These will be issued on the next addendum.
- b) Refer to AIA A201, 3.10.1 through 3.10.3 for Contractor's Construction Schedules and 8.3.1 through 8.3.3 for Delays and Extensions of Time.
- c) The bid date has already been extended 10 days. Should any contractors have legitimate concerns about obtaining accurate numbers from their suppliers, they should submit the request in writing from both the subcontractors and suppliers.

Question 4:

- a) Reference 088000 3.8 MONOLITHIC GLASS SCHEDULE B 2. And 3.9 INSULATED GLASS SCHEDULE B 1. spandrel color is stated as being selected by architect from full range. Will this be full range of manufacturer's standard colors, or will this need to also include custom color range as well?
- b) Reference detail D2/A133 Please clarify which specification the materials noted as extruded aluminum w/ snap cover and compressible gasket can be located.

Response:

- a) This is intended to be the full range of the manufacturer's standard colors, and does not include a custom range.
- b) Refer to specification item below, which is referenced on the drawings as snap cover, and extruded aluminum to match window framing system, where used in conjunction with one another, and for locations where CMU or metal stud wall systems abut a curtainwall, or shown elsewhere on the drawings.

Question 5:

Our Helio bollard is detailed on sheet L602, detail H. I believe Element Design specified this bollard and it is listed as M30/K4 on L602 but the plan detail drawing is for a smaller 6" dia. Helio bollard. I think the 6" dia. bollard should be sufficient and that the larger M30 designation would not be needed now (would be cost savings as well). Can that be changed to 6" dia.?

Second item is if our 6" lit Helio bollard can be listed as "Basis of Design or approved equal" vs. the Halo bollard also shown.

Response:

A 6" lit **security** bollard is sufficient. Eliminate reference to the M30/K4. Helio bollard is noted as Basis of Design.

Site Addenda Items (L):

Drawings:

No addendum items at this time.

Structural Addenda Items (S):

No addendum items at this time.

<u>Architectural Addenda Items (A):</u>

Drawings:

Item A1:

Refer to sheet A726: HM-3 and HM-4 to be GL-5, also referenced on sheet A103b.

Item A2:

Refer to sheet A572, D1: Door height to be changed to 7'-0". See detail A3 for revised elevation.

Item A3:

Refer to sheet A650, Detail 2: Door height to be changed to 7'-0", see updated section.

Specifications:

Item A4:

Refer to specifications, Table of Contents: Add section 098453 SOUND BARRIER WALL END CAP, see full specification included in this addendum.

Item A5:

Refer to specification Section 102239 "Folding Panel Partitions": 2.2, A.1., add: d. Corflex shall be an approved manufacturer.

Item A6:

Refer to specification Section 102800 "Toilet, Bath, and Laundry Accessories": 2.4.B., add: 8. World Dryer, VERDIdri model #Q-974A2 shall be listed as an approved manufacturer and model. Note that per 2.4.B.3.a.1.) a recess ADA kit equal to the Xlerator #40502 shall be provided in conjunction with hand dryers, also shown on sheet A151. American Specialities Inc. (ASI) shall be listed as an approved manufacturer for Toilet Accessories except for Hand Dryers, which needs to be submitted separately for review, and approved in advance of bidding.

Item A7:

Refer to specification Section 123216 "Manufactured Plastic-Laminate-Clad Casework":

- 1.11, A.2.Revise to read:
- 2. Warranty Period: Ten years from date of Substantial Completion.
- 2.3, Revise to read:
- B. Butt Hinges: Powder-coated, semiconcealed, five-knuckle hinges complying with ANSI/BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide two hinges for doors less than 48 inches high, and provide three hinges for doors more than 48 inches high.
- D. Door Catches: Dual, self-aligning, permanent magnet catch. Provide two catches on doors more than 48 inches high.
- F. Drawer Slides: ANSI/BHMA A156.9.
 - 1. Manufacturer's standard.
 - 2. Standard Duty (Grade 1): Bottom corner mount.
 - 3. Heavy Duty (Grade 1HD-100): Bottom corner mount.
 - a. Type: Full extension.
 - b. Material: Epoxy-coated polymer slides.

2.5.A. – Revise to read

- Drawer Sides and Backs: 1/2-inch- thick particleboard with thermally fused melamine interiors, doweled with 8mm dowels and glued into sides. Top edge banded with 1mm PVC.
- 6. Drawer Bottoms: 1/2-inch- thick particleboard with thermally fused melamine interiors, screwed directly to the bottom edges of drawer box.

Item A8:

Refer to specification Section 123623.16 "Manufactured Plastic-Laminate-Clad Countertops": 2.1, Revise to read:

H. Core Thickness: 1 inch.

1. Loose shelving core thickness: Thickness to be 1 inch for entire length of shelf.

Delete 2.1, H. 2 Build up countertop thickness to 1-1/2 inches at front, back, and ends with additional layers of core material laminated to top.

Food Service Addenda Items (K):

Drawings:

Item K1:

Included in this addendum are the Accurex hood preliminary shop drawings as the basis of design for the Culinary Arts spaces. All fans are intended to be constant volume. Makeup air is designed to 85%. Controls must communicate with building management systems as required. Stainless steel wall panels are to be included from floor base to underside of hood and stainless steel enclosures are to be provided to close off any gaps between hood and ceiling, island hoods, control boxes or the like. See the Foodservice Specification for additional information.

<u>Fire Protection Addenda Items (FP):</u>

No addendum items at this time.

Plumbing Addenda Items (P):

Drawings:

Item P1:

Refer to drawing P501 – PLUMBING DETAILS, refer to revised Domestic Water Service Entrance Detail.

Item P2:

Refer to drawing P601 – PLUMBING SCHEDULES, for the following changes,

- 1. Refer Plumbing Fixture Schedule, Mop Basin (MB1) Shall be changed to a Fiat TSB3000 12" Mop Basin with a 6" Drop Front, with stainless steel caps on all sides. All other requirements indicated on schedule shall remain the same.
- 2. Refer to Thermostatic Mixing Valve Schedule, this has been updated to include Fayette County requirement for product serial number to be added.
- 3. Refer to Electric Water Heater Schedule, this has been updated to include Fayette County requirement for product serial number to be added.

Item P3:

Refer to drawing P602 – PLUMBING SCHEDULES, for various changes to plumbing schedules. Most schedules revised to include Fayette County requirement for product serial number to be added

Specifications:

Attachments:

- The following full size PDF drawings are attached for inclusion in this Addenda.
 - a. P512 PLUMBING DETAILS
 - b. P601 PLUMBING SCHEDULES
 - c. P602 PLUMBING SCHEDULES

Mechanical Addenda Items (M):

General Clarifications:

Item M1:

Referencing all Mechanical Piping Drawings and Thermostat / Sensor Locations. The following clarification shall be provided for all locations:

- In Public Areas (Corridors, Restrooms, Commons) the sensors are to be flat plate stainless steel sensors with no adjustments, no overrides, and no displays. If flat plate sensors for Humidity are not available, humidity sensors shall be located in the return air duct of the HP served.
- In all Classrooms, Media Centers, Labs, and other educational spaces, the sensors are to be adjustable via wheel or slider, provided with an occupancy override button, with NO digital display. Sensors are to be temperature, CO2, and humidity.
- In all Offices, Workrooms, Multipurpose, and staff only areas, the sensors shall be adjustable with pushbutton adjustments, occupancy override button, and digital display.

Drawings:

Item M1:

Refer to drawing U101 – PARTIAL GEOTHERMAL SITE PLAN – MECHANICAL, Refer to Vertical Earth Loop Bore Detail. The detail shall be revised as indicated in attached. Vertical piping shall be 1-1/4" DR 11 Polyethylene Piping.

Item M2:

Refer to Mechanical Demolition Drawings; Fayette County Public Schools (FCPS) will salvage the existing water-cooled chillers. Mechanical Contractor shall disconnect and drain chillers for transportation by FCPS. Mechanical Contractor shall coordinate with FCPS for removal of chillers.

Item M3:

Refer to drawing M601 – MECHANICAL SCHEDULES; refer to Pump Schedule for revision to pumps P-04A and P-04B.

Item M4:

Refer to drawing M603 – MECHANICAL SCHEDULES; see revision to Water Source Heat Pump Unit Schedule for revisions to Heat Pump Tags to match drawings.

Item M5:

Refer to drawing M701 – BUILDING AUTOMATION SYSTEM – TEMPERATURE CONTROLS; refer to revision on sheet.

ALL TEMPERATURE / HUMIDITY / CO2 SENSORS FOR WATER-SOURCE HEAT PUMP UNITS SHALL BE PROVIDED BY THE TEMPERATURE CONTROLS CONTRACTOR.

Item M6:

Refer to drawing M702 – BUILDING AUTOMATION SYSTEM – TEMPERATURE CONTROLS; refer to revision on sheet.

ALL TEMPERATURE / HUMIDITY / CO2 SENSORS FOR WATER-SOURCE HEAT PUMP UNITS SHALL BE PROVIDED BY THE TEMPERATURE CONTROLS CONTRACTOR.

Item M7:

Refer to drawing M703 – BUILDING AUTOMATION SYSTEM – TEMPERATURE CONTROLS; refer to Sequences of Operations. The following shall be added to the dehumidification sequence of the Water-Source Heat Pump Units.

 During Dehumidification Mode the BAS shall monitor the unit Discharge Air Temperature, and shall modulate the water control valve as necessary to ensure unit LAT is room neutral 70°F+/- 1°F) The BAS shall modulate flow to restrict the flow to ensure that the Water Source Heat Pump is receiving correct entering water temp for dehumidification process utilizing HGRH.

Item M8:

Refer to drawing M704 – BUILDING AUTOMATION SYSTEM – TEMPERATURE CONTROLS; refer to Mini Split Units Points List. Remark number 1 shall be modified to state BACnet MSTP.

Item M9:

Refer to drawings M101a through M105a, all ducts penetrating floors shall be provided with a dynamic fire damper with associated access doors. All fire dampers and floor penetrations are to be sealed as required per KBC, IBC, and IMC.

Specifications:

Item M10:

Refer to specification Section 232113.33 – GROUND-LOOP HEAT PUMP PIPING, the following shall be added as acceptable contractors:

- 1. Mid State Construction Company, Livingston, TN
- 2. TCI Geothermal, Goodfield, IL

<u>Item M11:</u>

Refer to specification Section 232113.33 – GROUND-LOOP HEAT PUMP PIPING, Part 3.4 – Vertical Piping Installation, delete paragraph E in its entirety. Replace with the following:

E. Refer to Specification Section 232113.34 – THERMAL–ENHANCED BENTONITE GROUT

<u>ITEM M12:</u>

Refer to attached Specification Section 232113.34 – THERMAL-ENHANCED BENTONITE GROUT

Item M13:

Refer to attached specification Section 233426 – DUST COLLECTION SYSTEM. This section shall replace the original specification in its entirety.

Item M14:

Refer to attached specification Section 235216 – CONDENSING BOILERS. Fulton shall be added as an approve manufacturer for this section.

Attachments:

- 2. The following full size PDF drawings are attached for inclusion in this Addenda.
 - a. U101 PARTIAL GEOTHERMAL SITE PLAN MECHANICAL
 - b. M103a THIRD FLOOR PLAN A HVAC
 - c. M601 MECHANICAL SCHEDULES
 - d. M603 MECHANICAL SCHEDULES
 - e. M701 BUILDING AUTOMATION SYSTEM TEMPERATURE CONTROLS
 - f. M702 BUILDING AUTOMATION SYSTEM TEMPERATURE CONTROLS
 - g. M703 BUILDING AUTOMATION SYSTEM TEMPERATURE CONTROLS
 - h. M704 BUILDING AUTOMATION SYSTEM TEMPERATURE CONTROLS

Electrical Addenda Items (E):

General:

Item E1:

Applies to all Electrical Drawings and Specifications as described:

1. This Addendum document and associated Drawings, Sketches, Specifications, and associated attachments are complementary of each other, and all items shown are all-inclusive whether shown only on one source of documentation or multiple.

Drawings:

Item E2:

Refer to Drawings E101a through E104b and E621:

1. Provide lighting fixture additions/modifications as indicated and clouded on the attached Drawings.

Item E3:

Refer to Drawings E201a, E201b, E610, E620, and U202:

1. Provide power additions/modifications as indicated and clouded on the attached Drawings.

Item E4:

Refer to Drawings E301a, E301b, E303a, E303b, E304a, E505, and U202:

1. Provide system additions/modifications as indicated and clouded on the attached Drawings.

Attachments:

Item E5::

- 3. The following full size PDF drawings are attached for inclusion in this Addenda.
 - a. E101a FIRST FLOOR PLAN A LIGHTING
 - b. E101b FIRST FLOOR PLAN B LIGHTING
 - c. E102a SECOND FLOOR PLAN A LIGHTING
 - d. E102b SECOND FLOOR PLAN B LIGHTING
 - e. E103a THIRD FLOOR PLAN A LIGHTING
 - f. E103b THIRD FLOOR PLAN B LIGHTING
 - g. E104a FOURTH FLOOR PLAN A LIGHTING
 - h. E104b FOURTH FLOOR PLAN B LIGHTING
 - i. E201a FIRST FLOOR PLAN A POWER
 - j. E201b FIRST FLOOR PLAN B POWER
 - k. E301a FIRST FLOOR PLAN A SYSTEMS
 - I. E301b FIRST FLOOR PLAN B SYSTEMS
 - m. E303a THIRD FLOOR PLAN A SYSTEMS
 - n. E303b THIRD FLOOR PLAN B SYSTEMS
 - o. E304a FOURTH FLOOR PLAN A SYSTEMS
 - p. E505 ELECTRICAL DETAILS
 - g. E610 ELECTRICAL PANEL SCHEDULES
 - r. E620 ELECTRICAL PANEL SCHEDULES
 - s. E621 LIGHTING FIXTURE SCHEDULE
 - t. U202 PARTIAL SITE PLAN ELECTRICAL

End of items

END OF ADDENDUM 1 NARRATIVE

SECTION 098453 - SOUND BARRIER MULLION TRIM CAP

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes sound barrier mullion trim caps providing sound transmission control at curtain wall.
- B. Related Requirements:
 - 1. Section 079000 "Joint Sealants" for joint sealing.
 - 2. Section 084400 "Curtain Wall and Glazed Assemblies" for curtain wall construction.
 - 3. Section 092216 "Non-Structural Metal Framing" for interior wall construction.
 - 4. Section 092116 "Gypsum Board Assemblies" for interior wall construction

1.03 ACTION SUBMITTALS

A. Product Data:

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sound barrier wall end cap system.

B. Shop Drawings:

- 1. Include typical dimensioned cross-section(s) at the location where drywall partition terminates at the perimeter curtain wall, indicating:
 - a. Dimensions
 - b. Finish
- C. Samples: For each exposed product and for each color and texture specified.
 - 1. Size: 6 inch (152 mm) sound barrier mullion trim cap sample and 2" x3-1/2" (51 mm x 89 mm) custom color paint sample.

1.04 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each sound barrier mullion trim cap assembly, for ASTM E 90 tests performed by a qualified third party testing agency.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of aluminum extrusions and anodizing shall be ISO-9001 certified.
- B. Installer Qualifications: An entity that employs installers and supervisors who are approved by manufacturer.
- C. Testing Agency Qualifications: ASTM E 90 testing to be performed by laboratory accredited by IAS as complying with ISO/IEC Standard 17025.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver sound barrier mullion trim caps until spaces to receive them are clean, dry, and ready for their installation.
- B. Store sound barrier mullion trim caps in original undamaged packaging inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.07 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace sound barrier mullion trim caps that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Ten years limited warranty from date of Substantial Completion.
 - 2. Limited warranty does not cover adjacent products or improper installation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. <u>Manufacturers:</u> Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. MULL-it-OVER Products; Sound barrier mullion trim cap systems.

2.02 SYSTEM DESCRIPTION

- A. General: Provide sound barrier mullion trim caps of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.
 - 1. Furnish units in lengths of sufficient additional length to allow for field trimming to required length to match variations in construction tolerances of adjacent systems.

2.03 PERFORMANCE REQUIREMENTS

- A. Sound Transmission:
 - 1. Single Sided Installations: STC 50 or higher.
 - 2. Double-Sided Installations: STC 55 or higher.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 - 1. Mullion trim cap to be sized to accommodate thermal movement.

2.04 SOUND BARRIER MULLION TRIM CAP

- A. Sound Barrier Mullion Trim Cap:
 - 1. Products: MULL-it-OVER Products; Mullion Trim Cap.
- B. Profiles: 55 Wide Mullion Trim Cap, and Wide Mullion Trim Cap.

2.05 COMPONENTS

- A. Aluminum Extrusions:
 - 1. Thickness: 0.125 inches.
 - 2. Profile: As selected and approved by Architect to allow solid attachment and fastening to the partition wall framing.
- B. Sound Absorbing Foam:
 - 1. Resistant to smoke, flame, and microbial growth.
 - 2. Fire Rating: ASTM E 84 Class 1.
 - 3. Fungi Resistance: Zero rating per ASTM G 21.
- C. Compressible Foam: Between edge of extrusion and interior face of curtain wall glass.
 - 1. Thickness: Standard 1/2 inch (12.7 mm), ¾" (19.1 mm), 1 inch (25.4 mm) or 1-1/2" (38.1 mm) as required to accommodate mullion deflection.
 - 2. Color: As selected by Architect from manufacturer's standard colors.
- D. Fasteners:
 - 1. Self Tapping or appropriate threaded fastener.
 - 2. Compatible with all materials fasteners will contact with and not causing galvanic corrosion.
- E. Snap Cover: Snap-on fastener cover.
- F. Acoustical Sound Sealant: Acrylic latex based.

2.06 ACCESSORIES

A. Provide necessary and related parts and tools to complete installation.

2.07 FABRICATION

A. Extrusions and generic profiles to be shipped in custom lengths as required to meet project requirements or shipped in standard incremental foot lengths and cut to exact length on jobsite.

2.08 FINISHES

- A. Exposed surfaces of exposed aluminum extrusion:
 - 1. Standard Finish: Supplied in clear anodized finish.
 - 2. Custom Finish: Custom anodized finishes and painted finishes available upon request.

B. Finishes:

- 1. Aluminum clear anodize:
 - a. Clear anodized finish in accordance with AA-M10 C22 A41 Class I (0.7 to 1.0 thick anodic coating)
- 2. Aluminum color anodize or painted:
 - a. Color Choice with matte or bright finish. Select from manufacturer's custom color offering.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine walls and adjacent curtain wall for suitable conditions where sound barrier wall end cap will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Measure and cut sound barrier wall end cap to proper lengths.
- B. Notch around horizontal mullions, sills, or other obstructions leaving appropriate gap for differential movement between the sound barrier wall end cap and the obstruction.

- C. Apply continuous bead of acoustical sealant to the unexposed side of extruded aluminum surface that will be in contact with the drywall edge.
- D. Place sound barrier wall end cap on the vertical surface of the drywall partition wall and loosely install fasteners in the top and bottom slotted holes of the wall end cap.
- E. Plumb the wall end cap leaving recommended gap spacing between the interior glass surface and the wall end cap. Foam gasket to be in contact with glass.
- F. Tighten top and bottom fasteners to secure end cap.
- G. Install additional fasteners at 12 inches on center, minimum.
- H. Install snap cover to conceal fasteners.
- I. Apply color matched sealant at joints of dissimilar materials as desired.

3.03 CLEANING

A. After work is complete in adjacent areas, clean exposed surfaces with suitable cleaner that will not harm or attack the finish.

3.04 PROTECTION

A. Protect sound barrier wall end caps from damage during installation, general construction activities, and until turnover of structure.

END OF SECTION

SECTION 23 31 13.34 - THERMAL-ENHANCED BENTONITE GROUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Requirements for furnishing, mixing, and placing thermally-enhanced bentonite grout to seal and backfill each vertical u-bend well bore of the closed-loop ground heat exchangers to insure proper thermal contact with the earth and to ensure the environmental integrity of each vertical bore column. No other backfill material shall be accepted.

1.2 REFERENCES

- A. National Ground Water Association geothermal heat pump manual- Guidelines for the Construction of Vertical Boreholes for Closed Loop Heat Pump Systems
- B. Local codes

1.3 SUBMITTALS

A. Manufacturer's published data sheets including thermal conductivity, permeability, percent solids, grout weight, linear shrinkage potential, maximum particle size and unit yield along with verification of the required listing.

1.4 QUALITY ASSURANCE

1.5 Grouting compound shall be certified and listed by National Sanitation Foundation International to ANSI/NSF Standard 60, "Drinking Water Treatment Chemicals - Health Effects".

PART 2- PRODUCTS

2.1 MANUFACTURER/PRODUCT

- A. Grouting: Materials io be utilized by the Contractor shall be a minimum of 20% high sodium solids bentonite grout. The bentonite will be a slurry that will be tremie pouted from the bottom of the boring to the surface in accordance with the IGSHPA installation manual. The contractor will work quickly to assure that there are no air voids forming as a result of the bentonite placing.
- B. Grouting material shall be one of the following manufacturers:

1.	Aquagard	6.	Groutwell
2.	Aquagrout	7.	Puregold
3.	Black Hills Grout	8.	Quick Grout
4.	Enviroplug	9.	Volclay Grout

2.2 THERMAL CONDUCTIVITY

A. The thermal conductivity of the grouting compound must be 0.85 Btu/hr-ft-F or greater.

2.3 PERMEABILITY

A. The grout mixture shall also have a maximum permeability rate of less than 6.9 x 10 " cm/s as determined by using the "Falling-Head Method" (defined in the United States Army Corps of Engineers' Civil Engineering Manual No. EM 1 1 10-2-1906, "Laboratory Soils Testing" as recommended by the U.S. Environmental Protection Agency to insure proper sealing. Permeability shall be verified by an independent testing laboratory with a copy of the report being supplied upon request ft om the Owner or Owner's representative.

2.4 TOTAL SOLIDS AND ENHANCEMENT COMPOUND PERCENTAGE

A. The thermally-enhanced bentonite grout used shall have a minimum manufacturers recommended mixture of 63.5°/o solids. The thermal enhancement compound (high-grade silica compound) shall constitute a minimum of 50% by weight of the aqueous slurry.

2.5 PACKAGING

A. Grouting materials shall be pre-manufactured and packaged prior to delivery to the job site.

PART 3 - EXECUTION

3.1 MIXING

- A. Thermally-enhanced bentonite grouting material shall be mixed according to manufacturer written instructions.
- B. Contractor shall monitor the grouting operation to ensure trout is properly mixed and the viscosity is adequately maintained for pumping.
- C. Grout shall be mixed by a paddle type mixing device or by manufactured portable grouting unit specifically designed lot the vertical ground heat exchanger industry. <u>Jet mixing; and re- circulation use not allowed for grout.</u>

3.2 INSTALLATION

- A. Grout material shall be pressure pumped through a 1 in., I-1/4 in. or I-I/2 in. inside diameter tremie pipe and placed in the bore column from the bottom to the top. Grouting process shall conform to the manufacturer's instructions. Completed grouted surface shall be placed at ground level to ensure complete till of the bore column.
- B. Contractor shall maintain a ready supply of spare grout pipes, hoses and fittings on the site.
- C. A positive displacement pump shall be used for placing the grout in the borehole. Minimum pump suction and discharge line shall be 3 inches and 1- I/2 inches respectively.
- D. Drilling fluids shall be confined to the site and disposed of in accordance with prevailing local environmental regulations.

3.3 INSPECTION

- A. Since some settling may occur after initial placement of the grout material, the Contractor shall monitor each borehole and continue adding grout as required for a period of no less than 30 minutes and no longer than 2 hours.
- B. Grouting manufacturer shall provide testing of site mixed grouting material to verify thermal conductivity. Manufacturer shall provide a minimum of 3 sample analyses for each project.
- C. At a minimum, sampling shall be taken at the beginning of the project, at approximately one-third completion, and at approximately two-thirds completion. In the event that the analysis indicates a thermal conductivity value below the minimum specified value, corrective action shall be taken to increase thermal conductivity value back.

END OF SECTION 23 21 13.34

SECTION 23 34 26 - DUST COLLECTION SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide all materials and labor necessary to furnish and install the dust collecting equipment and related piping as specified herein and illustrated on the project drawings. Final connections to the shop equipment shall be included.
- B. Provide motor starters, disconnects and controls.

1.2 RELATED DOCUMENTS

- A. The General and Special Conditions, Division 01 Specification Sections, and all other Contract Documents (ESPECIALLY DIVISIONS 21, 22, 23 AND 26) are applicable to work under this section of the specifications. All the work under this section of the specifications shall be governed by any alternates and unit prices called for in the FORM OF PROPOSAL insofar as they affect this portion of the work.
- B. Section 230100 GENERAL PROVISIONS FOR MECHANICAL WORK

1.3 ACTION SUBMITTALS

- A. Shop Drawings:
 - Product Data: For each type of product indicated.
 - a. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for duct collectors.
 - Rated capacities, operating characteristics, and furnished specialties and accessories.
 - Certified fan performance curves with system operating conditions indicated.
 - d. Certified fan sound-power ratings.
 - e. Motor ratings and electrical characteristics, plus motor and electrical accessories.
 - f. Material thickness and finishes, including color charts.
 - g. Dampers, including housings, linkages, and operators.
 - h. Wiring Diagrams: For power, signal, and control wiring.

1.4 CLOSEOUT SUBMITTALS

- A. Approved Shop Drawings: For all dust collectors and related components. Provide in operation and maintenance manual.
- B. Operation and Maintenance Data: For dust collectors to include in operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

A. Dust collector manufacturer's representative shall provide complete test and start-up on all system components.

1.6 WARRANTY

A. A one-year parts and labor warranty shall be provided for all components from date of substantial completion for the project. Date of substantial completion shall be determined by the architect.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Nederman, American Air Filter, Torit, Dustvent, Sternvent and DISA.

2.2 SYSTEM MATERIALS

- A. Duct shall be galvanized spiral pipe with 3" through 7" diameter being 24 gauge and 8" and larger being 22 gauge.
 - 1. Duct may be by Lindab, Nordfab, or shop fabricated.
- B. Elbows shall be a minimum of two gauges heavier than straight pipe of equal diameter. One-piece machine rolled elbows are acceptable provided the inside radius is sealed to prevent air leaks. Elbows exposed to the elements must be full-weld type. All elbows shall have a centerline radius of 2.5 times the pipe diameter.
- C. Hoods shall be as designed for maximum collection efficiency by the dust collector supplier and approved by the Engineer.
- D. Where flexible ducting is required, wire-reinforced type of flexible fabric hose shall be furnished, and its use limited to the minimum length required without creating short radius turns.
- E. All branch connection fittings shall be constructed so the branch enters the main near the OD end of the fitting with the angle of entry not to exceed 45 degrees. Branch connection fittings which involve change of diameter shall be tapered with the taper being 2" long for each 1" change in diameter.
- F. Reducer and increasers shall be tapered with the taper being 2" long for each 1" change in diameter.
- G. Blast gates shall either be designed for locking the gate in position or removing the gate entirely.
- H. Cleanouts shall include a piano-hinged panel with two spring type clamps and felting to prevent air leaks yet permit easy access.

2.3 DUST COLLECTORS

- A. Dust Collector DC-01 (Carpentry)
 - 1. Manufacturer
 - a. System shall be JET Model DC650CK
 - b. Other manufacturers shall provide request in writing for approval. Other manufacturers must meet requirements indicated on schedule within drawings.

TEFC, 1 HP, 1Ph, 115V/230V, Prewired 115V, 60Hz, 7/3.5A

2. Specifications:

i.

Motor

a.	Model	DC-650M
b.	Stock Number	708642
C.	Blower Wheel Diameter (in.)	9-1/2
d.	Sound Rating at 3 feet	65-70 dB
e.	Hose Diameter (in.)	4
f.	Air Flow at 4" (CFM):	650
g.	Max. Static Pressure (inch of water):	6.5
h.	Velocity at 4" (FPM)	6300

Switch paddle style, removable safety key

Canister Filter Kit

a.	Stock Number	708737C

b. Canister Efficiency 86% of 1 micron particles; 98% of 2 micron particles

c. Canister Length (in.) 25

d. Collector Bag Diameter (in.) 14

e. Collector Bag Length (in.) 23

f. Collector Bag Capacity (cu. ft.) 2.1

4. Size Info

a. Overall Dimensions: 27"(I) x 14"(w) x 61"(h)

b. Net Weight 70 LBSc. Grose Weight 87 LBS

B. Dust Collector – DC-02 (Automation)

- Manufacturer
 - a. System shall be Nederman S-Series, model S-1000.
 - b. Other manufacturers shall provide request in writing for approval. Other manufacturers must meet requirements indicated on schedule within drawings.
- 2. Housing
 - a. The S-Series shall be a high efficiency filtration unit. The filter housing shall be constructed out of minimum 18-gauge galvanized steel panels.
- 3. Filters
 - a. The S-Series Dust Collector shall contain filter bags in an open enclosure. The filters shall be vertical 8.66-inch diameter filters, 15 sq. ft. per bag. The S-1000 shall contain 24 bags
 - 1) Material: 100% woven polyester with integrated carbon fiber for improved anti-static properties
 - 2) Construction: Vertically seamless
 - 3) Maximum Operating Temperature: 289 °F
 - Material Basis Weight 16 Oz. per Sq. Ft.
 - 5) Electrostatic Behavior:
 - i) Surface Resistance: 2.6 x 10e7 Ohm DIN 54 345 TEIL 1
 - ii) Charging Toward PA: .7 kV TEFO Method 40-77
 - 6) BIA Filter Efficiency: G
 - The maximum standard static pressure drop across the unit shall be 2"
 w. g.
 - c. Filter exchange shall be performed on the clean side of the filters.
- 4. Dust Container

a. The dust collector shall have three, heavy duty 8 mil plastic bags. Each bag shall have a minimum capacity of 45 gallons. The collection bags shall connect to the dust collector by means of Quickfit clamp and will not require a tool for assembly or disassembly. Access to the bags shall be from either side of the dust collector.

5. Integral Fan

a. The unit shall have a unit mounted fan with a TEFC electrical motor.

1) Construction: Cold Rolled Steel and with powder coated finish

2) Rated Motor: 10 HP

3) Nominal RPM: 1750

4) Rated Power: 208-230/460//60//3

PART 3- EXECUTION

3.1 DUCT INSTALLATION

- A. Girth joints of duct and elbows shall be made with a minimum 1" inner lap in the direction of airflow. Joints involving flexible fabric hose to include a hose adaptor to effect the inner lap. The flexible fabric hose shall be clamped to the adaptor.
- B. Duct and elbow joints shall be secured with three self-tapping sheet metal screws no longer than 5/8" or stainless-steel pop rivets, and be positioned at 12, 4 and 8 o'clock.
- C. Seal all duct joints with either caulk or hard cast type of sealant.
- D. Position cleanouts with the hinge at bottom center of the horizontal ductwork.
- E. Blast gates shall be required in all drops and shall be positioned within easy reach of the machine operator with an effort to standardize the elevation at 48".
- F. Support ductwork sufficiently to place no load on equipment connections. Maximum supporting interval is 8', otherwise, as required to prevent joint stress or unsafe conditions.

3.2 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances, service-utility connections, and other conditions affecting installation and performance of equipment. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Provide surface/substrate preparation as required by the manufacturer's printed installation instructions. Do not proceed with installation until site is in proper condition to receive the S-Series Dust Collector.

3.4 INSTALLATION

A. Install equipment in accord with manufacturer's written instructions, original design and referenced standards.

3.5 ADJUSTING

A. Adjust the S-Series Dust Collector if needed, for proper operation. Replace any parts that prevent the system from operating properly.

3.6 CLEANING

A. Remove all debris caused by installation. Clean all exposed surfaces to as fabricated condition and appearance.

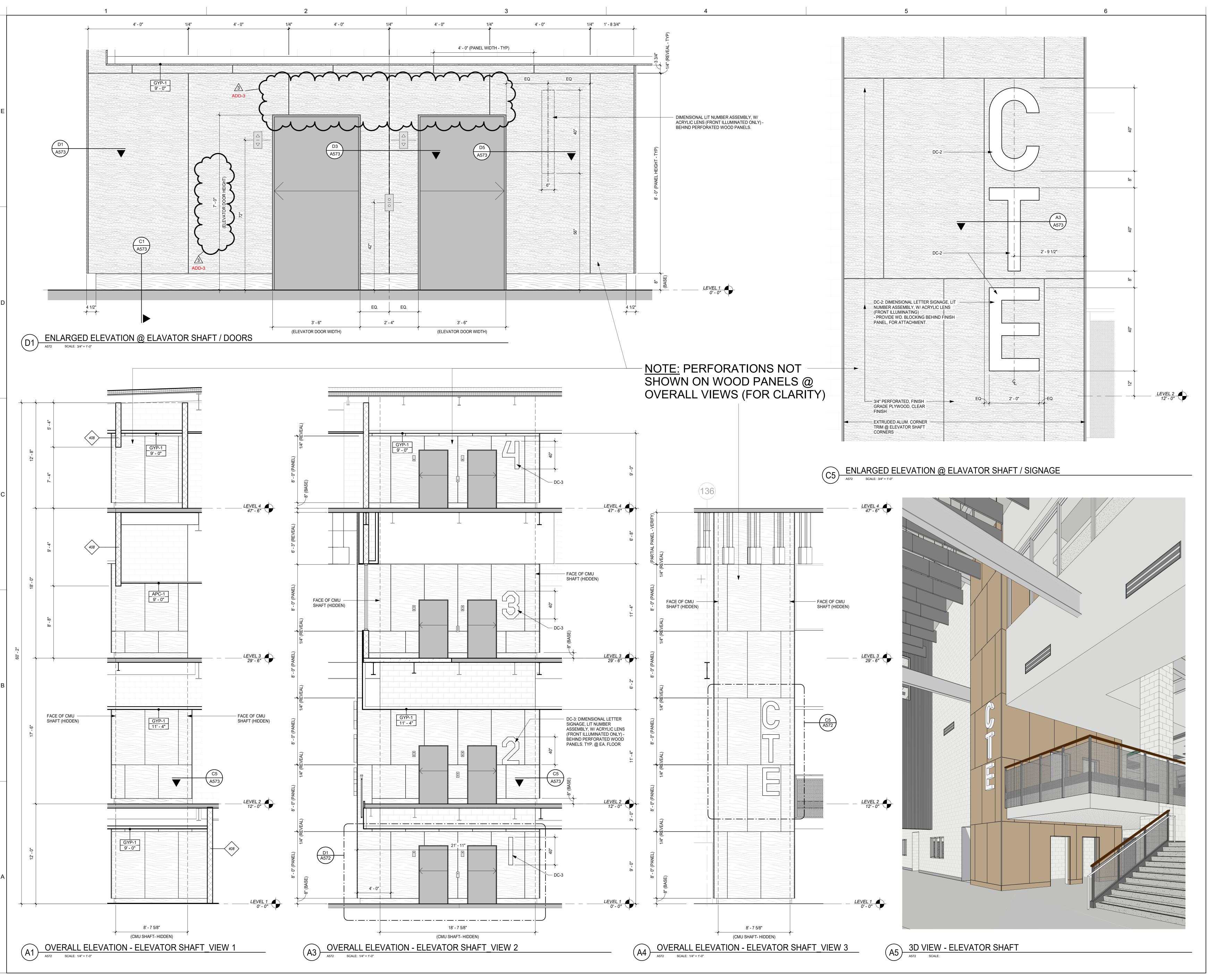
3.7 PROTECTION

A. Provide protection of the completed installation until completion of the project. Repair any damage at no additional cost to Owner.

3.8 DEMONSTRATION / TRAINING

A. Provide the end user a minimum of one hour of hands-on demonstration and operation of the S-Series Dust Collector and related equipment.

END OF SECTION 23 34 26

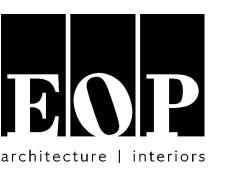


NEW FCPS COMBINED CTE SCHOOL

BG# 22-167 100 Midland Ave. Lexington, KY 40508

BID DOCUMENTS

REVISIONS DESCRIPTION



PROJECT TEAM

EOP Architects 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380



Element Design, PLLC. 366 S. Broadway Lexington, KY 40508

POAGE ENGINEERS & ASSOCIATES

Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504

SHROUT
TATE MECHANICAL AND
TATE ELECTRICAL ENGINEERS
WILSON Shrout Tate Wilson Consulting Engineers MEP Engineers 628 Winchester Rd.

Lexington, KY 40505

Reitano Design Group 302 N. East Street, Studio One Indianapolis, IN 46202

Calvert - Independent Hardware Specifications, LLC.

307 Oakwood Circle

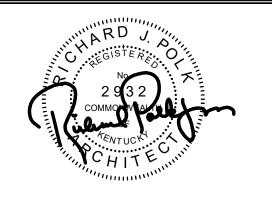
Vine Grove, KY 40175

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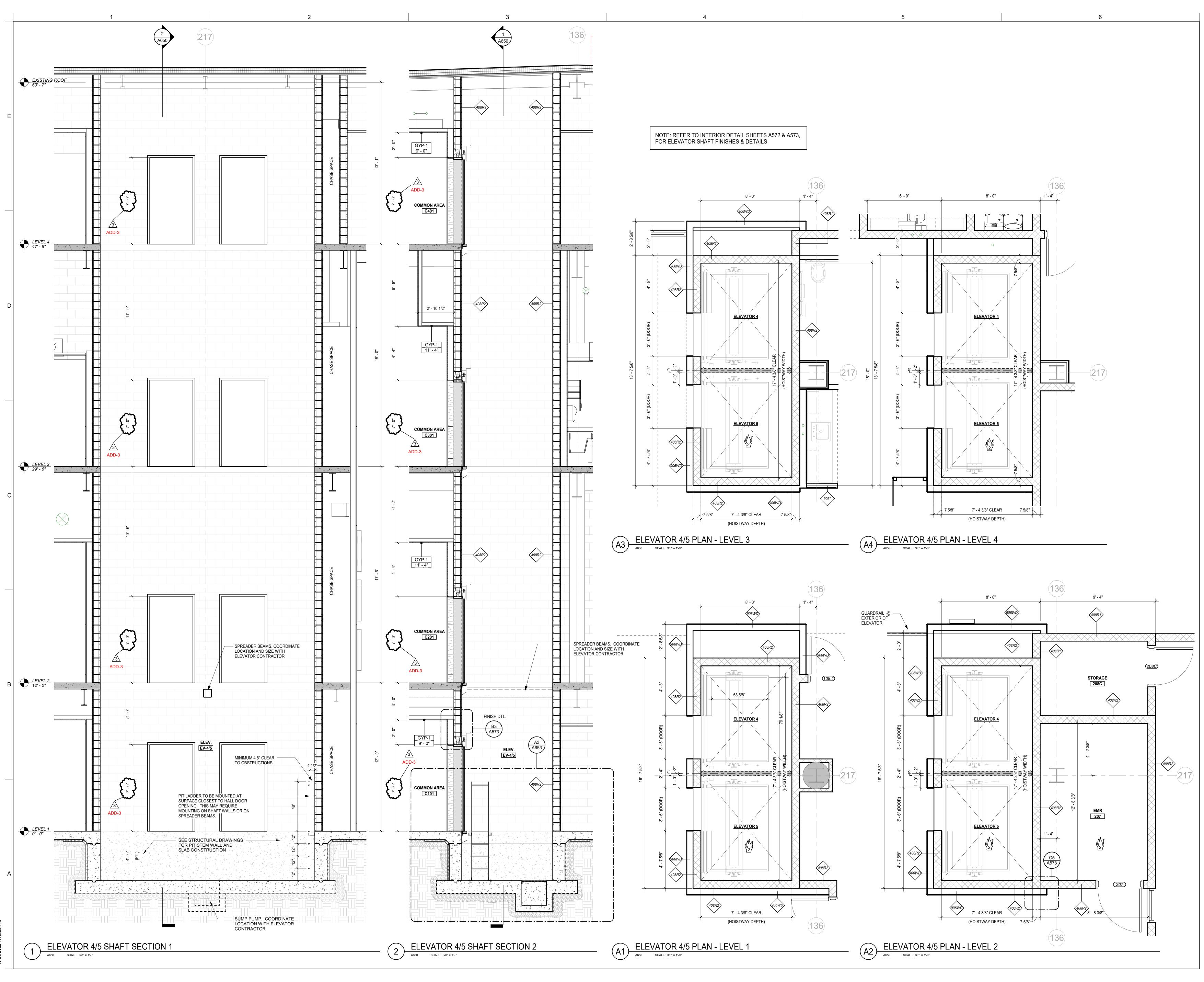
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ENLARGED DETAILS -INTERIOR

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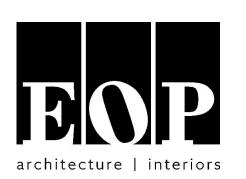


NEW FCPS COMBINED CTE

SCHOOL BG# 22-167

100 Midland Ave. Lexington, KY 40508 BID DOCUMENTS

REVISIONS DESCRIPTION # DATE 3 10/21/22 Revision 3



PROJECT TEAM

EOP Architects 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380 www.eopa.com



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628 Winchester Rd. Lexington, KY 40505

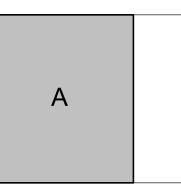


Indianapolis, IN 46202



Calvert - Independent Hardware Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

KEYPLAN

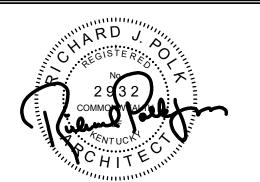


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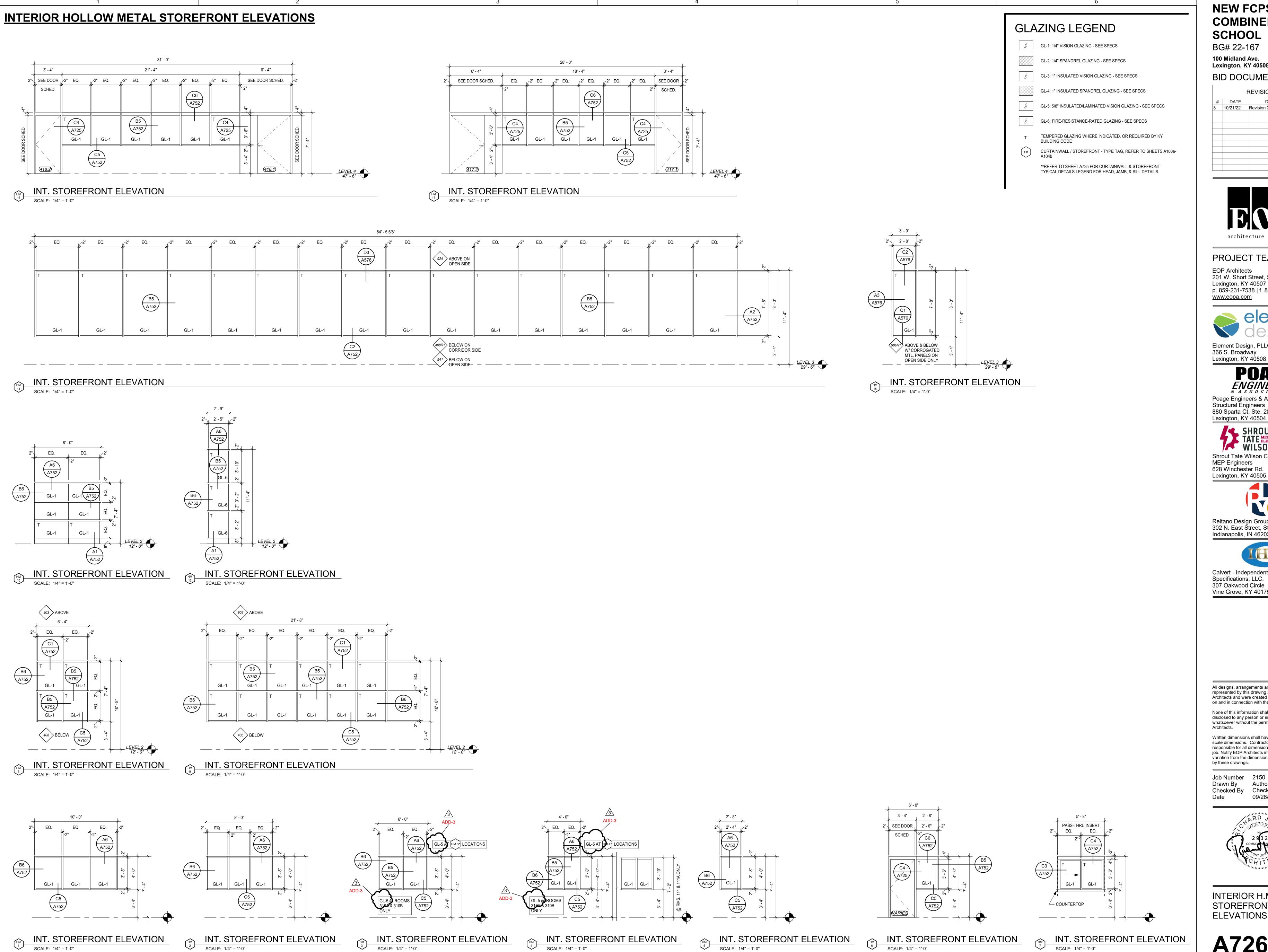
Job Number 2150 Author Drawn By Checked By Checker 09/28/2022



VERTICAL CIRCULATION -ELEVATORS

A650 ADD-3

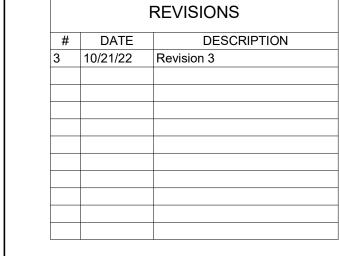




NEW FCPS COMBINED CTE SCHOOL

BG# 22-167 100 Midland Ave. Lexington, KY 40508

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PROJECT TEAM

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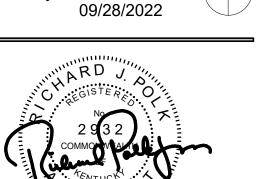
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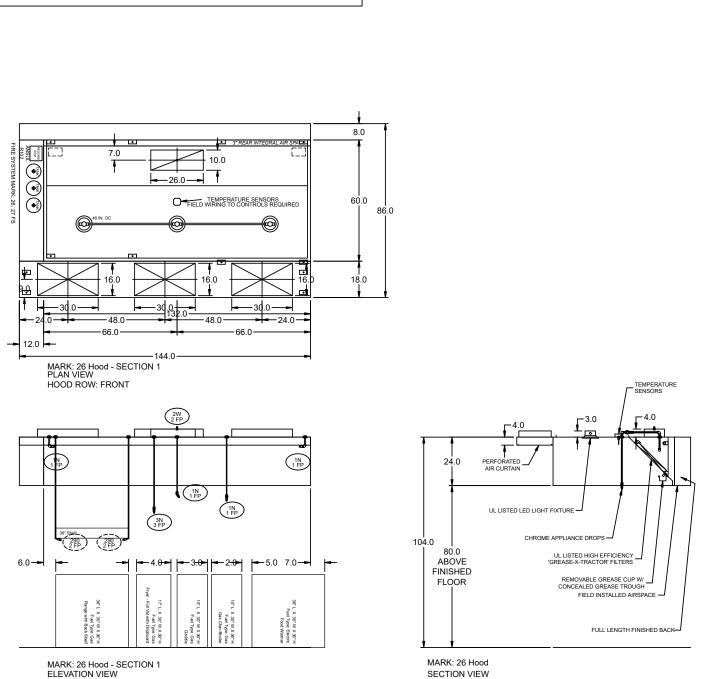


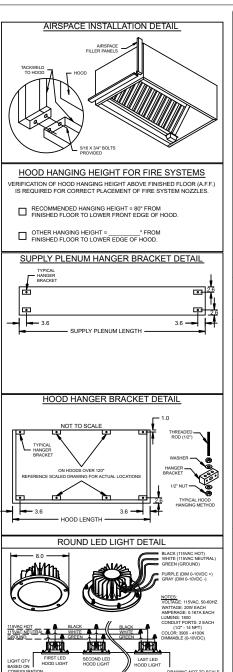
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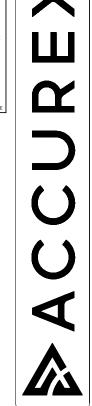
INTERIOR H.M. STOREFRONT ELEVATIONS

A726 ADD-3

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MIDLAND

ACCUREX CENTRAL, NORTHERN OH 30SH GARLITZ JOSH.GARLITZ@ACCUREX.COM (419)707-3685

Ŀ	HOOD I	NFORMATION																
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	NO.			LENGIH	WIDIT	HEIGHT	CONSTN.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	LOCKIO
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HOOD	INFORMATION												
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HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	QTY	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
140.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QII	L	Н	LOCATION	TYPE	SIZE	MODEL	INTERFACE
					X-TRACTOR	7	16						
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					STAINLESS STEEL	1	20			•		_	

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1	27 HOOD	FRONT	ASP	144	18	4	NO	YES	NO		2338	MUA	FACTORY	3	16	30		779	0.18	234

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625 BACK INTEGRAL AIR SPACE - 3 IN WIDE

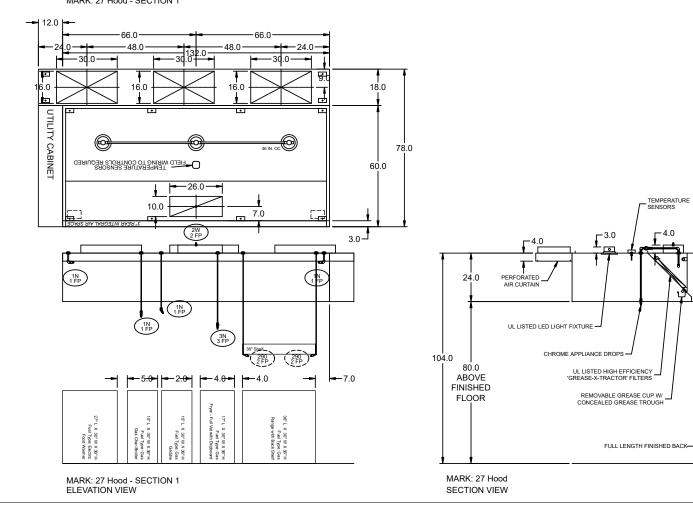
FINISHED BACK - FULL LENGTH

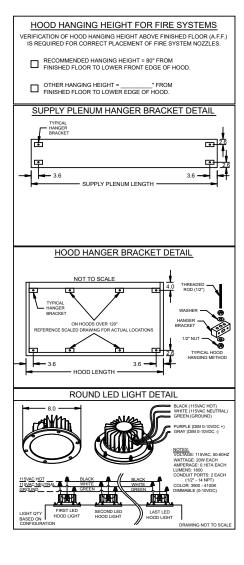
FACTORY MOUNTED EXHAUST COLLAR(S) HOOD ROW IS BACK SIDE OF DOUBLE ISLAND CONFIGURATION

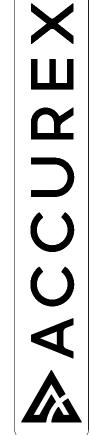
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

HOOD ROW: BACK PLAN VIEW MARK: 27 Hood - SECTION 1







R4

MIDLAND CTE

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HOOD I	NFORMATION																
			HOOD [DIMENSIC	NS (IN.)		COOKING			EXHA	UST			SUP	PLY	TOTAL	OFOTION
HOOD NO.	MARK	MODEL	LENGTH	WIDTH	HEIGHT	HOOD CONSTR.	LOAD / DUTY	TOTAL		С	OLLAR(S	5)		MUA	AC	WEIGHT	SECTION LOCATION
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'	26 HOOD	AAEW-132-3	132	60	24	300 33 100%	I I EAV T	2/30						2330		307 55	SINGLE

ŀ	HOOD I	NFORMATION												
Ī	11000		LIGHTING DETAIL	S		GREASE FILTRATI	ON E	ETAI	LS		UTILITY	CABIN	ET(S)	
	HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	QTY	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
	IVO.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QII	L	Н	LOCATION	TYPE	SIZE	MODEL	INTERFACE
Γ						X-TRACTOR	7	16		LEFT			XKC	
	1	28 HOOD	ROUND LED	3	72.08			-	20					
						STAINLESS STEEL	1	20	l					

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	Ю.	MARK	POS.	TYPE	L	W	Н	INSULATED	DAMPER(S)	SUPPLIED	QTY	CFM	TYPE	MOUNTING	QTY	W	L	DIA.	CFM	S.P.	VEL.
	1	28 HOOD	FRONT	ASP	144	18	4	NO	YES	NO		2338	MUA	FACTORY	3	16	30		779	0.18	234

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625 BACK INTEGRAL AIR SPACE - 3 IN WIDE

FINISHED BACK - FULL LENGTH

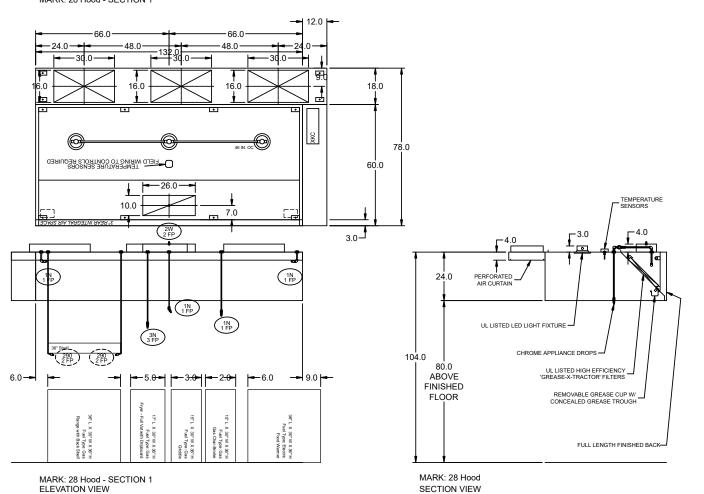
FACTORY MOUNTED EXHAUST COLLAR(S)

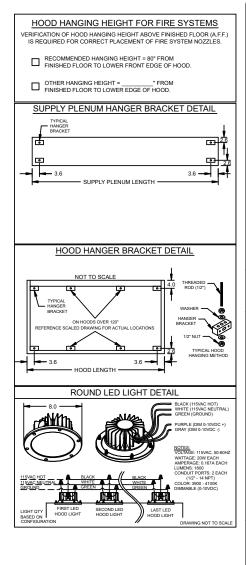
HOOD ROW IS BACK SIDE OF DOUBLE ISLAND CONFIGURATION

PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

HOOD ROW: BACK PLAN VIEW MARK: 28 Hood - SECTION 1







R4

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НС	DOD II	NFORMATION																
	000			HOOD	DIMENSIC	NS (IN.)		COOKING			EXH	AUST			SUP	PLY	TOTAL	OFOTION
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	1	29 HOOD	XXEW-132-S	132	60	24	300 SS 100%		2750	10	26		2750	0.604	2338		367 55	SINGLE
	'	29 HOOD	AAEW-132-3	132	00	24	300 33 100%	⊓EAV ĭ	2/30						2330		307 55	SINGLE

HOOD	INFORMATION												
11000		LIGHTING DETAIL	S		GREASE FILTRATI	ON E	ETAI	LS		UTILITY	CABIN	ET(S)	
HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	QTY	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
140.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QII	L	Н	LUCATION	TYPE	SIZE	MODEL	INTERFACE
					X-TRACTOR	7	16						
1	29 HOOD	ROUND LED	3	72.08		H	_	20	RIGHT	ANSUL R102	9		
					STAINLESS STEEL	1	20			•			

SUPF	LY PLENUM INFORMATION									-									
HOO	D MARK	POS.	TYPE	SI	ZE (I	N.)	INSULATED	DAMPED(C)	LED LIGI	HT(S)	TOTAL				COI	LARS			
NO	IVIARK	PUS.	TTPE	L	W	Н	INSULATED	DAMPER(5)	SUPPLIED	QTY	CFM	TYPE	MOUNTING	QTY	WΙ	DIA.	CFM	S.P.	VEL.
1	29 HOOD	FRONT	ASP	144	18	4	NO	YES	NO		2338	MUA	FACTORY	3	16 3	0	779	0.18	234

HOOD OPTIONS

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625

BACK INTEGRAL AIR SPACE - 3 IN WIDE

BACK NON-INTEGRAL AIR SPACE - 8 IN WIDE

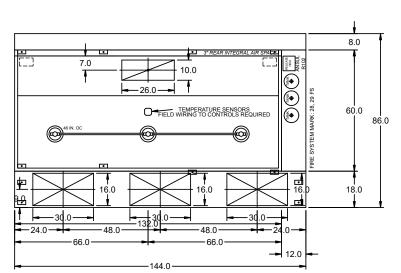
FINISHED BACK - FULL LENGTH

FACTORY MOUNTED EXHAUST COLLAR(S)

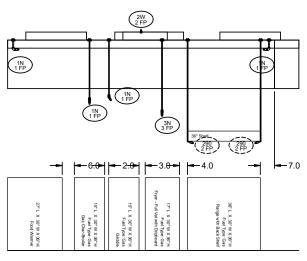
HOOD ROW IS FRONT SIDE OF DOUBLE ISLAND CONFIGURATION

PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

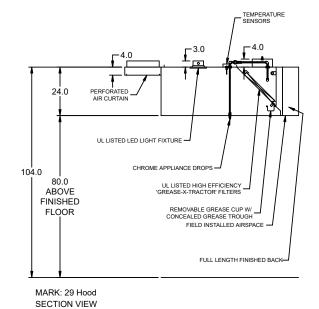
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

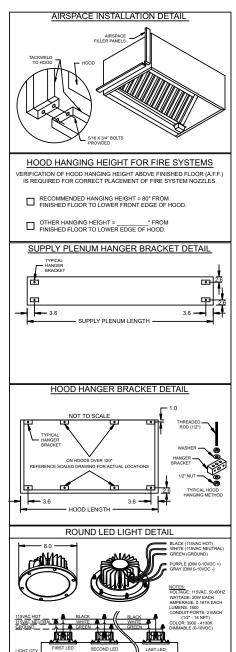


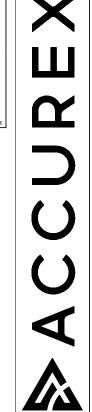
MARK: 29 Hood - SECTION 1 PLAN VIEW HOOD ROW: FRONT











CTE R4

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ACCUREX CENTRAL, NORTHERN OH JOSH GARLITZ JOSH.GARLITZ@ACCUREX.COM (419)707-3685

HOOD I	NFORMATION																
HOOD			HOOD E	IMENSIC	NS (IN.)	HOOD	COOKING			EXHA	AUST			SUP	PLY	TOTAL	SECTION
NO.	MARK	MODEL	LENGTH	WIDTH	HEIGHT	CONSTR.	LOAD / DUTY	TOTAL		C	OLLAR(S	5)		MUA	,	WEIGHT	LOCATION
110.			LLINGTIT	WIDIII	IILIOIII	oonon.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	200/11101
1	31 HOOD	XXEW-96-S	96	60	24	300 SS 100%	HEW/V	2000	10	19		2000	0.601	1710		281 58	LEFT
'	3111000	XXLVV-90-3	90	00	24	300 33 100 %	I LEAV I	2000						1710		20130	LLII
2	31 HOOD	XXEW-96-S	96	60	24	300 SS 100%	LIE AVAZ	1800	10	17		1800	0.543	1520		281 58	RIGHT
2	31 11000	XXEVV-90-5	96	60	24	300 55 100%	⊓EAV f	1800						1520		201 00	RIGHT

ŀ	HOOD I	NFORMATION												
			LIGHTING DETAIL	S		GREASE FILTRATI	ON D	ETAI	LS		UTILITY	CABIN	ET(S)	
	HOOD NO.	MARK	FIXTURE TYPE	OTV	FOOT	TYPE / MODEL	QTY	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
	INO.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QIT	L	Н	LUCATION	TYPE	SIZE	MODEL	INTERFACE
Γ						X-TRACTOR	6	16		LEFT	ANSUL R102	6	XKC	
	1	31 HOOD	ROUND LED	2	65	STAINLESS STEEL	<u> </u>	20	20					
L						STAINLESS STEEL	U	20						
						X-TRACTOR	l 6	16						1
	2	31 HOOD	ROUND LED	2	65	STAINLESS STEEL	-		20					i
L						STAINLESS STEEL	0	20						i

SUPF	LY PLENUM INFORMATION																			
HOO	D MARK	POS.	TYPE	SI	SIZE (IN.) INSULATED DAMPER(S) LED LIGHT(S) TOTAL							COLLARS								
NO	IVIARK	F03.	ITPE	L	W	Н	INSULATED	DAMPER(3)	SUPPLIED	QTY	CFM	TYPE	MOUNTING	QTY	W	Г	DIA.	CFM	S.P.	VEL.
1	31 HOOD	FRONT	ASP	108	18	4	NO	YES	NO		1710	MUA	FACTORY	2	16	30		855	0.17	257
2	31 HOOD	FRONT	ASP	96	18	4	NO	YES	NO		1520	MUA	FACTORY	2	16	30		760	0.17	228

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625

BACK INTEGRAL AIR SPACE - 3 IN WIDE

FINISHED BACK - FULL LENGTH

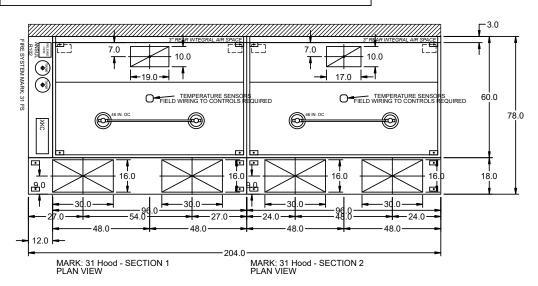
18 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED

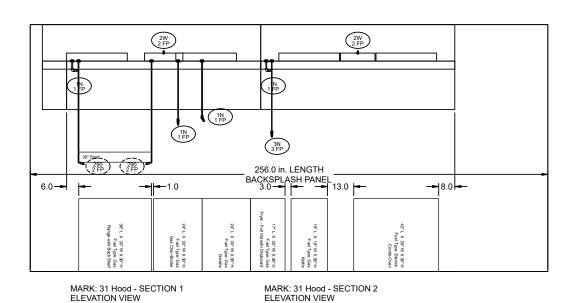
CONTINUOUS CAPTURE

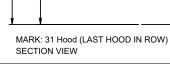
FACTORY MOUNTED EXHAUST COLLAR(S)

BACKSPLASH 122.00 IN HIGH 256.00 IN LONG PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH







UL LISTED LED LIGHT FIXTURE -

CHROME APPLIANCE DROPS -

24.0

ABOVE **FINISHED**

FLOOR

122.0

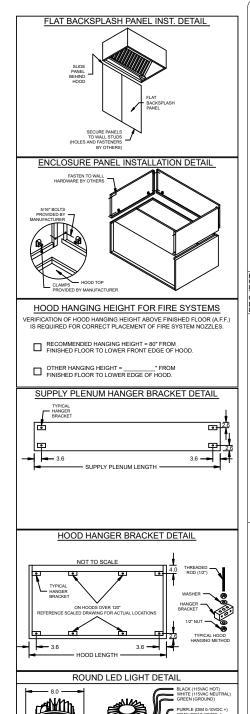
TEMPERATURE SENSORS

REAR ENCLOSURE IS NOT INCLUDED

-3.0

REMOVABLE GREASE CUP W/ __ CONCEALED GREASE TROUGH

FULL LENGTH FINISHED BACK





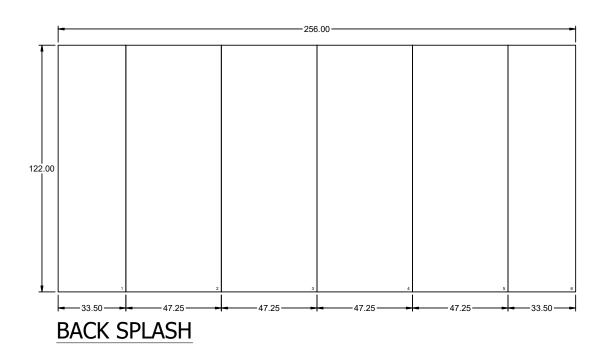
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31 Hood - SPLASH PANEL LAYOUT

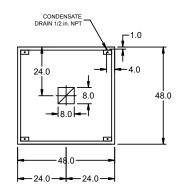
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HOOD	INFORMATION																
11000			HOOD DIMENSIONS (IN.)			COOKING			EXHA	AUST		SUPPLY		TOTAL	OFOTION		
HOOD NO.	MARK	MODEL	LENCTH	WIDTH	LEIGHT	HOOD CONSTR.	LOAD / DUTY	TOTAL		С	OLLAR(S	5)		MUA	AC	WEIGHT	SECTION LOCATION
NO.			LENGIA	WIDIN	HEIGHT	CONSTN.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	LOCATION
1	57 DISH HOOD	XD1-48-S	48 0	40	24	300 SS 100%		600	8	8		600	0.219			97	SINGLE
'	37 DISH HOOD	AD 1-40-3	400	40	24	300 33 100%		600								97	SINGLE

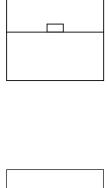
		LIGHTING DETAILS			BAFFLE FILTRATI	ID NC	ETAIL	.S	UTILITY CABINET(S)						
HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	VTV	SIZE	(IN.)	LOCATION	FIRE SYSTEM		CONTROLS			
		BULB / LAMP INFO		CANDLES	MATERIAL	QII	Г	Н	LOCATION	TYPE SIZE		MODEL	INTERFACE		
1	57 DISH HOOD	57 DISH HOOD				\vdash									

HOOD OPTIONS

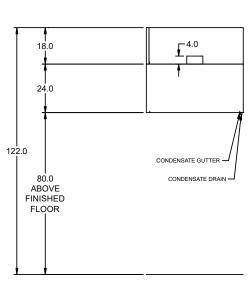
18 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED FACTORY MOUNTED EXHAUST COLLAR(S)
MESH FILTER(S) INCLUDED TO COVER DUCT OPENING(S)



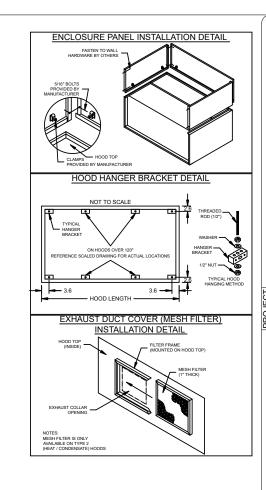
MARK: 57 Dish Hood - SECTION 1 PLAN VIEW

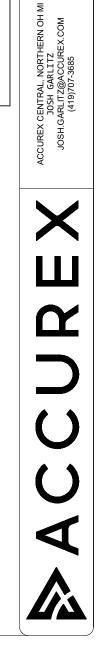


MARK: 57 Dish Hood - SECTION 1 ELEVATION VIEW



MARK: 57 Dish Hood SECTION VIEW

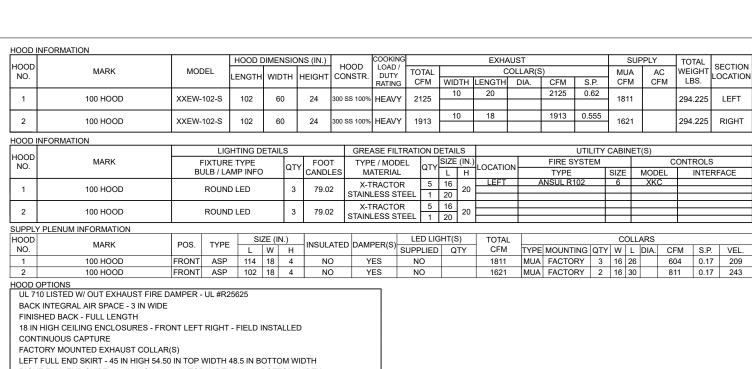




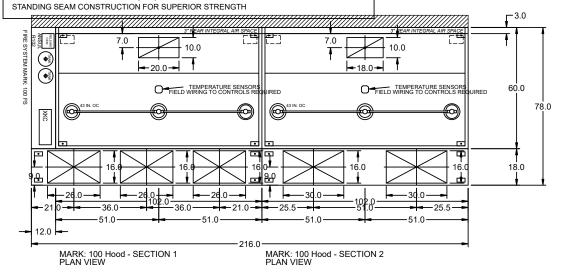
CONSTRUCTION COMPLES

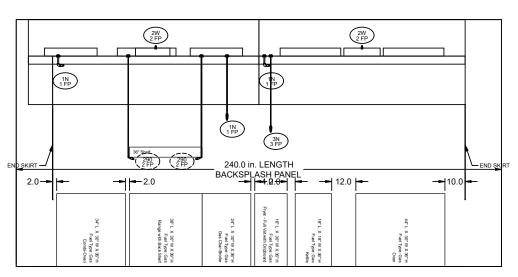
57 DISH HOOD

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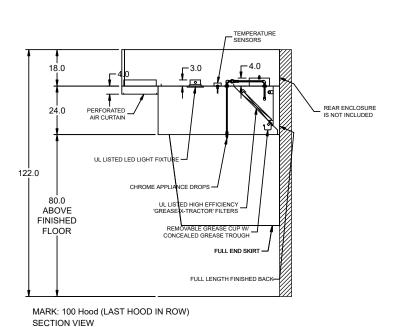


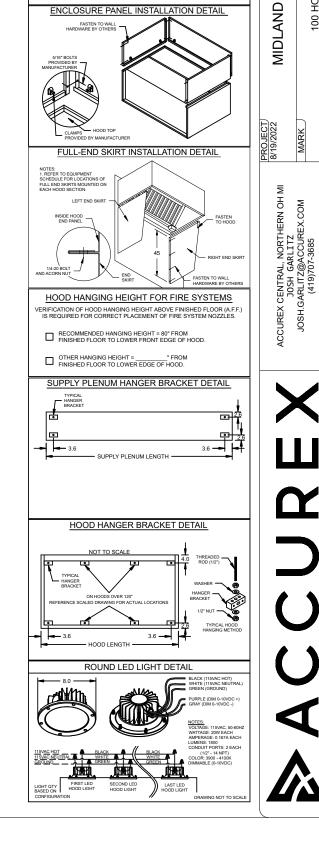
RIGHT FULL END SKIRT - 45 IN HIGH 54.50 IN TOP WIDTH 48.5 IN BOTTOM WIDTH BACKSPLASH 122.00 IN HIGH 240.00 IN LONG PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

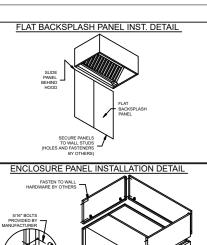




MARK: 100 Hood - SECTION 1 MARK: 100 Hood - SECTION 2

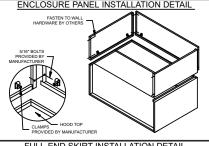


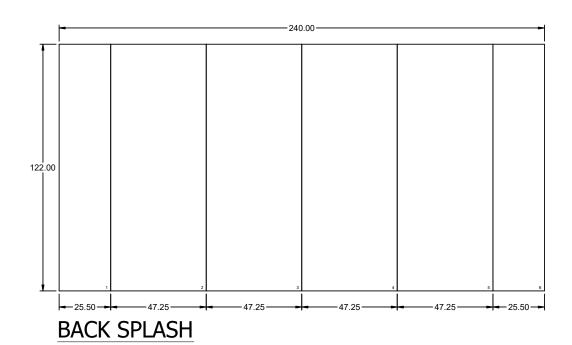




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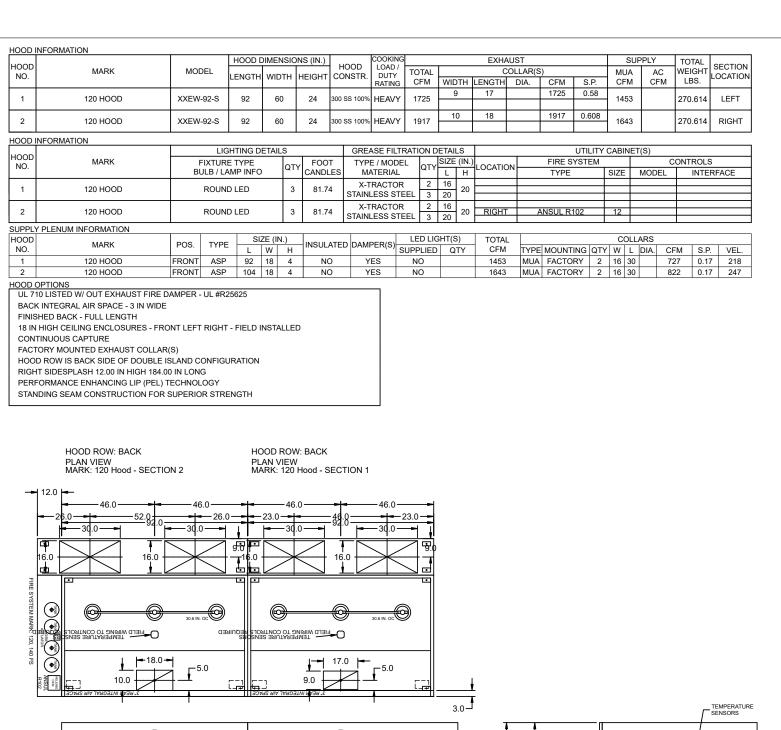


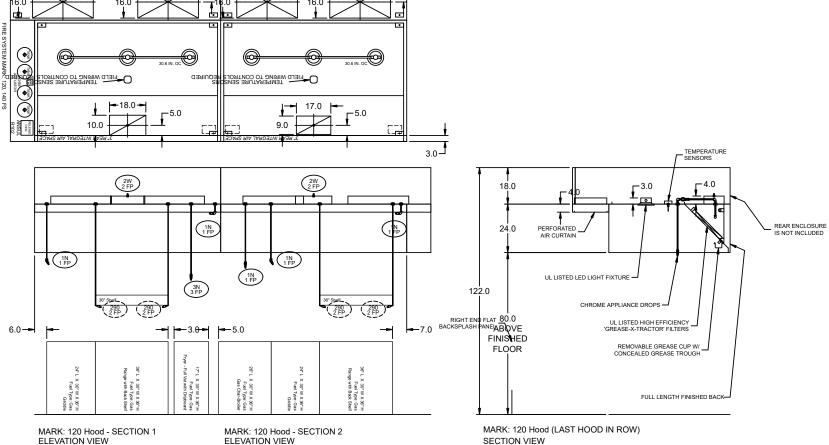


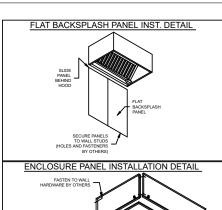
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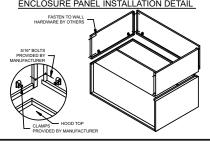
100 Hood - SPLASH PANEL LAYOUT

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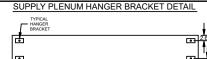


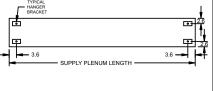


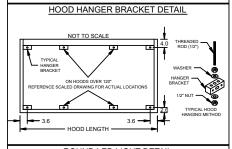
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

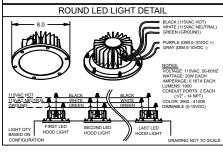
ERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

- RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.
- OTHER HANGING HEIGHT = _______* FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.











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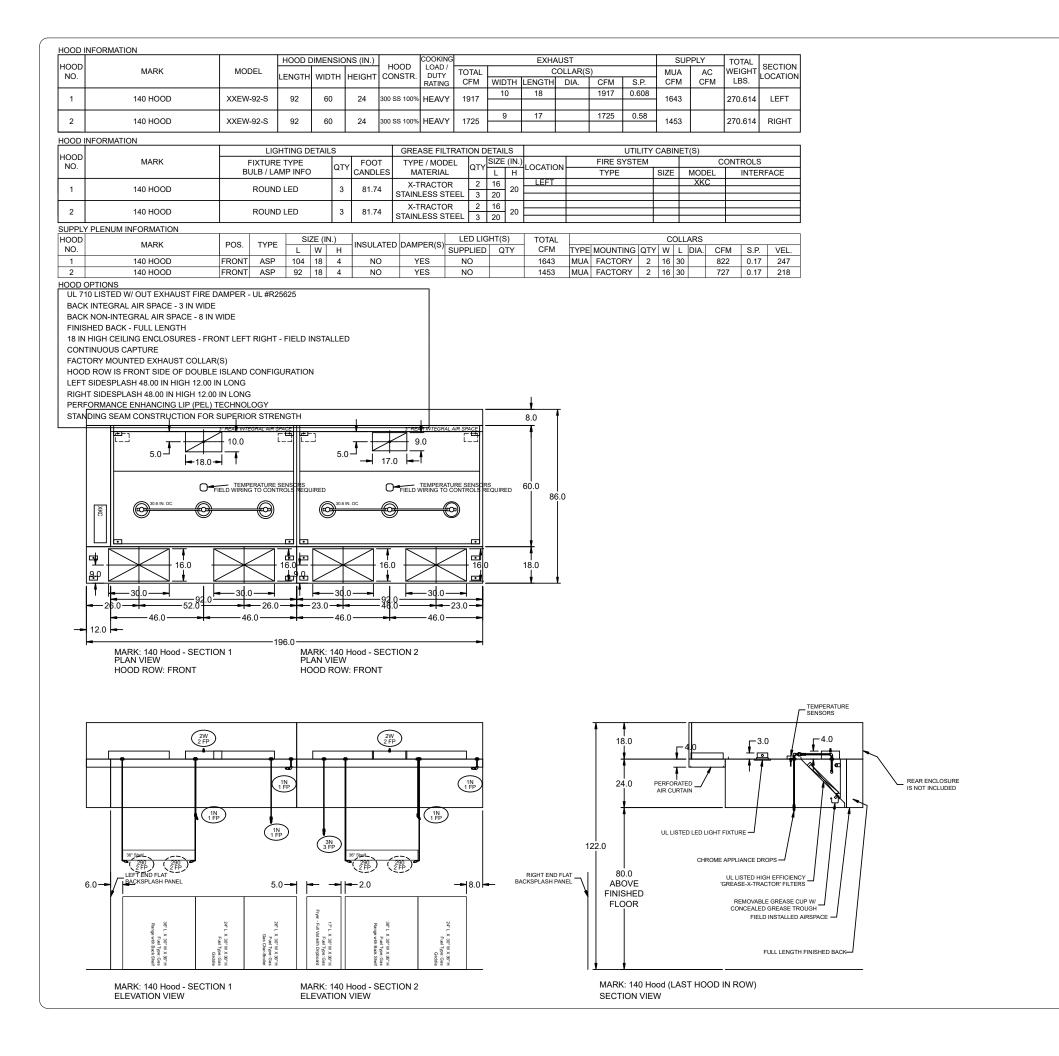
ACCUREX CENTRAL, NORTHERN O 30SH GARLITZ JOSH.GARLITZ@ACCUREX.CON (419)707-3885

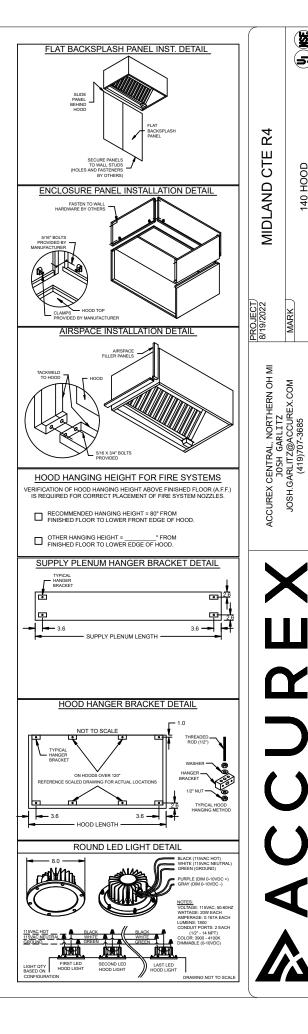
12.00

RIGHT SIDE SPLASH

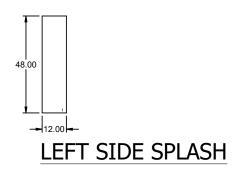
Midland CTE R4

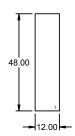
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RIGHT SIDE SPLASH

Ŀ	HOOD I	NFORMATION																
	11000	·		HOOD	IMENSIC	NS (IN.)		COOKING			EXH	AUST			SUP	PLY	TOTAL	CECTION
ľ	HOOD NO.	MARK	MODEL	LENGTH	WIDTH	HEIGHT	HOOD CONSTR.	LOAD / DUTY	TOTAL			OLLAR(S	5)		MUA	AC	WEIGHT	SECTION LOCATION
	NO.			LENGIH	WIDIT	HEIGHT	CONSTN.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	LOCKIO
	1	125 HOOD	XXEW-114-S	114	60	24	300 SS 100%	LIE MAY	2138	9	21		2138	0.592	1817		326 57	SINGLE
	'	123 HOOD	AAEW-114-3	''4	60	24	300 33 100%	TEAV T	2130						1017		320 37	SINGLE

HOOD	INFORMATION												
HOOD		LIGHTING DETAIL	.S		GREASE FILTRATI	ON D	ETA	ILS		UTILITY	CABIN	ET(S)	
HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	QTY	SIZE	E (IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
140.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QIT	L	Н	LOCATION	TYPE	SIZE	MODEL	INTERFACE
					X-TRACTOR	2	16						
1	125 HOOD	ROUND LED	3	76.03			_	20	RIGHT	ANSUL R102	6		
					STAINLESS STEEL	4	20					_	

SUPPLY	Y PLENUM INFORMATION																			
HOOD	MARK	POS.	TYPE	SI	ZE (IN	٧.)	INSULATED	DAMBER(C)	LED LIGI	HT(S)	TOTAL				C)LL	ARS			
NO.	WARK	PUS.	TTPE	L	W	Н	INSULATED		SUPPLIED	QTY	CFM	TYPE	MOUNTING	QTY	W	L	DIA.	CFM	S.P.	VEL.
1	125 HOOD	FRONT	ASP	126	18	4	NO	YES	NO		1817	MUA	FACTORY	3	16	30		606	0.14	182

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625 BACK INTEGRAL AIR SPACE - 3 IN WIDE

FINISHED BACK - FULL LENGTH

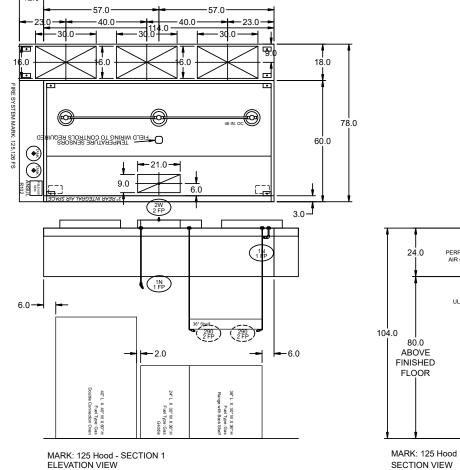
FACTORY MOUNTED EXHAUST COLLAR(S)

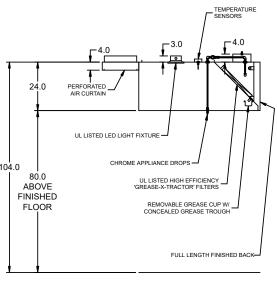
HOOD ROW IS BACK SIDE OF DOUBLE ISLAND CONFIGURATION

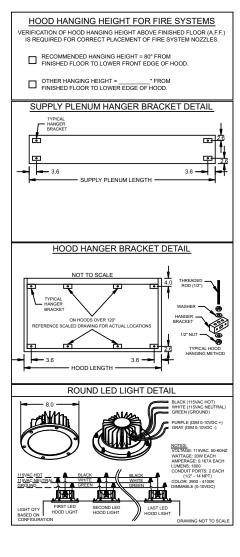
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

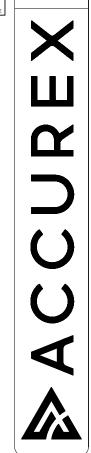
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

HOOD ROW: BACK PLAN VIEW MARK: 125 Hood - SECTION 1









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НОО	DINFORMATION																
			HOOD	DIMENSIC	NS (IN.)		COOKING			EXHA	UST			SUP	PLY	TOTAL	OFOTION
HOO NO	MARK	MODEL	LENCTH	WIDTH	ПЕІСПТ	HOOD CONSTR.	LOAD / DUTY	TOTAL		С	OLLAR(S)		MUA	AC	WEIGHT	SECTION LOCATION
INO			LENGIA	WIDIN	HEIGHT	CONSTN.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	LOCATION
1	126 HOOD	XXEW-114-S	114	60	24	300 SS 100%	LIE MAY	2375	9	23		2375	0.665	2019		322.557	SINGLE
_ '	126 HOOD	AAEW-114-3	114	60	24	300 33 100%	I I EAV T	23/3						2019		322.557	SINGLE

E	HOOD II	NFORMATION												
Γ.	1000		LIGHTING DETAIL	S		GREASE FILTRATI	ON D	ETA	LS		UTILITY	CABIN	ET(S)	
ľ	HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	QTY	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
	NO.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QII	L	Н	LOCATION	TYPE	SIZE	MODEL	INTERFACE
П						X-TRACTOR	2	16		LEFT				
	1	126 HOOD	ROUND LED	3	76.03		- -	_	20					
L						STAINLESS STEEL	4	20						

SUPPLY	Y PLENUM INFORMATION																		
HOOD	MARK	POS.	TYPE	SI	ZE (II	٧.)	INSULATED	DAMPED(C)		HT(S)	TOTAL				C	OLLAF	RS		
NO.	WARK	PUS.	TTPE	L	W	Н	INSULATED	DAMPER(5)	SUPPLIED	QTY	CFM	TYPE	MOUNTING	QTY	W	L DI	A. CFM	S.P.	VEL.
1	126 HOOD	FRONT	ASP	126	18	4	NO	YES	NO		2019	MUA	FACTORY	3	16	30	673	0.17	202

HOOD OPTIONS

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625

BACK INTEGRAL AIR SPACE - 3 IN WIDE

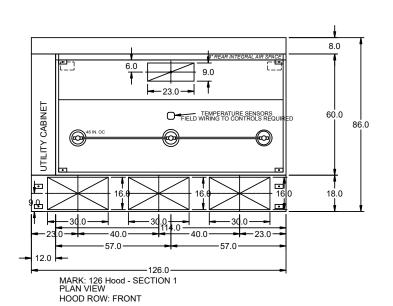
BACK NON-INTEGRAL AIR SPACE - 8 IN WIDE

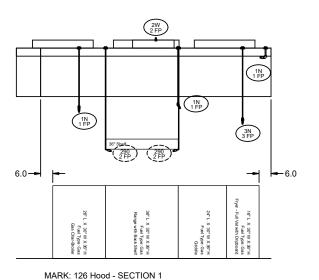
FINISHED BACK - FULL LENGTH
FACTORY MOUNTED EXHAUST COLLAR(S)

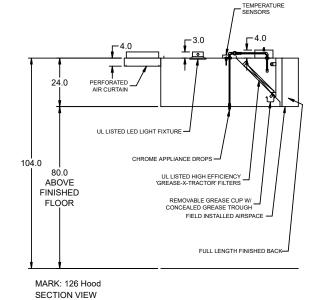
HOOD ROW IS FRONT SIDE OF DOUBLE ISLAND CONFIGURATION

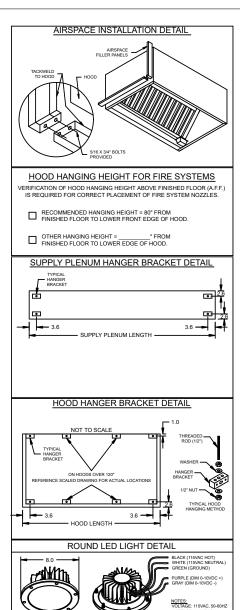
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY

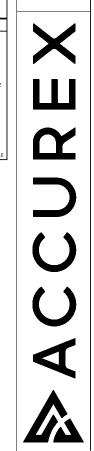
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH











126 HOOD

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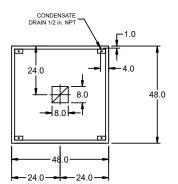
ŀ	HOOD	NFORMATION																
- [HOOD			HOOD	DIMENSIC	NS (IN.)		COOKING			EXH	AUST			SUP	PLY	TOTAL	SECTION
ľ	NO.	MARK	MODEL	LENGTH	WIDTH	LEIGHT	HOOD CONSTR.	LOAD / DUTY	TOTAL		C	OLLAR(S	5)		MUA	AC	WEIGHT	LOCATION
	NO.			LENGIH	WIDIN	HEIGHT	CONSTN.	RATING	CFM	WIDTH	LENGTH	DIA.	CFM	S.P.	CFM	CFM	LBS.	LOCATION
I	4	132 DISH HOOD	XD1-48-S	48 0	48	24	300 SS 100%		600	8	8		600	0.219			07	SINGLE
	'	132 01311 11000	AD 1-40-3	400	40	24	300 33 100%		000								9/	SINGLE

HOOD INFORMATION

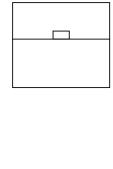
		LIGHTING DETAIL	S		BAFFLE FILTRATI	ON DI	ETAIL	S		UTILITY	CABIN	ET(S)	
HOOD NO.	MARK	FIXTURE TYPE	QTY	FOOT	TYPE / MODEL	ОТУ	SIZE	(IN.)	LOCATION	FIRE SYSTEM		C	ONTROLS
INO.		BULB / LAMP INFO	QII	CANDLES	MATERIAL	QIY	L	Н	LOCATION	TYPE	SIZE	MODEL	INTERFACE
1	132 DISH HOOD												
	102 8101111008												

HOOD OPTIONS

18 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED FACTORY MOUNTED EXHAUST COLLAR(S)
MESH FILTER(S) INCLUDED TO COVER DUCT OPENING(S)

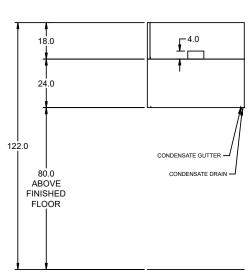


MARK: 132 Dish Hood - SECTION 1 PLAN VIEW

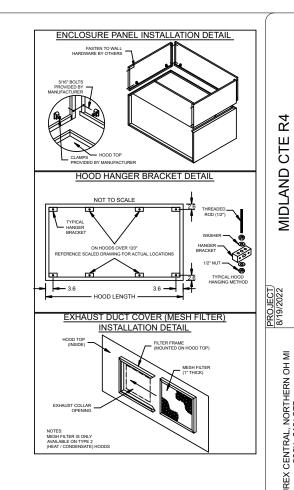


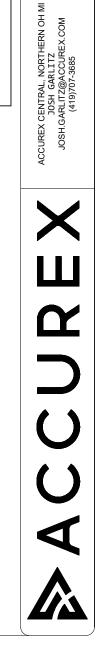


MARK: 132 Dish Hood - SECTION 1 ELEVATION VIEW



MARK: 132 Dish Hood SECTION VIEW





CONSTRUCTION COMPLES

132 DISH HOOD

MARK	MODEL	LOCATION	FLOW F	POINTS	SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
IVIARK	WODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARR(S) FROTECTED BY FIRE STOTEW
26, 27 FS	ANSUL R-102	CABINET LEET END OF 26 HOOD	26 UTILIZED		CONTINUOUS	ELICIBI E I INIV	26 HOOD SECTION 1
20, 27 1 0	WET CHEMICAL	CABINET – LEFT END OF 26 HOOD	33 AVAILABLE		CONTINUOUS	I OSIDEL LINK	27 HOOD SECTION 1

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

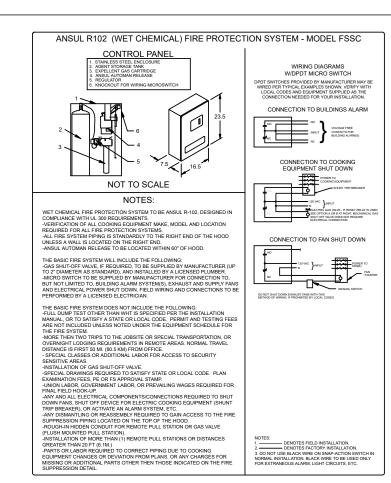
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 9 GAL. - [(3) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





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ſ	MARK	MODEL	LOCATION	FLOW F	POINTS	SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
	IVIARK	WODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARR(3) FROTEGIED BIT IRE STOTEW
ĺ	28, 29 FS	ANSUL R-102	CABINET - RIGHT END OF 29 HOOD	26 UTILIZED		CONTINUOUS	ELIGIBI E LINIK	28 HOOD SECTION 1
	20, 2913	WET CHEMICAL	CABINET – RIGHT END OF 29 HOOD	33 AVAILABLE		CONTINUOUS	FUSIBLE LINK	29 HOOD SECTION 1

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

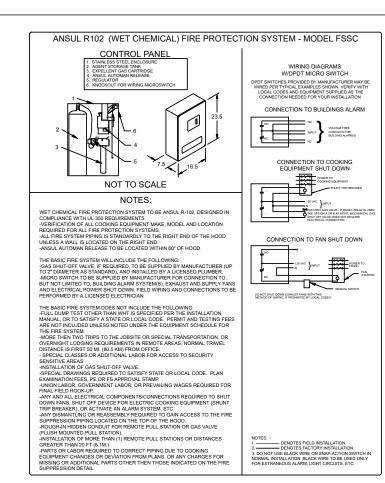
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 9 GAL. - [(3) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





R4

C

MARK	MODEL	LOCATION	FLOW F	POINTS	SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
IVIARK	WIODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARR(S) FROTECTED BY FIRE STOTEW
31 FS	ANSUL R-102	CABINET LEET END OF 31 HOOD	15 UTILIZED		CONTINUOUS	ELICIBI E I INIV	31 HOOD SECTION 1
3113	WET CHEMICAL	CABINET – LEFT END OF 31 HOOD	22 AVAILABLE		CONTINUOUS	I OSIDEL LINK	31 HOOD SECTION 2

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

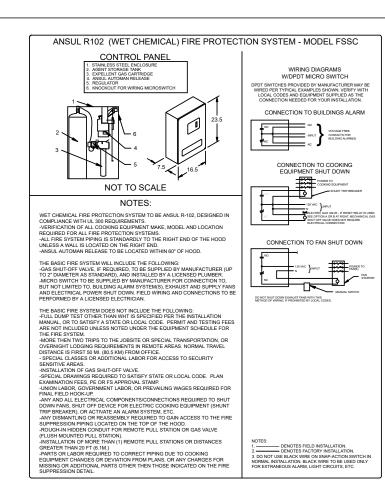
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 6 GAL. - [(2) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





C

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM		
IVIARK	MODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARK(S) PROTECTED BY FIRE STSTEW		
100 FS	ANSUL R-102	CABINET - LEFT END OF 100 HOOD	14 UTILIZED		CONTINUOUS	ELICIBI E I INIK	100 HOOD SECTION 1		
10013	WET CHEMICAL	CABINET – LEFT END OF 100 HOOD	22 AVAILABLE		CONTINUOUS	I OSIDEE LINK	100 HOOD SECTION 2		

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

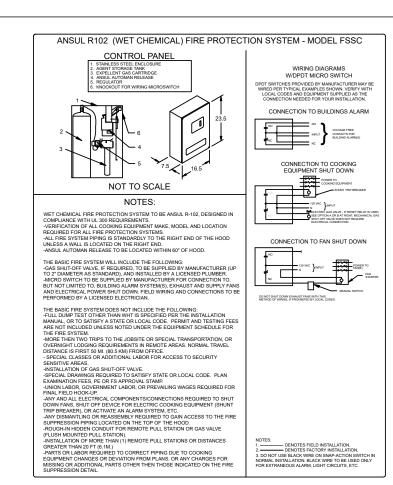
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 6 GAL. - [(2) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





R4

CTE

FIRE SYSTEM INFORMATION							
MARK	MODEL	LOCATION	FLOW F	POINTS	SUPPLY	DETECTION	MAR
IVIARK	MODEL	LOCATION	HOODS	PCU	LINE	DETECTION	I WAL

MARK	MODEL	LOCATION	FLOW F	POINTS	SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
IVIARK	WODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARR(S) FROTECTED BY FIRE STOTEW
							120 HOOD SECTION 1
120, 140 FS	ANSUL R-102	CABINET – RIGHT END OF 120	40 UTILIZED		CONTINUOUS	ELIGIBI E LINIK	120 HOOD SECTION 2
120, 140 1 0	WET CHEMICAL	HOOD	44 AVAILABLE		CONTINUOUS	I OSIBLE LINK	140 HOOD SECTION 1
							140 HOOD SECTION 2

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

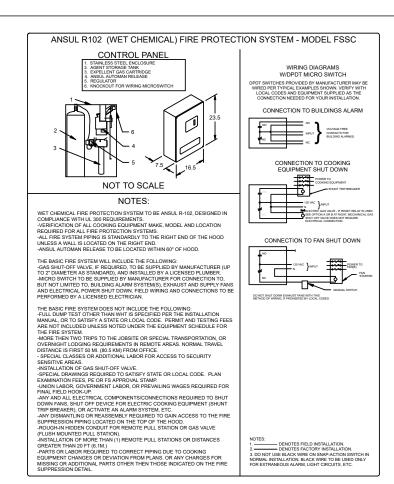
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

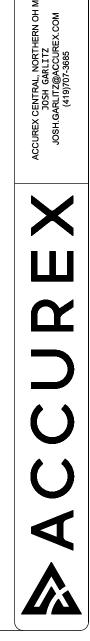
METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 12 GAL. - [(4) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





R4

CTE

MARK	MODEL	LOCATION	FLOW POINTS		SUPPLY	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM		
IVIARK	MODEL	LOCATION	HOODS	PCU	LINE	DETECTION	WARK(3) PROTECTED BY FIRE 3131EW		
125,126 FS	ANSUL R-102	CABINET - RIGHT END OF 125	20 UTILIZED		CONTINUOUS	ELICIBI E I INIK	125 HOOD SECTION 1		
123,12013	WET CHEMICAL	HOOD	22 AVAILABLE		CONTINUOUS	FUSIBLE LINK	126 HOOD SECTION 1		

FIRE SYSTEM OPTIONS AND ACCESSORIES

FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)

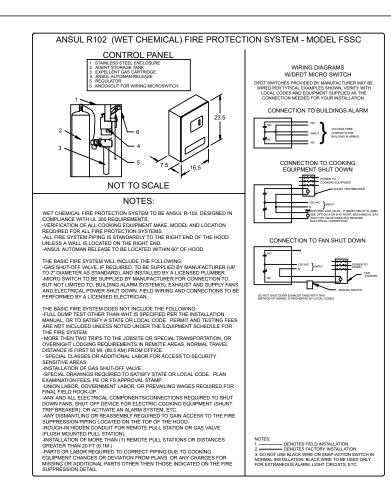
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED

METAL BLOW-OFF CAPS - INCLUDED

GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200

HOOD SUPPRESSION TANK - INCLUDED - 6 GAL. - [(2) 3.0 TANK(S)]

REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS





R4

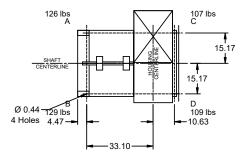
CTE

	Ullive	ersar sirigle widiri Fari												
MARK INFORMATION FAN INFORMATION						MOTOR INFORMATION								
	QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
	1	26,27 EF	XUEF-24	5,500	2.5	1,118	3.16	515	5	460/60/3	OP	1725	1	7.6
L		·	-								<u> </u>			

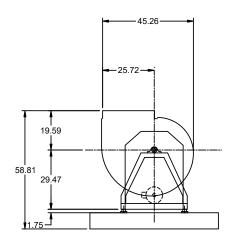
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

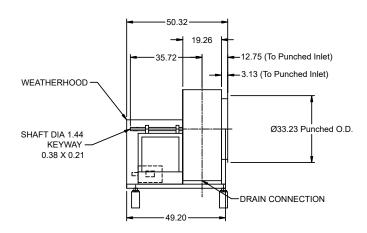
26,27 EF : SELECTED OPTIONS AND ACCESSORIES	
Finish - Coated	
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories	
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired	
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A	
Rotation - CW	
Bearings - L(10) Life of 80k Hours	
Discharge Position - UB	
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances	
Polished Steel Shaft	
Access Door - Bolted	
Equipment Supports (Qty:2), GESI-64-4-G8, No Coating	
Drain Connection - 1" Pipe Thread w/Plug	
Inlet Connection, Punched	
Outlet Connection, Slip Fit	
Weatherhood - Steel	
Heat Slinger	
Shaft Seal - High Ten@p33.2319.47 OD ►	
Grease Trap, ShipA&G569D	
Ø 32.23	
BOLT CIRCLE 26.03 OD	
\\	
Ø 30.23	
FLANGE ID	





FAN FOOTPRINT





END VIEW

SIDE VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE

*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE
*DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS MAY CHANGE

MIDLAND CTE R4

MARK

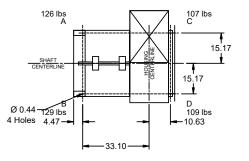
Cilit	ordar dinglo vilatir i air															
	MARK INFORMATION	FAN INFORMATION							MOTOR INFORMATION							
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)		OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*			
1	28,29 EF	XUEF-24	5,500	2.5	1,118	3.16	515	5	460/60/3	OP	1725	1	7.6			

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

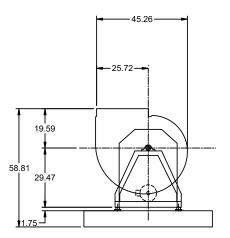
28,29 EF: SELECTED OPTIONS AND ACCESSORIES
Finish - Coated
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A
Rotation - CW
Bearings - L(10) Life of 80k Hours
Discharge Position - UB
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances
Polished Steel Shaft
Access Door - Bolted
Equipment Supports (Qty:2), GESI-64-4-G8, No Coating
Drain Connection - 1" Pipe Thread w/Plug
Inlet Connection, Punched
Outlet Connection, Slip Fit
Weatherhood - Steel
Heat Slinger
Shaft Seal - High Ter@p33.23 Grease Trap, ShipA&KG5oGD
Grease Trap, Snipperusiouse
BOLT CIRCLE 26.03 OD
Ø 30.23

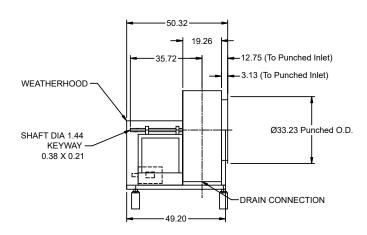
0.44 DIA. 8 HOLES OUTLET INLET

CONNECTIONS



FAN FOOTPRINT





END VIEW

SIDE VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE

*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE
*DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS MAY CHANGE

UNITED CONSTRUCTION COMPANS

MIDLAND CTE R4

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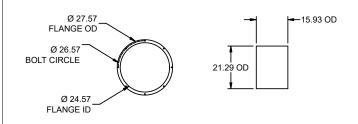
MARK

Grease Trap, Shipped Loose

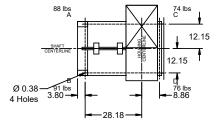
l N	MARK INFORMATION FAN INFORMATION							MOTOR INFORMATION						
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*	
1	31 EF	XUEF-20	3,800	2.25	1,327	2.01	371	3	460/60/3	OP	1725	1	4.8	

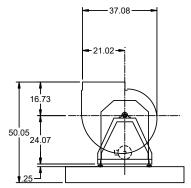
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

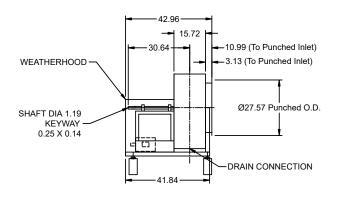
31 EF : SELECTED OPTIONS AND ACCESSORIES	
Finish - Coated	
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories	
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired	
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A	
Rotation - CW	
Bearings - L(10) Life of 80k Hours	
Discharge Position - UB	
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances	
Polished Steel Shaft	
Access Door - Bolted	
Equipment Supports (Qty:2), GESI-59-4-G8, No Coating	
Drain Connection - 1" Pipe Thread w/Plug	
Inlet Connection, Punched	
Outlet Connection, Slip Fit	
Weatherhood - Steel	
Heat Slinger	
Shaft Seal - High Temp	











FAN FOOTPRINT

SIDE VIEW

END VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE

*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE
*DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS MAY CHANGE

NO NOLLOWARESHOO

MIDLAND CTE R4

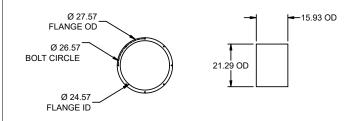
8/19/2022



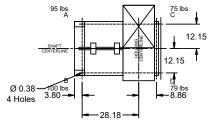
U	, i ii v C	isai oliigie widii i ali												
	MARK INFORMATION FAN INFORMATION						MOTOR INFORMATION							
QT	TY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
	1	100 EF	XUEF-20	4,038	2.5	1,403	2.37	390	5	460/60/3	TF	1725	1	7.6

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

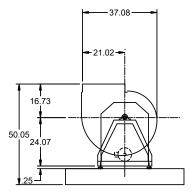
100 EF : SELECTED OPTIONS AND ACCESSORIES
Finish - Coated
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A
Rotation - CW
Bearings - L(10) Life of 80k Hours
Discharge Position - UB
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances
Polished Steel Shaft
Access Door - Bolted
Equipment Supports (Qty:2), GESI-59-4-G8, No Coating
Drain Connection - 1" Pipe Thread w/Plug
Inlet Connection, Punched
Outlet Connection, Slip Fit
Weatherhood - Steel
Heat Slinger
Shaft Seal - High Temp
Grease Trap, Shipped Loose

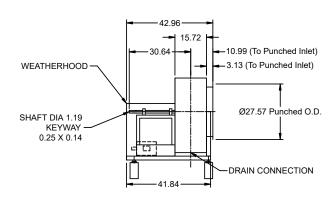






FAN FOOTPRINT





SIDE VIEW

END VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE

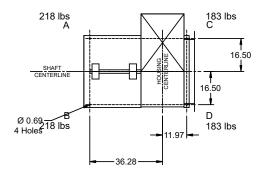
*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE
*DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS MAY CHANGE

MARK INFORMATION GTY MARK MODEL FAN INFORMATION FORMATION FORMATION FORMATION FORMATION FORMATION MOTOR INFORMATION MOTOR INFORMATION MOTOR INFORMATION FORMATION FORMATION FORMATION MOTOR INFORMATION MOTOR INFORMATION WEIGHT (LB.) SIZE (HP) V/C/P ENCLOSURE MOTOR RPM WINDINGS N	Ulliv	ersar sirigle width Fan												
QTY MARK MODEL (CFM) (IN WG) RPM POWER (HP) (LB.) SIZE (HP) V/C/P ENCLOSURE MOTOR WINDINGS N		MARK INFORMATION		IATION										
	QTY	MARK	MODEL						SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
1 120,140 EF XUEF-27 7,284 2.6 1,040 4.19 870 7.5 460/60/3 TF 1725 1	1	120,140 EF	XUEF-27	7,284	2.6	1,040	4.19	870	7.5	460/60/3	TF	1725	1	11

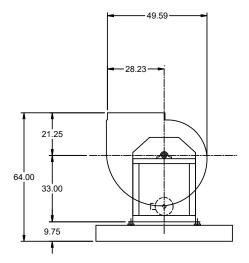
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

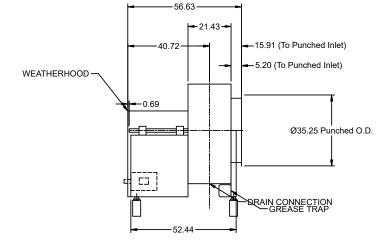
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A Rotation - CW Bearings - L(10) Life of 80k Hours Discharge Position - UB UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BlipANGE OD Weatherhood - Steel	120,140 EF : SELECTED OPTION	S AND ACCESSORIES
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A Rotation - CW Bearings - L(10) Life of 80k Hours Discharge Position - UB UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35,25 Outlet Connection, BlickNGE OD Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal Blight Circuit Grease Trap, Factory Mounted	Finish - Coated	
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A Rotation - CW Bearings - L(10) Life of 80k Hours Discharge Position - UB UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, Blick Cob Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal BUST CIRCLE Grease Trap, Factory Mounted	Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attac	ched Accessories
Rotation - CW Bearings - L(10) Life of 80k Hours Discharge Position - UB UL/CUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BligANGE OD Weatherhood - Steel Heat Slinger Shaft Seal Bush Terror Mounted Ø 32	Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Se	parate
Bearings - L(10) Life of 80k Hours Discharge Position - UB UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Oty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BlighRiGE OD Weatherhood - Steel Heat Slinger Shaft Seal BUST CIRCLE Grease Trap, Factory Mounted Ø 32	Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base	Coating - N/A
Discharge Position - UB UL/oUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Oty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BliANGE OD Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal BUET CIRCLE Grease Trap, Factory Mounted	Rotation - CW	
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BliANGE OD Weatherhood - Steel Heat Slinger Shaft Seal BUC CIRCLE Grease Trap, Factory Mounted Ø 32	Bearings - L(10) Life of 80k Hours	
Polished Steel Shaft Access Door - Bolted Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BliANGE OD Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal BUR DERCLE Grease Trap, Factory Mounted	Discharge Position - UB	
Access Door - Bolted Equipment Supports (Oty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BligANGE OD Weatherhood - Steel Heat Slinger Shaft Seal Build Terrocle Grease Trap, Factory Mounted Ø 32	UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust App	liances
Equipment Supports (Qty:2), GESI-68-4-G8, No Coating Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BligANGE OD Weatherhood - Steel Heat Slinger Shaft Seal BUST CIRCLE Grease Trap, Factory Mounted Ø 32	Polished Steel Shaft	
Drain Connection - 1" Pipe Thread w/Plug Inlet Connection, Punched 35.25 Outlet Connection, BligARGE OD Weatherhood - Steel Heat Slinger Shaft Seal BUST CIRCLE Grease Trap, Factory Mounted Ø 32	Access Door - Bolted	
Inlet Connection, Punched 35.25 Outlet Connection, SligANGE OD Weatherhood - Steel Heat Slinger Shaft Seal BUCK CIRCLE Grease Trap, Factory Mounted Ø 32	Equipment Supports (Qty:2), GESI-68-4-G8, No Coating	
Outlet Connection, SligNGE OD Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal BUR DERCLE Grease Trap, Factory Mounted Ø 32	Drain Connection - 1" Pipe Thread w/Plug	
Weatherhood - Steel Heat Slinger Ø 34 Shaft Seal Beigh Terror Wounted Ø 32 Ø 32	Inlet Connection, Punched 35.25	21.43 OD
Heat Slinger Shaft Seal High Terrocus Grease Trap, Factory Mounted Ø 32	Outlet Connection, SlipANGE OD	
Shaft Seal BHigh Terp 34 Grease Trap, Factory Mounted Ø 32	Weatherhood - Steel	
Grease Trap, Factory Mounted 28.67 OD Ø 32	Heat Slinger	†
Ø 32	Shaft Seal BOLT CIRCLE	
	Grease Trap, Factory Mounted	28.67 OD
	(//	
		<u>+ </u>
FLANGE ID	Ø 32	
	FLANGE ID	





FAN FOOTPRINT





END VIEW

SIDE VIEW

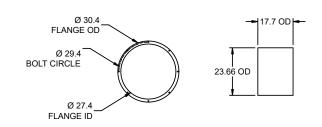
*SIDE VIEW IS VIEWED FROM DRIVE SIDE

Grease Trap, Shipped Loose

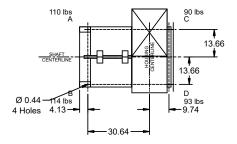
MARK INFORMATION FAN INFORMATION FAN INFORMATION WOTOR INFORMATION OPERATING WEIGHT (LB.) SIZE (HP) V/C/P ENCLOSURE MOTOR WINDING RPM POWER (HP) (LB.)	
LOTY I MARK I MODEL L'EENCLOSURE INVIOLENCE IN INVIOLENCE IN INVIOLENCE INVIO	,
(CFM) (IN WG) RPM POWER (HP) (LB.) CERT RPM WINDING	NEC FLA*
1 125,126 EF XUEF-22 4,513 2.6 1,242 2.7 451 5 460/60/3 TF 1725 1	7.6

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

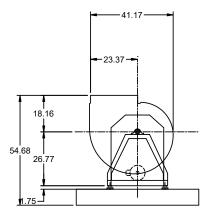
······································
125,126 EF: SELECTED OPTIONS AND ACCESSORIES
Finish - Coated
Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired
Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A
Rotation - CW
Bearings - L(10) Life of 80k Hours
Discharge Position - UB
UL/cUL-762 Outdoor - Power Vent. for Restaurant Exhaust Appliances
Polished Steel Shaft
Access Door - Bolted
Equipment Supports (Qty:2), GESI-61-4-G8, No Coating
Drain Connection - 1" Pipe Thread w/Plug
Inlet Connection, Punched
Outlet Connection, Slip Fit
Weatherhood - Steel
Heat Slinger
Shaft Seal - High Temp

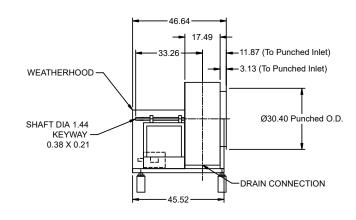






FAN FOOTPRINT





SIDE VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE

*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE
*DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS MAY CHANGE

END VIEW

Universal Single Width Fan

	Cilive	ordar dirigio vitati i ari												
		MARK INFORMATION		FAN INFORMATION MOTOR INFORMATION										
(QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)		SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
	1	57 EF-Dish	XUEF-08	600	1.15	1,835	0.31	166	0.5	115/60/1	TF	1725	1	9.8

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

57 EF-Dish : SELECTED OPTIONS AND ACCESSORIES

Finish -	Galvanized

Galvanized Finish on Steel Components

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired

Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A

Discharge Position - UB

Bearings - L(10) Life of 80k Hours
UL/cUL-705 - "Power Ventilators"

Polished Steel Shaft

Access Door - Bolted

Equipment Supports (Qty:2), GESI-25-4-G8, No Coating

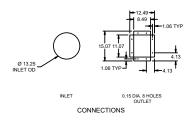
Damper, Gravity, WD-340, Galv. Blade, 8.4x11.3, Parallel, w/ Mill Finish

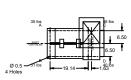
Drain Connection - 1" Drain Hole, Unthreaded

Inlet Connection, Slip Fit Outlet Flange, Punched

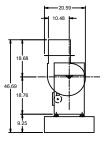
Weatherhood - Galvanized Construction

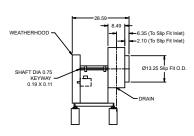
Extended Lube Lines - Nylon Shaft Seal - Aluminum





FAN FOOTPRINT





SIDE VIEW

SIDE VIEW IS VIEWED FROM DRIVE SIDE

*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE *DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS N

END VIEW

*OUTLET DIMENSION SHOWS FAN WITH DAMPER OPERATING CLEARANCE

UL MSE CONSTRUCTION, COMPUSS

MIDLAND CTE R4

Universal Single Width Fan

Omit	ordar dirigio vvidari i dir												
	MARK INFORMATION		FAN INFORMATION MOTOR INFORMATION										
QTY	MARK	MODEL	VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)		SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS	NEC FLA*
1	132 EF-Dish	XUEF-08	600	1.3	1,923	0.35	166	0.5	115/60/1	TF	1725	1	9.8

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

132 EF-Dish : SELECTED OPTIONS AND ACCESSOR

Finish - Galvanized

Galvanized Finish on Steel Components

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted and Wired

Direct Mount Isolators, Isolator-Rubber Mount, 0.50 Inch, Base Coating - N/A

Discharge Position - UB

Bearings - L(10) Life of 80k Hours
UL/cUL-705 - "Power Ventilators"

Polished Steel Shaft

Access Door - Bolted

Equipment Supports (Qty:2), GESI-25-4-G8, No Coating

Damper, Gravity, WD-340, Galv. Blade, 8.4x11.3, Parallel, w/ Mill Finish

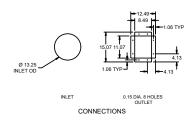
Drain Connection - 1" Drain Hole, Unthreaded

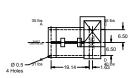
Inlet Connection, Slip Fit Outlet Flange, Punched

Weatherhood - Galvanized Construction

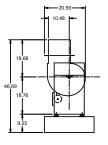
Extended Lube Lines - Nylon

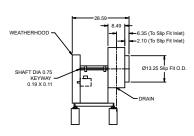
Shaft Seal - Aluminum





FAN FOOTPRINT





SIDE VIEW

SIDE VIEW IS VIEWED FROM DRIVE SIDE

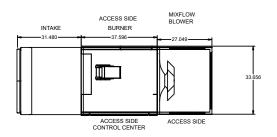
*FANS ARE SUBJECT TO ±.125 INCH TOLERANCE **DUE TO CONTINUAL IMPROVEMENTS DIMENSIONS

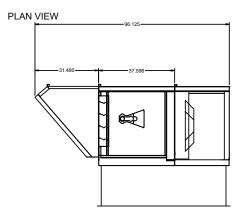
END VIEW

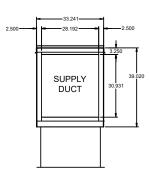
*OUTLET DIMENSION SHOWS FAN WITH DAMPER OPERATING CLEARANCE

MIDLAND CTE R4

					EQUIP	MENT	CUE) E						OPTIONS AND ACCESSORIES							
l_						VIII V	CITE	JULE						Air Flow Arrangement: Outdoor Air Only							
Te	mpe	red Ma	ke-U	p Air Uı	nit						M	ark: 26,2	7 MUA	Weatherhood: Aluminum Mesh, 16x20x2 - (4)							
٥.		curex Model		Volume	Externa	ı on	Total SP		RPM		Operating		Weight	Damper: Inlet Outdoor Air Intake Position: End							
Qty	Aci	curex Mode	'	volume	Externa	ISP	Iotal SP		RPM	1 '	Operating	Power	vveignt	Discharge Position: End							
	1 XDGX-P116-H12-MF 4.676 CFM 0.55 in. wg 1.628 in. wg 1868 2.21 hp 6		698 lb	Coating: Galvanized																	
	ADGA	-P110-H12-	WIF 4			wg	.020 III. W	9	1000		2.211	· ·	090 ID	Insulation: Double Wall - Tempering On							
				Motor Info	rmation Motor with				4	MC		1.4	OP.	Supply Fan Control: VFD							
	Size	V/C/	P	Enclosure	Shaft Groundi		RPM \	Vindings		IWO	`	-	JI.	VFD Control: Constant Volume							
	3 hp	460/6	0/3	ODP	No	172	5	1		6.3		1	5	Access Side: Right-Hand							
_	1000 10							Control Center Heat Inlet Air Sensor													
	Heating													Unit Controls: Terminal Strip							
	Type Gas Type Temperature Energy Connection Building Gas							Energ	Jy .			n Building Gas	Control								
	Type	Gas	Type	Winter DB	Max Δ	Max LAT	Input	Outp	ut Ef	ficiency	Gas	Pressure	Access	Direct Gas Options/Accessories							
Dir	ect Gas	Nat	ural	6.0 F	64.0 F	70.0 F	351.3	323		92%	3/4"	1/2 PSI	11a	Approvals: ETL							
	cor ous	, itua	ui ui	0.01	04.01	70.01	MBH	MB	Н	UL 70	0,4	1/21 01		FM Compliant							
	Outlet Sound Power By Octave Band LwA dBA										T		Sones	Flame Sensing: Flame Rod Ignition Control: Pilot							
62	2.5	125	250	500	1000	2000	40	00	8000	┑゚	LWA	dBA	Sones	Unit Rated Gas Pressure: 1/2 PSI							
81	1.8	78.4	76.6	78.7	78.9	75.7	7-	1.2	71.7	-	83.3	72.3	20.4	Unit Warranty: 1 Yr (Standard)							
• Lw	Link - A weighted sound power level based on ANSI S1.4 dSA - A weighted sound pressure level base on 11.1 dB attenuation per octabe band at 5.0 ft.																				





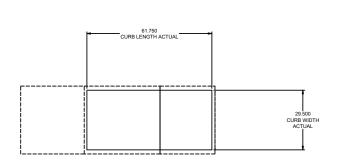


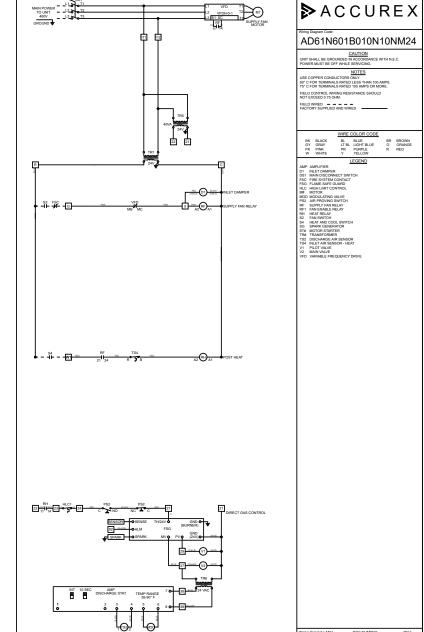
NOTE: Roof Opening Requirements:

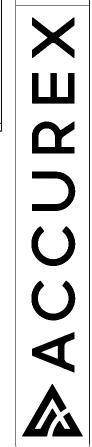
Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14×14 in. square, the minimum roof opening size is 14.5×14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb. For example: If the roof curb is 75×30 in. square, the maximum roof opening is 71.5×26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb. This is by design, in order to help alleviate water infiltration issues.







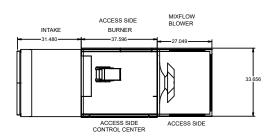
R4

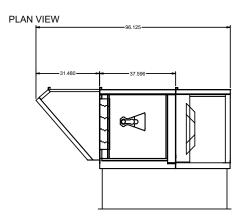
MIDLAND CTE

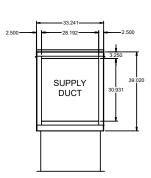
ACCUREX CENTRAL, NORTHERN OH MI JOSH GARLITZ JOSH.GARLITZ@ACCUREX.COM (419)707-3685

FOOTPRINT

					EQUIP	AENIT S	CHEL) I I E						OPTIONS AND ACCESSORIES						
l _						VILIVI C	OHLL	OLL						Air Flow Arrangement: Outdoor Air Only Weatherhood: Aluminum Mesh, 16x20x2 - (4)						
Τe	empe	red Ma	ike-U	p Air U	nit						Mark:	: 28,29	9 MUA							
										_				Damper: Inlet Outdoor Air Intake Position: End						
Qty	Ao	curex Mode	el	Volume	External	SP	Total SP	FF	PM	Opera	ting Powe	er	Weight	Discharge Position: End						
	1 XDGX-P116-H12-MF 4.676 CFM 0.55 in. wg 1.628 in. wg 1868 2.21 hp				Coating: Galvanized															
1	XDGX	-P116-H12-	MF	4,676 CFM	0.55 in.	wg 1.	628 in. wg	18	68	2.	21 hp		698 lb	Insulation: Double Wall - Tempering On						
	•			Motor Info									•	Supply Fan Control: VFD						
	Size	V/C/	/P	Enclosure	Motor with Shaft Groundi		PM W	/indings		MCA		MO	P .	VFD Control: Constant Volume						
	3 hp	40010	.0.10	ODP	No.	1725		-			_			Access Side: Right-Hand						
	Зпр	3 hp 460/60/3 ODP No 1725 1 6.3 15			15	5	Control Center													
\Box	Heating												Heat Inlet Air Sensor Unit Controls: Terminal Strip							
		1			Temperature		Ĭ	Energy		Conne	oction Bu	uilding Gas	Control	Temperature Control: Discharge						
	Type	Gas	Type	Winter DB	Max Δ	Max LAT	Input	Outpu	Efficie		as pre	Gas essure	Access	Direct Gas Options/Accessories						
\vdash							351.3	323.2	+	+	_			Approvals: ETL						
D	irect Gas	s Na	tural	6.0 F	64.0 F	70.0 F	MBH	MBH	929	3/4	4" 1/3	/2 PSI	11a	FM Compliant						
=	Outlet Sound Power By Octave Band											=		Flame Sensing: Flame Rod						
Ь.										LwA	dB.	BA	Sones	Ignition Control: Pilot						
-	2.5	125	250	500	1000	2000	_	_	3000		_	-		Unit Rated Gas Pressure: 1/2 PSI						
_	1.8	78.4	76.6	78.7	78.9	75.7	74.	.2	71.7	83.3	72.	.3	20.4	Unit Warranty: 1 Yr (Standard)						
	wA - A weigh R4 - A weigh	- A weighted sound power level based on ANSI S1.4 - A weighted sound power level based on ANSI S1.4 A weighted sound pressure level base on 11 of BB attenuation per octable band at 5.0 ft.																		





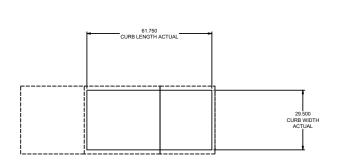


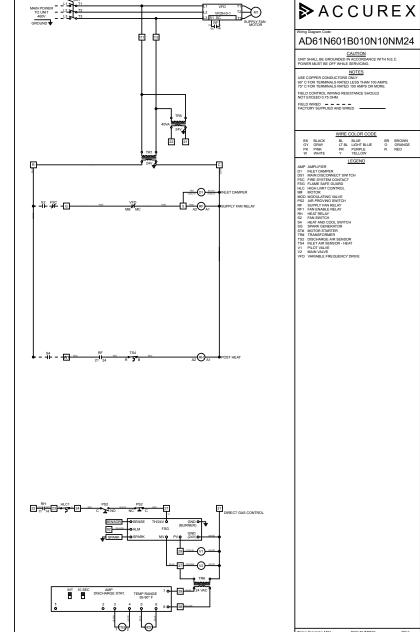
NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14×14 in. square, the minimum roof opening size is 14.5×14.5 in. square.

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NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb. This is by design, in order to help alleviate water infiltration issues.



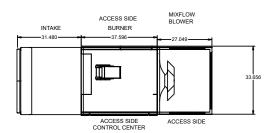


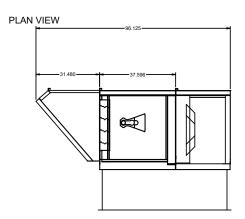


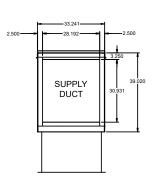
R4

MIDLAND CTE

					EQUIP	MENIT	CUEI) III E						OPTIONS AND ACCESSORIES						
l _						VILIVI C		JULL						Air Flow Arrangement: Outdoor Air Only						
Te	empe	red Ma	ıke-U	p Air U	nit							Mark: 3	1 MUA	Weatherhood: Aluminum Mesh, 16x20x2 - (4)						
Qty		urex Mode		Volume	Externa	ı on	Total SP		RPM		0 "		Weight	Damper: Inlet Outdoor Air Intake Position: End						
Qty	Acc	curex Mode	'	volume	Externa	ISP	Iotal SP		KPM	,	Operating Power W			Discharge Position: End						
4	VDGV	-P116-H12-	ME :	3.230 CFM	0.55 in.	wa 1	.391 in. w	, ,	531		1.26	in.	654 lb	Coating: Galvanized						
Ľ.	ADGA	1110411124	1011	.,		a	.001 111. 11	,	331		1.201	Ψ	03410	Insulation: Double Wall - Tempering On						
_				Motor Info	rmation Motor with				4	MCA		M	OP.	Supply Fan Control: VFD						
ᆫ	Size	V/C/	P	Enclosure	Shaft Groundi	ng Motor F	RPM V	/indings		IWC	`	m	JI.	VFD Control: Constant Volume						
	1 1/2 hp 460/		0/3	ODP	No	1725	5 I	1		4.1		1	5	Access Side: Right-Hand Control Center						
느	· · · · · · · · · · · · · · · · · · ·													Heat Inlet Air Sensor						
						Heatir	ng							Unit Controls: Terminal Strip						
	Type	Gos	Type		Temperature			Energ	/		Connectio	n Building Gas	Control							
	туре	Gas	туре	Winter DB	Max Δ	Max LAT	Input	Outp	ıt Effic	iency	Gas	Pressure	Access	Direct das Options/Accessories						
	irect Gas	Not	tural	6.0 F	64.0 F	70.0 F	242.7	223.		2%	3/4"	1/2 PSI	11a	Approvals: ETL						
Ľ	moot das	140	.u.u.	0.01	04.01	70.01	MBH	MBI	,	- /	0,4	1/2 1 01	110	FM Compliant						
	Outlet Sound Power By Octave Band LwA dBA S												Sones	Flame Sensing: Flame Rod Ignition Control: Pilot						
- 6	62.5	125	250	500	1000	2000	40	00	8000	7 '	-WA	dBA	Sones	Unit Rated Gas Pressure: 1/2 PSI						
7	78.5	74.7	72.5	73.7	73.3	71	69	1.3	71.4	7	78.7	67.7	16.8	Unit Warranty: 1 Yr (Standard)						
Link - A weighted sound power level based on ANSI S1.4 dBA - A weighted sound pressure level based on ANSI S1.4 dBA - A weighted sound pressure level base on 11.1 dB attenuation per octabe band at 5.0 fb.																				





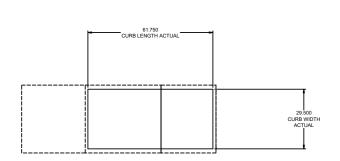


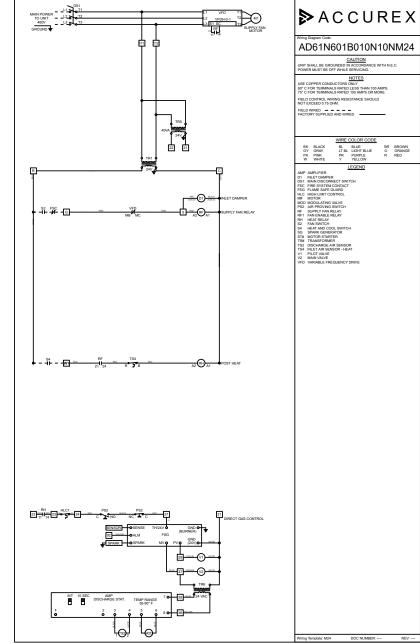
NOTE: Roof Opening Requirements:

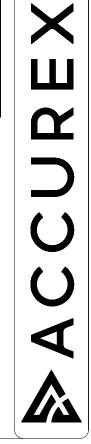
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NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb. This is by design, in order to help alleviate water infiltration issues.







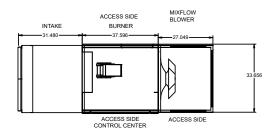
R4

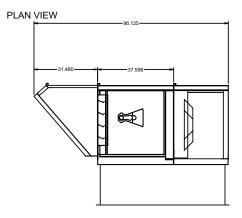
MIDLAND CTE

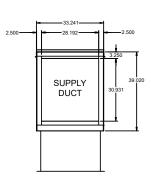
ACCUREX CENTRAL, NORTHERN OH MI JOSH GARLITZ JOSH.GARLITZ@ACCUREX.COM (419)707-3685

FOOTPRINT

					EQUIP	MENTS	CHE	JIII E						OPTIONS AND ACCESSORIES							
_						VILIVI C	OIILL	OLL						Air Flow Arrangement: Outdoor Air Only							
16	empe	red Ma	ike-U	p Air U	nit							Mark: 10	0 MUA	Weatherhood: Aluminum Mesh, 16x20x2 - (4) Damper: Inlet							
Qty	Δ.	curex Mode	. I	Volume	External	SP	Total SP	F	PM	Or	neratina	Power	Weight	Outdoor Air Intake Position: End							
uny	710	our ex mode		voidino	LAtomia		TOTAL OF			٠,				Discharge Position: End							
1			Coating: Galvanized																		
Ľ.														Insulation: Double Wall - Tempering On							
-			_	Motor Info	mation Motor with		1	/indinas	1	MCA		M	OP.	Supply Fan Control: VFD							
—	Size	V/C/	Р	Enclosure	Shaft Groundi	Motor R	PM V	rinaings						VFD Control: Constant Volume Access Side: Right-Hand							
	2 hp	460/6	0/3	ODP	No	1725	.	1		4.6		1	5	Control Center							
H														Heat Inlet Air Sensor							
_						Heatir	ıg					1		Unit Controls: Terminal Strip							
	Type	Gas	Type		Temperature			Energ			Connection		Control								
	,,			Winter DB	Max Δ	Max LAT	Input	Outpi	_	ency	Gas	Pressure	Access	Direct Gas Options/Accessories							
D	irect Gas	s Nat	tural	6.0 F	64.0 F	70.0 F	257.9	237.		36	3/4"	1/2 PSI	11a	Approvals: ETL							
_							MBH	MBH		_	_	<u> </u>		FM Compliant Flame Sensing: Flame Rod							
	Outlet Sound Power By Octave Band LwA dBA									l w	,,	dBA	Sones	Ignition Control: Pilot							
- 6	32.5	125	250	500	1000	2000	40	00	8000	-"		uba	001103	Unit Rated Gas Pressure: 1/2 PSI							
_	79	74.7	73.2	74.6	74.1	71.7	70	1	71.2	79.	.4	68.4	17.3	Unit Warranty: 1 Yr (Standard)							
• 1	wA - A weigh BA - A weigh	A - A weighted sound power level based on ANSI S1.4 A - A weighted sound pressure level base on 11 f dB attenuation per octabe band at 5.0 ft.																			





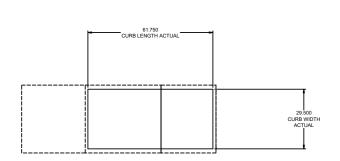


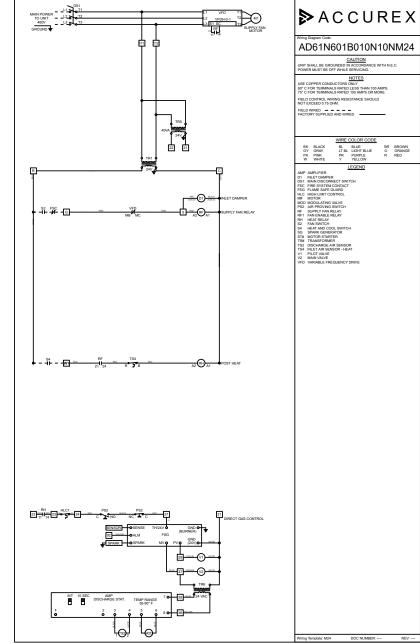
NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14×14 in. square, the minimum roof opening size is 14.5×14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb. For example: If the roof curb is 75×30 in. square, the maximum roof opening is 71.5×26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb. This is by design, in order to help alleviate water infiltration issues.







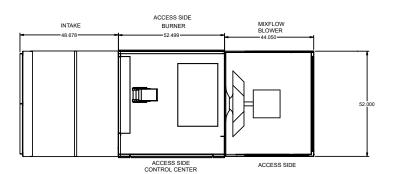
R4

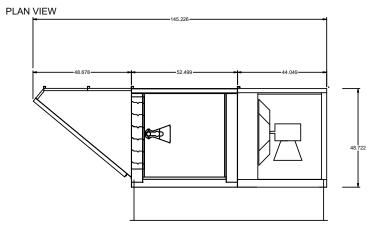
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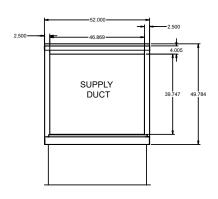
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FOOTPRINT

						AENIT C	CHEL							OPTIONS AND ACCESSORIES
	EQUIPMENT SCHEDULE										Air Flow Arrangement: Outdoor Air Only			
Τe	empei	red Ma	ke-U	p Air U	nit				Ma	rk: 120,1	25,126	,140	MUA	Weatherhood: Aluminum Mesh, 20x25x2 - (6)
														Damper: Inlet Outdoor Air Intake Position: End
Qty	Acc	curex Mode	'	Volume	External	SP	Total SP	FRE	M	Operati	ng Power		Weight	Discharge Position: End
								-	_			_		Coating: Galvanized
1	XDGX-	-P127-H32-	MF 1	0,028 CFM	0.6 in.	wg 1.	.548 in. wg	100	17	4.3	hp		1,215 lb	Insulation: Double Wall - Tempering On
	•			Motor Info										Supply Fan Control: VFD
	Size	V/C/	P	Enclosure	Motor with Shaft Groundi	Motor R	PM W	indings	,	MCA		MOI	Р	VFD Control: Constant Volume
	7 1/2 hp	460/6		ODP	No.	1180		. 1			1			Access Side: Right-Hand
	7 1/2 HP	460/6	U/3	ODP	No	1180	'	1		14.6		25		Control Center
\Box						Heatir	na							Heat Inlet Air Sensor
—					Temperature			Energy		Conne	tion Build	lina	Control	Unit Controls: Terminal Strip Temperature Control: Discharge
	Type	Gas	Type	Winter DB	Max Δ	Max LAT	Input	Output	Efficier		Ga Pres	s	Access	Direct Gas Options/Accessories
-		-	_				753.4	693.1	+	-		\neg		Approvals: ETL
D	irect Gas	Nat	tural	6.0 F	64.0 F	70.0 F	MBH	MBH	92%	1"	1/2	PSI	11a	FM Compliant
=		_	0	let Caused D	ower By Oct	ana Danai			' 			マ		Flame Sensing: Flame Rod
Η.							1			LwA	dBA		Sones	Ignition Control: Pilot
_	62.5	125	250	500	1000	2000	_	_	000		_	_		Unit Rated Gas Pressure: 1/2 PSI
_	78.5	75.6	80.5	85.4	77.6	75.4	76		7.3	85.4	74.4		20.8	Unit Warranty: 1 Yr (Standard)
• 1	wA - A weight	ted sound power	level based or	n ANSI S1.4										







END VIEW

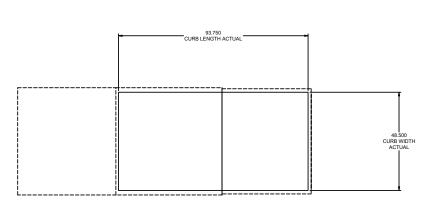
ELEVATION VIEW

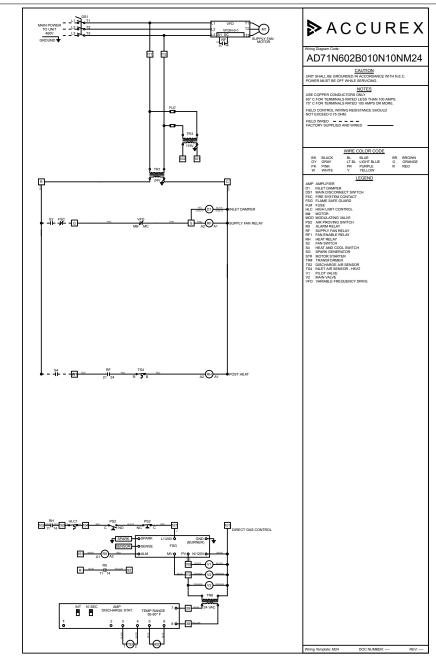
NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14×14 in. square, the minimum roof opening size is 14.5×14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb. For example: If the roof curb is 75×30 in. square, the maximum roof opening is 71.5×26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb. This is by design, in order to help alleviate water infiltration issues.







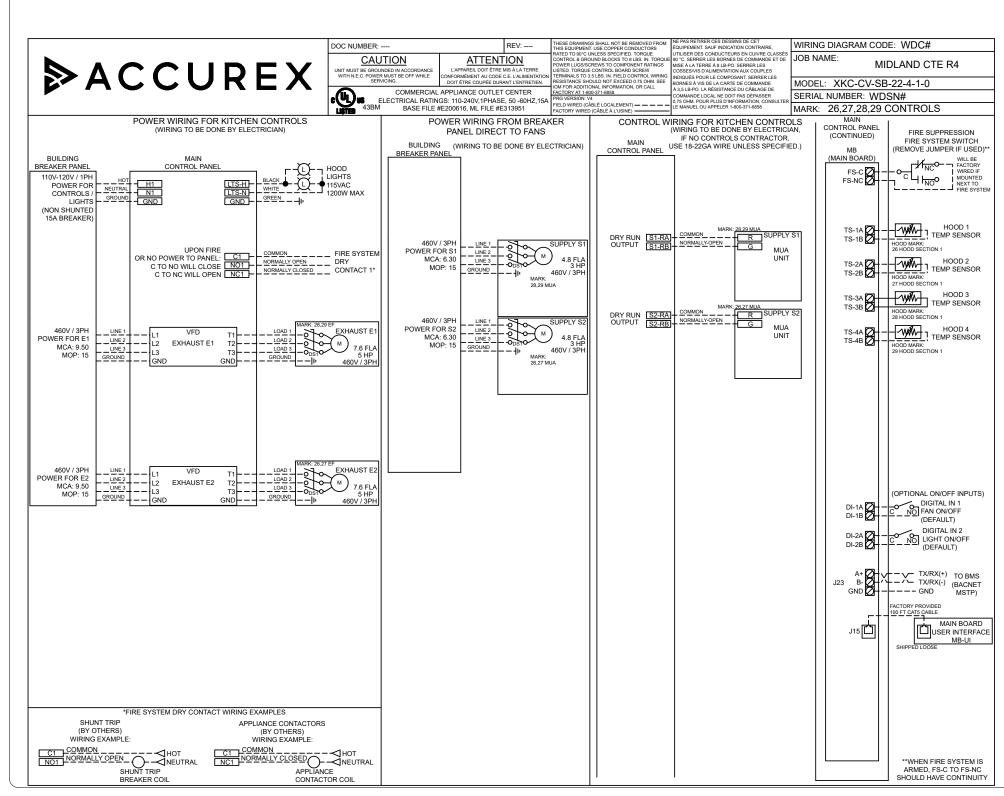
R4

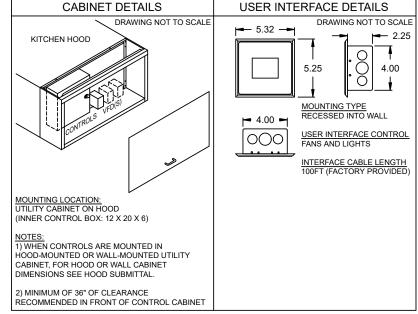
MIDLAND CTE

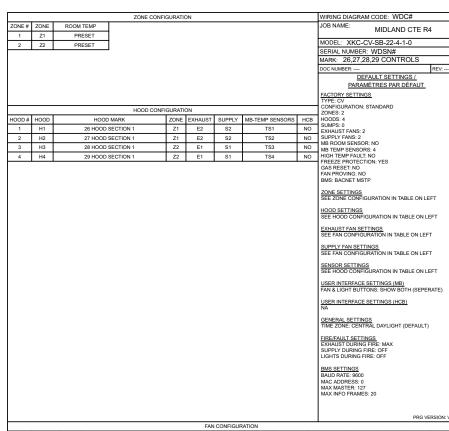
CONTROL INFORMATION					_											
MARK ELECTRICAL CONTROL PACKAGE USER INTERFACE						FANS CONTROLLED										
IVIARK	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
26,27,28,29 CONTROLS	XKC-CV-SB-22-4-1-0	LEFT CABINET ON 28 HOOD	FULL COLOR	SHIP LOOSE	1	EXHAUST	E1	28,29 EF	2	5500	5	460	60	3	NO	YES
20,21,20,29 CONTROLS	ARC-CV-SB-22-4-1-0	LEFT CABINET ON 28 HOOD	TOUCHSCREEN	SHIP LOOSE	2	SUPPLY	S1	28,29 MUA	2	4676	3	460	60	3	NO	NO
CONTROL FEATURES					3	SUPPLY	S2	26,27 MUA	1	4676	3	460	60	3	NO	NO
CONTROL FEATURES					4	EXHAUST	F2	26 27 FF	1	5500	5	460	60	3	NO	YES

ONTROL FEATURES
HOOD LIGHT CONTROL
TEMP SENSORS (FACTORY INSTALLED) - QTY. 4
DRY FIRE CONTACTS - QTY. 1
LIGHTS OFF DURING FIRE
EXHAUST MAX DURING FIRE
BMS INTEGRATION - BACNET MSTP

VFD(S) IN CONTROL PANEL PROVIDED FOR BALANCING







Z2

5500 YES

30 60

28,29 EF

28,29 MUA

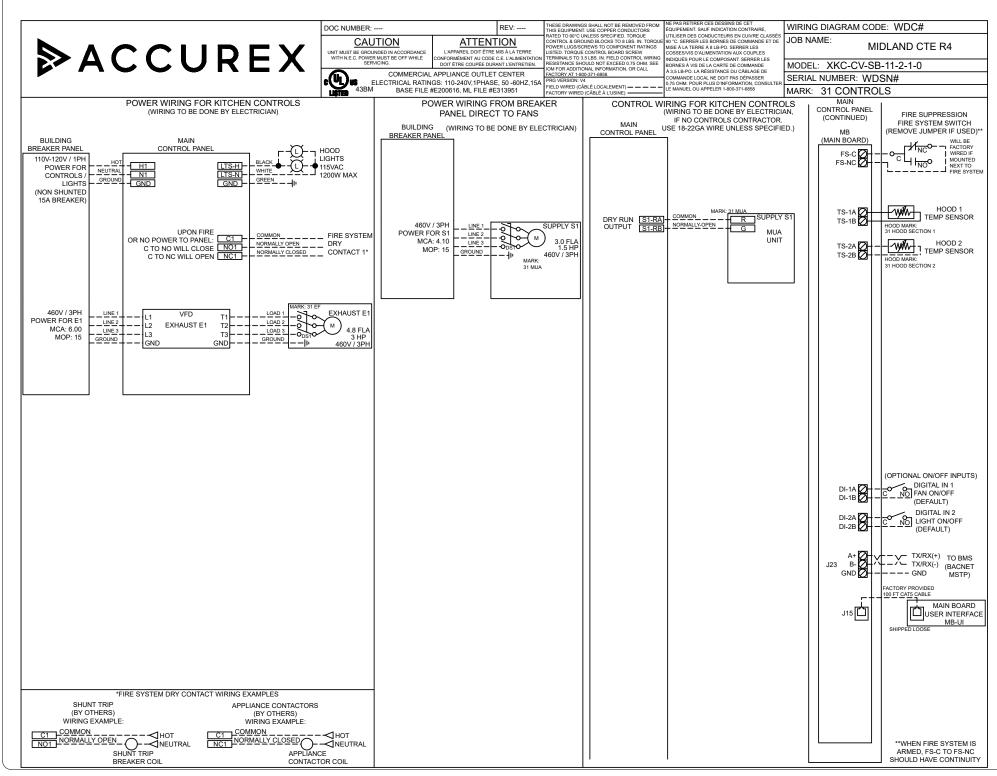


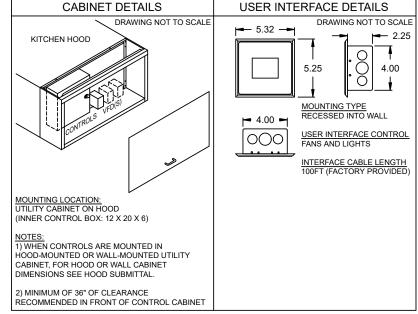
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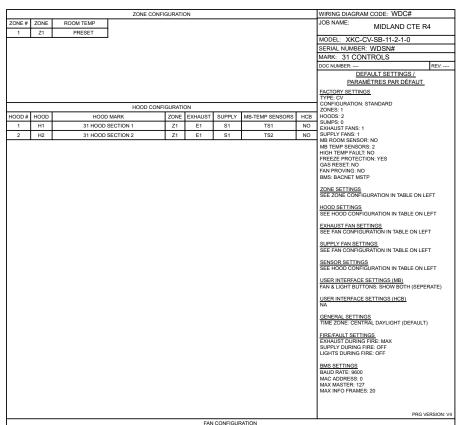
CONTROL INFORMATION																
MARK	ELECTRICAL CONTROL PACKAGE		USER INTERFACE		FANS CONTROLLED											
WARK	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
31 CONTROLS	XKC-CV-SB-11-2-1-0	LEFT CABINET ON 31 HOOD	FULL COLOR	SHIP LOOSE	1	EXHAUST	E1	31 EF	1	3800	3	460	60	3	NO	YES
31 CONTROLS	XXC-CV-3B-11-2-1-0	LEI I CABINET ON 31 1100D	TOUCHSCREEN	SHIF LOOSE	2	SUPPLY	S1	31 MUA	1	3230	1.5	460	60	3	NO	NO

CONTROL FEATURES
HOOD LIGHT CONTROL

HOOD LIGHT CONTROL
TEMP SENSORS (FACTORY INSTALLED) - QTY. 2
DRY FIRE CONTACTS - QTY. 1
LIGHTS OFF DURING FIRE
EXHAUST MAX DURING FIRE
SUPPLY OFF DURING FIRE
BMS INTEGRATION - BACNET MSTP
VFD(S) IN CONTROL PANEL PROVIDED FOR BALANCING









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MARK

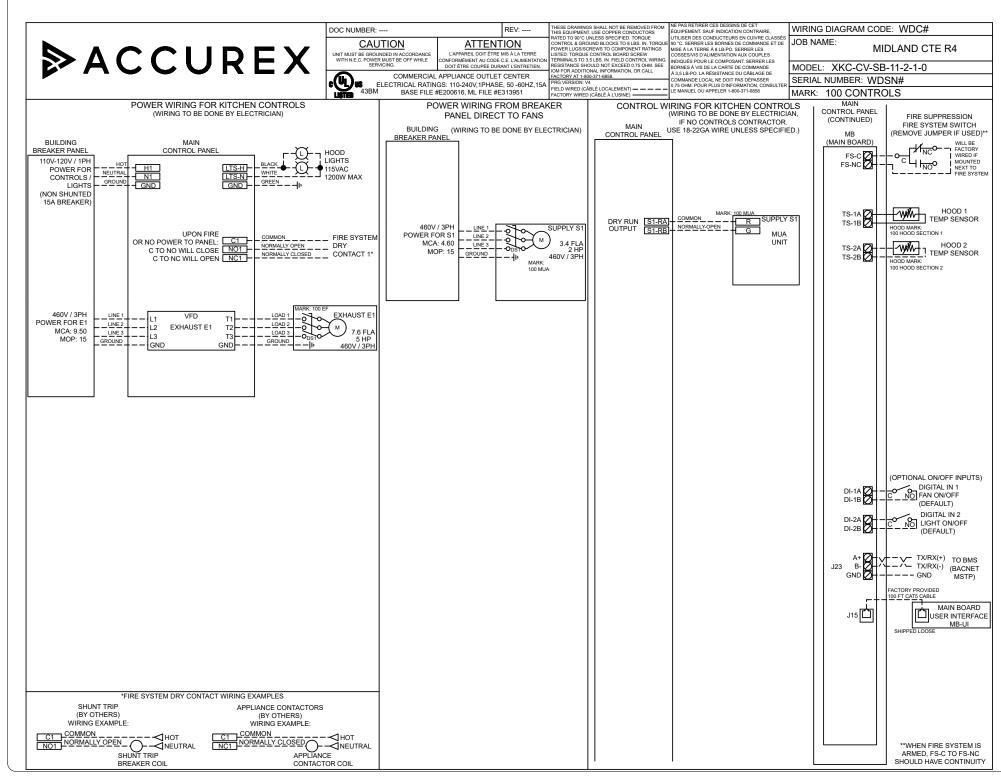
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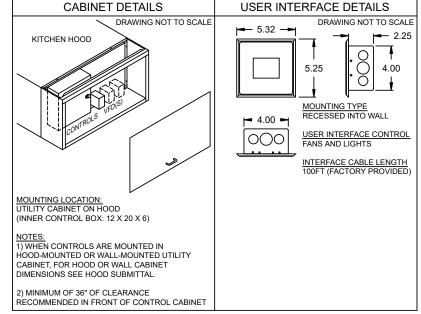
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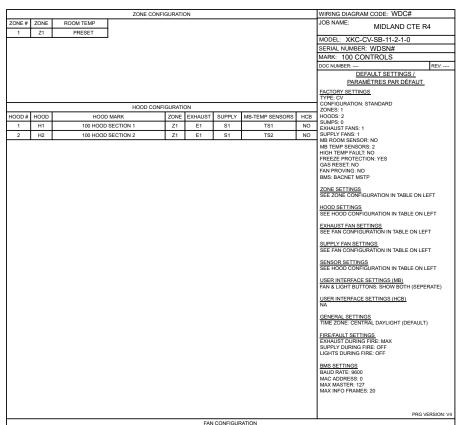
CONTROL INFORMATION																
MARK	ELECTRICAL CO	NTROL PACKAGE		USER INTERFACE		FANS CONTROLLED										
IVIARK	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
100 CONTROLS	XKC-CV-SB-11-2-1-0	LEFT CABINET ON 100 HOOD	FULL COLOR	SHIP LOOSE	1	EXHAUST	E1	100 EF	1	4038	5	460	60	3	NO	YES
100 CONTROLS	ARG-CV-3B-11-2-1-0	LEI I CABINET ON 100 1100D	TOUCHSCREEN	SHIF LOOSE	2	SUPPLY	S1	100 MUA	1	3432	2	460	60	3	NO	NO

CONTROL FEATURES

HOOD LIGHT CONTROL TEMP SENSORS (FACTORY INSTALLED) - QTY. 2 DRY FIRE CONTACTS - QTY. 1 LIGHTS OFF DURING FIRE EXHAUST MAX DURING FIRE SUPPLY OFF DURING FIRE BMS INTEGRATION - BACNET MSTP VFD(S) IN CONTROL PANEL PROVIDED FOR BALANCING



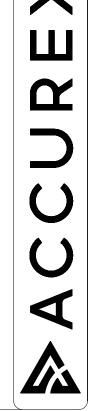






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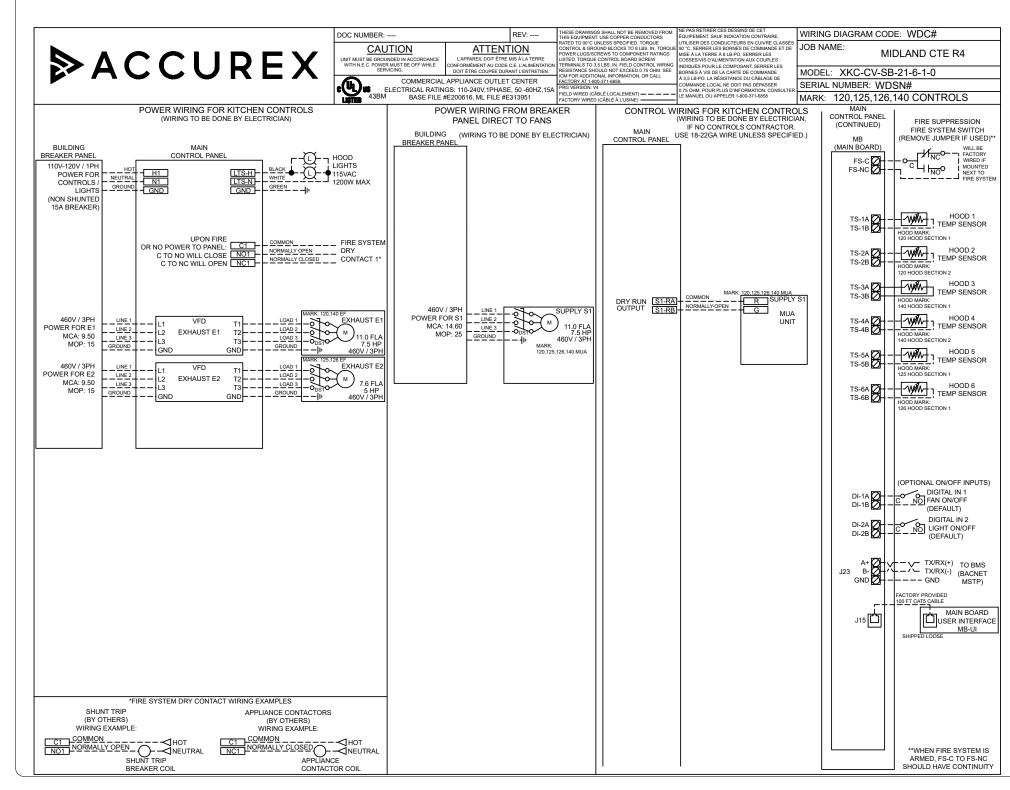
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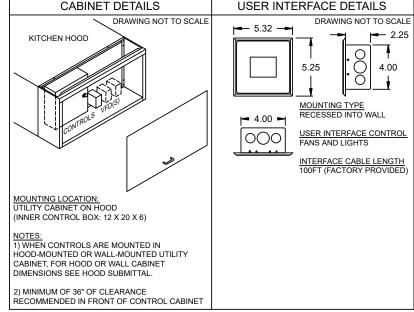


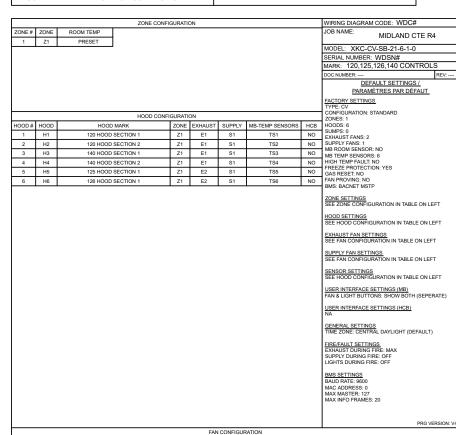
CONTROL INFORMATION ELECTRICAL CONTROL PACKAGE USER INTERFACE FANS CONTROLLED MARK TYPE FAN# TYPE FAN FAN MARK ZONE CFM MOTOR HP MOTOR VOLT CYCLE MOTOR PHASE MOTOR STARTER IN PANEL VFD IN PANEL MODEL LOCATION LOCATION 1 EXHAUST E1 1 7284 YES 120.140 EF 60 FULL COLOR 7.5 460 120,125,126,140 CONTROLS XKC-CV-SB-21-6-1-0 LEFT CABINET ON 140 HOOD SHIP LOOSE TOUCHSCREEN 2 FXHAUST F2 125 126 FF 1 4513 460 60 NO YES 3 SUPPLY S1 120,125,126,140 MUA 1 10028 7.5 460 60 NO

CONTROL FEATURES
HOOD LIGHT CONTROL

TEMP SENSORS (FACTORY INSTALLED) - QTY. 6
DRY FIRE CONTACTS - QTY. 1
LIGHTS OFF DURING FIRE
EXHAUST MAX DURING FIRE
SUPPLY OFF DURING FIRE
BMS INTEGRATION - BACNET MSTP
VFD(S) IN CONTROL PANEL PROVIDED FOR BALANCING







7284 YES

30 60

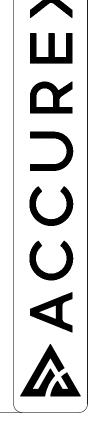
120,140 EF

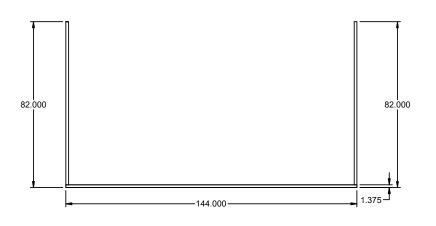


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MARK





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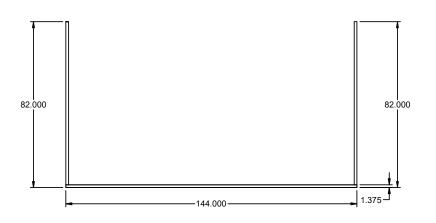
MIDLAND CTE R4

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CONSTRUCTION COLOURS

26 CEILING ENCLOSURES

ACCESSORY INFORMATION | DIMENSIONS (IN.) | CONSTR. LOCATION | LENGTH | HEIGHT | 80.625 | 18 | 304 S.S. | LEFT | 144 | 18 | 304 S.S. | FRONT | 80.625 | 18 | 304 S.S. | RIGHT | MODEL INSULATED MARK EP 27 CEILING ENCLOSURES EP EP

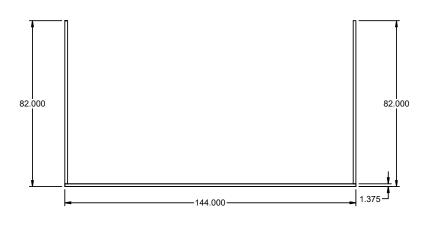


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CONSTRUCTION COLOURS

27 CEILING ENCLOSURES



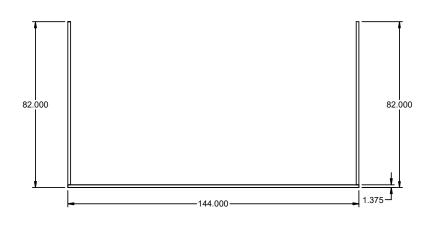
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28 CEILING ENCLOSURES



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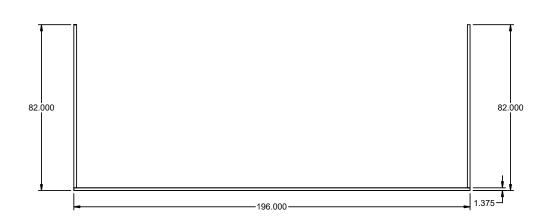
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29 CEILING ENCLOSURES

ACCESSORY INFORMATION | DIMENSIONS (IN.) | CONSTR. LOCATION | LENGTH HEIGHT | 80.625 | 18 | 304 S.S. | LEFT | 196 | 18 | 304 S.S. | FRONT | 80.625 | 18 | 304 S.S. | RIGHT | MODEL INSULATED MARK EP 120 CEILING ENCLOSURES EP EP



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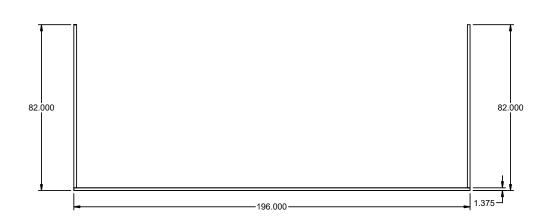
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MIDLAND CTE R4

120 CEILING ENCLOSURES

CONSTRUCTION COLOURS

ACCESSORY INFORMATION | DIMENSIONS (IN.) | CONSTR. LOCATION | LENGTH HEIGHT | 80.625 | 18 | 304 S.S. | LEFT | 196 | 18 | 304 S.S. | FRONT | 80.625 | 18 | 304 S.S. | RIGHT | MODEL INSULATED MARK EP 140 CEILING ENCLOSURES EP EP



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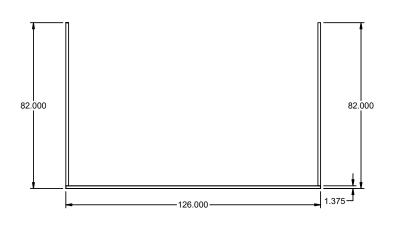
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CONSTRUCTION COLOURS

140 CEILING ENCLOSURES

ACCESSORY INFORMATION | DIMENSIONS (IN.) | CONSTR. LOCATION | LENGTH | HEIGHT | 80.625 | 18 | 304 S.S. | LEFT | 126 | 18 | 304 S.S. | FRONT | 80.625 | 18 | 304 S.S. | RIGHT | MODEL INSULATED MARK EP 125 CEILING ENCLOSURES EP EP



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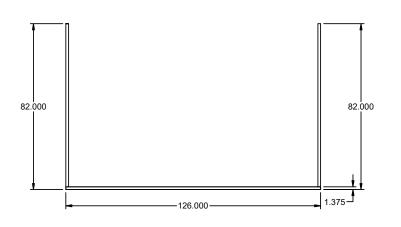
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125 CEILING ENCLOSURES

MIDLAND CTE R4

ACCESSORY INFORMATION | DIMENSIONS (IN.) | CONSTR. LOCATION | LENGTH | HEIGHT | 80.625 | 18 | 304 S.S. | LEFT | 126 | 18 | 304 S.S. | FRONT | 80.625 | 18 | 304 S.S. | RIGHT | MODEL INSULATED MARK EP 126 CEILING ENCLOSURES EP EP



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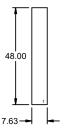
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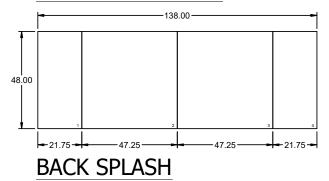


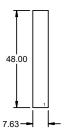
126 CEILING ENCLOSURES

	ACCESSORY INFORMATION							
ı	MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR.	LOCATION
l				WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
I	26 BACKSPLASH	SPLASH PANEL	NO		7.63	48	304 S.S.	LEFT
ı		SPLASH PANEL	NO		138	48	304 S.S.	BACK
ı		SPLASH PANEL	NO		7.63	48	304 S.S.	RIGHT



LEFT SIDE SPLASH



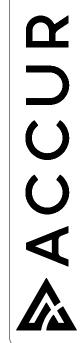


RIGHT SIDE SPLASH

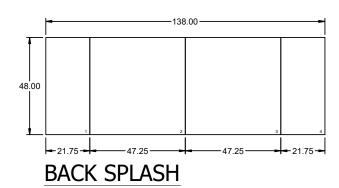


MIDLAND CTE R4

MARK



CCESSORY INFORMATION							
MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR	LOCATION
IVIARK			WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
27 BACKSPLASH	SPLASH PANEL	NO		138	48	304 S.S.	BACK



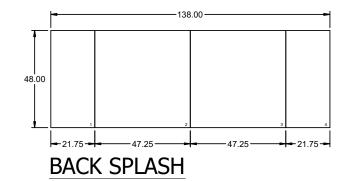
CUL MEST CONSTRUCTION COMPLEX WITH 1874 W

MIDLAND CTE R4

27 BACKSPLAS

MARK

CCESSORY INFORMATION							
MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR	LOCATION
WAIN			WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
28 BACKSPLASH	SPLASH PANEL	NO		138	48	304 S.S.	BACK



CONSTRUCTION COMPLES

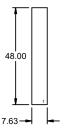
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28 BACKSPLASI

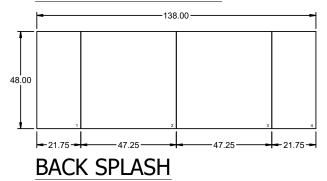
MARK

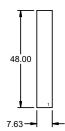
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	ACCESSORY INFORMATION							
MARK		MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR	LOCATION
	IVIARK	MODEL	INSULATED	WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
		SPLASH PANEL	NO		7.63	48	304 S.S.	LEFT
	29 BACKSPLASH	SPLASH PANEL	NO		138	48	304 S.S.	BACK
		SPLASH PANEL	NO		7.63	48	304 S.S.	RIGHT



LEFT SIDE SPLASH





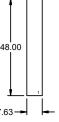
RIGHT SIDE SPLASH



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MARK

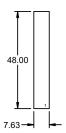
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LEFT SIDE SPLASH



BACK SPLASH



RIGHT SIDE SPLASH



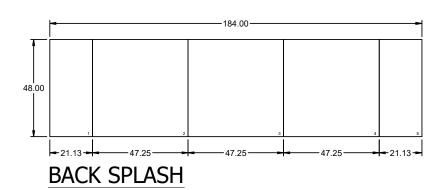
MIDLAND CTE R4

MARK

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CCESSORY INFORMATION							
MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR.	LOCATION
			WIDTH	LENGTH	HEIGHT		
140 BACKSPLASH	SPLASH PANEL	NO		184	48	304 S.S.	BACK



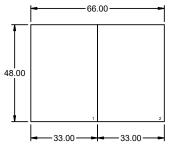
CONSTRUCTION COMPLES

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MARK J

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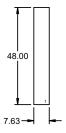
ACCESSORY INFORMATION							
MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR	LOCATION
IVIARK	WODEL	INSULATED	WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
	SPLASH PANEL	NO		66	48	304 S.S.	LEFT
125 BACKSPLASH	SPLASH PANEL	NO		114	48	304 S.S.	BACK
	SPLASH PANEL	NO		7.63	48	304 S.S.	RIGHT



LEFT SIDE SPLASH



BACK SPLASH



RIGHT SIDE SPLASH

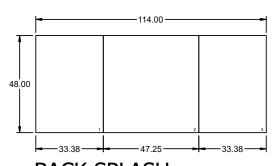
CONSTRUCTION CONFLES MITH HERA SE

MIDLAND CTE R4

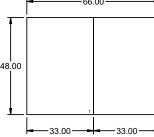
MARK

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ACCESSORY INFORMATION							
MARK	MODEL	INSULATED	DIMENSIONS (IN.)			CONSTR	LOCATION
WARK	WODEL	INSULATED	WIDTH	LENGTH	HEIGHT	CONSTR.	LOCATION
126 BACKSPLASH	SPLASH PANEL	NO		114	48	304 S.S.	BACK
126 BACKSPLASH	SPLASH PANEL	NO		66	48	304 S.S.	RIGHT



BACK SPLASH



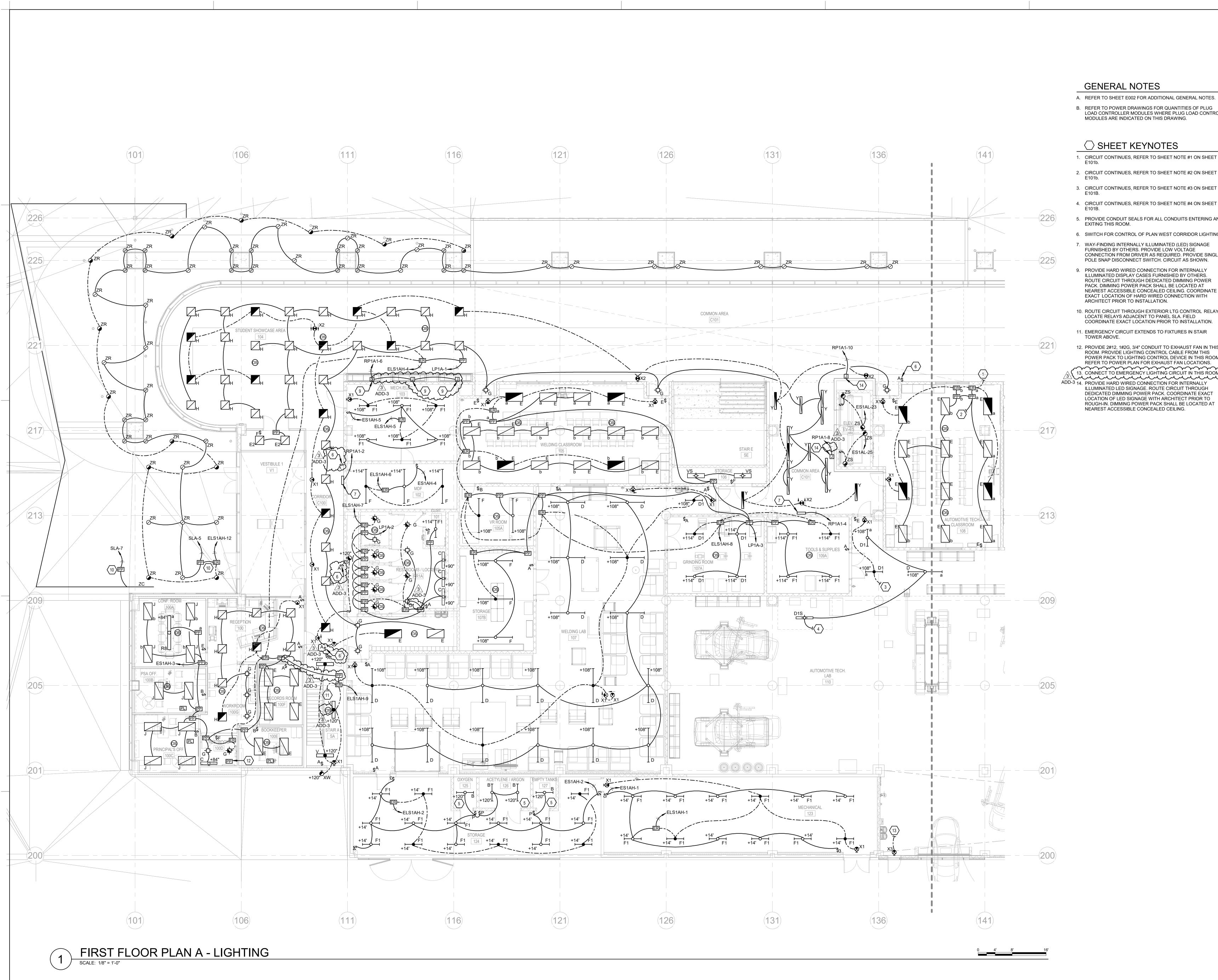
RIGHT SIDE SPLASH

CONSTRUCTION COMPLES
WITH NETA OF

MIDLAND CTE R4

MARK

CCUREX CENTRAL, NORTHERN OH MI JOSH GARLITZ JOSH.GARLITZ@ACCUREX.COM (419)707-3685



GENERAL NOTES

- A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.
- B. REFER TO POWER DRAWINGS FOR QUANTITIES OF PLUG LOAD CONTROLLER MODULES WHERE PLUG LOAD CONTROL MODULES ARE INDICATED ON THIS DRAWING.

○ SHEET KEYNOTES

1. CIRCUIT CONTINUES, REFER TO SHEET NOTE #1 ON SHEET

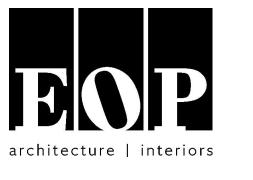
- 2. CIRCUIT CONTINUES, REFER TO SHEET NOTE #2 ON SHEET
- 3. CIRCUIT CONTINUES, REFER TO SHEET NOTE #3 ON SHEET
- 4. CIRCUIT CONTINUES, REFER TO SHEET NOTE #4 ON SHEET
- 5. PROVIDE CONDUIT SEALS FOR ALL CONDUITS ENTERING AND
- EXITING THIS ROOM. 6. SWITCH FOR CONTROL OF PLAN WEST CORRIDOR LIGHTING.
- 7. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.
- 9. PROVIDE HARD WIRED CONNECTION FOR INTERNALLY ILLUMINATED DISPLAY CASES FURNISHED BY OTHERS. ROUTE CIRCUIT THROUGH DEDICATED DIMMING POWER PACK. DIMMING POWER PACK SHALL BE LOCATED AT NEAREST ACCESSIBLE CONCEALED CEILING. COORDINATE EXACT LOCATION OF HARD WIRED CONNECTION WITH ARCHITECT PRIOR TO INSTALLATION.
- 10. ROUTE CIRCUIT THROUGH EXTERIOR LTG CONTROL RELAYS. LOCATE RELAYS ADJACENT TO PANEL SLA. FIELD COORDINATE EXACT LOCATION PRIOR TO INSTALLATION. 11. EMERGENCY CIRCUIT EXTENDS TO FIXTURES IN STAIR TOWER ABOVE.
- 12. PROVIDE 2#12, 1#2G, 3/4" CONDUIT TO EXHAUST FAN IN THIS ROOM. PROVIDE LIGHTING CONTROL CABLE FROM THIS POWER PACK TO LIGHTING CONTROL DEVICE IN THIS ROOM. REFER TO POWER PLAN FOR EXHAUST FAN LOCATIONS. 3 (13. CONNECT TO EMERGENCY LIGHTING CIRCUIT IN THIS ROOM.) ADD-3 14. PROVIDE HARD WIRED CONNECTION FOR INTERNALLY ILLUMINATED LED SIGNAGE. ROUTE CIRCUIT THROUGH DEDICATED DIMMING POWER PACK. COORDINATE EXACT

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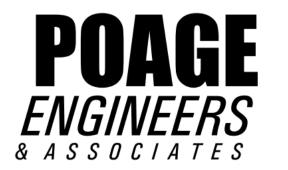
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1	10/14/22	ADDENDUM 1
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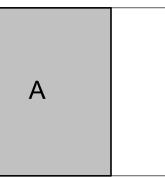


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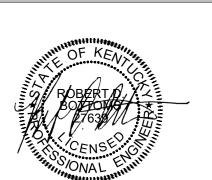
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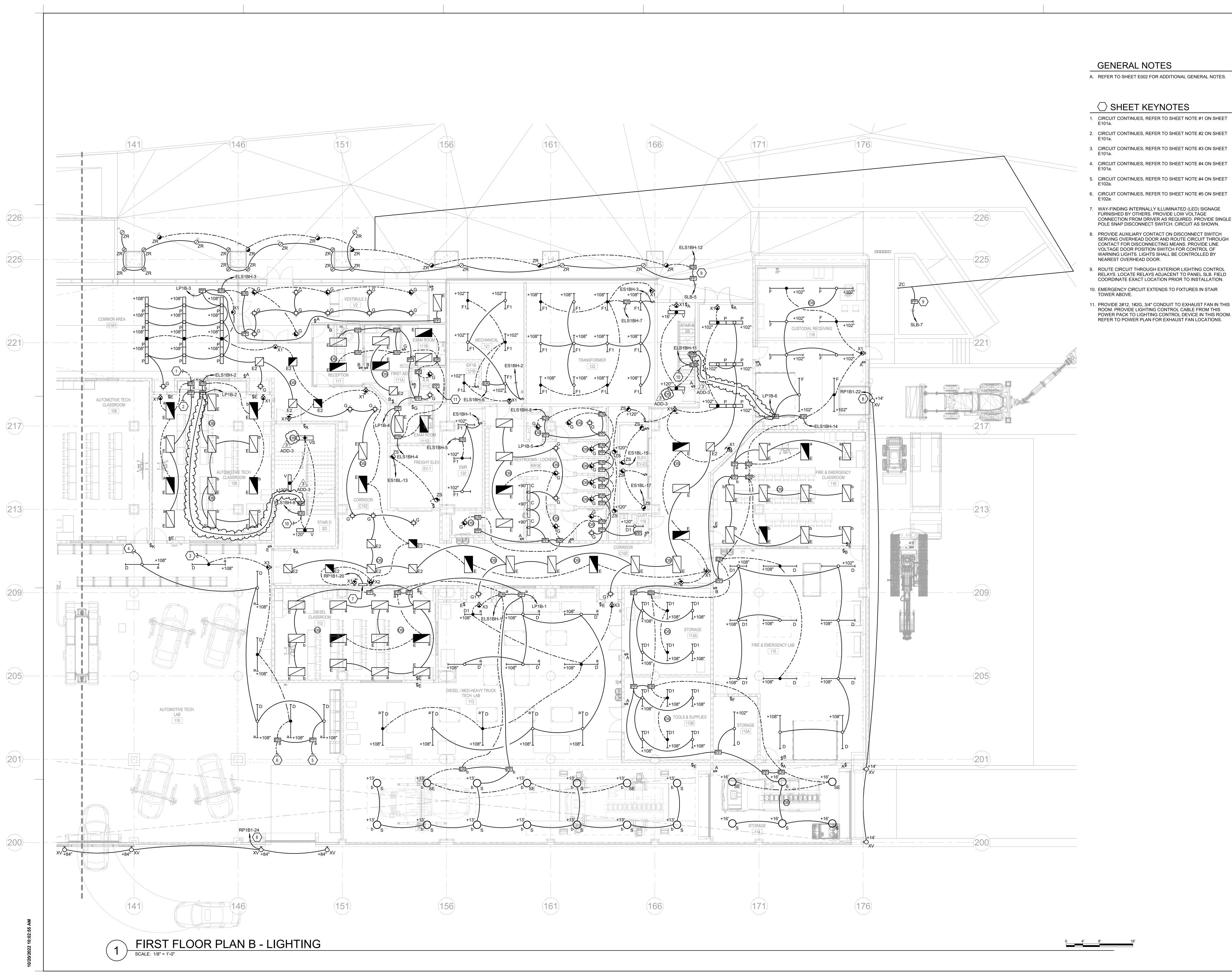
by these drawings.

JHS RDB



FIRST FLOOR PLAN A -LIGHTING

E101a



(226)

(225)

(221)-

(217)

(209)

(205)

(201)-

(200)

A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.

1. CIRCUIT CONTINUES, REFER TO SHEET NOTE #1 ON SHEET

2. CIRCUIT CONTINUES, REFER TO SHEET NOTE #2 ON SHEET

3. CIRCUIT CONTINUES, REFER TO SHEET NOTE #3 ON SHEET

4. CIRCUIT CONTINUES, REFER TO SHEET NOTE #4 ON SHEET

5. CIRCUIT CONTINUES, REFER TO SHEET NOTE #4 ON SHEET

7. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.

8. PROVIDE AUXILIARY CONTACT ON DISCONNECT SWITCH SERVING OVERHEAD DOOR AND ROUTE CIRCUIT THROUGH CONTACT FOR DISCONNECTING MEANS. PROVIDE LINE VOLTAGE DOOR POSITION SWITCH FOR CONTROL OF WARNING LIGHTS. LIGHTS SHALL BE CONTROLLED BY

ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTROL RELAYS. LOCATE RELAYS ADJACENT TO PANEL SLB. FIELD COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.

ROOM. PROVIDE LIGHTING CONTROL CABLE FROM THIS POWER PACK TO LIGHTING CONTROL DEVICE IN THIS ROOM. REFER TO POWER PLAN FOR EXHAUST FAN LOCATIONS.

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Poage Engineers & Associates Inc

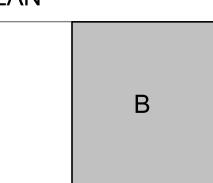


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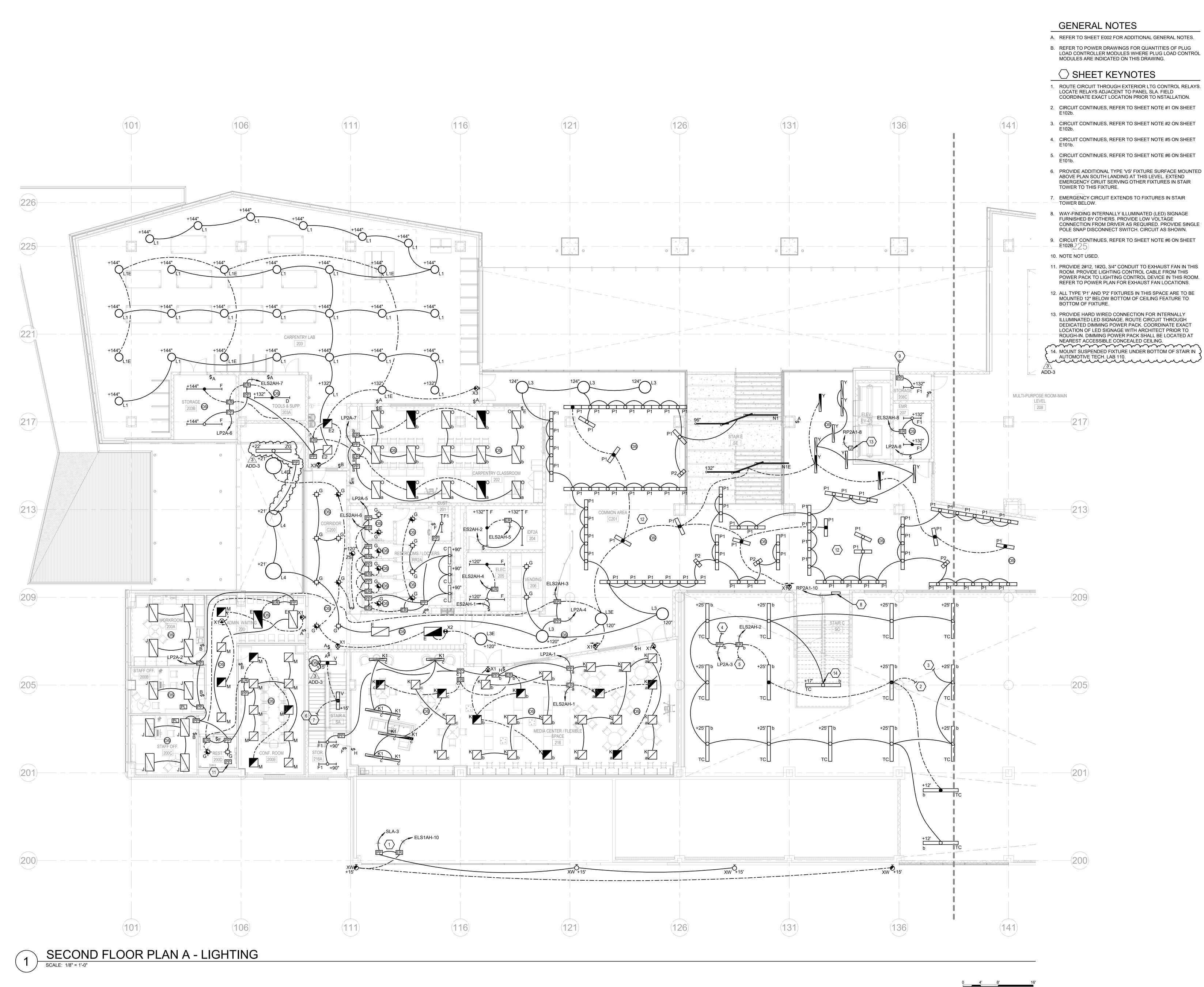
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FIRST FLOOR PLAN B -LIGHTING

E101b



A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES. B. REFER TO POWER DRAWINGS FOR QUANTITIES OF PLUG LOAD CONTROLLER MODULES WHERE PLUG LOAD CONTROL

- WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE
- ROOM. PROVIDE LIGHTING CONTROL CABLE FROM THIS POWER PACK TO LIGHTING CONTROL DEVICE IN THIS ROOM.
- ILLUMINATED LED SIGNAGE. ROUTE CIRCUIT THROUGH
- ROUGH-IN. DIMMING POWER PACK SHALL BE LOCATED AT NEAREST ACCESSIBLE CONCEALED CEILING.

& ASSOCIATES Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200

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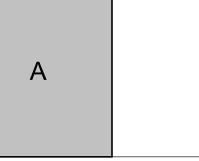


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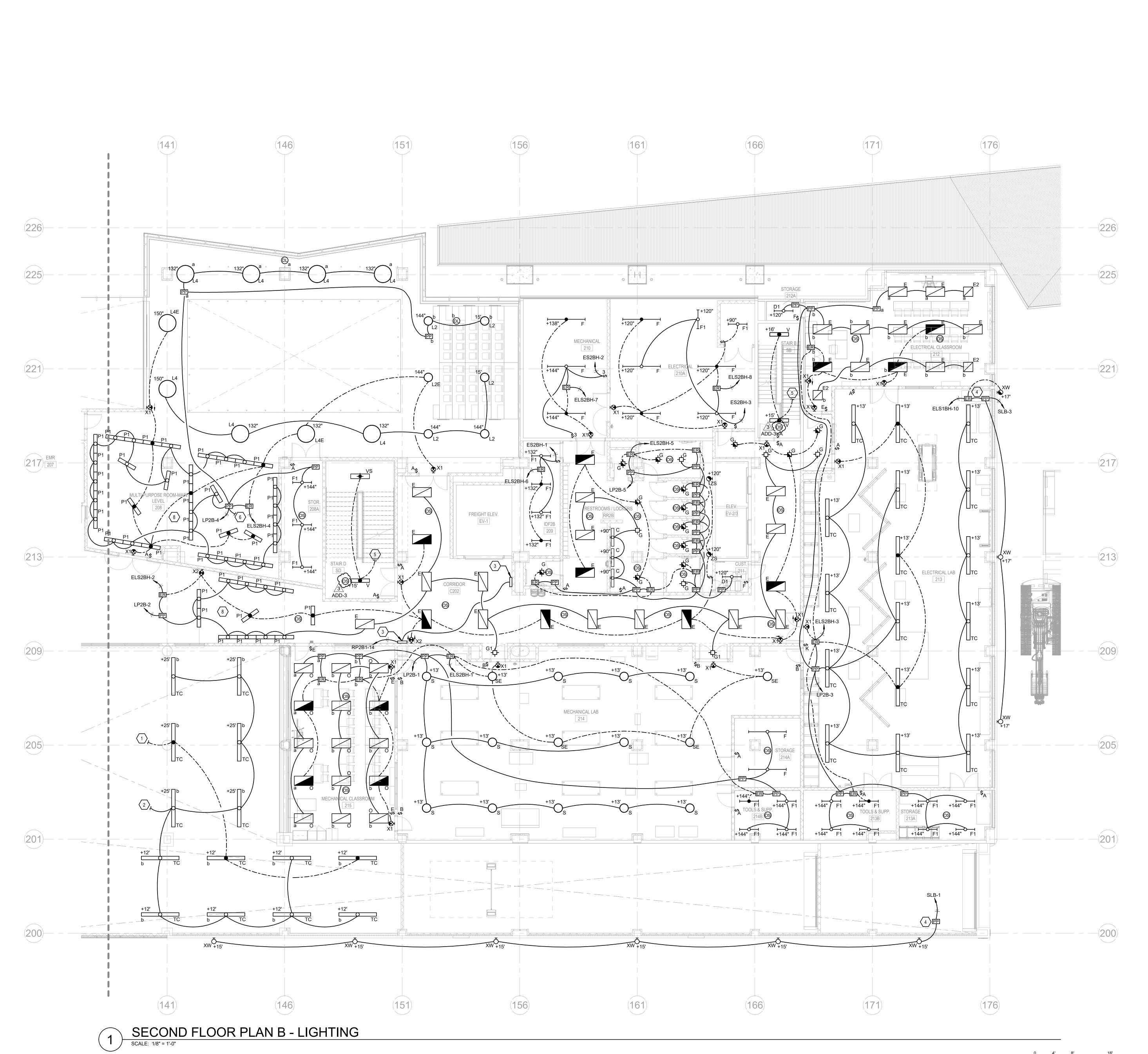
by these drawings.

JHS RDB 09/28/2022



SECOND FLOOR PLAN A - LIGHTING

E102a



GENERAL NOTES

○ SHEET KEYNOTES

CIRCUIT CONTINUES, REFER TO SHEET NOTE #2 ON SHEET E102a.

3. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE

4. ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTROL RELAY(S). LOCATE RELAY(S) ADJACENT TO PANEL SLB. FIELD COORDINATE EXACT LOCATION OF RELAY(S) PRIOR TO

5. EMERGENCY CIRCUIT EXTENDS TO FIXTURES IN STAIR TOWER BELOW.

6. CIRCUIT CONTINUES, REFER TO SHEET NOTE #9 ON SHEET E102a.

8. ALL TYPE 'P1' AND 'P2' FIXTURES IN THIS SPACE ARE TO BE BOTTOM OF FIXTURE.

A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.

2. CIRCUIT CONTINUES, REFER TO SHEET NOTE #3 ON SHEET E102a.

CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.

INSTALLATION.

7. NOTE NOT USED.

MOUNTED 12" BELOW BOTTOM OF CEILING FEATURE TO

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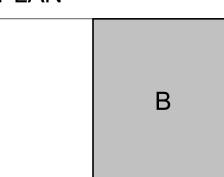


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KEYPLAN

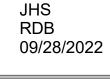


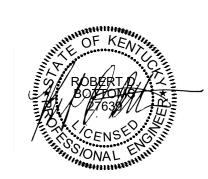
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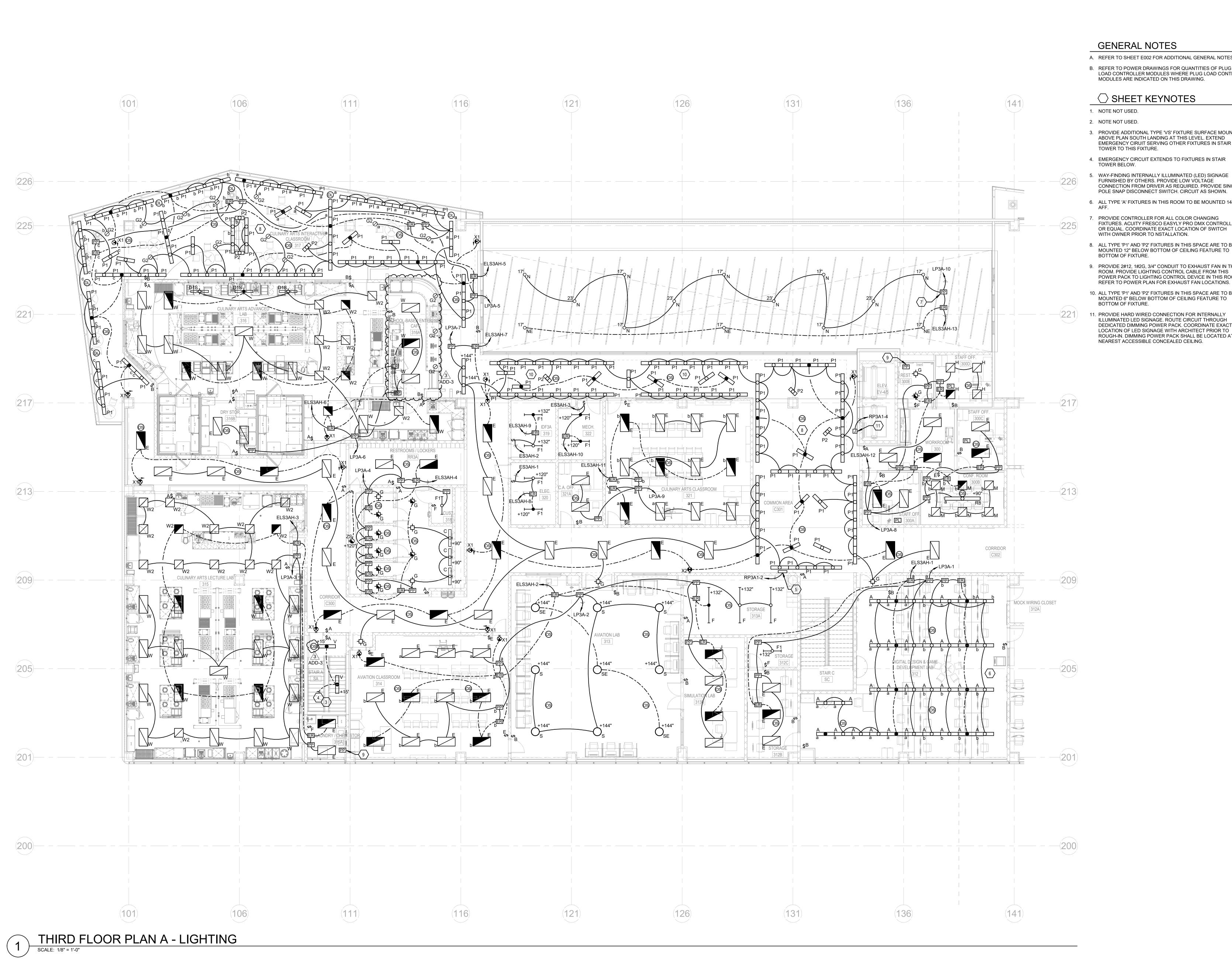
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SECOND FLOOR PLAN B - LIGHTING

E102b



- B. REFER TO POWER DRAWINGS FOR QUANTITIES OF PLUG LOAD CONTROLLER MODULES WHERE PLUG LOAD CONTROL MODULES ARE INDICATED ON THIS DRAWING.

○ SHEET KEYNOTES

NOTE NOT USED.

- 2. NOTE NOT USED.
- ABOVE PLAN SOUTH LANDING AT THIS LEVEL. EXTEND
- POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.
- 7. PROVIDE CONTROLLER FOR ALL COLOR CHANGING FIXTURES. ACUITY FRESCO EASYLY PRO DMX CONTROLLER
- 8. ALL TYPE 'P1' AND 'P2' FIXTURES IN THIS SPACE ARE TO BE
- 9. PROVIDE 2#12, 1#2G, 3/4" CONDUIT TO EXHAUST FAN IN THIS ROOM. PROVIDE LIGHTING CONTROL CABLE FROM THIS POWER PACK TO LIGHTING CONTROL DEVICE IN THIS ROOM.
- 10. ALL TYPE 'P1' AND 'P2' FIXTURES IN THIS SPACE ARE TO BE MOUNTED 6" BELOW BOTTOM OF CEILING FEATURE TO
- ROUGH-IN. DIMMING POWER PACK SHALL BE LOCATED AT

GENERAL NOTES

A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.

- 3. PROVIDE ADDITIONAL TYPE 'VS' FIXTURE SURFACE MOUNTED EMERGENCY CIRUIT SERVING OTHER FIXTURES IN STAIR TOWER TO THIS FIXTURE.
- 4. EMERGENCY CIRCUIT EXTENDS TO FIXTURES IN STAIR TOWER BELOW.
- 5. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE
- 6. ALL TYPE 'A' FIXTURES IN THIS ROOM TO BE MOUNTED 144"
- OR EQUAL. COORDINATE EXACT LOCATION OF SWITCH WITH OWNER PRIOR TO NSTALLATION.
- MOUNTED 12" BELOW BOTTOM OF CEILING FEATURE TO BOTTOM OF FIXTURE.
- 11. PROVIDE HARD WIRED CONNECTION FOR INTERNALLY ILLUMINATED LED SIGNAGE. ROUTE CIRCUIT THROUGH DEDICATED DIMMING POWER PACK. COORDINATE EXACT LOCATION OF LED SIGNAGE WITH ARCHITECT PRIOR TO NEAREST ACCESSIBLE CONCEALED CEILING.

NEW COMBINED CTE SCHOOL

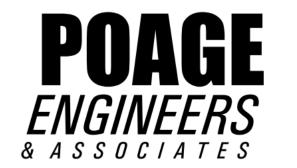
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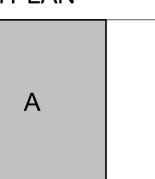


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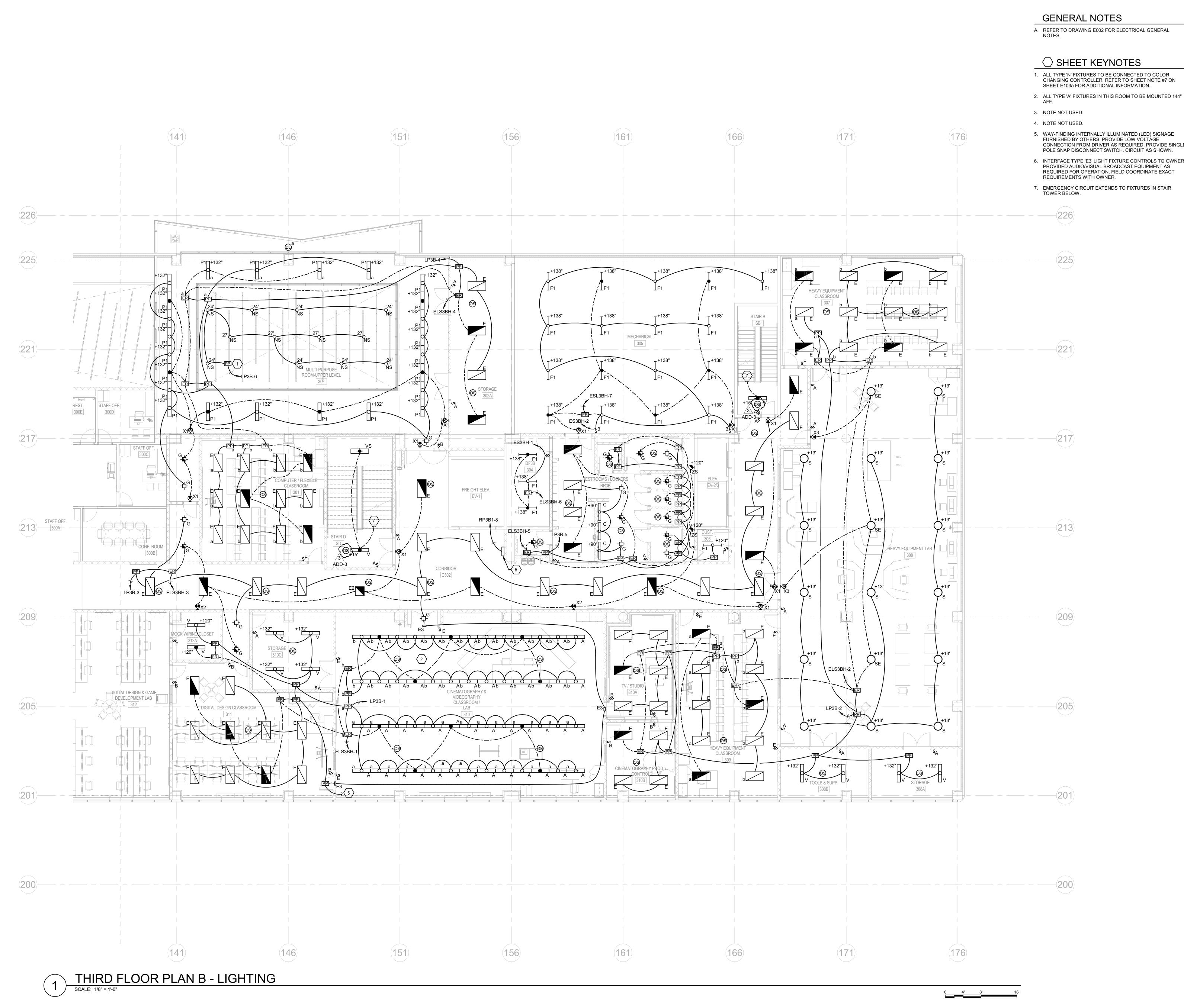
by these drawings.

Checked By RDB



THIRD FLOOR PLAN A -LIGHTING

E103a



CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.

6. INTERFACE TYPE 'E3' LIGHT FIXTURE CONTROLS TO OWNER PROVIDED AUDIO/VISUAL BROADCAST EQUIPMENT AS REQUIRED FOR OPERATION. FIELD COORDINATE EXACT

& *ASSOCIATES*

Poage Engineers & Associates Inc

Structural Engineers

Lexington, KY 40504

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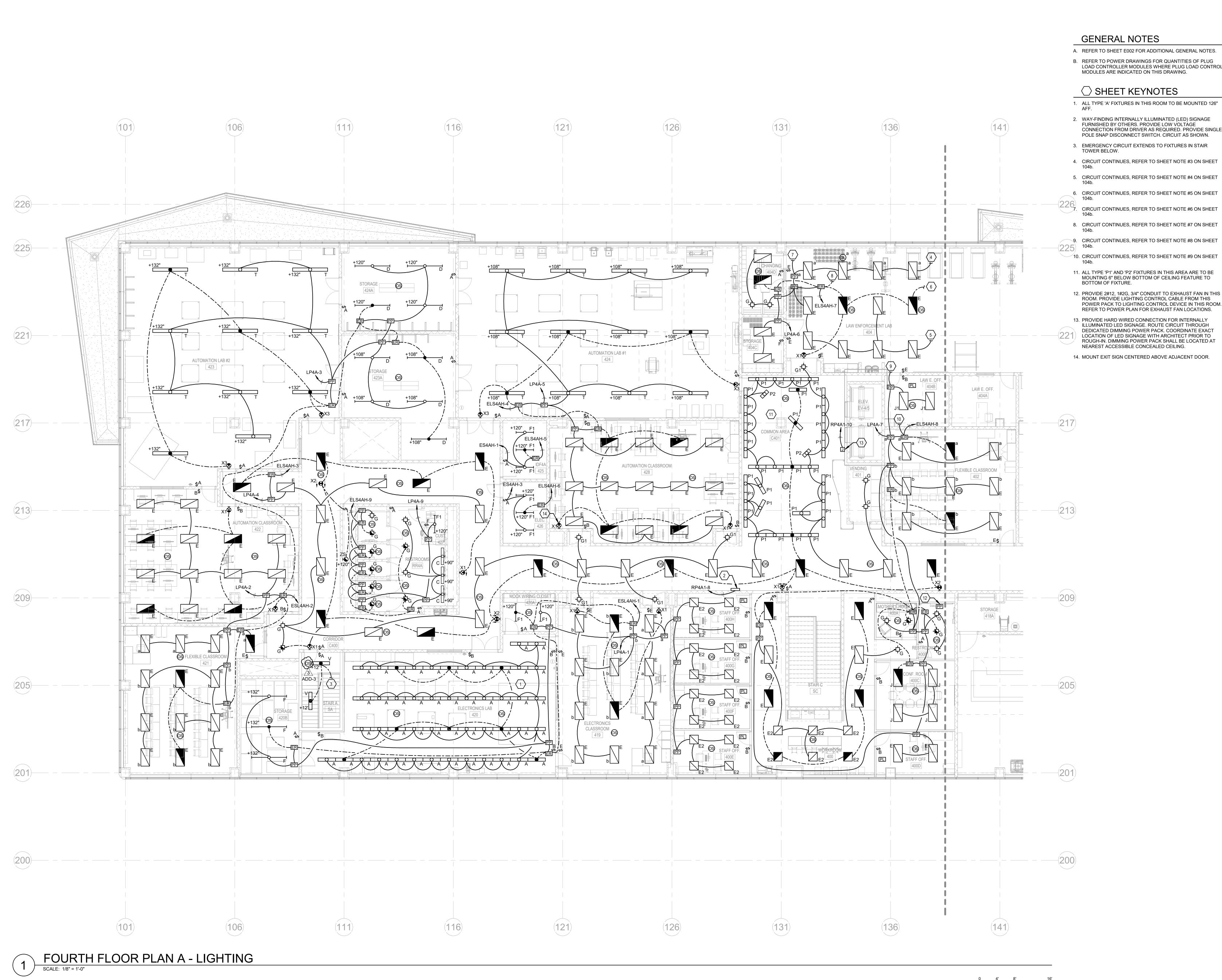
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THIRD FLOOR PLAN B -LIGHTING

E103b



A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES. B. REFER TO POWER DRAWINGS FOR QUANTITIES OF PLUG LOAD CONTROLLER MODULES WHERE PLUG LOAD CONTROL MODULES ARE INDICATED ON THIS DRAWING.

○ SHEET KEYNOTES

- 1. ALL TYPE 'A' FIXTURES IN THIS ROOM TO BE MOUNTED 126"
- 2. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE
- 3. EMERGENCY CIRCUIT EXTENDS TO FIXTURES IN STAIR
- 4. CIRCUIT CONTINUES, REFER TO SHEET NOTE #3 ON SHEET
- 5. CIRCUIT CONTINUES, REFER TO SHEET NOTE #4 ON SHEET
- 6. CIRCUIT CONTINUES, REFER TO SHEET NOTE #5 ON SHEET
- 9. CIRCUIT CONTINUES, REFER TO SHEET NOTE #8 ON SHEET
- 10. CIRCUIT CONTINUES, REFER TO SHEET NOTE #9 ON SHEET
- 11. ALL TYPE 'P1' AND 'P2' FIXTURES IN THIS AREA ARE TO BE MOUNTING 6" BELOW BOTTOM OF CEILING FEATURE TO
- 12. PROVIDE 2#12, 1#2G, 3/4" CONDUIT TO EXHAUST FAN IN THIS ROOM. PROVIDE LIGHTING CONTROL CABLE FROM THIS POWER PACK TO LIGHTING CONTROL DEVICE IN THIS ROOM.
- 13. PROVIDE HARD WIRED CONNECTION FOR INTERNALLY ILLUMINATED LED SIGNAGE. ROUTE CIRCUIT THROUGH DEDICATED DIMMING POWER PACK. COORDINATE EXACT LOCATION OF LED SIGNAGE WITH ARCHITECT PRIOR TO ROUGH-IN. DIMMING POWER PACK SHALL BE LOCATED AT NEAREST ACCESSIBLE CONCEALED CEILING.
- 14. MOUNT EXIT SIGN CENTERED ABOVE ADJACENT DOOR.

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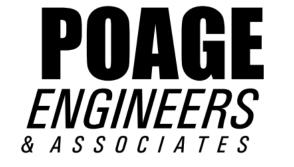
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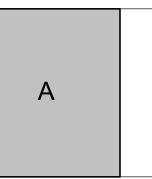


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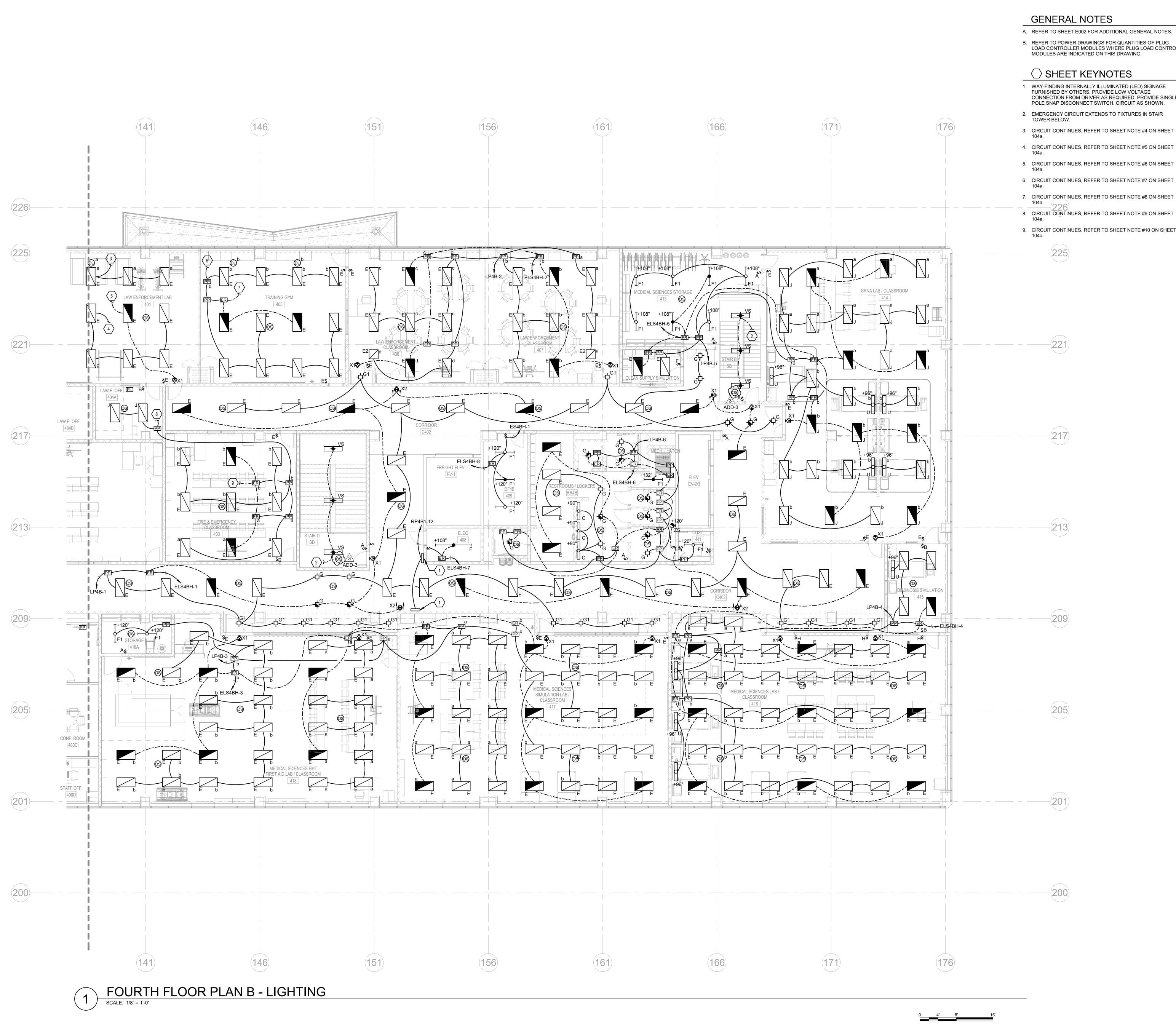
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FOURTH FLOOR PLAN A - LIGHTING

E104a



- A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.
- B. REFER TO POWER DRAWINGS FOR QUANTITIES OF PLUG LOAD CONTROLLER MODULES WHERE PLUG LOAD CONTROL

- 1. WAY-FINDING INTERNALLY ILLUMINATED (LED) SIGNAGE FURNISHED BY OTHERS. PROVIDE LOW VOLTAGE CONNECTION FROM DRIVER AS REQUIRED. PROVIDE SINGLE POLE SNAP DISCONNECT SWITCH. CIRCUIT AS SHOWN.
- EMERGENCY CIRCUIT EXTENDS TO FIXTURES IN STAIR TOWER BELOW.
- 3. CIRCUIT CONTINUES, REFER TO SHEET NOTE #4 ON SHEET
- 4. CIRCUIT CONTINUES, REFER TO SHEET NOTE #5 ON SHEET
- 5. CIRCUIT CONTINUES, REFER TO SHEET NOTE #6 ON SHEET

- 9. CIRCUIT CONTINUES, REFER TO SHEET NOTE #10 ON SHEET



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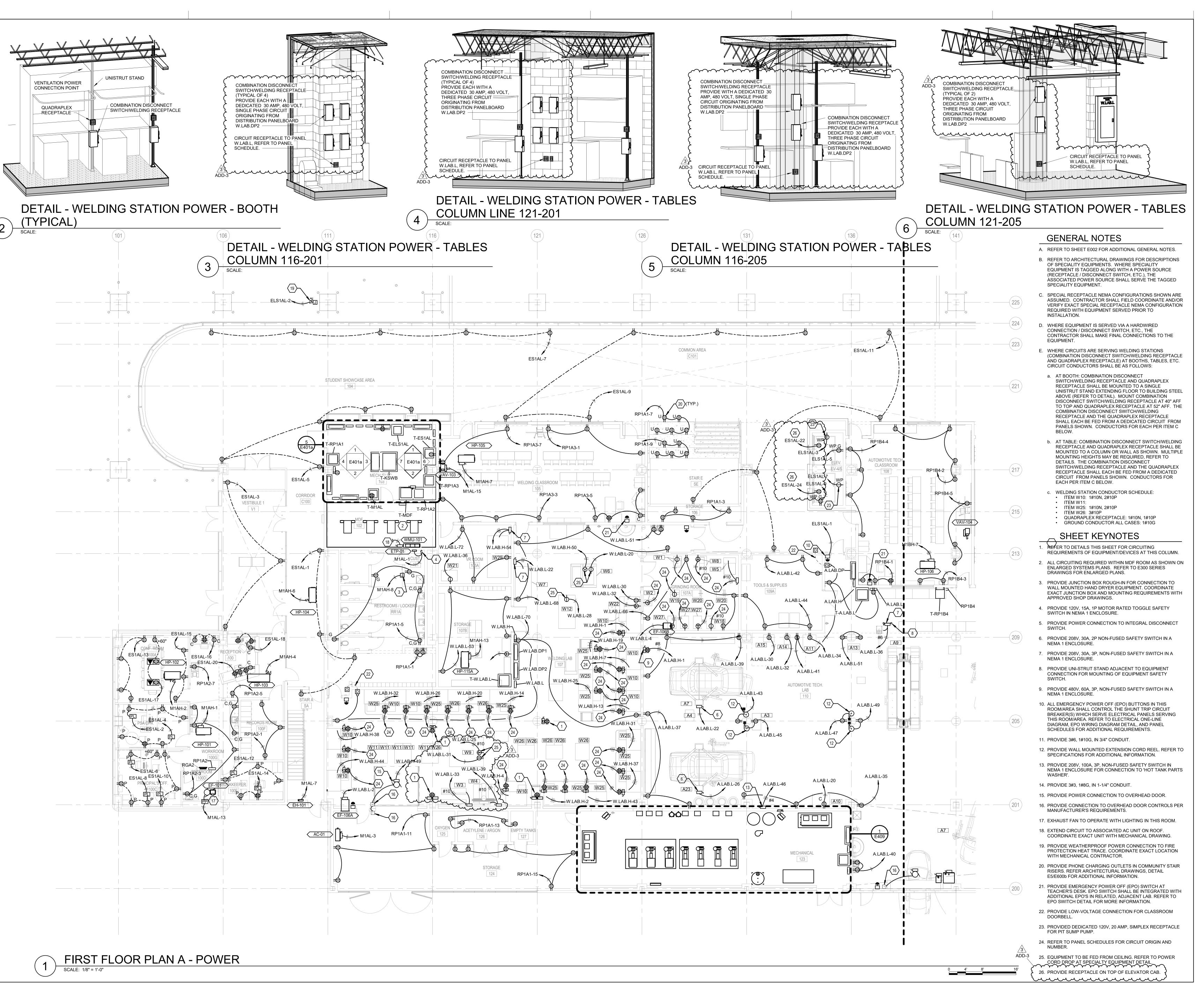
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FOURTH FLOOR PLAN B - LIGHTING

E104b

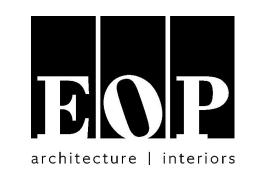


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A

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scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

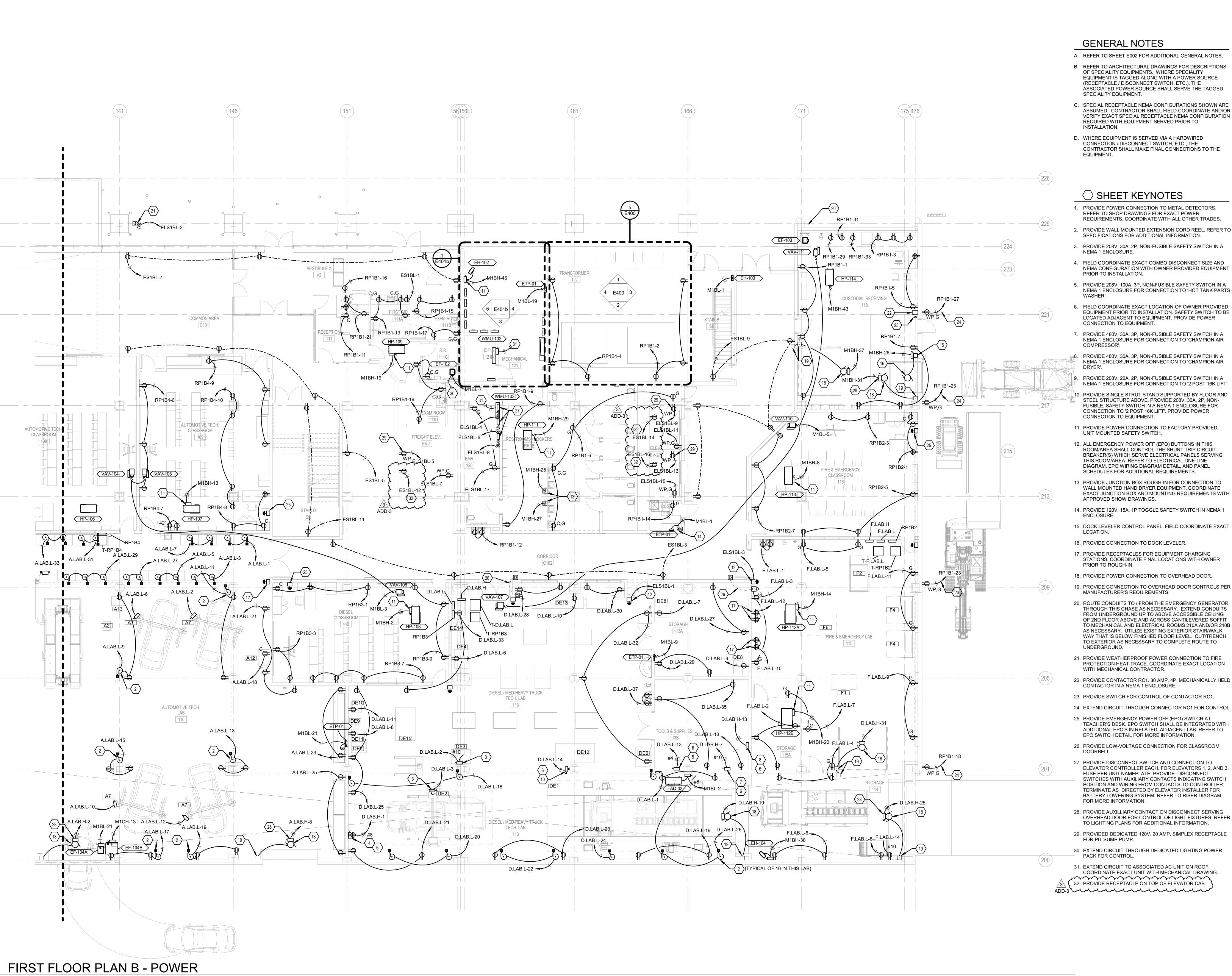
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FIRST FLOOR PLAN A -POWER

E201a



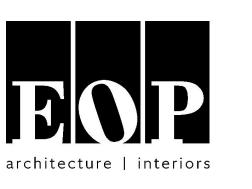
- A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.
- B. REFER TO ARCHITECTURAL DRAWINGS FOR DESCRIPTIONS OF SPECIALITY EQUIPMENTS. WHERE SPECIALITY EQUIPMENT IS TAGGED ALONG WITH A POWER SOURCE (RECEPTACLE / DISCONNECT SWITCH, ETC.), THE ASSOCIATED POWER SOURCE SHALL SERVE THE TAGGED
- C. SPECIAL RECEPTACLE NEMA CONFIGURATIONS SHOWN ARE ASSUMED. CONTRACTOR SHALL FIELD COORDINATE AND/OR VERIFY EXACT SPECIAL RECEPTACLE NEMA CONFIGURATION REQUIRED WITH EQUIPMENT SERVED PRIOR TO
- D. WHERE EQUIPMENT IS SERVED VIA A HARDWIRED CONNECTION / DISCONNECT SWITCH, ETC., THE CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO THE

- 1. PROVIDE POWER CONNECTION TO METAL DETECTORS. REFER TO SHOP DRAWINGS FOR EXACT POWER REQUIREMENTS. COORDINATE WITH ALL OTHER TRADES.
- 2. PROVIDE WALL MOUNTED EXTENSION CORD REEL. REFER TO
- 4. FIELD COORDINATE EXACT COMBO DISCONNECT SIZE AND NEMA CONFIGURATION WITH OWNER PROVIDED EQUIPMENT
- 5. PROVIDE 208V, 100A, 3P, NON-FUSIBLE SAFETY SWITCH IN A
- 6. FIELD COORDINATE EXACT LOCATION OF OWNER PROVIDED EQUIPMENT PRIOR TO INSTALLATION. SAFETY SWITCH TO BE
- PROVIDE 480V, 30A, 3P, NON-FUSIBLE SAFETY SWITCH IN A NEMA 1 ENCLOSURE FOR CONNECTION TO 'CHAMPION AIR
- 8. PROVIDE 480V, 30A, 3P, NON-FUSIBLE SAFETY SWITCH IN A NEMA 1 ENCLOSURE FOR CONNECTION TO 'CHAMPION AIR
- PROVIDE 208V. 20A. 2P. NON-FUSIBLE SAFETY SWITCH IN A NEMA 1 ENCLOSURE FOR CONNECTION TO '2 POST 16K LIFT'.
- 10. PROVIDE SINGLE STRUT STAND SUPPORTED BY FLOOR AND STEEL STRUCTURE ABOVE. PROVIDE 208V, 30A, 2P, NON-FUSIBLE, SAFETY SWITCH IN A NEMA 1 ENCLOSURE FOR CONNECTION TO '2 POST 16K LIFT'. PROVIDE POWER
- 11. PROVIDE POWER CONNECTION TO FACTORY PROVIDED,
- ROOM/AREA SHALL CONTROL THE SHUNT TRIP CIRCUIT BREAKER(S) WHICH SERVE ELECTRICAL PANELS SERVING THIS ROOM/AREA. REFER TO ELECTRICAL ONE-LINE DIAGRAM, EPO WIRING DIAGRAM DETAIL, AND PANEL SCHEDULES FOR ADDITIONAL REQUIREMENTS.
- 13. PROVIDE JUNCTION BOX ROUGH-IN FOR CONNECTION TO WALL MOUNTED HAND DRYER EQUIPMENT. COORDINATE EXACT JUNCTION BOX AND MOUNTING REQUIREMENTS WITH
- 14. PROVIDE 120V, 15A, 1P TOGGLE SAFETY SWITCH IN NEMA 1
- 15. DOCK LEVELER CONTROL PANEL. FIELD COORDINATE EXACT
- 16. PROVIDE CONNECTION TO DOCK LEVELER.
- 17. PROVIDE RECEPTACLES FOR EQUIPMENT CHARGING STATIONS. COORDINATE FINAL LOCATIONS WITH OWNER
- 18. PROVIDE POWER CONNECTION TO OVERHEAD DOOR.
- 19. PROVIDE CONNECTION TO OVERHEAD DOOR CONTROLS PER MANUFACTURER'S REQUIREMENTS.
- 20. ROUTE CONDUITS TO / FROM THE EMERGENCY GENERATOR THROUGH THIS CHASE AS NECESSARY. EXTEND CONDUITS FROM UNDERGROUND UP TO ABOVE ACCESSIBLE CEILING OF 2ND FLOOR ABOVE AND ACROSS CANTILEVERED SOFFIT TO MECHANICAL AND ELECTRICAL ROOMS 210A AND/OR 210B AS NECESSARY. UTILIZE EXISTING EXTERIOR STAIR/WALK WAY THAT IS BELOW FINISHED FLOOR LEVEL. CUT/TRENCH
- 21. PROVIDE WEATHERPROOF POWER CONNECTION TO FIRE PROTECTION HEAT TRACE. COORDINATE EXACT LOCATION
- 22. PROVIDE CONTACTOR RC1. 30 AMP, 4P, MECHANICALLY HELD
- 23. PROVIDE SWITCH FOR CONTROL OF CONTACTOR RC1.
- 24. EXTEND CIRCUIT THROUGH CONNECTOR RC1 FOR CONTROL.
- 25. PROVIDE EMERGENCY POWER OFF (EPO) SWITCH AT TEACHER'S DESK. EPO SWITCH SHALL BE INTEGRATED WITH ADDITIONAL EPO'S IN RELATED, ADJACENT LAB. REFER TO EPO SWITCH DETAIL FOR MORE INFORMATION.
- 26. PROVIDE LOW-VOLTAGE CONNECTION FOR CLASSROOM
- ELEVATOR CONTROLLER EACH, FOR ELEVATORS 1, 2, AND 3. FUSE PER UNIT NAMEPLATE. PROVIDE DISCONNECT SWITCHES WITH AUXILIARY CONTACTS INDICATING SWITCH POSITION AND WIRING FROM CONTACTS TO CONTROLLER; TERMINATE AS DIRECTED BY ELEVATOR INSTALLER FOR BATTERY LOWERING SYSTEM. REFER TO RISER DIAGRAM
- 28. PROVIDE AUXILLIARY CONTACT ON DISCONNECT SERVING OVERHEAD DOOR FOR CONTROL OF LIGHT FIXTURES. REFER TO LIGHTING PLANS FOR ADDITIONAL INFORMATION.
- 29. PROVIDED DEDICATED 120V, 20 AMP, SIMPLEX RECEPTACLE
- 30. EXTEND CIRCUIT THROUGH DEDICATED LIGHTING POWER
- 31. EXTEND CIRCUIT TO ASSOCIATED AC UNIT ON ROOF. COORDINATE EXACT UNIT WITH MECHANICAL DRAWING. 32. PROVIDE RECEPTACLE ON TOP OF ELEVATOR CAB.

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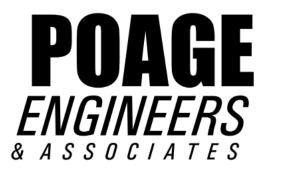
BID DOCUMENTS

REVISIONS DESCRIPTION # DATE 10/14/22 ADDENDUM 1 10/21/22 ADDENDUM 3

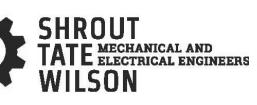


PROJECT TEAM

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Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504



Shrout Tate Wilson Consulting Engineers MEP Engineers 628 Winchester Rd. Lexington, KY 40505



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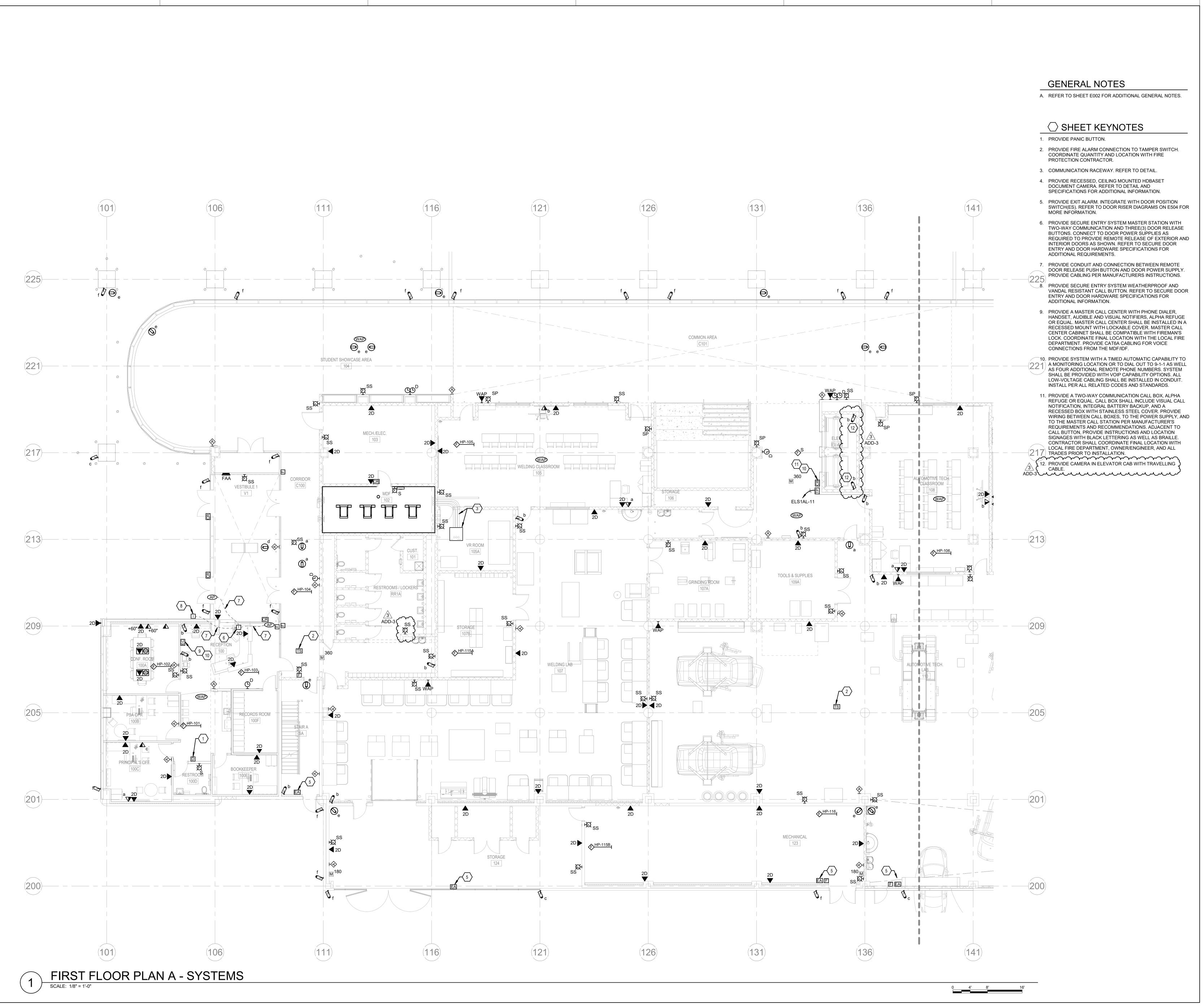
variation from the dimensions and conditions shown by these drawings. Job Number 2150 Drawn By

JHS Checked By RDB 09/28/2022



FIRST FLOOR PLAN B -POWER

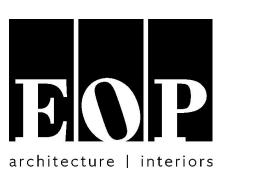
E201b



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BID DOCUMENTS

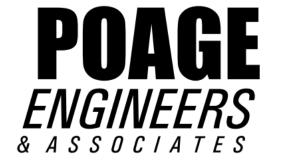
REVISION

REVISIONS		
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



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KEYPLAN

A

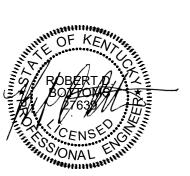
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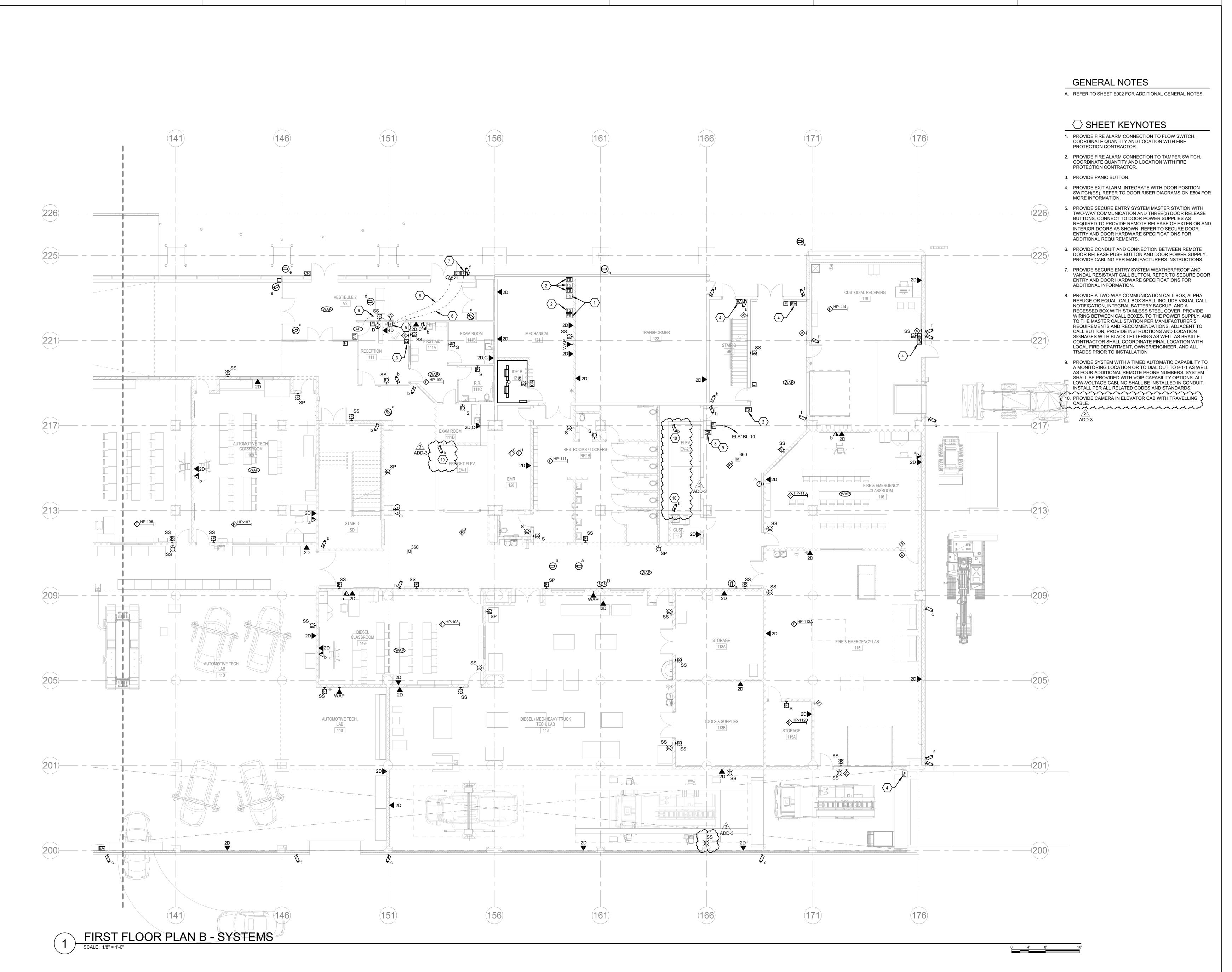
Job Number 2150 Drawn By JHS Checked By RDB

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FIRST FLOOR PLAN A -SYSTEMS

E301a



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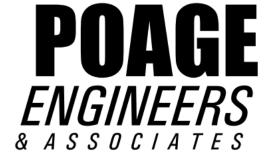
BID DOCUMENTS

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1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



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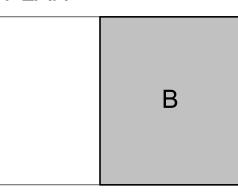


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KEYPLAN

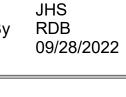


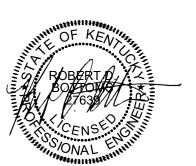
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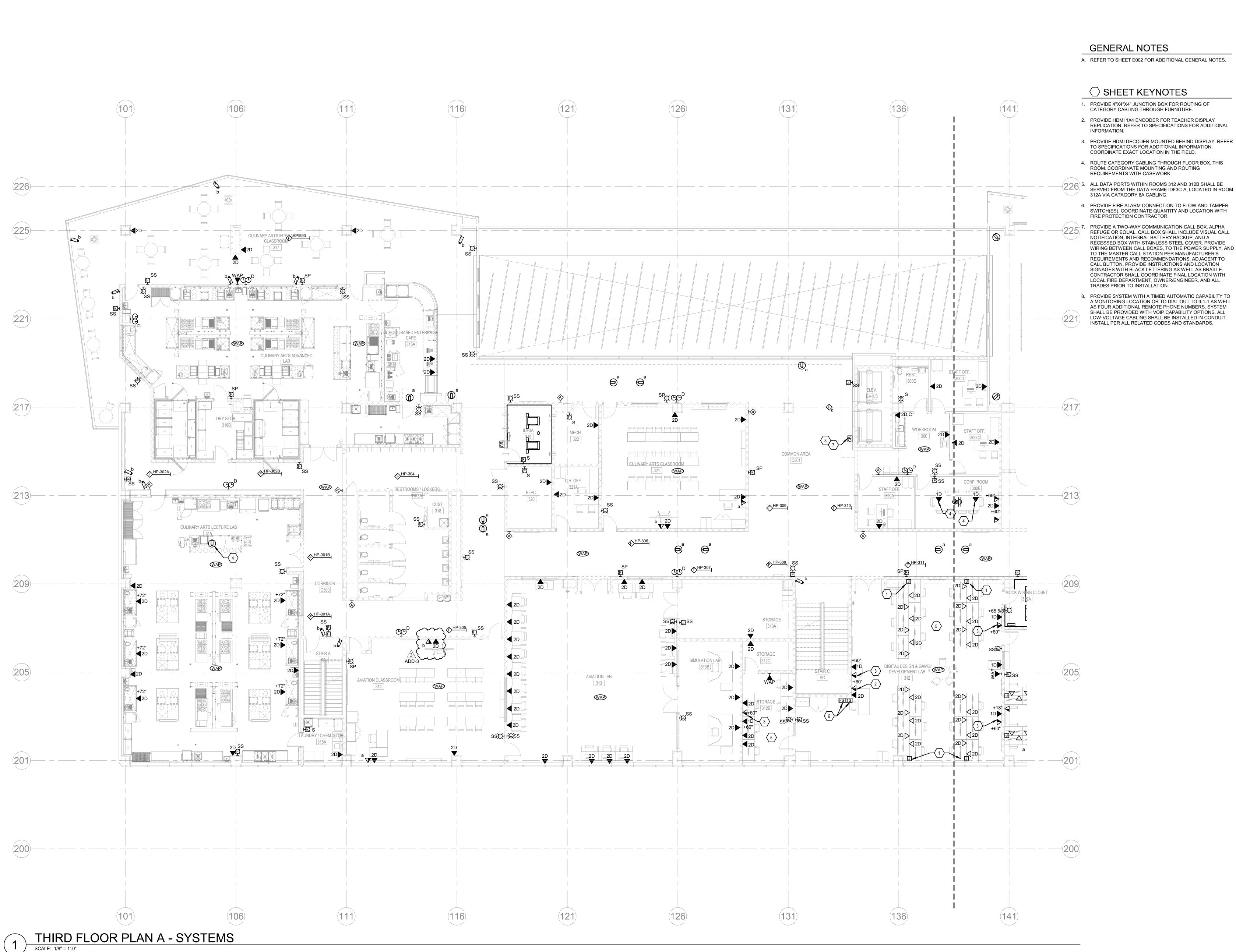
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FIRST FLOOR PLAN B -SYSTEMS

E301b



GENERAL NOTES

A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.

○ SHEET KEYNOTES

PROVIDE 4"X4"X4" JUNCTION BOX FOR ROUTING OF CATEGORY CABLING THROUGH FURNITURE.

2. PROVIDE HDMI 1X4 ENCODER FOR TEACHER DISPLAY REPLICATION. REFER TO SPECIFICATIONS FOR ADDITIONAL

COORDINATE EXACT LOCATION IN THE FIELD. 4. ROUTE CATEGORY CABLING THROUGH FLOOR BOX, THIS

ROOM. COORDINATE MOUNTING AND ROUTING REQUIREMENTS WITH CASEWORK.

5. ALL DATA PORTS WITHIN ROOMS 312 AND 312B SHALL BE SERVED FROM THE DATA FRAME IDF3C-A, LOCATED IN ROOM 312A VIA CATAGORY 6A CABLING.

6. PROVIDE FIRE ALARM CONNECTION TO FLOW AND TAMPER SWITCH(ES). COORDINATE QUANTITY AND LOCATION WITH

REFUGE OR EQUAL. CALL BOX SHALL INCLUDE VISUAL CALL NOTIFICATION, INTEGRAL BATTERY BACKUP, AND A RECESSED BOX WITH STAINLESS STEEL COVER. PROVIDE WIRING BETWEEN CALL BOXES, TO THE POWER SUPPLY, AND TO THE MASTER CALL STATION PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. ADJACENT TO CALL BUTTON, PROVIDE INSTRUCTIONS AND LOCATION SIGNAGES WITH BLACK LETTERING AS WELL AS BRAILLE. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH LOCAL FIRE DEPARTMENT, OWNER/ENGINEER, AND ALL TRADES PRIOR TO INSTALLATION

8. PROVIDE SYSTEM WITH A TIMED AUTOMATIC CAPABILITY TO A MONITORING LOCATION OR TO DIAL OUT TO 9-1-1 AS WELL AS FOUR ADDITIONAL REMOTE PHONE NUMBERS. SYSTEM SHALL BE PROVIDED WITH VOIP CAPABILITY OPTIONS. ALL LOW-VOLTAGE CABLING SHALL BE INSTALLED IN CONDUIT. INSTALL PER ALL RELATED CODES AND STANDARDS.

NEW COMBINED CTE SCHOOL

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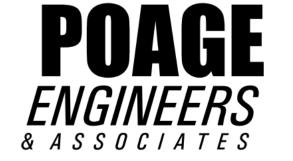
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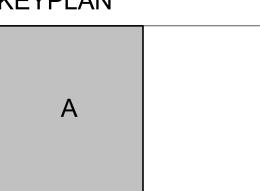


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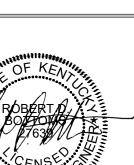
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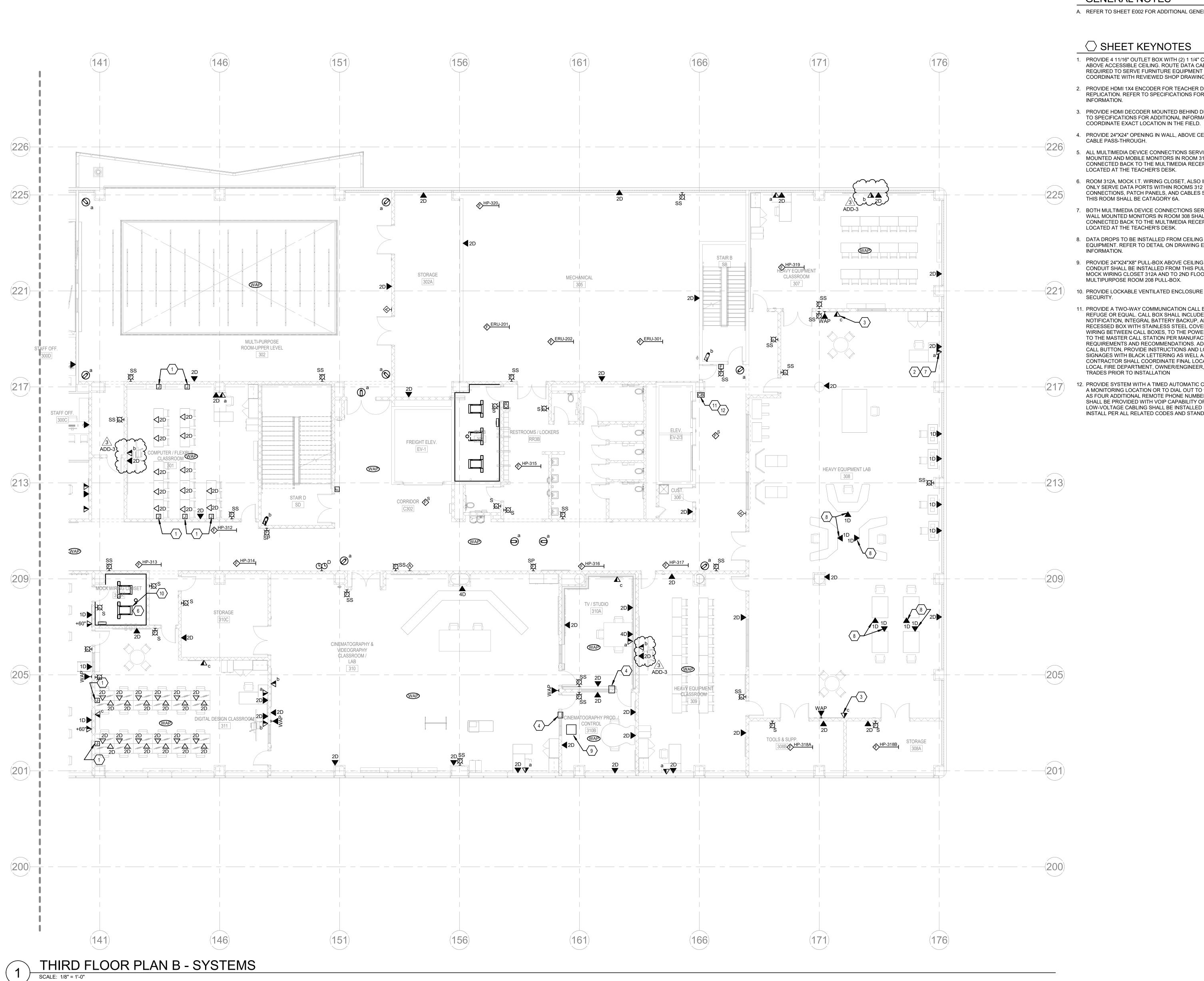
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THIRD FLOOR PLAN A -SYSTEMS

E303a



GENERAL NOTES

A. REFER TO SHEET E002 FOR ADDITIONAL GENERAL NOTES.

○ SHEET KEYNOTES

- PROVIDE 4 11/16" OUTLET BOX WITH (2) 1 1/4" CONDUITS TO ABOVE ACCESSIBLE CEILING. ROUTE DATA CABLING AS REQUIRED TO SERVE FURNITURE EQUIPMENT AND COORDINATE WITH REVIEWED SHOP DRAWINGS.
- 2. PROVIDE HDMI 1X4 ENCODER FOR TEACHER DISPLAY REPLICATION. REFER TO SPECIFICATIONS FOR ADDITIONAL
- 3. PROVIDE HDMI DECODER MOUNTED BEHIND DISPLAY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 4. PROVIDE 24"X24" OPENING IN WALL, ABOVE CEILING FOR CABLE PASS-THROUGH.
- ALL MULTIMEDIA DEVICE CONNECTIONS SERVING THE WALL MOUNTED AND MOBILE MONITORS IN ROOM 311 SHALL BE CONNECTED BACK TO THE MULTIMEDIA RECEPTACLE LOCATED AT THE TEACHER'S DESK.
- 6. ROOM 312A, MOCK I.T. WIRING CLOSET, ALSO IDF3C, SHALL ONLY SERVE DATA PORTS WITHIN ROOMS 312 AND 312B. ALL CONNECTIONS, PATCH PANELS, AND CABLES SERVED FROM
- 7. BOTH MULTIMEDIA DEVICE CONNECTIONS SERVING THE WALL MOUNTED MONITORS IN ROOM 308 SHALL BE CONNECTED BACK TO THE MULTIMEDIA RECEPTACLE LOCATED AT THE TEACHER'S DESK.
- 8. DATA DROPS TO BE INSTALLED FROM CEILING DOWN TO EQUIPMENT. REFER TO DETAIL ON DRAWING E5.1 FOR MORE INFORMATION.
- 9. PROVIDE 24"X24"X8" PULL-BOX ABOVE CEILING. (1) EACH 4" CONDUIT SHALL BE INSTALLED FROM THIS PULL-BOX TO MOCK WIRING CLOSET 312A AND TO 2ND FLOOR MULTIPURPOSE ROOM 208 PULL-BOX.
- 10. PROVIDE LOCKABLE VENTILATED ENCLOSURE FOR

11. PROVIDE A TWO-WAY COMMUNICATION CALL BOX, ALPHA REFUGE OR EQUAL. CALL BOX SHALL INCLUDE VISUAL CALL NOTIFICATION, INTEGRAL BATTERY BACKUP, AND A RECESSED BOX WITH STAINLESS STEEL COVER. PROVIDE WIRING BETWEEN CALL BOXES, TO THE POWER SUPPLY, AND TO THE MASTER CALL STATION PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. ADJACENT TO CALL BUTTON, PROVIDE INSTRUCTIONS AND LOCATION SIGNAGES WITH BLACK LETTERING AS WELL AS BRAILLE. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH LOCAL FIRE DEPARTMENT, OWNER/ENGINEER, AND ALL TRADES PRIOR TO INSTALLATION

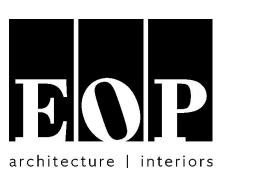
12. PROVIDE SYSTEM WITH A TIMED AUTOMATIC CAPABILITY TO A MONITORING LOCATION OR TO DIAL OUT TO 9-1-1 AS WELL AS FOUR ADDITIONAL REMOTE PHONE NUMBERS. SYSTEM SHALL BE PROVIDED WITH VOIP CAPABILITY OPTIONS. ALL LOW-VOLTAGE CABLING SHALL BE INSTALLED IN CONDUIT. INSTALL PER ALL RELATED CODES AND STANDARDS.

NEW COMBINED CTE SCHOOL

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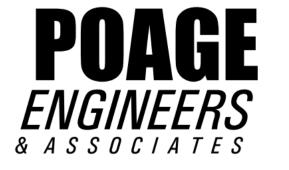
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1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



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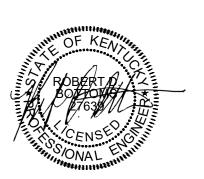
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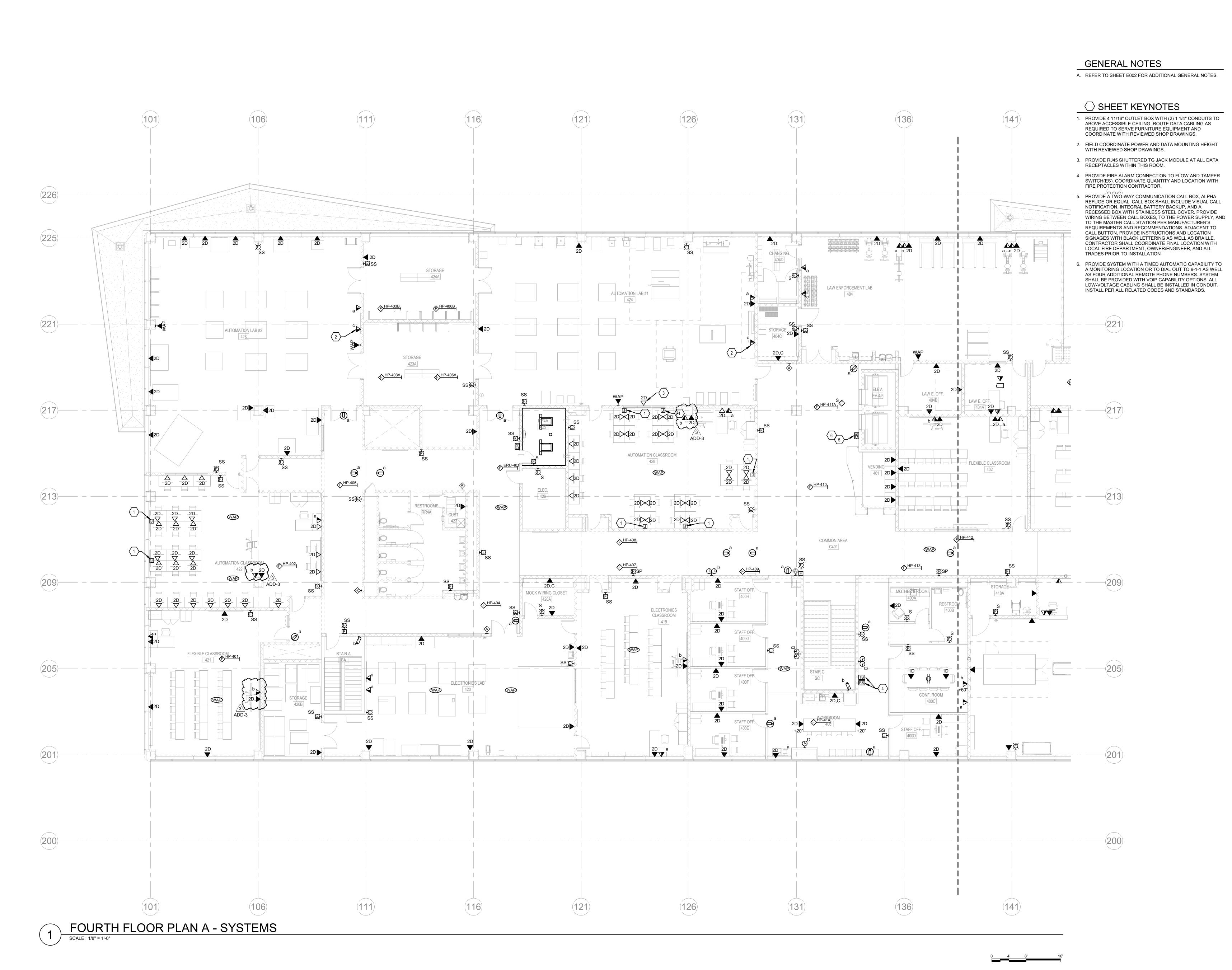
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THIRD FLOOR PLAN B -SYSTEMS

E303b



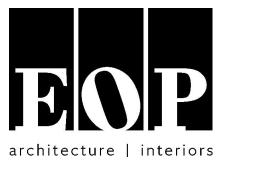
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NEW

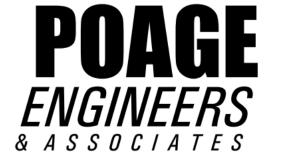
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	1	10/14/22	ADDENDUM 1
	3	10/21/22	ADDENDUM 3



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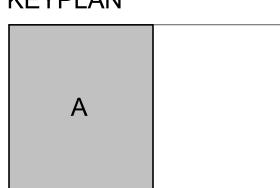


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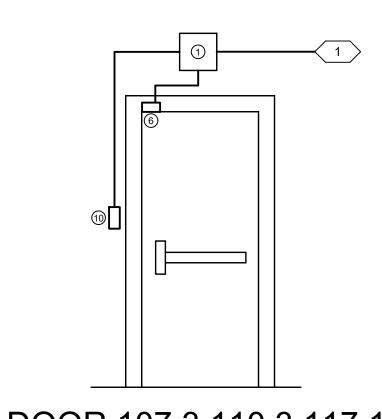


FOURTH FLOOR PLAN A - SYSTEMS

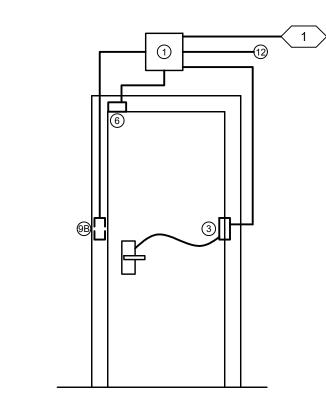
E304a

	CAM	IERA SCHEDULE
TYPE	DESCRIPTION	MODEL NUMBER
а	INTERIOR CEILING MOUNTED CAMERA	VX-5M28-MD-IAW-A-C_SpecSheetandSummary_11162021 - Type 2
b	INTERIOR WALL MOUNTED CAMERA	VX-5M28-MD-IAW-A-C_SpecSheetandSummary_11162021 - Type 2
С	EXTERIOR WALL OR POLE MOUNT CAMERA. REFER TO DRAWINGS FOR MOUNTING.	VX-8M-180-IAW Spec Sheet and Summary_08262020 - Type 4
d	360° CEILING MOUNT CAMERA	VX-6M-360-IAW-A-C_SpecSheetandSummary_11162021 - Type 5
е	INTERIOR/EXTERIOR CEILING MOUNTED CAMERA	VX-5M-OD-RIAW-A-C Spec Sheet and Summary_11162021 - Type 1 & 3
f	INTERIOR/EXTERIOR WALL OR POLE MOUNT CAMERA. REFER TO DRAWINGS FOR MOUNTING.	VX-5M-OD-RIAW-A-C Spec Sheet and Summary_11162021 - Type 1 & 3

VERIFY ALL FLOOR BOX LOCATIONS PRIOR TO ROUGH-IN. PROVIDE ALL COMPONENTS FOR A COMPLETE INSTALLATION. COORDINATE COVER COLOR WITH ARCHITECT.



DOOR 107.3,110.3,117.1,SA1.2,SB1.2

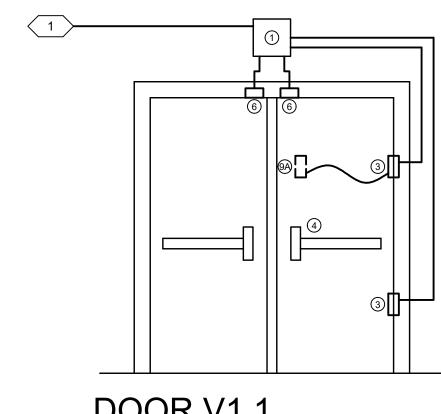


DOOR 100.1,111.1

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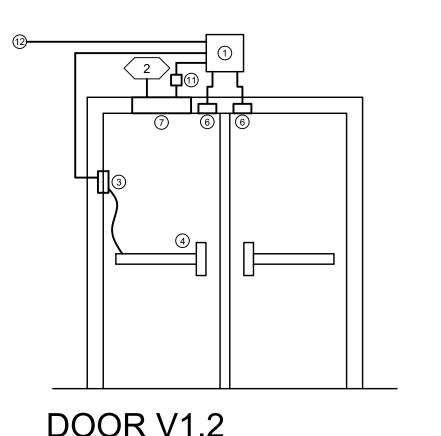
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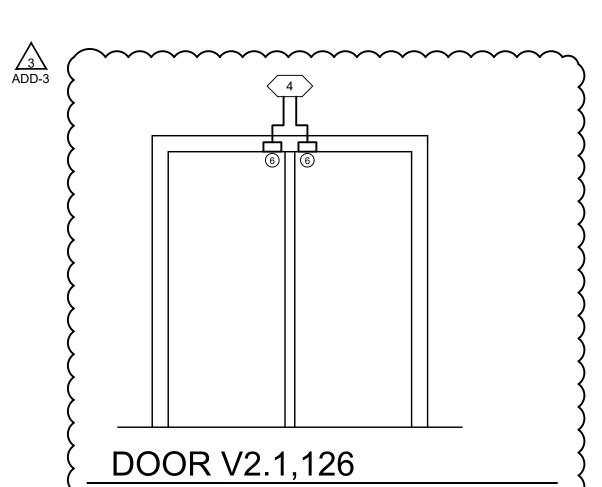
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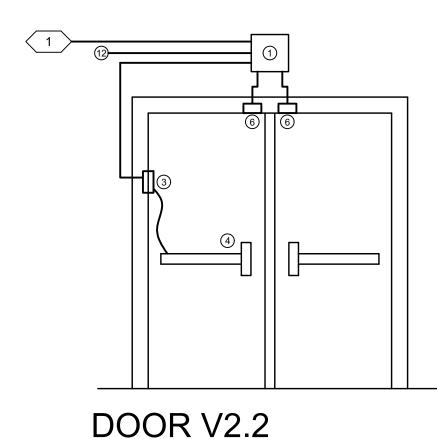


DOOR V1.1

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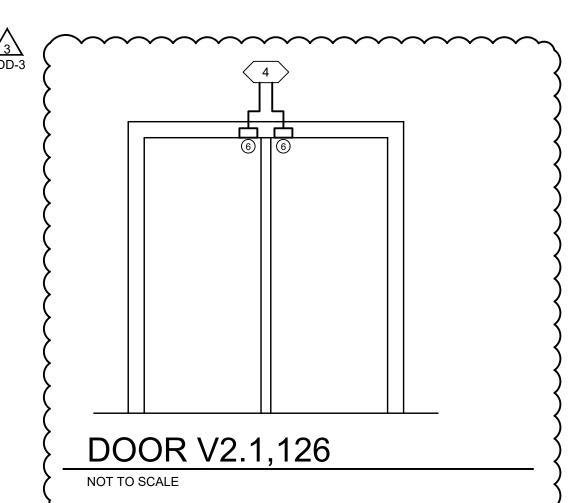


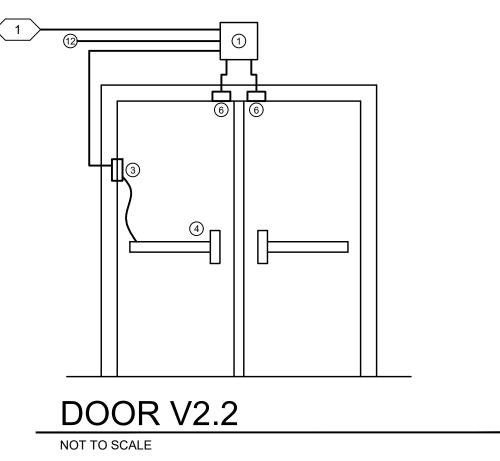


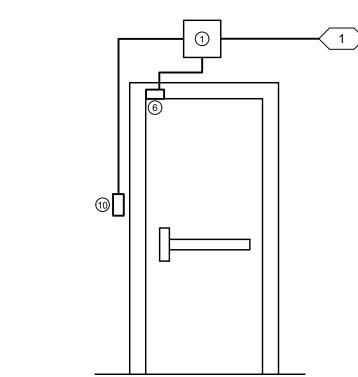




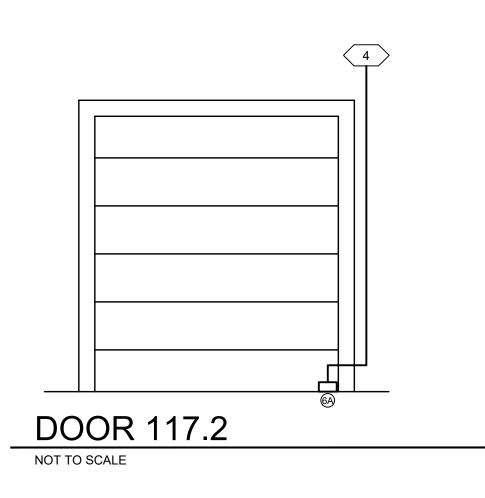
DOOR V1.2

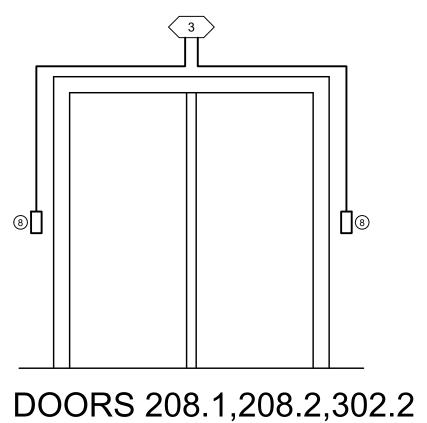


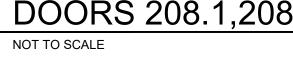




NOT TO SCALE







NOT TO SCALE

DOORS 107.4,110.4,110.5,114.2

GENERAL NOTES:

- A. REFER TO SHEETS E002 FOR ADDITIONAL GENERAL NOTES.
- B. PROVIDE POWER CONNECTION TO NEAREST EMERGENCY LIFE SAFETY 120/208V PANEL AS REQUIRED FOR EACH DOOR INDICATED REQUIRING 120VAC CONNECTION. PROVIDE SNAP SWITCH AT POWER SUPPLIES FOR LOCAL DISCONNECT MEANS. DOOR CIRCUITS MAY BE COMBINED FOR A MAXIMUM OF 10 AMPS. PROVIDE FIRE ALARM CONNECTIONS AS

GENERAL DOOR RISER NOTES:

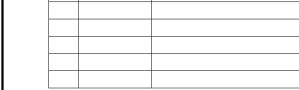
- A. THESE RISERS SHOW TYPICAL CONDUIT
 PATHWAYS REQUIRED TO BE CONCEALED IN
 FINISHED SPACES. SEE PLANS AND
 COORDINATE WITH DOOR HARDWARE
 CONTRACTOR AND ACCESS CONTROL PROVIDER FOR EXACT LOCATIONS OF ALL
- B. DASHED LINES INDICATE OTHER SIDE OF DOOR.

ELECTRICAL SERVICE NOTES: < # >

- 1. 120VAC, 60Hz, 1A SERVICE REQUIRED.
- 2. 120VAC, 60Hz, 5A SERVICE REQUIRED. PROVIDE POWER, FIRE ALARM, AND CONTROL WIRING AS REQUIRED. COORDINATE EXACT REQUIREMENTS IN FIELD.
- 4. CONDUIT STUB-UP TO CLEAR ACCESSIBLE SPACE.

DOOR RISER NOTES:

- POWER SUPPLY
- 4"D X 12"W X 12"H JUNCTION BOX BY ELECTRICAL CONTRACTOR IN CONCEALED ACCESSIBLE SPACE AS LOCATED BY ENGINEER OF RECORD.
- 3. ELECTRIC POWER TRANSFER, CONCEALED IN FRAME
- 4. ELECTRIFIED EXIT DEVICE.
- 5. ELECTRIFIED MORTISE LOCKSET WITH ONBOARD REX MONITORING CONTACT.
- 6. DOOR POSITION SWITCH (CONCEALED IN TOP JAMB, SCREWED IN, MORTISED). 6A. DOOR POSITION SWITCH (FOR OVERHEAD DOOR).
- 7. AUTOMATIC DOOR OPERATOR.
- 8. MAGNETIC HOLDER (SINGLE-GANG).
- 9. CARD READER (SINGLE GANG). 9A. CARD READER (CONCEALED INSIDE FRP DOOR).
- 9B. CARD READER (NARROW JAMB MOUNT).
- 10. HARD-WIRED EXIT ALARM (DOUBLE-GANG), DETEX
- 11. ON-OFF LIGHT SWITCH, 120VAC (LOCATED ABOVE THE CEILING) BY ELECTRICAL CONTRACTOR. 12. PUSHBUTTON WITH MOMENTARY SENSING (SURFACE MOUNTED UNDER DESK).
- 13. KEY SWITCH (SINGLE-GANG).



NEW

SCHOOL

BG# 22-167

100 Midland Ave, Lexington, KY 40508

DATE

10/14/22 3 10/21/22

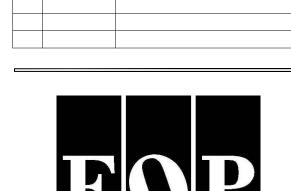
BID DOCUMENTS

REVISIONS

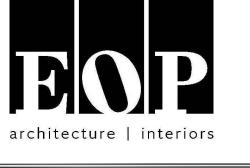
DESCRIPTION

ADDENDUM 1

ADDENDUM 3



COMBINED CTE



PROJECT TEAM

EOP Architects 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380 www.eopa.com



Element Design, PLLC. 366 S. Broadway Lexington, KY 40508

Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504



Shrout Tate Wilson Consulting Engineers
MEP Engineers
628 Winchester Rd.
Lexington, KY 40505



Reitano Design Group 302 N. East Street, Studio One Indianapolis, IN 46202



Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

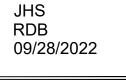
KEYPLAN

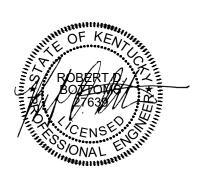
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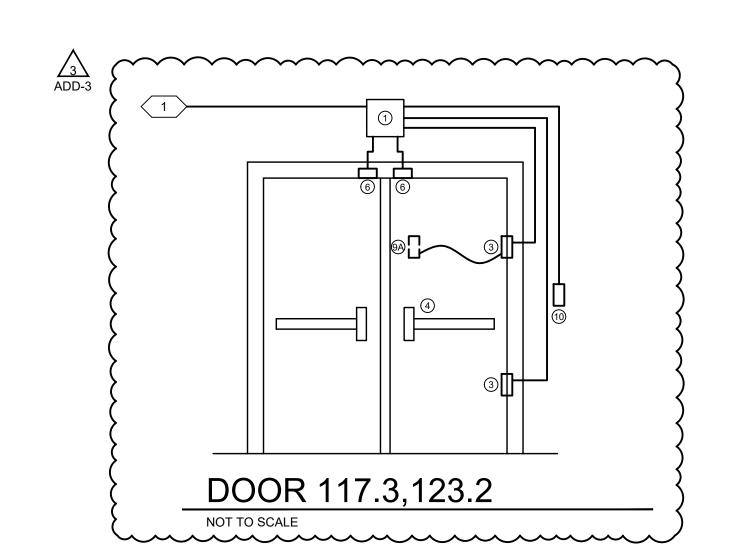
Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

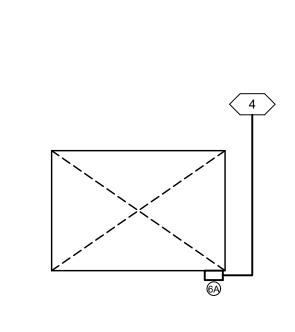
Job Number 2150 Drawn By Checked By



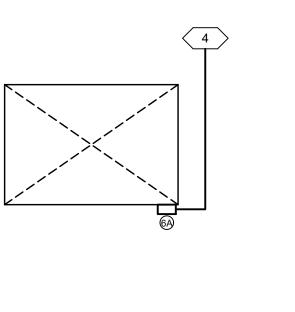


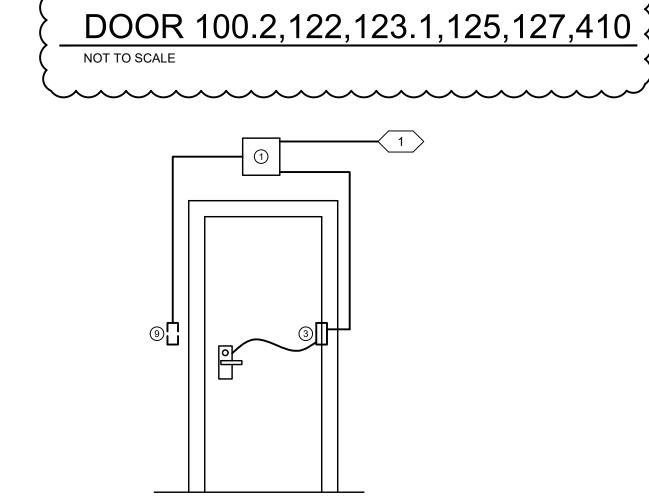
ELECTRICAL **DETAILS**



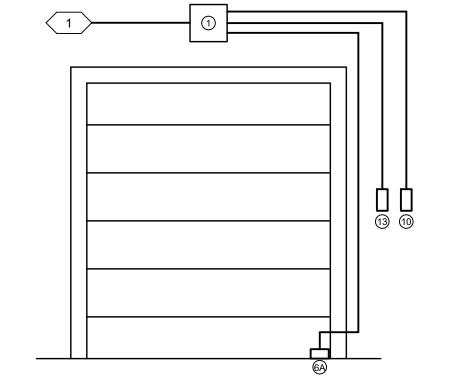


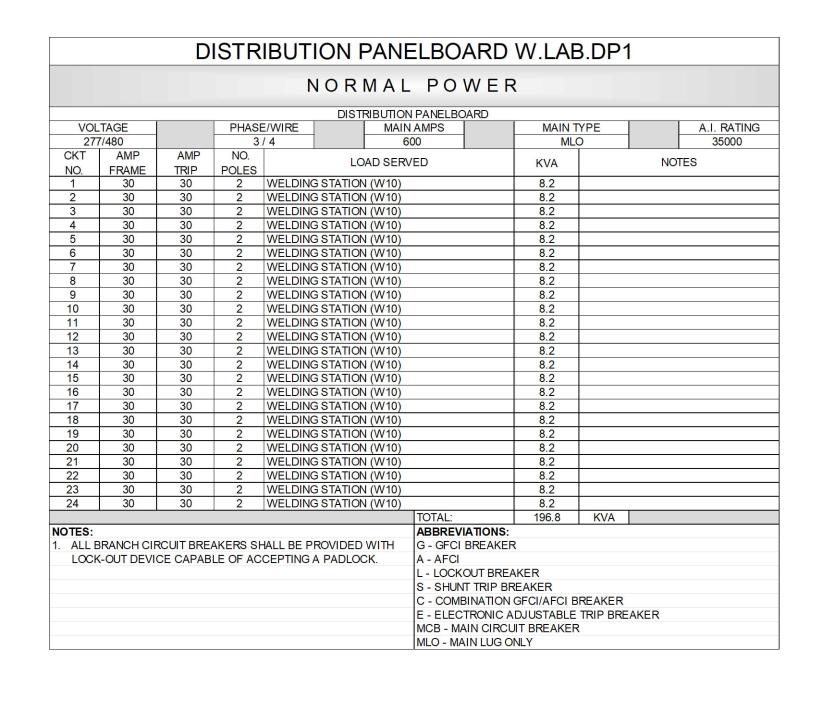
ROOM 410 ROOF HATCH





DOOR 102,121B,204,209,304,319,409,425



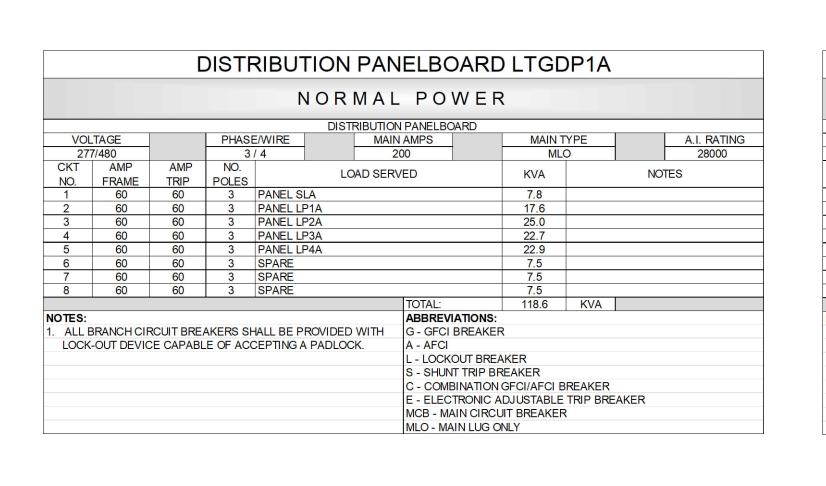


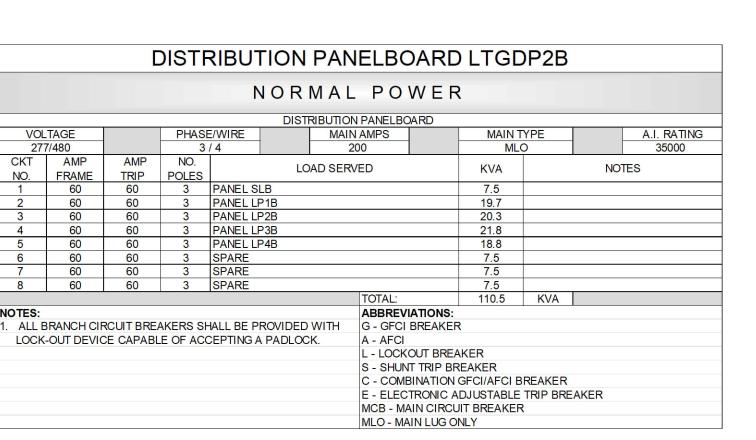
		D	ISTR	IROII	ONF	ANE	ELBOA	RD W	LAE	3.DP2		
				N	ORI	MAL	POW	ER				
					DIST	RIBUTION	PANELBOAR	D				
	TAGE			E/WIRE			AMPS		MAINT			A.I. RATING
	7/480	A 1 4 1 1 1		/ 4		60	00		ML)		35000
CKT	AMP	AMP	NO.		LO	AD SERV	'ED	ŀ	(VA		NOTE	S
NO. 1	FRAME 400	TRIP 400	POLES 3	W.LAB.H				1	41.3			
2	200	110		W.LAB.L	VIAM-IM	AMO	$\sim\sim$		41.3 34.4			
3	30	30	2	WELDER					8.5	1		
4	30	30	2	WELDER					8.5)		
5	30	30	2	WELDER					8.5	<u> </u>		
6	30	30	2	WELDER					8.5	7.		
7	30	30	3	WELDER	(W26) CC	L 121-20	1		12.5			
8	30	30	3	WELDER	(W26) CC	L 121-20	1	1	12.5	y 3 \		
9	30	30	3	WELDER					12.5	\		
10	30	30	3	WELDER					12.5			
11	30	30	3	WELDER					12.5)		
12	30	30	3	WELDER					12.5			
13	30	30	2	WELDER					8.5	<u> </u>		
14	30	30	3	WELDER	\ /		5		12.5	<u> </u>		
15	30			SPARE					70			
16	30	30	3	SPARE					7.0			
17 18	30	30	3	SPARE SPARE					7.0 7.0			
19	200	150	3	SPARE					30.0			
20	200	125	3	SPARE					15.0			
21	100	100	3	SPARE					15.0			
22	60	60	3	SPARE					10.0			
23	60	50	3	SPARE					10.0			
24	30	30	3	SPARE					7.0			
							TOTAL:	4	50.6	KVA		
OTES:							ABBREVIATI	IONS:				
	BRANCH CIF				North M. Martin St.	COLUMN TWO IS	G - GFCI BRI	EAKER				
LOCI	K-OUT DEVI	CE CAPAB	LE OF AC	CEPTING A	PADLO	K.	A - AFCI					
							L - LOCKOUT					
							S - SHUNT TI			DEALCED		
							C - COMBINA				/CD	
							E - ELECTRO				NEK	
							MLO - MAIN			\		

				В	RANG	CH CIF	RCUIT P	ANELB	OARD				
V	OLTAG	E	3 PHASE POLES		MAI	IN AMF	PS	MAIN	TYPE	A. I. RATING	M	OUNTI	NG
2	277/480		4 WIRE 72			400			1LO	65,000	S	URFA	ÇE
POLE		KER	LOAD SERVED			PH/	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAD OLIVED	KV	A	Α	В	С	KVA	EGAB GERVEB	TRIP	Р	NO.
1	20	3	WELDING STATION HOO		_	4.6			2.3	WELDING STATION HOOD	20	3	2
3	-	-	-	2.3	_		4.6		2.3	-	-	-	4
5	-	-	-	2.3	_			4.6	2.3	-	-	-	6
7	20	3	WELDING STATION HOO		_	4.6			2.3	WELDING STATION HOOD	20	3	8
9	=	-	-	2.3			4.6		2.3	-	-	-	10
11	-	-	-	2.3				4.6	2.3	-	-	-	12
13	20	3	WELDING STATION HOO	D 2.3		4.6			2.3	WELDING STATION HOOD	20	3	14
15	-		-	2.3	_		4.6		2.3	-	-	-	16
17	-	-	-	2.3				4.6	2.3	-	-	1-	18
19	20	3	WELDING STATION HOO	D 2.3		4.6			2.3	WELDING STATION HOOD	20	3	20
21	-	-	-	2.3			4.6		2.3	-	-	-	22
23	-	-	-	2.3				4.6	2.3	-	-	-	24
25	20	3	WELDING STATION HOO	D 2.3		4.6			2.3	WELDING STATION HOOD	20	3	26
27	-	-	-	2.3			4.6		2.3	-	-	-	28
29	_	1	-	2.3				4.6	2.3	-	-	-	30
31	20	3	WELDING STATION HOO	D 2.3		4.6			2.3	WELDING STATION HOOD	20	3	32
33	-	I	-	2.3			4.6		2.3	-	-	-	34
35	-	-	-	2.3	_			4.6	2.3	-	-	-	36
37	20	3	WELDING STATION HOO		_	4.6			2.3	WELDING STATION HOOD	20	3	38
39	-	-	-	2.3	_		4.6		2.3	-	-	-	40
41	-	-	-	2.3	_			4.6	2.3	-	-	-	42
43	20	3	WELDING STATION HOO			4.6	4.0		2.3	WELDING STATION HOOD	20	3	44
45 47	-		-	2.3	-		4.6	4.6	2.3	=	-	1/2	46 48
49	15	-	- OVERHEAD DOOR 503	0.9	-	5.1		4.6	2.3	PLACMA CUTTING TABLE	25	2	50
51	15	3	OVERHEAD DOOR 592	0.9	-	J. I	5.1		4.2	PLASMA CUTTING TABLE	25		52
53	-	1	_	0.9	_		J. I	4.8	3.9	PLASMA TABLE 4510	20	3	54
55	20	1	SPARE	0.5	_	4.4		7.0	3.9	-	-	-	56
57	20	1	SPARE	0.5	_	н. т	4.4		3.9	-	_	-	58
59	20	1	SPARE	0.5	_		11	1.0	0.5	SPARE	20	1	60
61	20	1	SPARE	0.5	_	1.0			0.5	SPARE	20	1	62
63	20	1	SPARE	0.5			1.0			SPARE	20	1	64
65	20	1	SPARE	0.5				1.0	0.5	SPARE	20	1	66
67	20	1	SPARE	0.5	-	1.0			0.5	SPARE	20	1	68
69	20	1	SPARE	0.5			1.0		0.5	SPARE	20	1	70
71	20	1	SPARE	0.5				1.0	0.5	SPARE	20	1	72
			PHASE TOTAL			48.3	48.3	44.6		TOTAL: 141.3	KVA		
DEAL	CFR AF	BREV	IATIONS: G - GFCI: A -	AFCI: L	- LO	CKOU	T: S - S	HUNT T	RIP: C -	COMBINATION GFCI/AFCI;	E - ELE	CTRO	NIC

POLE NO.	LTAGE 20/208 BREA			1			L W	.LAE	3.L					DIAGRAM AND PANEL
POLE NO.	0/208 BREA			1	NO R								_	
POLE NO.	0/208 BREA				1010	MA	L F	OV	VEF	2			9	SCHEDULES
POLE NO.	0/208 BREA				BRAN	VCH CIF	RCUIT P	ANELBO	DARD					GENERAL NOTES:
POLE NO.	BREA		3 PHASE	POLES	MA	AIN AMF	PS	MAIN	TYPE	A. I. RATING	M	10UNTI	VG	DENTE IN LETTE OF LO.
NO.			4 WIRE	72		250			CB	22,000		SURFAC		DEFED TO CHEETO FORCAND FOR ADDITIONAL
			LOAD	SERVED /	$\sim\sim$	_	ASE LOA			LOAD SERVED			POL€.	REFER TO SHEETS E002 AND E600 FOR ADDITIONAL
1 1	TRIP	P			KVA	J A	В	С	KVA		TRIP		NO.	GENERAL NOTES.
	20G			ING BOOTH	0.8	1.0	4.0		0.2	EQUIP: EF-106A	20	2	2	
	20G 20G			ING BOOTH OING BOOTH	0.8)	1.0	1.2	0.2	EQUIP: EF-106B	20	1	4 6	
	20G	1		ING BOOTH	0.8	2.0		1.2	1.2	EQUIP: BELT SANDER (W1)	20G	1	8	
	20G	1		ING BOOTH	0.8	2.0	3.0		2.2	EQUIP: IRONWORKER (W8)	30	2	10	
	20G			ING BOOTH	0.8)	0.0	3.0	2.2	-	-		12	
	20G			ING BOOTH	0.8	1.6		0.0	0.8	EQUIP: BAND SAW (W5)	20	3	14	
	20G			ING BOOTH	0.8	\	1.6		0.8	-	-	-	16	
	20G			ING BOOTH	0.8)		1.6	0.8	-	-	12	18	
19	20G	1	REC WELD	ING BOOTH	0.8	2.3			1.5	EQUIP: PLASMA TABLE	20	1	20	
21	20G			ING BOOTH	0.8		2.4		1.6	EQUIP: HORIZONTAL BANDSAW	20	3	22	
	20G			THIS BOOTH	0.8	<		2.4	1.6	-	-	-	24	
	30	3	REC: SHEA	AR (W9)	2.9	4.5			1.6	-	-	-	26	
27	-	-	-		2.9)	4.1		1.2	EQUIP: TRAC AND TORCH TABLE	20	1	28	
29	-	-	-		2.9	5		3.9	1.0	EQUIP: VERTEX 360 120V		1	30	
	20G		REC: SHEA		1.5	\(1.7			0.2	EQUIP: VERTEX 360 208V		1	32	
	30		EQUIP: GRE	EN LAYTHE (W3))	1.4	4.4	0.2	FOURD MILLED LIVE ADO	20	1	34	
35 (-	-	-		1.2	1.9		1.4	0.2	EQUIP: MILLER LIVE ARC EQUIP: PEDESTAL GRINDER (W27)		3	36 38	
	30	3	EQUIP: MIL	1 (\\/\/4)	0.4	1.5	1.1		0.7	-	-	-	40	
41(-	-	-	L (VV+)	0.4	7	1.1	1.1	0.7	-	_	_	42	
43	-	-	-		0.4	1.1			0.7	EQUIP: PEDESTAL GRINDER (W27)	15	3	44	
45	30	3	SPARE		1.0)	1.7		0.7	-	-	-	46	
47	-	-	_		1.0)		1.7	0.7	-	-	1-	48	
49	-	-	-		1.0	< 1.7			0.7	EQUIP: PEDESTAL GRINDER (W27)	15	3	50	
_	20G	1		ER COOLER	1.2)	1.9		0.7	-	-	-	52	
	20	4	REC: GEN		0.7	120		1.4	0.7	EQUIP: PED GRINDER TUNG (W18)	20	1	54	
	20G 20G	_	REC: COL		0.4	2.8	0.9		2.4 0.5	EQUIP: DRILL PRESS (W2)		3	56 58	
	20G	1	REC: COL		0.4	₹	0.9	0.9	0.5	-	-	_	60	
	20G	1	REC: COL		0.4	0.9		5.0	0.5	-	-	15	62	
	20G	1	SPARE				1.0		0.5	EQUIP: ANVIL ON STAND (W19)	20	1	64	
	20G		SPARE	/3	0.5			1.2	0.7	REC: GEN RM 107A	20	1	66	
	20G		SPARE		0.5	1.0				REC: GEN RM 107	20	1	68	
	20G		SPARE		0.5		1.0			REC: GEN RM 107	20	1	70	
71	20G	1	SPARE	LIAGE TOTAL O	0.5			1.0	0.5	REC: GEN RM 105A	20	1	72	
	ABLE		/IATIONS: G	HASE TOTALS: B - GFCI; A - AF N CIRCUIT BRE	CI; L - L		T; S - SI		RIP; C -	TOTAL: 64.4 COMBINATION GFCI/AFCI;	KVA E - ELE	ECTRO	NIC	
J	U BE	IT TW	O(2) WELDI		ADRAPLI	EX REC	EPTACL	ES PER	RCIRCL	VICE SAPABLE OF ASCER			XXXXX	$\frac{1}{2}$

WELDING LAB DISTRIBUTION EQUIPMENT

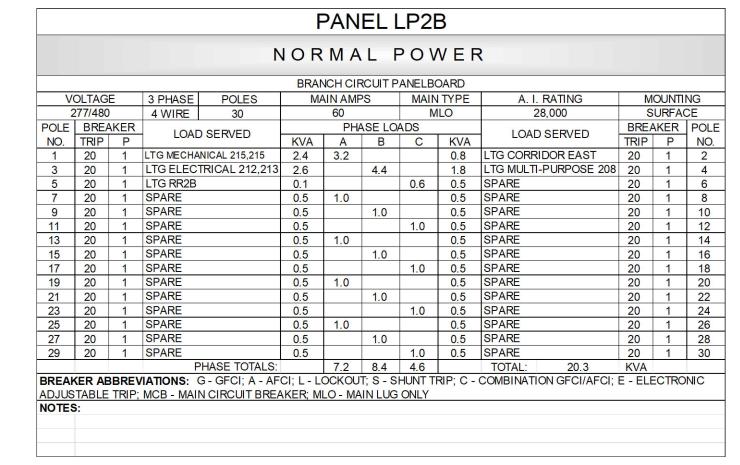




	0. = 1.0						RCUIT P					0111		
	OLTAGE		3 PHASE	POLES	IVI/	AIN AME	-8		ITYPE	A. I. RATING	-	MOUNTING SURFACE		
	277/480		4 WIRE	30		60	40F LO		ILO	28,000	_			
POLE	BREA TRIP	P	LOAD	SERVED	1/1//		ASE LO		IZVA	LOAD SERVED		AKER	POLE	
NO. 1	20	1	LTG COPP	RIDOR WEST	KVA 1.1	1.2	В	С	0.1	LTG RR1A	TRIP 20	1 1	NO.	
3	20	1		OING 105,107	2.9	1.2	3.4		0.1	SPARE	20	1	4	
5	20	1	SPARE	0110 100, 107	0.5		3.4	1.0	0.5	SPARE	20	1	6	
7	20	1	SPARE		0.5	1.0		1.0	0.5	SPARE	20	1	8	
9	20	1	SPARE		0.5	1.0	1.0		0.5	SPARE	20	1	10	
11	20	1	SPARE		0.5		1.0	1.0	0.5	SPARE	20	1	12	
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14	
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16	
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18	
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20	
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22	
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24	
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26	
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28	
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30	
				PHASE TOTALS:		5.2	7.4	5.0		TOTAL: 17.6	KVA			
	TABLE			G - GFCI; A - AF N CIRCUIT BRE					RIP; C -	COMBINATION GFCI/AFCI;	E-ELI	ECIRC	DNIC	

V	OLTAG	E	3 PHASE	POLES	I M	AIN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	277/480		4 WIRE	30		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	1015	050/50		PH	ASE LO	ADS		1010000000	BREAKER P		POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG DIESE	L 112, 113	2.7	3.3			0.6	LTG AUTOMOTIVE 108,109	20	1	2
3	20	1	LTG EAST	CORRIDOR	1.2		1.4		0.2	LTG FIRST AID 111, 111A	20	1	4
5	20	1	LTG RR1B		0.3			2.9	2.7	LTG FIRE EMG. 115,116	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
			_	PHASE TOTALS:		7.3	5.4	6.9		TOTAL: 19.7	KVA		
			/IATIONS:		CI; L - L	OCKOU	T; S - S	HUNT T	RIP; C -	TOTAL: 19.7 COMBINATION GFCI/AFCI;		CTRC	NIC

				N	IOR	MA	LF	OV	VEF	ξ			
					BRAI	NCH CIF	RCUIT P	ANELB	DARD				
V	OLTAG	E	3 PHASE	POLES	MA	AIN AMF	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	277/480)	4 WIRE	30	(5.6)			N	ILO	28,000		SURFACE	
POLE	BRE	AKER	LOAD	SERVED		PHASE LOA				LOAD SERVED	BREAKER		POLE
NO.	TRIP	Р	LOAD	OLIVED	KVA	Α	В	С	KVA	EOAD GERVED	TRIP	Р	NO.
1	20	1	LTG MEDIA	CENTER 216	0.9	1.7			0.9	LTG ADMIN 200	20	1	2
3	20	1	LTG AUTO.	TECH. 110	3.7		7.4		3.8	LTG CORRIDOR WEST	20	1	4
5	20	1	LTG RR2A		0.2			3.8	3.6	LTG CARPENTRY 203	20	1	6
7	20	1	LTG CARPE	NTRY 202	0.6	1.1			0.5	LTG EMR 207	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
				ASE TOTALS:		5.8	11.4	7.8		TOTAL: 25.0	KVA		
				- GFCI; A - AF			T; S - S	HUNT T	RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRC	NIC



					BRAI	VCH CIF	RCUIT P	ANELBO	OARD				
V	OLTAGI	Ē	3 PHASE	POLES	M	AIN AMF	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	77/480	60	4 WIRE	30		60		N	ILO	28,000	SURFAC		CE
POLE	BREA	KER	LOAF	D SERVED		PH/	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SEKVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG DIGITA	AL DESIGN 312	1.2	2.5			1.3	LTG AVIATION 313, 314	20	1	2
3	20	1	LTG CULIN	VARY LAB 315	1.5		1.7		0.2	LTG RR3A	20	1	4
5	20	1	LTG CULIN	VARY 317	2.4			3.5	1.1	LTG CULINARY LAB 316	20	1	6
7	20	1	LTG CORR	RIDOR WEST	1.9	2.3			0.4	LTG STAFF 300	20	1	8
9	20	1	LTG CULIN	VARY ARTS 321	0.4		2.8		2.4	LTG COMMON C101	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
				PHASE TOTALS:		7.8	7.4	7.5		TOTAL: 22.7 COMBINATION GFCI/AFCI;	KVA		

					BRAI	VCH CIF	RCUITP	ANELBO	DARD				
VC	OLTAG	E	3 PHASE	POLES	MA	AIN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	77/480	H	4 WIRE	30		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOAF	0.000/00		PHA	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG VIDEO	D LAB 310	2.3	5.2			2.8	LTG HEAVY EQUIP. 307,308	20	1	2
3	20	1	LTG CORR	IDOR C302	0.6		1.7		1.1	LTG MULTI-PURPOSE 302	20	1	4
5	20	1	LTG RR3B		0.3			2.9	2.6	LTG MULTI-PURPOSE 302	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
				PHASE TOTALS:		9.2	5.7	6.9		TOTAL: 21.8 COMBINATION GFCI/AFCI;	KVA		

					BRAI	ICH CIF	RCUIT P	ANELBO	DARD				
V	OLTAG		3 PHASE	POLES	MA	IN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	77/480		4 WIRE	30		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	1045	050/50		PH	ASE LO	ADS		LOAD OFFICE	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG ELECT	RONICS 419,420	2.8	3.6			0.8	LTG CLASSROOM 421	20	1	2
3	20	1	LTG AUTON	MATION 423	2.2		3.9		1.8	LTG CORRIDOR C400	20	1	4
5	20	1	LTG AUTON	MATION 424	2.2			3.2	1.0	LTG LAW 404, 405	20	1	6
7	20	1	LTG 400, 40	2, 400A-D, 404	1.1	1.6			0.5	SPARE	20	1	8
9	20	1	LTG RR4A SPARE		0.1		0.6		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
			P	HASE TOTALS:		8.1	7.6	7.2		TOTAL: 22.9	KVA		

					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAGE		3 PHASE	POLES	MA	AIN AME	PS	MAIN	TYPE	A. I. RATING	M	OUNTI	NG
2	277/480		4 WIRE	30		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOAF	SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG CORR	IDOR C403	1.2	1.8			0.5	LTG LAW 406,407	20	1	2
3	20	1	LTG MEDIC	CAL 417,418	2.1		3.5		1.4	LTG MEDICAL 415,416	20	1	4
5	20	1	LTG MEDIC	CAL 413,414	1.3			1.6	0.3	LTG RR4B	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15												1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
19	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	20
21	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	22
23	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	24
25	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	26
27	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30
				HASE TOTALS:		5.8	7.5	5.6		TOTAL: 18.8	KVA		
									RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRC	NIC
ADJUS	TABLE S:	TRIP;	MCB - MAII	N CIRCUIT BREA	AKER; MI	LO - MA	IN LUG	ONLY					

					BRAN	NCH CIF	RCUIT P	ANELBO	DARD				
V	OLTAGE		3 PHASE	POLES	MA	IN AMF	S	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	277/480	ì	4 WIRE	18		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOAF	SERVED		PHA	ASE LO	NDS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	P	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG SITE F		0.5	1.0			0.5	SPARE	20	1	2
3	20	1	LTG ENTRY	LANDSCAPE	0.1		0.6		0.5	SPARE	20	1	4
5	20	1	LTG EXTER	RIOR CANOPY	1.2			1.7	0.5	SPARE	20	1	6
7	20	1	LTG EXTER	RIOR CANOPY	0.5	1.0			0.5	SPARE	20	1	8
9	20	1	LTG EXTER	RIOR FLOOD	0.5		1.0		0.5	SPARE	20	1	10
11	20	1	LTG EXTER	RIOR PARKING	0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	0.5			0.0	SPD	30	3	14
15	20	1	SPARE		0.5		0.5		0.0	-	-	-	16
17	20	1	SPARE		0.5			0.5	0.0	-	-	-	18
			P	HASE TOTALS:		2.5	2.1	3.2		TOTAL: 7.8	KVA		
	TABLE			G - GFCI; A - AFON CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFO	CI; E - ELE	CTRC	ONIC

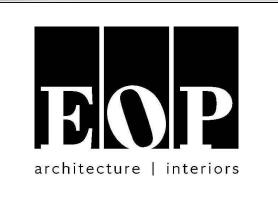
						PAN	IEL	SLB	}				
				٨	I O R	МА	L F	POV	VEF	?			
					BRAN	ICH CIF	RCUIT P	ANELBO	DARD				
V	OLTAG	E	3 PHASE	POLES	MA	IN AMF	PS	MAIN	TYPE	A. I. RATING	M	OUNTI	NG
2	277/480)	4 WIRE	18		60		M	LO	28,000	S	URFAC	CE
POLE	BREA	AKER	LOAD	SERVED		PH/	ASE LO	ADS		LOAD SERVED	BRE	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG SITE F	PLAN SOUTH	0.3	1.2			0.9	LTG EXTERIOR PARKING	20	1	2
3	20	1	LTG SITE I	PLAN EAST	0.1		0.8		0.7	LTG EXTERIOR PARKING	20	1	4
5	20	1	LTG EXTE	RIOR CANOPY	0.5			1.0	0.5	SPARE	20	1	6
7	20	1	LTG EXTE	RIOR CANOPY	0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	0.5			0.0	SPD	30	3	14
15	20	1	SPARE		0.5		0.5		0.0	=0	_	_	16
17	20	1	SPARE		0.5			0.5	0.0	E.	-	-	18
			F	PHASE TOTALS:		2.7	2.3	2.5		TOTAL: 7.5	KVA		
	TABLE			G - GFCI; A - AFC N CIRCUIT BREA		OCKOU!	16	HUNT TI	₹P; C -	COMBINATION GFCI/AFCI	1000000	CTRO	NIC

COMBINED CTE ELECTRICAL ONE-LINE SCHOOL

BG# 22-167 100 Midland Ave, Lexington, KY 40508

BID DOCUMENTS

	ŀ	REVISIONS
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



PROJECT TEAM

EOP Architects 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380



Element Design, PLLC. 366 S. Broadway Lexington, KY 40508

Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504





Indianapolis, IN 46202

302 N. East Street, Studio One



Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

KEYPLAN

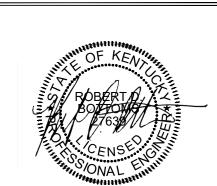
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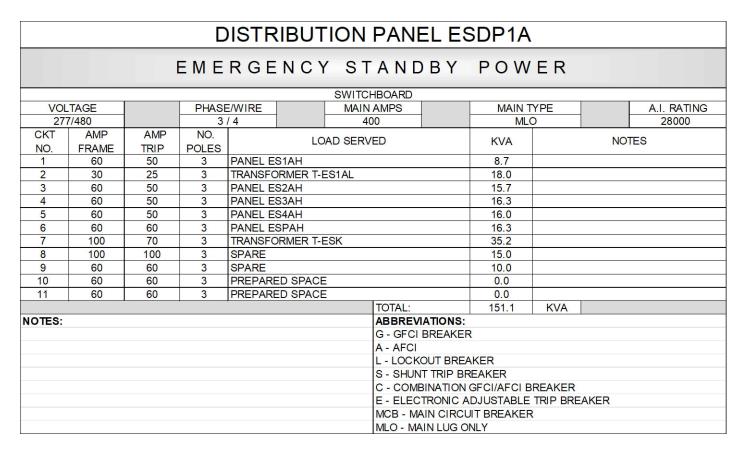
Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any

variation from the dimensions and conditions shown by these drawings. Job Number 2150

Drawn By JHS Checked By RDB 09/28/2022



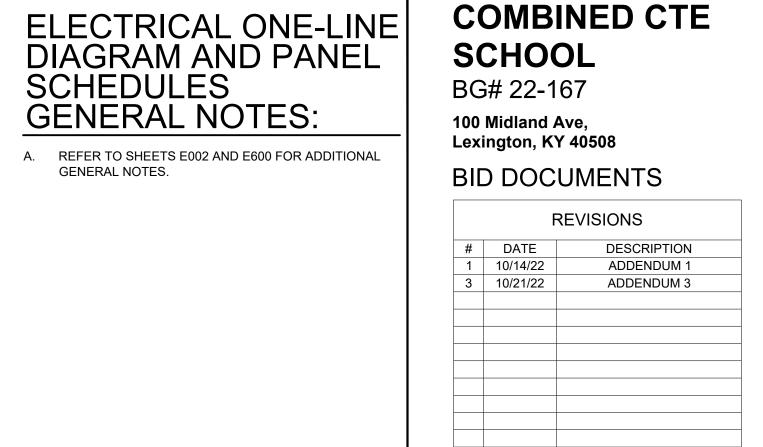
ELECTRICAL PANEL SCHEDULES



			D	ISTR	IBUT	ION	PAN	EL ES	SDP2B			
			ЕМЕ	RGE	NCY	ST	AND	ВҮ	POW	ER		
						SWITCH	HBOARD					
VOL	TAGE		PHASE	E/WIRE		MAIN	AMPS		MAIN	TYPE		A.I. RATING
277	7/480		3	/ 4		60	00		MC	В		65000
CKT NO.	AMP FRAME	AMP TRIP	NO. POLES		LOA	AD SERV	'ED		KVA		NC	OTES
1	60	60	3	SLIDGE D	ROTECTIO	N DEVIC	` <u></u>		0.0			1
2	60	50	3	PANEL ES		IN DEVIC	,L		15.9			1
3	60	50	3	PANEL ES					16.6			
4	60	50	3	PANEL ES					17.6			
5	60	50	3	PANEL ES					16.2			
6	60	60	3	PANEL ES					16.2			
7	200	125	3		R 4 (PASS	ENGER)			54.0			2
8	200	125	3		R 5 (PASS		<u> </u>		54.0			2
9	400	400	3	DISTRIBU	ITION PAN	ELBOARI	D ESDP1A	1	151.1			
10	100	100	3	SPARE					15.0			
11	60	60	3	SPARE					10.0			
12	60	60	3	PREPARE	D SPACE				0.0			
13	60	60	3	PREPARE	D SPACE				0.0			
							TOTAL:		366.6	KVA		
NOTES:								IATIONS:				
	DEVICE TO				ACENT TO)		BREAKER	3			
	RIBUTION P						A - AFCI					
2. ELEV	ATORS 4 A	ND 5 ARE I	NON-CON	CURRENTI	LOADS			OUT BREA				
								IT TRIP BE				
									GFCI/AFCI E			
									DJUSTABLE		REAKER	
									IIT BREAKER	₹		
							MLO - M	AIN LUG O	NLY			

POLES 42 D SERVED IN COOLER R BLOWER COIL R COND. UNIT IN FREEZER ER BLOWER COIL		AIN AMF 150 PH. A 1.7		M	OARD I TYPE CB KVA 0.5 0.5 0.5 0.5	A. I. RATING 22,000 LOAD SERVED (#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR		OUNTI FLUSH AKER P 1	POLE NO. 2
42 D SERVED IN COOLER R BLOWER COIL R COND. UNIT IN FREEZER R BLOWER COIL	KVA 1.2 0.2 1.4 1.4 1.2 1.6	150 PH. A 1.7	ASE LO B	ADS C	KVA 0.5 0.5 0.5	22,000 LOAD SERVED (#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR	BREATRIP 20 20 20	FLUSH AKER P 1	POLE NO. 2
O SERVED IN COOLER R BLOWER COIL R COND. UNIT IN FREEZER R BLOWER COIL	1.2 0.2 1.4 1.4 1.4 1.2	PH. A 1.7	0.6	ADS C	KVA 0.5 0.5 0.5	LOAD SERVED (#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR	TRIP 20 20 20	P 1	POLE NO. 2
IN COOLER R BLOWER COIL R COND. UNIT IN FREEZER R BLOWER COIL	1.2 0.2 1.4 1.4 1.4 1.2	A 1.7	0.6	С	0.5 0.5 0.5	(#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR	TRIP 20 20 20	P 1 1	NO. 2 4
IN COOLER R BLOWER COIL R COND. UNIT IN FREEZER R BLOWER COIL	1.2 0.2 1.4 1.4 1.4 1.2	1.7	0.6		0.5 0.5 0.5	(#24) REFRIGERATOR (#24) REFRIGERATOR (#24) REFRIGERATOR	20 20 20	1	2 4
R BLOWER COIL R COND. UNIT IN FREEZER R BLOWER COIL	0.2 1.4 1.4 1.4 1.2 1.6	1.8		1.8	0.5 0.5	(#24) REFRIGERATOR (#24) REFRIGERATOR	20 20	1	4
R COND. UNIT	1.4 1.4 1.4 1.2 1.6			1.8	0.5	(#24) REFRIGERATOR	20	- 15	
IN FREEZER ER BLOWER COIL	1.4 1.4 1.2 1.6		1.8	1.8		Control of the Contro		1	^
IN FREEZER ER BLOWER COIL	1.4 1.2 1.6		1.8		0.5	(#24) REFRIGERATOR	20		6
R BLOWER COIL	1.2 1.6		1.8				20	1	8
R BLOWER COIL	1.6				0.5	(#24) REFRIGERATOR	20	1	10
				1.7	0.5	(#24) REFRIGERATOR	20	1	12
R BLOWER COIL	16	2.1			0.5	(#24) REFRIGERATOR	20	1	14
R BLOWER COIL	1.0		2.1		0.5	(#24) REFRIGERATOR	20	1	16
	1.7			2.8	1.2	(#76) REFRIG. MERCHANT	20	1	18
	1.7	2.1			0.4	(#87) U.C. REFRIG.	20	1	20
	1.7		2.1		0.4	(#87) U.C. REFRIG.	20	1	22
T CHILLER FRZ.	1.2			2.0	0.7	(#65) REACH-IN FREEZER	20	1	24
	1.2	1.7			0.5	(#66) REACH-IN REFRIG.	20	1	26
H-IN REFRIG.	0.5		1.9		1.4	(#119) ROLL-IN REFRIG.	20	1	28
ER FREEZER	1.2			2.6	1.4	(#14) ICE MAKER	20	1	30
	1.2	1.5			0.3	(#90) U.C. FREEZER	20	1	32
	0.5		1.0		0.5	WALK-IN FRZ HEAT TAPE	20	1	34
	0.5			1.0	0.5	SPARE	20	1	36
	0.5	1.0			0.5	SPARE	20	1	38
	0.5		1.0		0.5	SPARE	20	1	40
	0.5			1.0	0.5	SPARE	20	1	42
		11.8	10.4	12.9		TOTAL: 35.2	KVA		
	CH-IN REFRIG. LER FREEZER PHASE TOTALS: - GFCI; A - AFCI; CIRCUIT BREAK	1.2 CH-IN REFRIG. 0.5 LER FREEZER 1.2 1.2 0.5 0.5 0.5 0.5 0.5 0.5 0.5 CHASE TOTALS: GFCI; A - AFCI; L - LOC CIRCUIT BREAKER; MLC	1.2 1.7 CH-IN REFRIG. 0.5 LER FREEZER 1.2 1.2 1.5 0.5 0.5 0.5 0.5 0.5 1.0 0.5 PHASE TOTALS: 11.8 CIRCUIT BREAKER; MLO - MAIN	1.2 1.7 CH-IN REFRIG. 0.5 1.9 LER FREEZER 1.2 1.5 0.5 1.0 0.5 1.0 0.5 1.0 0.5 1.0 PHASE TOTALS: 11.8 10.4 - GFCI; A - AFCI; L - LOCKOUT; S - SHUI	1.2 1.7	1.2 1.7 0.5 CH-IN REFRIG. 0.5 1.9 1.4 LER FREEZER 1.2 2.6 1.4 1.2 1.5 0.3 0.5 1.0 0.5 0.5 1.0 0.5 0.5 1.0 0.5 0.5 1.0 0.5 PHASE TOTALS: 11.8 10.4 12.9 - GFCI; A - AFCI; L - LOCKOUT; S - SHUNT TRIP; C - COM- CIRCUIT BREAKER; MLO - MAIN LUG ONLY	1.2 1.7 0.5 (#66) REACH-IN REFRIG. CH-IN REFRIG. 0.5 1.9 1.4 (#119) ROLL-IN REFRIG. LER FREEZER 1.2 2.6 1.4 (#14) ICE MAKER 1.2 1.5 0.3 (#90) U.C. FREEZER 0.5 1.0 0.5 WALK-IN FRZ HEAT TAPE 0.5 1.0 0.5 SPARE 0.5 CFC; A - AFC; L - LOCKOUT; S - SHUNT TRIP; C - COMBINATION GFCI/AFC; E - ELCIRCUIT BREAKER; MLO - MAIN LUG ONLY	1.2 1.7 0.5 (#66) REACH-IN REFRIG. 20 CH-IN REFRIG. 0.5 1.9 1.4 (#119) ROLL-IN REFRIG. 20 LER FREEZER 1.2 2.6 1.4 (#14) ICE MAKER 20 1.2 1.5 0.3 (#90) U.C. FREEZER 20 0.5 1.0 0.5 SPARE 20 0.5 SPARE 20 0.5 1.0 0.5 SPARE 20	1.2 1.7 0.5 (#66) REACH-IN REFRIG. 20 1 CH-IN REFRIG. 0.5 1.9 1.4 (#119) ROLL-IN REFRIG. 20 1 LER FREEZER 1.2 2.6 1.4 (#14) ICE MAKER 20 1 0.5 1.0 0.5 WALK-IN FRZ HEAT TAPE 20 1 0.5 1.0 0.5 SPARE 20 1

			FN	/FRGE	NC	YS	ТА	ND	ΒY	POWER			
				WILKOL				110		TOWER			
					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAG	E	3 PHASE	POLES	MA	AIN AMF	PS	MAIN	I TYPE	A. I. RATING	M	OUNTI	NG
2	277/480	П	4 WIRE	18		50		N	1LO	28,000	S	URFA	CE
POLE	BRE/	KER	LOAF	SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	AKER	PC
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	N
1	20	1	LTG MECH	. 123	0.4	1.0			0.6	LTG STORAGE 124	20	1	
3	20	1	LTG ADMIN	AREA 100	1.0		1.1		0.1	LTG MDF 102	20	1	-
5	20	1	LTG MECH	/ELEC 103	0.1			0.6	0.5	SPARE	20	1	
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	1
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	1
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	1
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	1
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	1
			P	HASE TOTALS:		3.0	3.1	2.6		TOTAL: 8.7	KVA		
BREAK	(ER AE	BREV	IATIONS: (G - GFCI; A - AF	CI; L - L	OCKOU	T; S - S	HUNT T	RIP; C -	COMBINATION GFCI/AF	CI; E - ELE	ECTRO	NIC
		TRIP;	MCB - MAII	N CIRCUIT BREA	AKER; M	LO - MA	IN LUG	ONLY					
NOTES	3:												



NEW

SCHOOL

COMBINED CTE

			E	MERGE	NC	Y S	ТА	N D	ВΥ	POWER			
					BRAI	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAG		3 PHASE	POLES	MA	AIN AME	PS	MAIN	TYPE	A. I. RATING	M	OUNTI	NG
2	77/480	II.	4 WIRE	18		50		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOAF) SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	KER	POL
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO
1	20	1	LTG EMR 1	120	0.1	0.2			0.1	LTG MECH. 121	20	1	2
3	20	1	LTG XFRM	122	0.4		0.9		0.5	SPARE	20	1	4
5	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	3.5			3.0	TRANSFORMER T-ES1BL	25	3	14
15	20	1	SPARE		0.5		4.7		4.2	-	-	3	16
17	20	1	SPARE		0.5			2.6	2.1	-	-	3	18
			F	PHASE TOTALS:		4.7	6.6	4.6		TOTAL: 15.9	KVA		
	TABLE			G - GFCI; A - AF <u>N CIRCUIT BRE</u>					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	ECTRO	NIC

								S2A	•••				
			EN	MERGE	NC	Y S	ТА	N D	ВΥ	POWER			
					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAG	Ē	3 PHASE	POLES	MA	AIN AMF	PS	MAIN	TYPE	A. I. RATING	M	OUNTI	NG
2	77/480		4 WIRE	18		50		N	1LO	28,000	S	URFA	CE
POLE	BREA	KER	LOAD	SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	AKER	POLE
NO.	NO. TRIP P KVA A B C KVA												
1	1 20 1 20 222												2
3	20 1 SPARE 0.5 1.0 0.5 SPARE									20	1	4	
5	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	6
7													8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	3.4			2.9	TRANSFORMER T-ES2AL	25	3	14
15	20	1	SPARE		0.5		3.5		3.0	-	-	3	16
17	20	1	SPARE		0.5			3.5	3.0	-	-	3	18
			F	PHASE TOTALS:		4.6	5.5	5.5		TOTAL: 15.7	KVA		
				G - GFCI; A - AF N CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELI	ECTRO	NIC
NOTES		, ,	WOD WIN	TOTAL DILL	utert, ivi	LO 1111		OHL					
	•												

					P	ANE	ELE	S2B	Н						
			ΕN	MERGE	NC	Y S	ЗΤА	N D	ВҮ	POWER					
					BRAN	NCH CIF	RCUIT P	ANELBO	DARD						
V	OLTAG	E	3 PHASE	POLES	MA	AIN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG		
2	277/480	ĥ	4 WIRE	18		50		M	ILO	28,000	S	URFA	CE		
POLE	BREA	KER	LOAD	SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE		
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.		
1	20	LTG MECH. 210	20	1	2										
3	20	1 LTG ELEC. 210A 0.3 0.8 0.5 SPARE										1	4		
5	20 1 SPARE 0.5 1.0 0.5 SPARE												6		
7															
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10		
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12		
13	20	1	SPARE		0.5	4.0			3.5	TRANSFORMER T-ES2BL	25	3	14		
15	20	1	SPARE		0.5		4.2		3.7	-	-	3	16		
17	20	1	SPARE		0.5			3.4	2.9	-		3	18		
			Р	HASE TOTALS:		5.3	6.0	5.4		TOTAL: 16.6	KVA				
	TABLE			G - GFCI; A - AF N CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRO	NIC		

			_ L IV	ILKOL	110		, , , ,	110	י ט	POWER			
					1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			ANELBO					
V	OLTAG	E	3 PHASE	POLES	MA	AIN AME	S	MAIN	ITYPE	A. I. RATING		OUNTI	
2	77/480	II.	4 WIRE	18		50		IV	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOAD	SERVED		PH/	SE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р			KVA	Α	В	С	KVA	EGAB SERVED	TRIP	Р	NO.
1	20	1	LTG ELEC.	320	0.4	0.5			0.1	LTG IDF3A 319	20	1	2
3	20	1	LTG. MECH.	322	0.1		0.6		0.5	SPARE	20	1	4
5	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	3.9			3.4	TRANSFORMER T-ES3AL	25	3	14
15	20	1	SPARE		0.5		3.7		3.2	-	_	3	16
17	20	1	SPARE		0.5			3.5	3.0	-	-	3	18
			Ph	HASE TOTALS:		5.4	5.3	5.5		TOTAL: 16.3	KVA		
	TABLE			- GFCI; A - AFI CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	ECTRC	NIC



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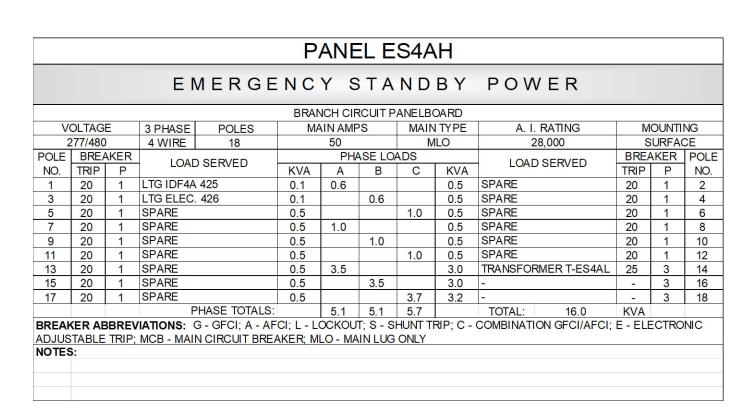
KEYPLAN

302 N. East Street, Studio One

Calvert - Independent Hardware

366 S. Broadway Lexington, KY 40508

					P	ANE	ELE	S3E	3H				
			EM	ERGE	NC	Y S	ТА	N D	ВҮ	POWER			
					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAG	E	3 PHASE	POLES	MA	IN AME	PS	MAIN	N TYPE	A. I. RATING	М	OUNTI	NG
2	277/480)	4 WIRE	18		50		N	1LO	28,000	S	URFAC	CE
POLE	BREA	AKER	LOADS	SERVED		PHA	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOADS	BERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	LTG IDF3B 3	04	0.1	0.5			0.4	LTG MECH. 305	20	1	2
3	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	4
5	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	4.3			3.8	TRANSFORMER T-ES3BL	25	3	14
15	20	1	SPARE		0.5		3.9		3.4	-	-	3	16
17	20	1	SPARE		0.5			3.9	3.4	-	-	3	18
			PH	ASE TOTALS:		5.8	5.9	5.9		TOTAL: 17.6	KVA		
	STABLE			GFCI; A - AF CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRO	NIC



			Εľ	MERGE	NC	Y S	ΤА	N D	ВҮ	POWER			
					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	DLTAG		3 PHASE	POLES	M/	AIN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
2	77/480	U.	4 WIRE	18		50		N	ILO	28,000	S	URFA	CE
POLE	BREA	KER	LOVE	O SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	JULINULD	KVA	Α	В	С	KVA	LOAD SLIVED	TRIP	Р	NO.
1	20	1	LTG IDF4B	3 409	0.1	0.6			0.5	SPARE	20	1	2
3	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	4
5	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	3.6			3.1	TRANSFORMER T-ES4BL	25	3	14
15	20	1	SPARE		0.5		3.5		3.0	-	-	3	16
17	20	1	SPARE		0.5			3.5	3.0	-	-	3	18
			F	PHASE TOTALS:		5.2	5.5	5.5		TOTAL: 16.2	KVA		
	TABLE			G - GFCI; A - AF N CIRCUIT BRE <i>A</i>					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	ECTRO	NIC

				MEDCE	NC	V C	т л	ND	DV	POWER			
				WERGE	NC	1 3) I A	ND	ВΙ	POWER			
					BRAN	NCH CIF	RCUIT P	ANELBO	OARD				
V	OLTAGI	E	3 PHASE	POLES	M/	AIN AMF	PS .	MAIN	I TYPE	A. I. RATING	M	OUNTI	NG
2	77/480	ll .	4 WIRE	18		60		IV	ILO	28,000	S	URFA	CE
POLE	BREA	KER	1001	O SERVED		PH/	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	JUNED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	SPARE		0.5	1.0			0.5	SPARE	20	3	2
3	20	1	SPARE		0.5		1.0		0.5	-	-	1	4
5	20	1	SPARE		0.5			1.0	0.5	-	-	i	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	15	3	8
9	20	1	SPARE		0.5		1.0		0.5	-	-	-	10
11	20	1	SPARE		0.5			1.0	0.5	-	-	-	12
13	30	3	SPARE		0.5	3.3			2.8	TRANSFORMER T-ESPAL	25	3	14
15	-	-	-		0.5		3.5		3.0	-	-	ı	16
17	Ţ	-	-		0.5			3.5	3.0	-	-	ı	18
				PHASE TOTALS:		5.3	5.5	5.5		TOTAL: 16.3	KVA		
BREAK	(ER AE	BREV	/IATIONS:	G - GFCI; A - AF	CI; L - L	OCKOU	T; S - S	HUNT TI	RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRO	NIC
ADJUS	TABLE	TRIP;	MCB - MAI	N CIRCUIT BREA	KER; M	LO - MA	IN LUG	ONLY					
NOTES	:												

					P	ANE	LE	SPE	3H				
			ΕN	MERGE	NC	Y S	ТА	N D	ВҮ	POWER			
					BRAN	ICH CIF	RCUIT P	ANELBO	OARD				
V	OLTAGI	E	3 PHASE	POLES	MA	IN AMF	rs	MAIN	ITYPE	A. I. RATING	М	OUNTI	NG
2	77/480)	4 WIRE	18		60		N	ILO	28,000	S	URFA	CE
POLE	BREA	AKER	LOAF	SERVED		PH	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	SPARE		0.5	1.0			0.5	SPARE	20	3	2
3	20	1	SPARE		0.5		1.0		0.5	-	_	-	4
5	20	1	SPARE		0.5			1.0	0.5	-	-	-	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	15	3	8
9	20	1	SPARE		0.5		1.0		0.5	-	-	-	10
11	20	1	SPARE		0.5			1.0	0.5	-	-	-	12
13	30	3	SPARE		0.5	3.2			2.7	TRANSFORMER T-ESPBL	25	3	14
15	-	-	-		0.5		3.5		3.0	-	-	_	16
17	-	-	-		0.5			3.5	3.0	-	-	-	18
			P	PHASE TOTALS:		5.2	5.5	5.5		TOTAL: 16.2	KVA		
				G - GFCI; A - AF N CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	ECTRO	NIC
NOTES													
1.	ALL BI	RANCH	CIRCUIT B	REAKERS SHAI	LL BE PF	ROVIDE	D WITH	LOCK-	OUT DE	VICE CAPABLE OF ACCEPT	TING A	PADL	OCK.

			Εſ	MERGE	NC	Y S	ТА	N D	ВҮ	POWER			
					BRAN	ICH CIF	RCUIT P	ANELB	OARD				
V	OLTAGI		3 PHASE	POLES	MA	IN AME	S	MAIN	I TYPE	A. I. RATING	M	OUNTI	NG
1	120/208		4 WIRE	30		100		M	ICB	22,000	S	URFA	CE
POLE	BREA	KER	1001	0.000/00		PH/	ASE LO	ADS		LOAD CEDVED	BREA	KER	PO
NO.	TRIP	Р	LOAL	D SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	N
1	20	1	REC: C100	D/ STAIR SA	0.7	1.3			0.5	REC: OFFICE RM 100B	20	1	2
3	20	1	REC: VES	TIBULE V1	0.5		1.3		0.7	REC: OFFICE RM 100B	20	1	4
5	20	1	REC: RM 1	104	0.9			1.7	8.0	REC: PRINCIPAL RM 100C	20	1	6
7	20	1	REC: RM 1	104	0.9	1.6			0.7	REC: PRINCIPAL RM 100C	20	1	8
9	20	1	REC: RM	C101	0.9		1.4		0.5	REC: PRINCIPAL RM 100C	20	1	10
11	20	1	REC: RM	C101	0.5			1.0	0.5	REC: BOOKKEEPER 100E	20	1	12
13	20	1	REC: GEN	RM 100A	0.7	1.2			0.5	REC: BOOKKEEPER 100E	20	1	14
15	20	1	REC: GEN	RM 100A	0.5		1.2		0.7	REC: RECEPTION RM 100	20	1	16
17	20	1	REC: FLOOR	RBOX/TV RM 100A	1.0			1.7	0.7	REC: RECEPTION RM 100	20	1	18
19	20	1	LTG: ADDI	RESS SIGN	0.5	1.0			~ 5	REC-RECEPTION RM 100	20	1	20
21	20	1	GEOTHERN	MAL SUMP PUMP	1.0		1.2		0.2	REC: EV4 TOP OF CAB	20	1	22
23	20	1	EV4 PIT LI	IGHTS	0.1			0.3	0.2	REC: EV5 TOP OF CAB	20	1	24
25	20	1	EV5 PIT LI	IGHTS	0.1	0.6			0.5	SPARE	20	1	26
27	20	1	BAS CTRL	. PNL RM 123	1.0		1.5		0.5	SPARE /3	20	1	28
29	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	30

					Р	ANE	EL E	S1E	3L				
			ΕN	MERGE	NC	Y S	ТА	N D	ВΥ	POWER			
					BRAN	ICH CIF	RCUITP	ANELB	OARD				
V	OLTAG	E	3 PHASE	POLES	MA	IN AMF	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
1	20/208	i.	4 WIRE	18		50		M	CB	22,000	S	URFA	CE
POLE	BREA	KER	ΙΟΔΓ	SERVED		PHA	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SLIVED	KVA	Α	В	С	KVA	EOAD SERVED	TRIP	Р	NO.
1	20	1	REC: REFF	RIG 111A	0.5	1.5			1.0	GEN. BATT. CHARGER	20	1	2
3	20	1	REC: CORI	R. C102	0.7		2.2		1.5	GEN. HEATER	20	1	4
5	20	1	REC: CORI	R. C101/C102	0.7			0.9	0.2	GEN. RECEPTACLE	20	1	6
7	20	1	REC: CORI	R. C101/V2	0.7	1.2			0.5	LTG: ADDRESS SIGN	20	1	8
9	20	1	REC: CORI	R. C102	0.7		1.7		1.0	GEOVAETWAL SUMPOUND	20	1	10
11	20	1	REC: STAI	R D RM SD	0.4			0.6	0.2	REC: EV1 TOP OF CAB	20	1	12
13	20	1	EV1 PIT LI	GHTS	0.1	0.3		\	0.2	REC: EV2 TOP OF CAB	20	1	14
15	20	1	EV2 PIT LI	GHTS	0.1		0.3		0.2	REC: EV3 TOP OF CAB	20	1	16
17	20	1	EV3 PIT LI	GHTS	0.1			0.6	0.5	SPARE	20	1	18
				PHASE TOTALS:		3.0	4.2	2.1		TOTAL: 9.3 $\sqrt{3}$	KVA		
BREAK	ER AE	BREV	IATIONS:	G - GFCI; A - AF	CI; L - LO	OCKOU	T; S - S	HUNT T	RIP; C -	COMBINATION GFCI/AFCI,	E - ELE	CTRO	NIC
ADJUS	TABLE	TRIP;	MCB - MAII	N CIRCUIT BREA	KER; MI	LO - MA	IN LUG	ONLY					
NOTES	i :												

					Р	ANE	ELE	S2A	۱L					
			ΕN	M E R G E	NC	Y S	ТА	N D	ВҮ	POW	/ E R			
					BRAN	NCH CIF	RCUIT P	ANELBO	DARD					
V	OLTAGI	E	3 PHASE	POLES	MA	AIN AME	PS	MAIN	ITYPE	A. I.	RATING	M	OUNTI	NG
•	120/208	l l	4 WIRE	18		50		M	СВ	2	2,000	S	URFA	CE
POLE	BREA	KER	LOVE	SERVED -		PH/	ASE LO	ADS		LOVE	SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SLIVLD	KVA	Α	В	С	KVA	LOAL	SLINLD	TRIP	Р	NO.
1	20	1	REC: C200	/SA	0.4	0.9			0.5	SPARE		20	1	2
3	20	1	REC: C200	/C201	0.5		1.0		0.5	SPARE		20	1	4
5	20	1	REC: C201		0.5			1.0	0.5	SPARE		20	1	6
7	20	1	REC: C201		0.5	1.0			0.5	SPARE		20	1	8
9	20G	1	REC: REFF	RIG RM200A	0.5		1.0		0.5	SPARE		20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE		20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE		20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE		20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE		20	1	18
			P	HASE TOTALS:		2.9	3.0	3.0		TOTAL:	9.0	KVA		
	TABLE			G - GFCI; A - AFON CIRCUIT BREA					RIP; C -	COMBINATI	ON GFCI/AFCI;	E - ELE	ECTRO	NIC

					Р	ANE	ELE	S2E	3L				
			ΕN	MERGE	NC	Y S	ТА	N D	ВҮ	POWER			
					BRAN	NCH CIF	RCUIT P	ANELB	OARD				
V	OLTAG	E	3 PHASE	POLES	MA	IN AME	S	MAIN	N TYPE	A. I. RATING	M	OUNTI	NG
1	120/208	3	4 WIRE	18		50		N	ICB	22,000	S	URFAC	CE
POLE	BRE/	AKER	1045) SERVED		PH/	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	REC: COR	RIDOR RM C202	0.9	1.5			0.6	BLINDS C201	15	1	2
3	20	1	REC: COR	RIDOR RM C202	0.7		1.7		1.0	BLINDS C201	15	1	4
5	20	1	REC: STAI	RDSD	0.4			0.9	0.5	SPARE	20	1	6
7	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
			F	PHASE TOTALS:		3.5	3.7	2.9		TOTAL: 10.1	KVA		
				G - GFCI; A - AF N CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	ECTRO	NIC
NOTES		,			,								

					BRAN	NCH CIF	RCUIT P	ANELBO	DARD				
	OLTAG		3 PHASE	POLES	M/	AIN AMF	PS		ITYPE	A. I. RATING		ITMUC	
1	120/208		4 WIRE	18		50		1000	CB	22,000	S	URFA	CE
POLE	BREA	KER	LOAD	SERVED		PH/	ASE LO	ADS		LOAD SERVED	BREA	KER	POLE
NO.	TRIP	Р			KVA	Α	В	С	KVA	LOAD GLIVED	TRIP	Р	NO.
1	20	1	EMER REC	C: CORR C300	0.7	1.2			0.5	SPARE	20	1	2
3	20	1	EMER REC	C: CORR C301	0.7		1.2		0.5	SPARE	20	1	4
5	20	1	EMER REC	C: CORR C300	0.5			1.0	0.5	SPARE	20	1	6
7	20	1	EMER REC	C: CORR C301	0.7	1.2			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
			F	PHASE TOTALS:		3.4	3.2	3.0		TOTAL: 9.7	KVA		
	TABLE			G - GFCI; A - AF N CIRCUIT BRE <i>i</i>					RIP; C -	COMBINATION GFCI/AFCI	E - ELE	CTRO	NIC

					BRAN	ICH CIF	RCUIT P	ANELB	DARD				
V	OLTAGI	E	3 PHASE	POLES	MA	IN AME	PS	MAIN	ITYPE	A. I. RATING	M	OUNTI	NG
	120/208	l .	4 WIRE	18		50		M	СВ	22,000	S	URFA	CE
POLE	BREA	KER	LOAF) SERVED		PHA	ASE LO	ADS		LOAD SERVED	BREA	AKER	POLE
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.
1	20	1	EMER REC	: CORR C302	0.9	1.4			0.5	SPARE	20	1	2
3	20	1	EMER REC	: CORR C302	0.9		1.4		0.5	SPARE	20	1	4
5	20	1	SPARE		0.9			1.4	0.5	SPARE	20	1	6
7	20	1	SPARE		0.9	1.4			0.5	SPARE	20	1	8
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18
			F	PHASE TOTALS:		3.8	3.4	3.4		TOTAL: 10.6	KVA		
	TABLE			3 - GECI; A - AE N CIRCUIT BRE <i>I</i>					RIP; C -	COMBINATION GFCI/AFCI;	E-ELE	-CTRC	DNIC

120/208	\/(OLTAGI	F	3 PHASE	POLES		AIN AME		ANELB	TYPE	A. I. RATING	M	OUNTI	NG
DOLE BREAKER NO. TRIP P						141/								
NO. TRIP P LOAD SERVED KVA A B C KVA TRIP P N 1 20 1 REC: CORRIDOR C400 0.5 1.0 0.5 SPARE 20 1 2 3 20 1 REC: CORRDOR C400 0.5 1.0 0.5 SPARE 20 1 2 5 20 1 REC: COMMON AREA C401 0.7 1.2 0.5 SPARE 20 1 6 7 20G 1 REC: REFRIG RM 400A 0.5 1.0 0.5 SPARE 20 1 8 9 20G 1 REC: REFRIG RM 400 0.5 1.0 0.5 SPARE 20 1 1 11 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1	POLE							ASFIO		IOD				POLI
1 20 1 REC: CORRIDOR C400 0.5 1.0 0.5 SPARE 20 1 2 3 20 1 REC: CORRDOR C400 0.5 1.0 0.5 SPARE 20 1 2 5 20 1 REC: COMMON AREA C401 0.7 1.2 0.5 SPARE 20 1 6 7 20G 1 REC: REFRIG RM 400A 0.5 1.0 0.5 SPARE 20 1 8 9 20G 1 REC: REFRIG RM 400 0.5 1.0 0.5 SPARE 20 1 1 11 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20	NO.	_		LOAL	SERVED	KVA		_		KVA	LOAD SERVED			NO.
5 20 1 REC: COMMON AREA C401 0.7 1.2 0.5 SPARE 20 1 6 7 20G 1 REC: REFRIG RM 400A 0.5 1.0 0.5 SPARE 20 1 8 9 20G 1 REC: REFRIG RM 400 0.5 1.0 0.5 SPARE 20 1 1 11 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16	1	20	1	REC: COR	RIDOR C400	0.5	1.0			0.5	SPARE	20	1	2
7 20G 1 REC: REFRIG RM 400A 0.5 1.0 0.5 SPARE 20 1 8 9 20G 1 REC: REFRIG RM 400 0.5 1.0 0.5 SPARE 20 1 1 11 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 11 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16	3	20	1	REC: COR	RDOR C400	0.5		1.0		0.5	SPARE	20	1	4
9 20G 1 REC: REFRIG RM 400 0.5 1.0 0.5 SPARE 20 1 11 12 12 1 SPARE 0.5 1.0 0.5 SPARE 20 1 12 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 12 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 14 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 14 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 18 18 18 18 18 18 18 18 18 18 18 18 18	5	20	1	REC: COMM	ON AREA C401	0.7			1.2	0.5	SPARE	20	1	6
11 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 13 13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 15 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 16	7	20G	1	REC: REF	RIG RM 400A	0.5	1.0			0.5	SPARE	20	1	8
13 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 1 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 15	9	20G	1	REC: REF	RIG RM 400	0.5		1.0		0.5	SPARE	20	1	10
15 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 10 17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 10	11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12
17 20 1 SPARE 0.5 1.0 0.5 SPARE 20 1 18	13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14
	15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16
	17	20	1						1.0	0.5	SPARE	20	1	18
PHASE TOTALS: 3.0 3.0 3.2 TOTAL: 9.3 KVA				F	PHASE TOTALS:		3.0	3.0	3.2		TOTAL: 9.3	KVA		

					•	, 11 1 6	ELE								
			EN	MERGE	NC	Y S	ТА	N D	ВҮ	POWER					
					BRAN	NCH CIF	RCUIT P	ANELB	OARD						
V	VOLTAGE 3 PHASE POLES MAIN AMPS MAIN TYPE A. I. RATING MOUNTING														
1	120/208 4 WIRE 18 50 MCB 22,000 SURFACE														
POLE	E BREAKER LOAD SERVED PHASE LOADS LOAD SERVED BREAKER POLE														
NO.	TRIP	Р	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD SERVED	TRIP	Р	NO.		
1	20	1	EMER REC	C: RM C401/402	0.7	1.2			0.5	SPARE	20	1	2		
3	20	1	EMER REC	C: RM C402	0.5		1.0		0.5	SPARE	20	1	4		
5	20	1	EMER REC	C: RM C403	0.5			1.0	0.5	SPARE	20	1	6		
7	20 1 EMER REC: RM C403 0.5 1.0 0.5 SPARE 20 20 1 EMER REC: STAIRS SD 0.4 0.9 0.5 SPARE 20												8		
9	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	10		
11	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	12		
13	20	1	SPARE		0.5	1.0			0.5	SPARE	20	1	14		
15	20	1	SPARE		0.5		1.0		0.5	SPARE	20	1	16		
17	20	1	SPARE		0.5			1.0	0.5	SPARE	20	1	18		
			F	PHASE TOTALS:		3.1	3.0	3.0		TOTAL: 9.1	KVA				
	TABLE			G - GFCI; A - AF N CIRCUIT BREA					RIP; C -	COMBINATION GFCI/AFCI;	E - ELE	CTRC	NIC		

	PANEL ESPAL													
	EMERGENCY STANDBY POWER													
	BRANCH CIRCUIT PANELBOARD													
V	OLTAG	E	3 PHASE	POLES	MA	AIN AMF	PS	MAIN	TYPE	A. I. R	ATING	M	OUNTI	NG
1	20/208	3	4 WIRE	18		50		M	СВ	22,	000	S	URFA	CE
POLE	BREA	AKER	LOVE) SERVED		PH	ASE LO	ADS		LOADS	EDVED	BREA	AKER	POLE
NO.	NO. TRIP P KVA A B C KVA TRIP P NO.													
1	1 20 1 LTG PENTHOUSE A 0.3 0.8 0.5 SPARE 15 1 2													
3	20	20 1 SPARE 0.5 1.0 0.5 SPARE 15 1 4												
5	20	1	SPARE		0.5			1.0	0.5	SPARE		15	1	6
7	20 1 20 10 10 10 10 10 10 10 10 10 10 10 10 10													
9	20	3	SPARE		0.5		1.0		0.5	SPARE		15	3	10
11	1-	-	-		0.5			1.0	0.5	-		-	-	12
13	-	-	-		0.5	1.0			0.5	-		-	-	14
15	20	2	SPARE		0.5		1.0		0.5	SPARE		15	2	16
17	-	-	-		0.5			1.0	0.5	-		-	-	18
			F	PHASE TOTALS:		2.8	3.0	3.0		TOTAL:	8.8	KVA		
BREAK	KER AE	BREV	IATIONS:	G - GFCI; A - AF	CI; L - L	OCKOU	Ť; S - S	HUNT TI	RIP; C -	COMBINATION	GFCI/AFCI;	E - ELE	ECTRO	NIC
ADJUS	TABLE	TRIP;	MCB - MAII	N CIRCUIT BREA	KER; M	LO - MA	AIN LUG	ONLY						
NOTES	S:													
1.	ALL BI	RANCH	I CIRCUIT E	REAKERS SHAL	LL BE PE	ROVIDE	D WITH	LOCK-	OUT DE	VICE CAPABL	E OF ACCEP	TING A	PADL	OCK.

BRANCH CIRCUIT PANELBOARD VOLTAGE 3 PHASE POLES MAIN AMPS MAIN TYPE A. I. RATING MOUNTING													
VOLTAGE 3 PHASE POLES MAIN AMPS MAIN TYPE A. I. RATING												ITMUC	NG
0/208		4 WIRE	18		50		N	ICB	22,	000	S	URFA	CE
BREAK	KER	100	CEDVED		PH	ASE LO	ADS		LOADS	EDVED	BREA	KER	POLE
TRIP	P	LOAL	SERVED	KVA	Α	В	С	KVA	LOAD	DERVED	TRIP	P	NO.
1 20 1 LTG PENTHOUSE B 3 20 1 SPARE					0.7			0.5	SPARE		15	1	2
20	1	SPARE		0.5		1.0		0.5	SPARE		15	1	4
20	1	SPARE		0.5			1.0	0.5	SPARE		15	1	6
20	1	SPARE		0.5	1.0			0.5	SPARE		15	1	8
20	3	SPARE		0.5		1.0		0.5	SPARE		15	3	10
-	-	-		0.5			1.0	0.5	-			-	12
-	-	-		0.5	1.0			0.5	4		-	-	14
20	2	SPARE		0.5		1.0		0.5	SPARE		15	2	16
-	-	-		0.5			1.0	0.5	-		-	-	18
		F	PHASE TOTALS:		2.7	3.0	3.0		TOTAL:	8.7	KVA		
R ABI	BREV	IATIONS:	G - GFCI; A - AF	CI; L - L	OCKOU	T; S - S	HUNT T	RIP; C -	COMBINATION	GFCI/AFCI;	E - ELE	CTRC	NIC
ADJUSTABLE TRIP; MCB - MAIN CIRCUIT BREAKER; MLO - MAIN LUG ONLY													
	0/208 BREAN RIP 20 20 20 20 20 20 20 20 R ABI	0/208 BREAKER RIP P 20 1 20 1 20 1 20 1 20 3 20 2	3 3 3 3 3 3 3 3 3 3	Magnetia Magnetia	D/208 4 WIRE 18 BREAKER LOAD SERVED KVA RIP P KVA 20 1 LTG PENTHOUSE B 0.2 20 1 SPARE 0.5 20 1 SPARE 0.5 20 1 SPARE 0.5 20 3 SPARE 0.5 - - 0.5 - - 0.5 20 2 SPARE 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 - - 0.5 R ABBREVIATIONS: G - GFCI; A - AFCI; L - LI	Dig 208	Marie 18 50 Served Harden 18 50 Served Harden 18 Served Served Harden 18 Served Served	Marie 18 50 Marie 18 50 Marie Marie	MC208	MCB SPARE SPARE	MCB 18 50 MCB 22,000	N/208	MCB 22,000 SURFAR



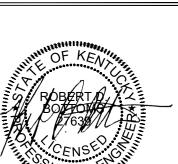
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scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

Written dimensions shall have precedence over

Job Number 2150 JHS Drawn By Checked By RDB 09/28/2022



ELECTRICAL PANEL SCHEDULES

				L	IGHT FIXTU	RE SCH	IEDUL	<u> </u>			
XTURE TYPE	DESCRIPTION PENDANT MOUNTED 8-1/4" WIDE X 1-3/4" TALL DIRECT/NDIRECT LED WITH	TYPE	CRI	DIMMING	LAMPS COLOR TEMP	LUMENS	WATTS	VOLTS	MOUNTING TYPE	MANUFACTURER - MODEL NUMBER	NOTES
A	RECTANGULAR FORMED COLD-ROLLED STEEL HOUSING, DIE-CAST SCULPTED END CAPS, HIGH PERFORMANCE DIFFUSER, WHITE ENAMELED REFLECTOR, L80 RATED LIFE OF 50,000 HOURS, 60% INDIRECT 40% DIRECT DISTRIBUTION, AIRCRAFT CABLE SUSPENSION, AND FIVE YEAR LIMITED FIXTURE WARRANTY.	LED	>80	0-10V, @ 1%	4000K	3120DN / 2080UP	44.4	MVOLT	SUSPENDED	PEERLESS BRM9L LLP 4FT 80CRI 40K ID1500LMF 60/40 MIN1 ZT MVOLT F2/72A LEDALITE EQUAL PAL EQUAL	1,2
В	SUSPENDED CLASS 1 DIVISION 1 EXPLOSION PROOF LED INDUSTRIAL WITH 4' COPPER FREE ALUMINUM ALLOY HOUSING, CAST ALUMINUM DRIVER HOUSING, EXTRUDED ALUMINUM REFLECTORS, TEMPERED GLASS LENS, L70 60,000 HOUR RATED LIFE LED ARRAY, CLASS I DIVISION 1 RATING, UL 1598 LISTING, AND 5 YEAR LIMITED WARRANTY.	LED	>80	NA NA	4000K	7291	54	UNV	SUSPENDED	AZZ LIGHTING XML-07-L-D-4-U-RIG APPLETON EQUAL CROUSE HINDS EQUAL	1,2
С	WALL MOUNTED 37" DECORATIVE VANITY LIGHT WITH CO-EXTRUDED WHITE OPAL ACRYLIC DIFFUSER, BRUSHED ALUMINUM HOUSING, MULTI- VOLT VOLT INTEGRAL DRIVER, UL LISTING, AND 5 YEAR LIMITED WARRANTY. 8'-0" SUSPENDED LED INDUSTRIAL WITH IMPACT-RESISTANT UV-	LED	>80	ELV	3500K	2619	29.7	MVOLT	SURFACE	MODERN FORMS WS-W81637 BETA CALCO EQUAL TECH EQUAL	2
D	RESISTANT REINFORCED FIBERGLASS HOUSING, UL LISTING FOR WET LOCATION, WET LOCATION END FITTINGS, INJECTION MOLDED ACRYLIC DIFFUSER SECURED TO FULLY GASKETED HOUSING BY TEN CAPTIVE LATCHES, L80 OF 60,000 HOURS, CSA LISTED FOR WET LOCATIONS, AND FIVE (5) YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	18770	125.5	MVOLT	SUSPENDED	LITHONIA FEM L96 20000LM IMAFL WD MVOLT GZ10 40K 80CRI HUBBEL EQAUL PARAMOUNT EQUAL	1,2
DL	8'-0" SUSPENDED LED INDUSTRIAL WITH IMPACT-RESISTANT UV- RESISTANT REINFORCED FIBERGLASS HOUSING, UL LISTING FOR WET LOCATION, WET LOCATION END FITTINGS, INJECTION MOLDED ACRYLIC DIFFUSER SECURED TO FULLY GASKETED HOUSING BY TEN CAPTIVE LATCHES, L80 OF 60,000 HOURS, CSA LISTED FOR WET LOCATIONS, AND FIVE (5) YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	8516	53.4	MVOLT	SUSPENDED	LITHONIA FEM L96 9000LM IMAFL WD MVOLT GZ10 40K 80CRI HUBBEL EQAUL PARAMOUNT EQUAL	1,2
1	4'-0" SUSPENDED LED INDUSTRIAL WITH IMPACT-RESISTANT UV- RESISTANT REINFORCED FIBERGLASS HOUSING, UL LISTING FOR WET LOCATION, WET LOCATION END FITTINGS, INJECTION MOLDED ACRYLIC DIFFUSER SECURED TO FULLY GASKETED HOUSING BY TEN CAPTIVE LATCHES, L80 OF 60,000 HOURS, CSA LISTED FOR WET LOCATIONS, AND FIVE (5) YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	7435	50.5	MVOLT	SUSPENDED	LITHONIA FEM L48 8000LM IMAFL WD MVOLT GZ10 40K 80CRI PARAMOUNT EQUAL HUBBEL EQUAL	1,2
ıs	4'-0" SURFACE MOUNTED LED INDUSTRIAL WITH IMPACT-RESISTANT UV- RESISTANT REINFORCED FIBERGLASS HOUSING, UL LISTING FOR WET LOCATION, WET LOCATION END FITTINGS, INJECTION MOLDED ACRYLIC DIFFUSER SECURED TO FULLY GASKETED HOUSING BY TEN CAPTIVE LATCHES, L80 OF 60,000 HOURS, CSA LISTED FOR WET LOCATIONS, AND FIVE (5) YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	7435	50.5	MVOLT	SURFACE	LITHONIA FEM L48 8000LM IMAFL WD MVOLT GZ10 40K 80CRI FEMSMB PARAMOUNT EQUAL HUBBEL EQUAL	
Ξ	2 X 4 LED RECESSED GRID TROFFER WITH 2" DEEP STEEL HOUSING, INTEGRAL T-BAR CLIPS, COLD ROLLED STEEL REFLECTOR, POLYESTER POWDER COAT AFTER FABRICATION, 7" WIDE FROSTED ACRYLIC DIFFUSER, L80 RATED LIFE OF 60,000 HOURS, DLC QUALIFIED, AND FIVE YEAR LIMITED FIXTURE WARRANTY.	LED	>80	0-10V, @ 10%	4000K	5393	39.71	MVOLT	RECESSED	LITHONIA STAKPAK 2X4 ALO6 40K CP2 (50L) COLUMBIA EQUAL METALUX EQUAL	
2	2 X 2 LED RECESSED GRID TROFFER WITH 2" DEEP STEEL HOUSING, INTEGRAL T-BAR CLIPS, COLD ROLLED STEEL REFLECTOR, POLYESTER POWDER COAT AFTER FABRICATION, 7" WIDE FROSTED ACRYLIC DIFFUSER, L80 RATED LIFE OF 60,000 HOURS, DLC QUALIFIED, AND FIVE YEAR LIMITED FIXTURE WARRANTY.	LED	>80	0-10V, @10%	4000K	3683	26.18	MVOLT	RECESSED	LITHONIA STAKS 2X2 ALO3 SWW7 40K 40L COLUMBIA EQUAL METALUX EQUAL	
≣3	RECESSED MOUNT 9-1/4"W X 5-5/8"H X 4"D 'ON AIR' LED SIGN WITH 16 GAUGE STEEL RECESSED HOUSING, METALLIC ALUMINUM POLYESTER TRIM, SILK-SCREENED COPY ON WHITE ACRYLIC. 8'-0" SUSPENDED LED STRIP LIGHT WITH 20 GAUGE STEEL HOUSING, HIGH	LED	NA	NA	NA	NA		UNV	RECESSED	COLE LIGHTING SL252-277-ROF-STF ALKCO EQUAL SURELITE EQUAL	4
F	GLOSS BAKED WHITE ENAMEL FINISH, REPLACEABLE MEDIUM DIFFUSE ACRYLIC LENS, HIGH OUTPUT LEDS ON TWO LAYER CIRCUIT BOARD, ELECTRONIC LED DRIVER, 85% OUTPUT AT 44,000 HOURS, CSA LISTED FOR DAMP LOCATIONS, AND TEN YEAR LIMITED WARRANTY. 4'-0" SUSPENDED LED STRIP LIGHT WITH 20 GAUGE STEEL HOUSING, HIGH	LED	>80	0-10V, @10%	4000K	10300	87.9	MVOLT	SUSPENDED	LITHONIA CSS L96 ALO4 MVOLT 40K 80CRI WILLIAMS EQUAL METALUX EQUAL	1,2
=1	GLOSS BAKED WHITE ENAMEL FINISH, REPLACEABLE MEDIUM DIFFUSE ACRYLIC LENS, HIGH OUTPUT LEDS ON TWO LAYER CIRCUIT BOARD, ELECTRONIC LED DRIVER, 85% OUTPUT AT 44,000 HOURS, CSA LISTED FOR DAMP LOCATIONS, AND TEN YEAR LIMITED WARRANTY. 13" DIAMETER X 3/4" DEEP SURFACE MOUNTED LED WITH MULTI-VOLT LED	LED	>80	0-10V, @10%	4000K	5150	43.9	MVOLT	SUSPENDED	LITHONIA CSS L48 ALO3 MVOLT 40K 80CRI WILLIAMS EQUAL METALUX EQUAL JUNO JSF 13IN 18LM 40K 90CRI MVOLT ZT	1,2
G	DRIVER, LED LIGHT ENGINE DELIVERING 1800 LUMENS, UL LISTING FOR WET LOCATIONS, L70 RATED LIFE OF 50,000 HOURS, AND FIVE (5) YEAR LIMITED WARRANTY. 7" DIAMETER X 3/4" DEEP SURFACE MOUNTED LED WITH MULTI-VOLT LED	LED	>80	0-10V, @ 1%	4000K	1800	20	MVOLT	SURFACE	PRESCOLITE EQUAL SIGNIFY EQUAL	
G1	DRIVER, LED LIGHT ENGINE DELIVERING 1000 LUMENS, UL LISTING FOR WET LOCATIONS, L70 RATED LIFE OF 50,000 HOURS, AND FIVE (5) YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	1000	13	MVOLT	SURFACE	JUNO JSF 7IN 10LM 40K 90CRI MVOLT ZT PRESCOLITE EQUAL SIGNIFY EQUAL	
G2	RECESSED 9" DIAMETER DOWNLIGHT WITH ALUMINUM HOUSING, 45 DEGREE DISTRIBUTION, CIRCULAR ANIDOLIC OPTICAL STRUCTURES, CLEAR ACRYLIC LENS, INTEGRAL 120-277 VOLT 0-10 VOLT DIMMABLE DRIVER, L80 OF 72,000 HOURS, UL LISTING, AND 5 YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	4000	28	MVOLT	RECESSED	FLUXWERX TC1-R-09-D-K1-M1-8-40-E-E1-M ZUMTOBEL EQUAL NEOREY EQUAL	
1	2X2 RECESSED TROFFER WITH 2.7 INCH DEEP HOUSING, EXTRUDED ALUMINUM .6" REGRESSED BEZEL, BACK LIGHTED 1.25MM THICK 3D OPTICAL LAYER, .66MM THICK BACKPLATE, L80 OF 60,000 HOURS, IC RATED, DAMP LOCATION LISTED, IP5X RATED, ISO CLASS 9-5, AND FIVE YEAR LIMITED WARRANTY. RECESSED 2X4 LED GRID TROFFER WITH DIRECT-LIT CURVED	LED	>80	0-10V, @ 1%	4000K	4080	28	MVOLT	RECESSED	LITHONIA SPX 2X2 4000LM 80CRI 40K BFR 3DCP MIN1 EZT MVOLT METALUX EQUAL WILLIAMS EQUAL	
J	TRANSLUCENT ACRYLIC DIFFUSER, DUST PROOF IP5X RATED OPTICS, L80 LIFE OF 60,000 HOURS, 3 STEP MCADAM ELLYPSE COLOR CONSISTANCY, MADE IN USA, CSA LISTED FOR DAMP LOCATIONS, AND FIVE YEAR WARRANTY. RECESSED 2X4 LED GRID TROFFER WITH DIRECT-LIT CURVED	LED	>80	0-10V, @ 1%	4000K	5097	50	MVOLT	RECESSED	LITHONIA ENVX 2X4 HRG 6000LM 80CRI 40K MIN1 EZT MVOLT METALUX EQUAL LEDALITE EQUAL	
J1	TRANSLUCENT ACRYLIC DIFFUSER, DUST PROOF IP5X RATED OPTICS, L80 LIFE OF 60,000 HOURS, 3 STEP MCADAM ELLYPSE COLOR CONSISTANCY, MADE IN USA, CSA LISTED FOR DAMP LOCATIONS, AND FIVE YEAR WARRANTY. RECESSED 2X2 LED WITH 22 GUAGE STEEL HOUSING, NINE (9) RADIAL	LED	>80	0-10V, @ <1%	4000K	5097	50	MVOLT	RECESSED	LITHONIA ENVX 2X4 HRG 6000LM 80CRI 40K DARK EZT MVOLT METALUX EQUAL LEDALITE EQUAL	
K	ANIDOLIC OPTICAL STRUCTURES PRODUCING 360 DEGREE BATWING DISTRIBUTION, HIGH REFLECTANCE WHITE TEXTURED POWDER COAT REFLECTOR, L90 RATED LIFE OF 60,000 HOURS, 4000K LED ARRAY BINNED TO 2 SDCM, UL LISITNG, AND FIVE YEAR LIMITED WARRANTY. RECESSED 6" WIDE X 4' LONG LED WITH 22 GUAGE STEEL HOUSING, EIGHT (8) RADIAL ANIDOLIC OPTICAL STRUCTURES PRODUCING 360 DEGREE	LED	>80	0-10V, @ 1%	4000K	5350	39	MVOLT	RECESSED	FLUXWERX LR1-22-D-40-E1-M ZUMTOBEL EQUAL NEOREY EQUAL	
(1	(6) NADIAL ANIBOCIO OF TICAL STROCTORIAS FRADERINA SON DEGRALE BATWING DISTRIBUTION, HIGH REFLECTANCE WHITE TEXTURED POWDER COAT REFLECTOR, L90 RATED LIFE OF 60,000 HOURS, 4000K LED ARRAY BINNED TO 2 SDCM, UL LISITING, AND FIVE YEAR LIMITED WARRANTY. PENDANT MOUNTED LED LUMINAIRE WITH TWO-PIECE DIE-CAST	LED	>80	0-10V, @ 1%	4000K	4950	38	MVOLT	RECESSED	FLUXWERX LR1-64-D-40-E1-M-K1 ZUMTOBEL EQUAL NEOREY EQUAL	
L1	ALUMINUM HOUSING, WIDE DISTRIBUTION, IP66 RATING, ZINC-INFUSED SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH, MOLDED MICRO PRISMATIC ACRYLIC LIGHT GUIDE, WIDE DISTRIBUTION UP-LIGHT OPTIC, L89/100,000 HOURS, MINIMUM 6.0 KV SURGE RATING, 0-10 VOLT DIMMING TO 10%, RATED FOR -40°C MINIMUM AMBIENT, AIRCRAFT CABLE SUSPENSION, DECORATIVE CANOPY, AND UL LISTED FOR WET	LED	>80	NA	4000K	16,564	134	MVOLT	SUSPENDED	LITHONIA VCPG LED P7 40K 80CRI T5W MVOLT SRM KIM EQUAL COOPER EQUAL	1,2
	LOCATIONS. SAME AS FIXTURE TYPE 'L1' BUT ON EMERGENCY CIRCUIT.	LED	>80	NA	4000K	16,564	134	MVOLT	SUSPENDED	LITHONIA VCPG LED P7 40K 80CRI T5W MVOLT SRM KIM EQUAL COOPER EQUAL	1,2
_2	2' DECORATIVE LED PENDANT WITH 5,000 LUMENS DIRECT, 1,000 LUMENS INDIRECT, EXTRUDED ALUMNUM 4' DIAMETER HOUSING, ONE PIECE ABS PLASTIC TOP COVER, MULTI CABLE SUSPENSION, WHITE CANOPY, 18 GAUGE STEEL CANOPY, REGRESSED .118" THICK ACRYLIC LENS, L90 OF 57,000 HOURS, FIVE YEAR LIMITED WARRANTY, AND ETL LISTING	LED	>80	0-10V, @ 1%	4000K	5000DN / 1000UP	55	UNV	SUSPENDED	FOCAL POINT FSDEP-2-FL-5000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
2E	SAME AS FIXTURE TYPE 'L2' BUT ON EMERGENCY CIRCUIT.	LED	>80	0-10V, @ 1%	4000K	5000DN / 1000UP	55	UNV	SUSPENDED	FOCAL POINT FSDEP-2-FL-5000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
L3	3' DECORATIVE LED PENDANT WITH 7,000 LUMENS DIRECT, 2,000 LUMENS INDIRECT, EXTRUDED ALUMNUM 4' DIAMETER HOUSING, ONE PIECE ABS PLASTIC TOP COVER, MULTI CABLE SUSPENSION, WHITE CANOPY, 18 GAUGE STEEL CANOPY, REGRESSED .118" THICK ACRYLIC LENS, L90 OF 57,000 HOURS, FIVE YEAR LIMITED WARRANTY, AND ETL LISTING	LED	>80	0-10V, @ 1%	4000K	7000DN / 2000UP	87	UNV	SUSPENDED	FOCAL POINT FSDEP-3-FL-7000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
BE	SAME AS FIXTURE TYPE 'L3' BUT ON EMERGENCY CIRCUIT. 4' DECORATIVE LED PENDANT WITH 11,000 LUMENS DIRECT, 2000 LUMENS	LED	>80	0-10V, @ 1%	4000K	7000DN / 2000UP	87	UNV	SUSPENDED	FOCAL POINT FSDEP-3-FL-7000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
_4	4 DECORATIVE LED PENDANT WITH 11,000 LOWIENS DIRECT, 2000 LOWIENS INDIRECT, EXTRUDED ALUMNUM 4' DIAMETER HOUSING, ONE PIECE ABS PLASTIC TOP COVER, MULTI CABLE SUSPENSION, WHITE CANOPY, 18 GAUGE STEEL CANOPY, REGRESSED .118" THICK ACRYLIC LENS, L90 OF 57,000 HOURS, FIVE YEAR LIMITED WARRANTY, AND ETL LISTING	LED	>80	0-10V, @ 1%	4000K	11000DN / 2000UP	127	UNV	SUSPENDED	FOCAL POINT FSDEP-4-FL-11000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
4E	SAME AS FIXTURE TYPE 'L4' BUT ON EMERGENCY CIRCUIT. BECESSED 2X2 INDIRECT/DIRECT WITH 5" DEEP FORMED STEEL HOUSING.	LED	>80	0-10V, @ 1%	4000K	11000DN / 2000UP	127	UNV	SUSPENDED	FOCAL POINT FSDEP-4-FL-11000DN-2000UP-40K-UNV-L11 BETA CALCO EQUAL LITECONTROL EQUAL	1,2
1	RECESSED 2X2 INDIRECT/DIRECT WITH 5" DEEP FORMED STEEL HOUSING, CONCEALED PERIMETER MOUNTED INDIRECT LEDS, PATTERNED 20 GAUGE VAULTED REFLECTOR, UL LISTING, L70 RATED LIFE OF 50,000 HOURS, 3034 DELIVERED LUMENS, AND FIVE YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	3992	35.9	277	RECESSED	MARK ARCHITECTURAL CHSL 2X2 80CRI 40K 4000LM MNML 4SD MIN1 277 LEDALITE EQUAL WILLIAMS EQUAL	
N	DECORATIVE LED PENDANT WITH 8" DIAMETER X 91" TALL TRANSLUCENT ACRYLIC CYLINDER, RGB LED LIGHT ENGINE ILLUMINATING BODY, MEDIUM DISTIBUTION LUMEN DOWNLIGHT DELIVERING 2800 LUMENS, OVEN CURED NO VOC ACRYLIC POWDER COAT FOR PAINTED FINISH, REMOTE DMX DRIVER, ADJUSTABLE WHITE POWER/SUSPENSION CABLE, ROUND DECORATIVE CANOPY, ETL LISTED FOR INDOOR DAMP LOCATIONS, L70 RATED LIFE OF 50,000 HOURS, AND FIVE YEAR FIXTURE WARRANTY. THE REMOTE POWER SUPPLY SHALL BE LOCATED WHERE INDICATED ON DRAWINGS. LENGTH AND OVERALL HEIGHT AS INDICATED ON DRAWINGS.	LED	>80	DMX	4000K	2800	115	MVOLT	PENDANT	VISA CP2046 RGB L40K MVOLT MED ORIGINAL CAST EQUAL SPI EQUAL	1,2
NE	SAME AS FIXTURE TYPE 'N' BUT ON EMERGENCY CIRCUIT. SUSPENDED LINEAR LED LUMIAIRE WITH EXTRUDED ALLIMINUM IREAM	LED	>80	DMX	4000K	2800	115	MVOLT	PENDANT	VISA CP2046 RGB L40K MVOLT MED ORIGINAL CAST EQUAL SPI EQUAL PRIM L \$3.888.4407.D4\$Y.J4\$Y.40.277 10 DIN	1,2
N1	SUSPENDED LINEAR LED LUMIAIRE WITH EXTRUDED ALUMINUM IBEAM SHAPED HOUSING, SATIN ACRYLIC LENS, L70 OF 50,000 HOURS, AND UL LISTING. SAME AS FIXTURE TYPE 'N1' BUT ON EMERGENCY CIRCUIT.	LED	>80	0-10V, @ 1%	4000K	17,000	216	UNV	PENDANT	RBW LS3-888-AA07-DASY-IASY-40-277_10_DIN FLUXWERX EQUAL PAL EQUAL RBW LS3-888-AA07-DASY-IASY-40-277_10_DIN	1,2
NS	DECORATIVE LED PENDANT WITH 8" DIAMETER X 69" TALL TRANSLUCENT ACRYLIC CYLINDER, RGB LED LIGHT ENGINE ILLUMINATING BODY, MEDIUM DISTIBUTION LUMEN DOWNLIGHT DELIVERING 2800 LUMENS, OVEN CURED NO VOC ACRYLIC POWDER COAT FOR PAINTED FINISH, REMOTE DMX DRIVER, ADJUSTABLE WHITE POWER/SUSPENSION CABLE, ROUND DECORATIVE CANOPY, ETL LISTED FOR INDOOR DAMP LOCATIONS, L70 RATED LIFE OF 50,000 HOURS, AND FIVE YEAR FIXTURE WARRANTY. THE	LED	>80	0-10V, @ 1%	4000K	2,800	216 115	UNV MVOLT	PENDANT	FLUXWERX EQUAL PAL EQUAL VISA CP2044 RGB L40K MVOLT MED ORIGINAL CAST EQUAL SPI EQUAL	1,2

IXTURE				LIC	GHT FIXTU	JRE SCH	EDULI	1	MOUNTING	T	
TYPE	DESCRIPTION RECESSED 2X4 FLAT PANEL WITH SEAMLESS ALUMINUM FRAME, SATIN WHITE ACRYLIC LENS, INTEGRAL T-BAR CLIPS FOR INSTALLATION INTO	TYPE	CRI	DIMMING	COLOR TEMP	LUMENS	WATTS	VOLTS	TYPE	MANUFACTURER - MODEL NUMBER	NOTES
0	15/16" T-GRID CEILINGS (CLIPS FOR 9/16" T GRID INSTALLATION ARE AVAILABLE), 97.7% OF LUMENS AT 60,000 HOURS (L97/60,000), CSA LISTED, (DLC) PREMIUM QUALIFIED, DAMP LOCATION LISTED, IC RATED, IP5X RATED, AND 5 YEAR WARRANTY. PENDANT MOUNTED DIRECT LED WITH 4" WIDE EXTRUDED ALUMINUM	LED	>80	0-10V, @ 1%	4000K	6548	50	MVOLT	RECESSED	LITHONIA EPANL 2X4 6000LM 80CRI 40K MIN1 EZT MVOLT LED METALUX EQUAL LEDALITE EQUAL	
Р	HOUSING, DIE CAST ALUMINUM END CAPS, 22 GAUGE FABRICATED STEEL HOSUING, EXTRUDED .085" THICK SATIN ACRYLIC LENS, L90 RATED LIFE OF 61,000 HOURS, ETL LISTING, AND FIVE YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	4000	37	MVOLT	SUSPENDED	MARK ARCHITECTURAL S4LD 4FT 80CRI 40K 1000LMF MIN1 MVOLT NEOREY EQUAL LINEAR EQUAL	1,2
P1	PENDANT MOUNTED DIRECT / INDIRECT LED WITH 4" WIDE EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, 22 GAUGE FABRICATED STEEL HOSUING, EXTRUDED .085" THICK SATIN ACRYLIC LENS, L90 RATED LIFE OF 61,000 HOURS, ETL LISTING, AND FIVE YEAR LIMITED WARRANTY.	LED	>81	0-10V, @ 1%	4000K	1600DN / 3200UP	37	MVOLT	SUSPENDED	MARK ARCHITECTURAL S4LID 4FT 80CRI 40K 400LMF I80CRI I40K I800LMF NEOREY EQUAL LINEAR EQUAL	1,2
P2	PENDANT MOUNTED DIRECT / INDIRECT LED WITH 4" WIDE EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, 22 GAUGE FABRICATED STEEL HOSUING, EXTRUDED .085" THICK SATIN ACRYLIC LENS, L90 RATED LIFE OF 61,000 HOURS, ETL LISTING, AND FIVE YEAR LIMITED WARRANTY.	LED	>82	0-10V, @ 1%	4000K	800DN / 1600UP	38	MVOLT	SUSPENDED	MARK ARCHITECTURAL S4LID 2FT 80CRI 40K 400LMF I80CRI I40K I800LMF NEOREY EQUAL LINEAR EQUAL	1,2
	PENDANT MOUNTED LINEAR LED WITH ANODIZED EXTRUDED ALUMINUM HOUSING, PRECISION MACHINED ALUMINUM JOINTS, MILLED ALUMINUM ENDCAPS, STAINLESS STEEL AIRCRAFT CABLE SUSPENSIONS, ANIDOLIC OPTICAL LINEAR LIGHT EXTRACTION ELEMENTS, R9 \geq 0, COLOR ACCURATE BINNING \leq 2 SDCM, LV POWER CORDS FACTORY PREINSTALLED, 5 YEAR LIMITED WARRANTY, AND UL LISTING.	LED	>80	0-10V, @ 1%	4000K	1840DN / 460UP	46	MVOLT	SUSPENDED	FLUXWERX VU1-B-BB40-08-G-E1-M-03 LUMENWERKS EQUAL LUMIUM EQUAL	1,2
S	LED HIGHBAY WITH CAST ALUMINUM FINNED HEAT SINK, 18,000 DELIVERED LUMENS, 4000K 70CRI LED ARRAY, GLASS OPTICAL ENCLOSURE (IP65 RATED), FACETED ALUMINUM REFLECTOR MOUNTED TO CASTING, HIGH TEMPERATURE 90°C CASE TEMPERATURE, LUMEN MAINTENANCE L91 AT 60,000 HOURS, 3/4" NPT THREADED HUB TO ACCOMMODATE CONDUIT, UL LISTING FOR DAMP LOCATION, SUITABLE FOR USE IN AMBIENT TEMPERATURES FROM -40°C UP TO 55°C, WIRE GUARD,	LED	>80	0-10V, @ 10%	4000K	15,475	125	MVOLT	PENDANT	LITHONIA JCBL 18000LM SALR ALDRP MVOLT GZ10 40K 80CRI PM HUBBEL EQUAL METALUX EQUAL	1,2
SE	AND 5 YEAR LIMITED WARRANTY. SAME AS FIXTURE TYPE 'S' BUT ON EMERGENCY CIRCUIT.	LED	>80	0-10V, @ 10%	4000K	15,475	125	MVOLT	PENDANT	LITHONIA JCBL 18000LM SALR ALDRP MVOLT GZ10 40K 80CRI PM HUBBEL EQUAL METALUX EQUAL	1,2
Т	8'-0" PENDANT MOUNTED ROUGH SERVICE LINEAR LED WITH EXTRUDED ALUMINUM HOUSING, STAINLESS STEEL END CAPS, IK10 RATED POLYCARBONATE DIFFUSING LENSES, AIRCRAFT CABLE SUSPENSION, L70	LED	>80	0-10V, @ 1%	4000K	32,016	200	UNV	SUSPENDED	LUX DYNAMICS 360P-8-URDL-840-U1-HM-CA KENALL EQUAL PARAMOUNT EQUAL	1,2
TC	OF 60,000 HOURS, UL LISTING, AND 5 YEAR WARRANTY. SAME AS FIXTURE TYPE 'T' BUT WITH COLOR TUNING CAPABILITIES	LED	>80	(2) 0-10V, @ 1%	COLOR TUNING	32,516	208	UNV	SUSPENDED	LUX DYNAMICS 360P-8-RDL-TW-U1-HM-CA KENALL EQUAL	1,2
U	4'-0" PENDANT MOUNTED DIRECT LED WITH 4" WIDE EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, 22 GAUGE FABRICATED STEEL HOSUING. EXTRUDED .085" THICK SATIN ACRYLIC LENS. L90 RATED LIFE	LED	>80		4000K	2200	21	UNV	SUSPENDED	PARAMOUNT EQUAL CERTROLUX LMEZXP48-LED840K-022LUNV LINEAR EQUAL	1,2
	OF 61,000 HOURS, ETL LISTING, AND FIVE YEAR LIMITED WARRANTY. 4'-0" SUSPENDED LED WITH COLD ROLLED STEEL HOUSING, STAMPED	LED	760		4000K	2200	21	OINV	SUSPENDED	PAL EQUAL	1,2
V	STEEL END CAPS, CRESENT SHAPED IMPACT MODIFIED LINEAR FACETED ACRYLIC DIFFUSER, L80 OF 50,000 HOURS, AND FIVE YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	5205	40	MVOLT	SUSPENDED	LITHONIA BLWP4 48L ADP EZ1 LP840 LIGHTOLIER EQUAL WILLIAMS EQUAL	1,2
VS	SAME AS TYPE 'V' FIXTURE BUT SURFACE MOUNTED. 2X4 RECESSED GRID WET LOCATION TROFFER WITH 20-GAUGE COLD	LED	>80	0-10V, @ 1%	4000K	5205	40	MVOLT	SURFACE	LITHONIA BLWP4 48L ADP EZ1 LP840 LIGHTOLIER EQUAL	
W	ROLLED STEEL HOUSING, .060 PAINTED ALUMINUM DOOR FRAME, DIFFUSED ACRYLIC LENS SEALED TO DOOR FRAME, CLOSED CELL NEOPRENE GASKETING, POLYESTER POWDER PAINT AFTER FABRICATION, L80/60,000 HOURS, 6KV/3KA SURGE PROTECTION, CSA LISTED FOR WET LOCATION, SUITABLE FOR AMBIENT TEMPERATURE RANGE OF -4°F (-20°C) TO 77°F (25°C), 5-YEAR LIMITED WARRANTY. 2X2 RECESSED GRID WET LOCATION TROFFER WITH 20-GAUGE COLD	LED	>80	0-10V, @ 1%	4000K	6850	58.6	MVOLT	RECESSED	LITHONIA 2WRTL G L48 7000LM AFL MVOLT GZ1 40K 80CRI KENALL EQUAL LUMAX EQUAL	
W2	ROLLED STEEL HOUSING, .060 PAINTED ALUMINUM DOOR FRAME, DIFFUSED ACRYLIC LENS SEALED TO DOOR FRAME, CLOSED CELL NEOPRENE GASKETING, POLYESTER POWDER PAINT AFTER FABRICATION, L80/60,000 HOURS, 6KV/3KA SURGE PROTECTION, CSA LISTED FOR WET LOCATION, SUITABLE FOR AMBIENT TEMPERATURE RANGE OF -4°F (-20°C) TO 77°F (25°C), 5-YEAR LIMITED WARRANTY.	LED	>80	0-10V, @ 1%	4000K	7074	60.6	MVOLT	RECESSED	LITHONIA 2WRTL G L24 7000LM AFL MVOLT GZ1 40K 80CRI KENALL EQUAL LUMAX EQUAL	
	LED WALL PACK WITH 11.5" WIDE X 7" DEEP X 9" TALL ONE PIECE DIE CAST ALUMINUM HOUSING, REGRESSED LED OPTICAL DELIVERING, VISUAL COMFORT FORWARD THROW DISTRIBUTION, L91 OF 100,00 HOURS, ELECTRONIC DRIVER, 6KV SURGE PROTECTION, IP66 RATING, CSA LISTED FOR WET LOCATIONS, INTEGRAL PHOTCELL, BI-LEVEL SWITCHING MOTION SENSOR, AND FIVE YEAR WARRANTY. LED WITH P4 - PERFORMANCE PACKAGE. 3000K. 80CRI. TYPE 3 MEDIUM OPTIC	LED	>80	-	3000K	4065	47	MVOLT	SURFACE	LITHONIA WDGE2 LED P4 30K 80CRI T3M KIM EQUAL GARDCO EQUAL	
XV	WARNING LIGHT	LED	>80	NA	NA	NA	12	120	SURFACE	FEDERAL SIGNAL LP3G-S-120-A OR APPROVED EQUIVALENT	
X1	EDGE-LIT SINGLE FACE EXIT SIGN WITH ULTRASONICALLY WELDED INJECTION-MOLDED ACRYLIC WEDGE SHAPE PANELS, RECESS MOUNT UNIVERSAL ROUGH-IN 20 GAUGE DIE-FORMED GALVANIZED STEEL SECTION INCLUDING T-BAR MOUNTING HANGERS AND CLIPS, EXTRUDED ALUMINUM HOUSING TRIM, BRUSHED ALUMINUM HOUSING FINISH, PLUG-IN POWER CONNECTORS, THREE YEAR UNCONDITIONAL WARRANTY, LED LAMP ASSEMBLY, SOLID-STATE ELECTRONICS. PANEL LETTERS SHALL BE	LED	>80	NA	NA	NA NA	3	MVOLT	REFER TO DRAWINGS	LITHONIA LRP NK 1 RC 120/277 SURELITES EQUAL DUALITE EQUAL	3
X2	MOLDED AND TEXTURED 6" HIGH WITH 3/4" STROKE. EDGE-LIT SINGLE FACE EXIT SIGN WITH ULTRASONICALLY WELDED INJECTION-MOLDED ACRYLIC WEDGE SHAPE PANELS, RECESS MOUNT UNIVERSAL ROUGH-IN 20 GAUGE DIE-FORMED GALVANIZED STEEL SECTION INCLUDING T-BAR MOUNTING HANGERS AND CLIPS, EXTRUDED ALUMINUM HOUSING TRIM, BRUSHED ALUMINUM HOUSING FINISH, PLUG-IN POWER CONNECTORS, THREE YEAR UNCONDITIONAL WARRANTY, LED	LED	>80	NA	NA	NA NA	3	MVOLT	REFER TO DRAWINGS	LITHONIA LRP NK 2 RMR 120/277 SURELITES EQUAL DUALITE EQUAL	3
Х3	LAMP ASSEMBLY, SOLID-STATE ELECTRONICS. PANEL LETTERS SHALL BE MOLDED AND TEXTURED 6" HIGH WITH 3/4" STROKE. SINGLE FACE EXIT SIGN SUITABLE FOR WET LOCATIONS AND HIGH ABUSE APPLICATIONS WITH UNIVERSAL MOUNTING KIT, LOW-PROFILE CAST ALUMINUM HOUSING, UV-STABLE POLYCARBONATE HOUSING SECURED WITH TORX T20 TAMPER-RESISTANT SCREWS WITH CENTER PIN. FIVE	LED	>80	NA NA	NA	NA	2.3	UNV	REFER TO DRAWINGS	LITHONIA LV S 1 120/277 UM SURELITES EQUAL DUALITE EQUAL	3
Y	YEAR WARRANTY RECESSED INDIRECT LINEAR LED WITH 22 GUAGE STEEL HOUSING, LED ARRAY ON 2 SIDES OF HOUSING, LIGHT EMIITING ANIDOLIC OPTICAL STRUCTURES COVERED BY EXTRUDED ACRYLIC LENSES, HIGH REFLECTANCE WHITE TEXTURED POWDER COAT REFLECTOR, 4300	LED	>80	0-10V, @ 1%	4000K	3600	37.6	MVOLT	RECESSED	FLUXWERX NT1 D1-B-D-40-E1-M PAL EQUAL	
· 	DELIVERED LUMENS, INTEGRAL ELDOLED 0-10 VOLT 1-100% DIMMABLE LED DRIVER, L90 RATED LIFE OF 60,000 HOURS, 4000K LED ARRAY BINNED TO 2 SDCM, UL LISITNG, AND FIVE YEAR LIMITED WARRANTY. LED CUTOFF LUMINAIRE WITH 21.7" LONG X 12" DIE-CAST ALUMINUM			, @						LITECONTROL EQUAL	
Z1	HOUSING, INTEGRAL ADJUSTABLE TILT MOUNTING ARM, .57 EPA, PRECISION-MOLDED LENS ASSEMBLIES FORM A TYPE 3 DISTRIBUTION, METAL CORE CIRCUIT BOARD IS MACHINED WITH A MODULAR CAST ALUMINUM HEAT SINK, 120-277 VOLT DRIVERS, TVSS IN ACCORDANCE WITH IEEE/ANSI, CSA LISTED AT 40 DEGREE C., L80 OF 100,000 HOURS, IP65 RATED LUMINAIRE. THE FIXTURE SHALL BE PROVIDED WITH AN INTEGRAL AMBIENT/MOTION SENSOR BUILT INTO FIXTUE HOUSING. FIXTURE(S) TO BE MOUNTED TO A 20'-0" STRAIGHT SQUARE STEEL POLE WITH EPA GREATER THAN 2.0 AT 90MPH WITH 1.3 GUST FACTOR.	LED	>80	INTEGRAL	4000K	21,737	147	MVOLT	POLE	LITHONIA RSX2 LED P3 40K R3 MVOLT AASP HS PIRHN KIM EQUAL GARDCO EQUAL	6,8
7 2	LED CUTOFF LUMINAIRE WITH 21.7" LONG X 12" DIE-CAST ALUMINUM HOUSING, INTEGRAL ADJUSTABLE TILT MOUNTING ARM, .57 EPA, PRECISION-MOLDED LENS ASSEMBLIES FORM A TYPE 4 DISTRIBUTION, METAL CORE CIRCUIT BOARD IS MACHINED WITH A MODULAR CAST ALUMINUM HEAT SINK, 120-277 VOLT DRIVERS, TVSS IN ACCORDANCE WITH IEEE/ANSI, CSA LISTED AT 40 DEGREE C., L80 OF 100,000 HOURS, IP65 RATED LUMINAIRE. THE FIXTURE SHALL BE PROVIDED WITH AN INTEGRAL AMBIENT/MOTION SENSOR BUILT INTO FIXTUE HOUSING. FIXTURE(S) TO BE MOUNTED TO A 20'-0" STRAIGHT SQUARE STEEL POLE WITH EPA GREATER THAN 2.0 AT 90MPH WITH 1.3 GUST FACTOR.	LED	>80	INTEGRAL	4000K	21,247	147	MVOLT	POLE	LITHONIA RSX2 LED P3 40K R4S MVOLT AASP HS PIRHN KIM EQUAL GARDCO EQUAL	6,8
Z3	LED CUTOFF LUMINAIRE WITH 21.7" LONG X 12" DIE-CAST ALUMINUM HOUSING, INTEGRAL ADJUSTAB;E TILT MOUNTING ARM, .57 EPA, PRECISION MOLDED LENS ASSEMBLIES FORM A TYPE 4 DISTRIBUTION, METAL CORE CIRCUIT BOARD IS MACHINED WITH A MODULAR CAST ALUMINUM HEAT SINK, 120-277 VOLT DRIVERS, TVSS IN ACCORDANCE WITH IEEE/ANSI, CSA LISTED AT 40 DEGREE C., L80 OF 100,000 HOURS, IP65 RATED LUMINAIRE. THE FIXTURE SHALL BE PROVIDED WITH AN INTEGRAL AMBIENT/MOTION SENSOR BUILT INTO FIXTUE HOUSING. FIXTURE(S) TO BE MOUNTED TO A 20'-0" STRAIGHT SQUARE STEEL POLE WITH EPA GREATER	LED	>80	INTEGRAL	4000K	21,814	147	MVOLT	POLE	LITHONIA RSX2 LED P3 40K R2 MVOLT AASP HS PIRHN KIM EQUAL GARDCO EQUAL	6,8
	THAN 2.0 AT 90MPH WITH 1.3 GUST FACTOR. INGRADE ROUND LED FLOODLIGHT WITH REMOTE DRIVER, 40 DEGREE FLOOD PATTERN, WATERPROOF HOUSING. PROVIDE WITH REMOTE DRIVER LOCATED IN BUILDING AT NEAREST CONCEALED ACCESSIBLE CEILING.	LED	>80	0-10V	4000K	568	8	UNV	GROUND LEVEL INSTALLATION	TARGETTI KPLM-41-GMB-FL-L1-40-1DU434418 EQUAL EQUAL	
ZB	ILLUMINATED BOLLARD WITH EMBEDDED SECURITY CORE, 360 DEGREE LIGHT DISTRIBUTION AND 0-10V DIMMING CAPABILITIES, ELECTRICAL CONTRACTOR TO PERFORM ALL WORK REGARDING LIGHTING OF THE BOLLARD.	LED	>80	0-10V	4000K	604	40	MVOLT	BOLLARD	PROVIDED BY OTHERS	
ZC	LED LOW VOLTAGE ACCENT LIGHT WITH FLEXIBLE UV AND IMPACT RESISTANT PVC DIFFUSER, CLEAR ENDS FOR CONTINUOUS APPEARANCE, MAXIMUM LENGTH OF 191 INCHES PER FEED, L70 OF 40,000 HOURS 3.0 WATTS PER FOOT, 24 VOLT DRIVER(S), IP67 RATING, ETL LISTING FOR WET LOCATIONS, FIVE YEAR LIMITED WARRANTY. FIXTURE TO BE MOUNTED IN CHANNEL OF CANOPY INDICATED ON ARCHITECTURAL PLANS, LOCATION AND CONFIGURATION AS INDICATED ON DRAWINGS. PROVIDE REMOTE DIMMING DRIVER(S) FOR CONTROL. LENGTH AND CONFIGURATION AS SHOWN ON DRAWINGS. MANUFACTURER TO PROVIDE FACTORY DRAWINGS OF FACTORY CUT PRODUCT LENGTHS DURING SHOP DRAWING	LED	>80	0-10V, @10%	4000K	213 / FT.	3W / FT.	24VDC	SURFACE	Q TRAN KURV-SW-PPS-FT-WET-40-HO-ENC/TL MODA EQUAL TARGETTI EQUAL	7,9
	REVIEW. STANCHION MOUNTED LED FLOODLIGHT WITH DIE CAST ALUMINUM FINNED HOUSING, DIE-CAST ALUMINUM KNUCKLE, INTEGRAL SLIP FITTER, VACUUM METALIZED WIDE DISTRIBUTION REFLECTOR, LED RATED LIFE OF 84%	LED	>80	0-10V, @ 1%	4000K	12,278	93	MVOLT	STANCHION	LITHONIA DSXF2 LED P3 40K WFL MVOLT IS AFTM KIM EQUAL GARDCO EQUAL	8
ZF	LIGHT OUPUT AT 100,000 HOURS, MULTI-VOLT LED DRIVER, CSA LISTED FOR WET LOCATIONS, IP65 RATED, DLC CERTIFIED, AND FIVE YEAR LIMITED FIXTURE WARRANTY. FIXTURE TO BE MOUNTED TO A 2-3/8" OD		I		~~~	\sim	\sim	~~~	~~~	· · · · · · · · · · · · · · · · · · ·	~~
~~~	FOR WET LOCATIONS, IP65 RATED, DLC CERTIFIED, AND FIVE YEAR LIMITED FIXTURE WARRANTY. FIXTURE TO BE MOUNTED TO A 2-3/8" OD VENOWBASY EXPENDING ABOVE SKADE.  EIGHT FOOT SUSPENDED LUMINARE FOR WALLWASHING GRAPHIC WALL, EXTRUDED ALUMINUM HOUSING WITH ADJUSTABLE DIE-CAST ALUMINUM	LED	>80		4000K	2,600	40	277V	SUSPENDED	PEERLESS LIGHTING RD4MW W40 R8 277 EZB LP840 F2/36 ALIGHT EQUAL	1,2
ZG	FOR WET LOCATIONS, IP65 RATED, DLC CERTIFIED, AND FIVE YEAR LIMITED FIXTURE WARRANTY. FIXTURE TO BE MOUNTED TO A 2-3/8" OD VENOWBASY EXPENDING ABOVE SKADE.  EIGHT FOOT SUSPENDED LUMINARE FOR WALLWASHING GRAPHIC WALL,	LED LED	~~	0-10V, @<1% 0-10V, @ 10%	4000K	2,600	27.2	277V UNV		PEERLESS LIGHTING RD4MW W40 R8 277 EZB LP840 F2/36 ALIGHT EQUAL  FOSAL POINT FIGSA RD9-2500L-46K-F1/2-UNIVAD1/AC-BIN OD/ACSARD9-SI/WH-WP EQUAL	

PROVIDE STEM / PENDANT LENGTH AS REQUIRED. STEM / PENDANT / LENGTH TO EXTEND FROM FIXTURE TO BUILDING STEEL WHERE EXPOSED. FIELD CUT AND THREAD STEM AS REQUIRED.

2 REFER TO DRAWINGS FOR MOUNTING HEIGHT DETAILS.
3 PROVIDE FACTORY CHEVRONS AS INDICATED ON DRAWINGS.

4 MOUNT BOTTOM OF FIXTURE 96" AFF.
5 DURING SHOP DRAWING REVIEW SUBMITTAL PROVIDE DRIVER SUBMITTAL FOR EACH LUMINAIRE

PROVIDE PROVISIONS FOR ARMED CAMERA MOUNTING INCLUDING GROMMETTED ACCESS HOLE, CAGE NUT, AND ADDITIONAL EPA REQUIREMENT. REFER TO SITE PLANS FOR ADDITIONAL INFORMATION REGARDING QUANTITY OF CAMERAS AT EACH POLE.

7 MOUNT LINEAR LED TAPE IN ALUMINUM CHANNEL AROUND PERIMETER OF EXTERIOR CANOPY. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL INFORMATION. 8 PROVIDE CONCRETE BASE, SEE DETAILS.

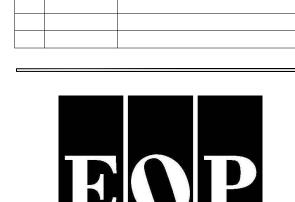
9 PROVIDE DIRECT WIRE CONNECTION BOX(S), LEADER AND JUMPER CABLES AND OTHER INSTALLATION ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.

NEW COMBINED CTE SCHOOL

BG# 22-167 100 Midland Ave, Lexington, KY 40508

REVISIONS

# DATE DESCRIPTION
1 10/14/22 ADDENDUM 1
3 10/21/22 ADDENDUM 3





PROJECT TEAM

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KEYPLAN

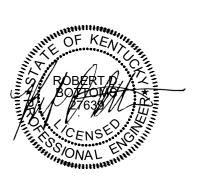
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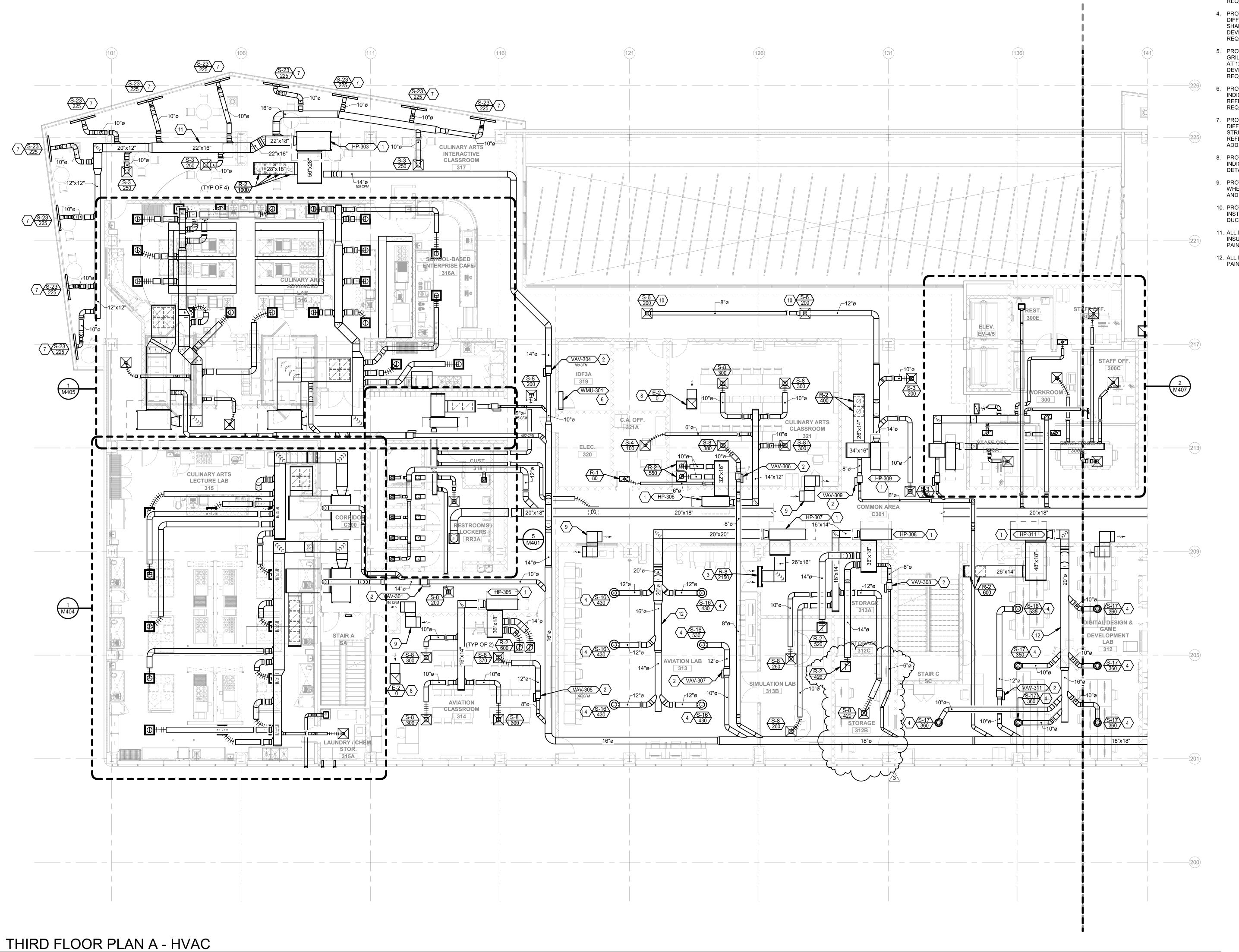
Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

Job Number 2150 Drawn By WMM Checked By RDB

By WMM ed By RDB 09/28/2022



LIGHTING FIXTURE SCHEDULE



#### **GENERAL NOTES**

REFER TO DRAWING M001 FOR MECHANICAL GENERAL NOTES AND LEGEND.

2. INTERIOR OF ALL RETURN, TRANSFER, AND EXHAUST AIR GRILLES/PLENUMS TO BE PAINTED MATTE BLACK.

1. PROVIDE HORIZONTAL WATER-SOURCE HEAT PUMP UNIT WHERE INDICATED. HORIZONTAL UNITS MOUNTED ABOVE CEILING SHALL BE INSTALLED NO MORE THAN 2'-0" ABOVE CEILING SYSTEM, WSHP UNITS SHALL NOT BE INSTALLED ABOVE CABLE TRAY OR PIPING. REFER TO SCHEDULE AND DETAILS FOR ADDITIONAL REQUIREMENTS.

- 2. PROVIDE A SINGLE DUCT VARIABLE AIR VOLUME (VAV) BOX WHERE INDICATED FOR OUTSIDE AIR DEMAND CONTROL VENTILATION. REFER TO SCHEDULE AND DETAILS FOR ADDITIONAL REQUIREMENTS.
- 3. PROVIDE A SIDEWALL SURFACE MOUNTED RETURN AIR GRILLE WHERE INDICATED. INSTALL RETURN AIR GRILLE 12'-6" A.F.F. TO BOTTOM OF GRILLE. REFER TO AIR DEVICE SCHEDULE FOR SIZING AND ADDITIONAL REQUIREMENTS.
- 4. PROVIDE A DUCT MOUNTED SUPPLY AIR DIFFUSER. THE DIFFUSER SHALL BE INSTALLED ON RIGID DUCT AND SHALL BE INSTALLED AT 12' - 6" A.F.F. REFER TO AIR DEVICE SCHEDULE FOR SIZING AND ADDITIONAL REQUIREMENTS.
- 5. PROVIDE A SIDEWALL SURFACE MOUNTED SUPPLY AIR GRILLE WHERE INDICATED. GRILLE SHALL BE INSTALLED AT 12'-6" A.F.F. TO BOTTOM OF GRILLE. REFER TO AIR DEVICE SCHEDULE FOR SIZING AND ADDITIONAL REQUIREMENTS.
- 6. PROVIDE A WALL MOUNTED MINI-SPLIT UNIT WHERE INDICATED. UNIT SHALL BE INSTALLED AT 8'-0" A.F.F. REFER TO MINI-SPLIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.
- 7. PROVIDE LINEAR SLOT DIFFUSER WHERE INDICATED. DIFFUSER SHALL BE SUPPORTED INDEPENDENTLY FROM STRUCTURE AND FLOATING. CONNECT WITH RIGID DUCT. REFER TO AIR DEVICE SCHEDULE FOR SIZE AND ADDITIONAL REQUIREMENTS.
- 8. PROVIDE AN EXHAUST AIR TRANSFER WHERE INDICATED. REFER TO TRANSFER/RETURN AIR BOOT
- 9. PROVIDE AN EXHAUST AIR TRANSFER SOUND TRAP WHERE INDICATED. REFER TO AIR DEVICE SCHEDULE AND '2' TRANSFER SOUND TRAP DETAIL.
- 10. PROVIDE SUPPLY AIR DIFFUSER WHERE INDICATED AND INSTALL ON END OF RIGID DUCT. DO NOT USE FLEX
- 11. ALL DUCT IN THIS AREA SHALL BE EXTERNALLY INSULATED AND WRAPPED WITH CANVAS FOR FIELD PAINTING BY OTHERS.
- 12. ALL DUCT SHALL BE DOUBLE WALL SPIRAL. PROVIDE PAINT GRIP FINISH FOR FIELD PAINTING BY OTHERS.

**NEW** 

**COMBINED CTE SCHOOL** 

BG# 22-167 100 Midland Ave, Lexington, KY 40508 **BID DOCUMENTS** 

REVISIONS											
#	DATE	DESCRIPTION									
3	10/21/2022	ADDENDUM #3									



PROJECT TEAM

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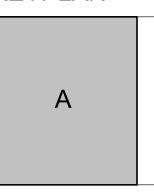
302 N. East Street, Studio One Indianapolis, IN 46202

Reitano Design Group



Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

KEYPLAN

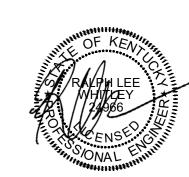


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> Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

Job Number 2150 Drawn By Checked By RLW



THIRD FLOOR PLAN A -HVAC

ADD# 3 10/21/2022

										WA	TER-S	SOUR	CE HE	EAT PUM	IP - EN	IERG	Y REC	COVER	RY UN	IIT SC	HEDU	JLE								
		UNIT									HEAT P	UMP COOLIN	NG		HOT GAS	REHEAT	HEA	T PUMP HEA	ATING		HEAT F	RECOVERY		COMBINED	CAPACITIES		ELECTRICA	٨١		
			SUPP	LY FAN	RETURN/E	XHAUST FAN	FL	UID	L	_AT	TOTAL	OENOIDI E	COM	IPRESSORS	БАТ		TOTAL	E A T		WINTER	WINTER	SUMMER	SUMMER	TOTAL	TOTAL		ELECTRICA	HL		SERIAL NUMBER
MARK	MANUFACTURER	MODEL	AIRFLOW (CFM)	ESP (inH²O)	AIRFLOW (CFM)	ESP (inH ² O)	FLOW (GPM)	WPD (FT)	LDB (F)	LWB(F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	QTY	REFRIGERANT	DB/WB (°F)	LAT (°F)	TOTAL CAPACITY (MBH)	EAT DB/WB (°F)	LAT (°F)					COMBINED COOLING (MBH)		V/Ø/Hz	MCA	МОСР	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
ERU-201	WATER FURNACE	DAS180S1	4,840	2	4,700	1	45	14.5	55.0	53.7	196	131.26	1	410A	55.0/53.7	70	129.85	50.4/41.9	75	50.4/41.9	70/54	80.1/67.7	75/63	389	473	460/60/3	58.4	90	ALL	
ERU-202	WATER FURNACE	DAS360L2	7,055	1.5	6,800	1	90	14.5	55.0	53.7	317.5	198.4	2	410A	55.0/53.7	70	200.9	48.6/40.8	75	48.6/40.8	70/54	80.4/68	75/63	591	685	460/60/3	101.4	125	ALL	
ERU-301	UNITED COOL AIR	VZWHL30G4DTAC-C-X	8,400	2.5	8,100	1.5	90	6.39	54.5	54.3	387.14	247.26	2	410A	54.5/54.3	70	248.6	81.1/68.9	75	48.4/	70/54	81.1/68.9	75/63	688	688	460/60/3	83.5	100	1,2,3,4,5,6,8,10	
ERU-401	WATER FURNACE	DAS180S1	4,200	1.25	4,000	1	45	14.5	55.0	53.7	185.6	118.26	1	410A	55.0/53.7	70	127.14	47.0/39.7	75	47.0/39.7	70/54	81.1/68.4	75/63	341	405	460/60/3	58.4	90	ALL	
ERU-402	WATER FURNACE	DAS180S1	4,550	1.25	4,350	1.0	45	14.8	55.0	53.7	191.55	125.02	1	410A	55.0/53.7	70	144.31	45.6/38.7	75	45.6/38.7	70/54	81.4/68.7	75/63	355	437	460/60/3	58.4	90	ALL	

1. COOLING DESIGN CONDITIONS: EAT 75F DB / 63F WB AND 95F DB / 78F WB AMBIENT. HEATING AMBIENT DESIGN CONDITIONS BASED ON 5F DB / 4F WB.

2. COOLING DESIGN CONDITIONS: EWT 85F. HEATING DESIGN CONDITIONS: EWT 40F.

3. PROVIDE WITH HOUSEKEEPING PAD. 4. SINGLE POINT POWER CONNECTION WITH FACTORY INSTALLED DISCONNECT SWITCH.

5. ENERGY RECOVERY WHEEL

6. VARIABLE SPEED COMPRESSOR.

7. 200 KAIC RATING

8. ECM FAN MOTORS. 9. AIRFLOW MEASURING STATIONS ON SUPPLY AND EXHAUST FANS.

10. MODULATING HOT GAS REHEAT.

	VAV BOX SCHEDULE - FIRST FLOOR											
MARK	MANUFACTURER	MODEL	INLET	OUTLET	MIN OCC STANDBY CFM	MIN OCCUPIED CFM	MAX OCCUPIED CFM	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)			
VAV-101	DAIKIN	MQTH-500	6"	12" x 8"	N/A	195	195	1,4				
VAV-102	DAIKIN	MQTH-500	5"	6"	N/A	100	100	1,2,4				
VAV-103	DAIKIN	MQTH-500	8"	10"	115	130	380	1,2,3				
VAV-104	DAIKIN	MQTH-500	8"	10"	115	130	380	1,2,3				
VAV-105	DAIKIN	MQTH-500	8"	10"	115	130	380	1,2,3				
VAV-106	DAIKIN	MQTH-500	8"	10"	105	105	340	1,2,3				
VAV-107	DAIKIN	MQTH-500	12"	14"	285	700	950	1,2,3				
VAV-108	DAIKIN	MQTH-500	6"	8"	N/A	135	135	1,2,4				
VAV-109	DAIKIN	MQTH-500	10"	12"	165	300	550	1,2,3				
VAV-110	DAIKIN	MQTH-500	8"	10"	110	115	365	1,2,3				
VAV-111	DAIKIN	MQTH-500	6"	8"	N/A	160	160	1,2,4				

1. SINGLE DUCT VAV ROUND INLET

2. PROVIDE TRANSITION FROM RECTANGULAR OUTLET TO ROUND DUCT

3. VARIABLE AIR VOLUME FOR DEMAND CONTROL VENTILATION. 4. CONSTANT VOLUME DURING OCCUPIED HOURS.

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. REFER TO DRAWINGS FOR SEQUENCES OF OPERATION.

	VAV BOX SCHEDULE - SECOND FLOOR												
MARK	MANUFACTURER	MODEL*	INLET	OUTLET	MIN OCC STANDBY CFM	MIN OCCUPIED CFM	MAX OCCUPIED CFM	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)				
VAV-201	DAIKIN	MQTH-500	6"	8"	60	185	185	1,2,4					
VAV-202	DAIKIN	MQTH-500	5"	6"	N/A	100	100	1,2,4					
VAV-203	DAIKIN	MQTH-500	6"	8"	N/A	150	150	1,2,4					
VAV-204	DAIKIN	MQTH-500	12"	14"	280	685	935	1,2,3					
VAV-205	DAIKIN	MQTH-500	8"	10"	110	115	365	1,2,3					
VAV-206A	DAIKIN	MQTH-500	10"	12"	N/A	425	425	1,2,4					
VAV-206B	DAIKIN	MQTH-500	10"	12"	N/A	425	425	1,2,4					
VAV-207	DAIKIN	MQTH-500	12"	14" x 14"	250	370	820	1,3					
VAV-208	DAIKIN	MQTH-500	8"	10"	110	115	365	1,2,3					
VAV-209	DAIKIN	MQTH-500	16"	24" x 16"	300	760	2520	1,3					
VAV-210A	DAIKIN	MQTH-500	8"	12"	120	275	400	1,2,3					
VAV-210B	DAIKIN	MQTH-500	8"	12"	120	275	400	1,2,3					
VAV-211A	DAIKIN	MQTH-500	10"	12"	130	290	425	1,2,3					
VAV-211B	DAIKIN	MQTH-500	10"	12"	130	290	425	1,2,3					
VAV-212	DAIKIN	MQTH-500	8"	10"	110	110	360	1,2,3					

### REMARKS:

1. SINGLE DUCT VAV ROUND INLET

2. PROVIDE TRANSITION FROM RECTANGULAR OUTLET TO ROUND DUCT

3. VARIABLE AIR VOLUME FOR DEMAND CONTROL VENTILATION. 4. CONSTANT VOLUME DURING OCCUPIED HOURS.

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. REFER TO DRAWINGS FOR SEQUENCES OF OPERATION.

		POT FEEDE	R / FILTER	SCHED	ULE	
MARK	MANUFACTURER	MODEL	INLET/OUTLET CONNECTIONS	FLOW GPM	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
PF-01	SHELCO	12F0S3SB-304-0-3F-GP-B	3"/3"	250	ALL	

1. 304L STAINLES STEEL CONSTRUCTION

2. (12) 30" DOUBLE OPEN-ENDED CARTRIDGES 3. SWING BOLT CLOSURE

4. FLANGED INLET / OUTLET

5. HEAVY-DUTY STAINLESS STEEL MOUNTING LEGS.

6. 150 PSIG MAXIUMUM OPERATING PRESSURE @ 300DEG F 7. PROVIDE (1) EXTRA SET OF CARTRIDGES AT SUBSTANTIAL COMPLETION

8. PROVIDE DRAIN CONNECTION TO NEAREST FLOOR DRAIN

		EXI	PANSION T	ANK SCI	HEDULE		
MARK	MANUFACTURER	MODEL	LOCATION	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
ET-01	BELL&GOSSETT	B800	MECH RM 123	211	101.25	ALL	

2. 100 PSIG PRESSURE RATING.

3. VERTICAL BLADDER TYPE.

4. INSTALL ON 4" CONCRETE PAD.

5. REFER TO DETAILS.

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: WESSELS, WATTS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

		AIR SEF	PARATOR S	CHEDUI	LE							
MARK	MANUFACTURER	MODEL	INLET/OUTLET	FLOW	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY						
			CONNECTIONS	GPM	1	CONTRACTOR)						
AS-01 BELL & GOSSETT RL-10F 10"/10" 1600 ALL												
REMARKS:												

1. ASME RATED COMPLETE WITH INTERNAL STRAINER AND AUTOMATI AIR VENT. 2. PROVIDE DRAIN LINE ROUTED TO NEAREST FLOOR DRAIN.

3. REFER TO AIR SEPERATOR DETAIL.

OTHER ACCEPTABLE MANUFACTURERS SHALL INCLUDE: GRUNDFOS, ARMSTRONG, TACO. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

		VAV	V BOX	SCHE	DULE	- THIR	D FLO	OR				VAV	вох	SCHEE	ULE -	FOUR	TH FL	OOR	
MARK	MANUFACTURER	MODEL*	INLET	OUTLET	MIN OCC STANDBY CFM	MIN OCCUPIED CFM	MAX OCCUPIED CFM	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)	MARK	MANUFACTURER	MODEL*	INLET	OUTLET	MIN OCC STANDBY CFM	MIN OCCUPIED CFM	MAX OCCUPIED CFM	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
VAV-301	DAIKIN	MQTH-500	10"	14"	185	420	610	1,2,3		VAV-401	DAIKIN	MQTH-500	8"	10"	115	135	385	1,2,3	
VAV-302	DAIKIN	MQTH-500	10"	12"	170	370	660	1,2,3		VAV-402	DAIKIN	MQTH-500	8"	10"	115	135	385	1,2,3	
VAV-303	DAIKIN	MQTH-500	5"	8"	N/A	105	105	1,2,4		VAV-403	DAIKIN	MQTH-500	5"	6"	N/A	100	100	1,2,4	
VAV-304	DAIKIN	MQTH-500	10"	14"	210	300	700	1,2,3		VAV-404	DAIKIN	MQTH-500	10"	12"	215	455	710	1,2,3	
VAV-305	DAIKIN	MQTH-500	8"	10"	115	120	370	1,2,3		VAV-405	DAIKIN	MQTH-500	10"	12"	210	445	700	1,2,3	
VAV-306	DAIKIN	MQTH-500	8"	10"	115	120	380	1,2,3		VAV-406	DAIKIN	MQTH-500	10"	12"	160	270	520	1,2,3	
VAV-307	DAIKIN	MQTH-500	10"	12"	160	280	530	1,2,3		VAV-407	DAIKIN	MQTH-500	8"	10"	120	140	390	1,2,3	
VAV-308	DAIKIN	MQTH-500	6"	8"	50	90	170	1,2,3		VAV-408	DAIKIN	MQTH-500	8"	10"	115	125	375	1,2,3	
VAV-309	DAIKIN	MQTH-500	6"	8"	N/A	150	150	1,2,4		VAV-409	DAIKIN	MQTH-500	4"	6"	N/A	60	60	1,2,4	
VAV-310	DAIKIN	MQTH-500	6"	8"	N/A	160	160	1,2,4		VAV-410	DAIKIN	MQTH-500	5"	6"	N/A	90	90	1,2,4	
VAV-311	DAIKIN	MQTH-500	10"	12"	160	280	535	1,2,3		VAV-411	DAIKIN	MQTH-500	4"	6"	N/A	70	70	1,2,4	
VAV-312	DAIKIN	MQTH-500	8"	10"	100	140	390	1,2,3		VAV-412	DAIKIN	MQTH-500	6"	8"	N/A	140	140	1,2,4	
VAV-313	DAIKIN	MQTH-500	8"	10"	105	95	345	1,2,3		VAV-413	DAIKIN	MQTH-500	8"	10"	85	150	275	1,2,3	
VAV-314	DAIKIN	MQTH-500	10"	14"	210	440	690	1,2,3		VAV-414	DAIKIN	MQTH-500	8"	10"	105	95	350	1,2,3	
VAV-315	DAIKIN	MQTH-500	6"	8"	50	75	150	1,2,3		VAV-415	DAIKIN	MQTH-500	8"	10"	85	150	275	1,2,3	
VAV-316	DAIKIN	MQTH-500	8"	10"	110	110	365	1,2,3		VAV-416	DAIKIN	MQTH-500	8"	10"	105	100	350	1,2,3	
VAV-317	DAIKIN	MQTH-500	12"	14"	260	590	840	1,2,3		VAV-417	DAIKIN	MQTH-500	10"	12"	160	280	530	1,2,3	
VAV-318	DAIKIN	MQTH-500	8"	10"	115	115	370	1,2,3		VAV-418	DAIKIN	MQTH-500	8"	10"	115	170	370	1,2,3	
VAV-319	DAIKIN	MQTH-500	10"	12"	140	225	495	1,2,3		VAV-419	DAIKIN	MQTH-500	10"	12"	160	275	530	1,2,3	
										VAV-420	DAIKIN	MQTH-500	8"	10"	110	105	355	1,2,3	
										VAV-421	DAIKIN	MQTH-500	8"	10"	105	100	350	1,2,3	
ī										VAV-422	DAIKIN	MQTH-500	6"	8"	N/A	170	170	1,2,4	
										VAV-423	DAIKIN	MQTH-500	5"	6"	N/A	100	100	1,2,4	
1										VAV-424	DAIKIN	MQTH-500	10"	12"	165	295	545	1,2,3	
										VAV-425	DAIKIN	MQTH-500	4"	6"	N/A	60	60	1,2,4	
REMARKS:										VAV-426	DAIKIN	MQTH-500	10"	12"	160	280	530	1,2,3	
	DUCT VAV ROUND II																		
	E TRANSITION FROM				UCT					REMARKS:									

						P	UMP S	CHEC	ULE					
				FLOW	HEAD		CONNE	CTIONS		ELEC1	RICAL			OEDIAL NUMBER
	MARK	MANUFACTURER	MODEL	(GPM)	(FT)	RPM	INLET	OUTLET	HP	V / Ø / Hz	MCA	MOCP	REMARKS	SERIAL NUMBER (To Be Completed by Contracto
	P-01A	BELL & GOSSETT	e1510 - 3BD	600	65	1688	4"	3"	15	480/3/60	26.25	40	1,2,4,5,6	
	P-01B	BELL & GOSSETT	e1510 - 5EB	975	90	1767	6"	5"	30	480/3/60	50	80	1,2,4,5,6	
	P-01C	BELL & GOSSETT	e1510 - 5EB	975	90	1767	6"	5"	30	480/3/60	50	80	1,2,4,5,6	
	P-02A	BELL & GOSSETT	e1510 - 4BD	635	65	1700	5"	4"	15	480/3/60	26.25	40	1,2,4,5,6	
	P-02B	BELL & GOSSETT	e1510 - 4BD	635	65	1700	5"	4"	15	480/3/60	26.25	40	1,2,4,5,6	
	P-03A	BELL & GOSSETT	e1510 - 4BD	800	65	1700	5"	4"	20	480/3/60	33.75	60	1,2,4,5,6	
	P-03B	BELL & GOSSETT	e1510 - 4BD	800	65	1700	5"	4"	20	480/3/60	33.75	60	1,2,4,5,6	
	P-01A	BELL& GOSSETT	e1510 - 6BD	1600	30	1739	8"	6"	20	480/3/60	33.75	60	1,2,4,5,6,7	
$\wedge$		RECES POSSET	e4510 6BB	1600	<b>30</b>	1750	~~~	<b>✓°~~</b>	~~~	480/3/60	32.75	<b>√</b> 66√	7,24,5,6,7	
22/3	P-04A	BELL& GOSSETT	ecoCirc 40-275	180	10	2658	3"	3"	2	208/1/60	7.5	15	3,4,5,7,8,9	)
	P-04B	BELL& GOSSETT	ecoCirc 40-275	180	10	2658	3"	3"	2	208/1/60	7.5	15	3,4,5,7,8,9	<b>  </b>

1. SINGLE DUCT VAV ROUND INLET. NO HEATING

4. CONSTANT VOLUME DURING OCCUPIED HOURS.

2. PROVIDE TRANSITION FROM RECTANGULAR OUTLET TO ROUND DUCT

3. VARIABLE AIR VOLUME FOR DEMAND CONTROL VENTILATION.

1. BASE-MOUNTED END SUCTION PUMP 2 PROVIDE WITH SUCTION DIEFUSER 3. LARGE WET ROTOR CIRCULATOR WITH ECM MOTOR. 4. PREMIDIM EFFICIENCY MOTOR FOR USE WITH VARIABLE FREQUENCY DRIVE 5. PROVIDE CHECK VALVE IN SUPPLY DISCHARGE 6. PUMP IMPELLER TO BE SELECTED AT MAXIMUM DIAMETER TO ACHIEVE HIGHEST EFFICIENCY. 7. PUMP IS PART OF ADD ALTERNATE. REFER TO SPECIFICATIONS AND DRAWINGS FOR ALTERNATE DESCRIPTION AND INFORMATION.

ADD #3

8. PUMP SHALL BE INTERLOCKED TO THE BOILER FOR OPERATION. BOILER SHALL START AND STOP PUMP.

9. PUMP SHALL BE INTEGRATED TO BAS FOR MONITORING.

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: ARMSTRONG, TACO, GRUNDFOS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

					MINI-S	SPLIT SY	STEM SO	CHEDU	JLE					
					COOLING	SENS. COOLING			ELECT	TRICAL		WEIGHT		SERIAL NUMBER
MARK	MANUFACTURER	MODEL	CFM	SEER	CAPACITY @ 95/75F (BTU/hr)	CAPACITY @ 95/75F (BTU/hr)	SERVED BY	V/Hz/Ø	RLA	MCA	MOCP	(LBS)	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
DUTDOOR L	JNIT													
AC-01	DAIKIN	RK36NVMJUA	2,811	15.9	34,400	22,160	-	230/60/1	16.25	17	25	133	1,2,4,7,11	
AC-02	DAIKIN	4MXL36TVJU	3,684	21.7	34,400	-	-	230/60/1	27	32.5	45	214	1,3,4,7,11	
AC-03	DAIKIN	5MXS48TVJU	3,684	20.2	47,000	-	-	230/60/1	27	33.2	45	216	1,3,4,5,10,11	
AC-04	DAIKIN	RK18NMVJU	2,461	18	18,000	14,480	-	230/60/1	10	18.3	25	97	1,2,4,5,10,11	
AC-05	DAIKIN	RK18NMVJU	2,461	18	18,000	14,480	-	230/60/1	10	18.3	25	97	1,2,4,5,10,11	
AC-06	DAIKIN	RK18NMVJU	2,461	18	18,000	14,480	-	230/60/1	10	18.3	25	97	1,2,4,5,10,11	
AC-07	DAIKIN	5MXS48TVJU	3,684	20.2	47,000	-	-	230/60/1	27	33.2	45	216	1,3,4,5,10,11	
INDOOR UN	IT													
WMU-101	DAIKIN	FTX36NVJU	915	15.9	34,400	22,160	AC-01	230/60/1	-	-	-	-	6,8,9	
WMU-102	DAIKIN	FTXS18LVJU	583	21.7	18,000	17,200	AC-02	230/60/1	=	-	F	-	6,8,9	
WMU-103	DAIKIN	FTXS18LVJU	583	21.7	18,000	17,200	AC-02	230/60/1	-	-	-	-	6,8,9	
WMU-201	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-03	230/60/1	-	0.3	15	-	6,8,9	
WMU-202	DAIKIN	FTK18NMVJU	713	18	18,000	14,480	AC-05	230/60/1	-	-	-1	-	6,8,9	
WMU-203	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-07	230/60/1	-	0.3	15	-	6,8,9	
WMU-301	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-03	230/60/1	- 1	0.3	15	-	6,8,9	
WMU-302	DAIKIN	FTK18NMVJU	713	18	18,000	14,480	AC-06	230/60/1	-1	-	-1	-	6,8,9	
WMU-303	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-07	230/60/1	=1	0.3	15	-	6,8,9	
WMU-401	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-03	230/60/1	-	0.3	15	-	6,8,9	
WMU-402	DAIKIN	FTK18NMVJU	713	18	18,000	14,480	AC-04	230/60/1	-1	-	-1	-	6,8,9	
WMU-403	DAIKIN	FTXS18LVJU	583	21.7	18,000	15,670	AC-07	230/60/1		0.3	15	-	6,8,9	

1. VARIABLE SPEED INVERTER DRIVEN COMPRESSOR

2. COOLING ONLY UNIT 3. HEAT PUMP UNIT - MULTIP PORT

3. VARIABLE AIR VOLUME FOR DEMAND CONTROL VENTILATION.

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

4. CONSTANT VOLUME DURING OCCUPIED HOURS.

4. LOW AMBIENT COOLING/PROVIDE WIND BAFFLES

5. INSTALL ON PRE-MANUFACTURED ROOF CURB ASSEMBLY

REFER TO DRAWINGS FOR SEQUENCES OF OPERATION.

7. WALL MOUNTED UNIT WITH ASSOCIATED CONDENSATE PUMP AND DRAIN PAN OVERFLOW SENSOR.

8. PROVIDE PRE-MANUFACTURED POWDER COATED WALL BRACKET FOR INSTALLATION. 9. INDOOR UNIT POWERED FORM OUTDOOR UNIT.

10. DACA-CP4-1 CONDENSATE PUMP OR SIMILAR.

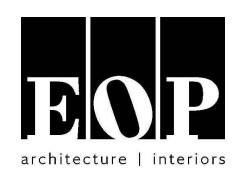
11. HAIL GUARDS. 12. PROVIDE SYSTEM WITH DKN PLUS BACNET INTERFACE (OR EQUIVALENT). FOR BACNET INTEGRATION TO BAS. PROVIDE 4-WIRE STAT BY T.C.C.

# **NEW COMBINED CTE** SCHOOL BG# 22-167

100 Midland Ave, Lexington, KY 40508

BID DOCUMENTS

	F	REVISIONS
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3
	·	



PROJECT TEAM

**EOP Architects** 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380 www.eopa.com



Element Design, PLLC. 366 S. Broadway Lexington, KY 40508

Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504



628 Winchester Rd. Lexington, KY 40505



Indianapolis, IN 46202

Calvert - Independent Hardware Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

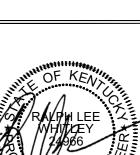
KEYPLAN

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None of this information shall be used by or disclosed to any person or entity for any reason whatsoever without the permission of EOP

Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

Job Number 2150 JC / CS Drawn By RLW Checked By 09/28/2022



**MECHANICAL** SCHEDULES

ADD #3 10/21/2022

										,	WATE	R SO	JRCE HI	EAT P	JMP U	NIT SO	CHED	JLE										
					I	EXTERNAL	FLUID	Fluid				COOLING	3					HEATING					ELECTRICAL					SERIAL NUMBER
	MARK	AREA SERVED BY HEAT PUMP	MODEL	CAPACITY	AIRFLOW (CFM) F	STATIC PRESSURE	FLOW (GPM)	Pressure Drop	LA	Т	TOTAL	SENSIBLE	HEAT OF REJECTION	EER	EER	LAT	TOTAL	HEAT OF ABSORPTION	COP	СОР	V/ Hz / PH	COMPRESSOR	FAN MOTOR	TOTAL UNIT	MCA (A)	MOCP	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
						(inH ₂ O)	(OI WI)	(Ft H2O)	LDB (°F)	LWB (°F)	(Btu/hr)	(Btu/hr)	(Btu/hr)	(Design)	(AHRI)	LDB (°F)	(Btu/hr)	(Btu/hr)	(Design)	(AHRI)	V/ 112 / 1 11	RLA	FLA	FLA	WO/ C(/ C)	101001		
	HP-101	PRINCIPAL PSA BOOKKEEPER	WGDH024	FULL PART	800 700	0.3	6.00	9.92 10.27	55.3 52.4	52.1 49.2	23646 17603	16532 12929	28756 20611	15.8 20.0	18.3 24.2	94.2 93.7	20338 17419	14539 13093	3.5 4.0	3.4	460/60/3	3.5	2.4	5.9	6.8	15	1,5,7,8,9,11,13	
	HP-102	CONFERENCE 100A	WGCH012	FULL	389	0.3	3.00	5.19	51.7	51.6	11035	9515	13847	13.4	14.2	98.7	11705	8510	3.7	3.2	265/60/1	4.7	0.5	5.2	6.4	15	1,4,7,8,11,13	
	HP-103 HP-104	RECEPTION 100 WORKROOM RECORDS  CORRIDOR C101	WGCH012 WGCH012	FULL FULL	389 389	0.3	3.00	5.19 5.19	51. <i>7</i> 51.7	51.6 51.6	11035 11035	9515 9515	13847 13847	13.4 13.4	14.2	98.7 98.7	11705 11705	8510 8510	3.7 3.7	3.2	265/60/1 265/60/1	4.7	0.5 0.5	5.2 5.2	6.4 6.4	15 15	1,4,7,8,11,13 1,4,7,8,11,13	
	HP-105	WELDING CLASS 105	WGDH030	FULL PART	1075 1000	0.3 0.3	7.50 7.50	14.16 14.66	57.8 53.8	53.8 50.1	27216 22958	19459	34119 27181	13.5 18.6	15.7 21.1	92.7 91.2	25709 22235	18238 16606	3.4	3.2 3.6	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,11,13	
	HP-106	AUTOMOTIVE TECH 108	WGDH030	FULL	1075	0.3	7.50	14.00	57.8	53.8	27216	16964 19459	34119	13.5	15.7	92.7	25709	18238	3.4	3.2	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,11,13	
				PART FULL	1000 1075	0.3	7.50 7.50	14.66 14.16	53.8 57.8	50.1 53.8	22958 27216	16964 19459	27181 34119	18.6 13.5	21.1 15.7	97.2 92.7	28568 25709	22751 18238	4.9 3.4	3.6 3.2				0.7	7.0	45		
	HP-107	AUTOMOTIVE TECH 109	WGDH030	PART	1000 1075	0.3	7.50 7.50	14.66 14.16	53.8 57.8	50.1	22958 27216	16964	27181 34119	18.6	21.1 15.7	97.2 92.7	28568 25709	22751	4.9	3.6	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,11,13	
	HP-108	DIESEL CLASS 112	WGDH030	FULL PART	1075	0.3 0.3	7.50	14.16	53.8	53.8 50.1	22958	19459 16964	27181	13.5 18.6	21.1	97.2	28568	18238 22751	3.4 4.9	3.2	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,11,13	
	HP-109	OFFICE SUITE 111	WGDH030	FULL PART	1075 1000	0.3	7.50 7.50	14.16 14.66	57.8 53.8	53.8 50.1	27216 22958	19459 16964	34119 27181	13.5 18.6	15.7 21.1	92.7 97.2	25709 28568	18238 22751	3.4 4.9	3.2	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,9,11,13	
	HP-110	DIESEL ENGINE LAB 113	WGTH0641	FULL	2000	0.3	15.00	9.55	53.4	51.3	62870	45465	75222	17.4	19.7	95.8	54292	40625	4	3.9	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,9,12,13	
	HP-111	CORRIDOR C102	WGCH015	PART FULL	1750 666	0.3	15.00 3.75	9.89 6.72	50.3 58.6	48.6 56.2	46362 15070	36275 12101	52888 18283	24.2 16	16.8	93.7 86.1	43551 13481	33770 10406	4.5 4.4	4.3 3.5	265/60/1	4.3	1.0	5.3	6.4	15	1,4,7,8,11,13	
	HP-112A	FIRE SAFETY LAB 115	WGDH030	FULL	1000	0.3	7.50	14.16	57.8	53.8	27216	19459	34119	13.5	15.7	92.7	25709	18238	3.4	3.2	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,9,12,13	
	HP-112B	FIRE SAFETY LAB 115	WGDH030	PART FULL	1000	0.3	7.50 7.50	14.66 14.16	53.8 57.8	50.1 53.8	22958 27216	16964 19459	27181 34119	18.6 13.5	21.1 15.7	91.2 92.7	22235 25709	16606 18238	3.4	3.6	460/60/3	4.3	2.4	6.7	7.8	15	1,5,7,8,9,12,13	
				PART FULL	1000 1350	0.3	7.50 9.00	14.66 11.89	53.8 56.0	50.1 53.5	22958 35366	16964 26877	27181 43344	18.6 15.1	21.1 17.6	91.2 91.5	22235 30581	16606 22178	4 3.6	3.6 3.3			2.4	0.7		10		
	HP-113	FIRE CLASSROOM 116	WGDH036	PART	1200	0.3	9.00	12.32	53.7	50.7	25719	20490	30182	19.7	24.5	90.4	25757	19708	4.3	4	460/60/3	5.7	3.4	9.1	10.5	15	1,5,7,8,11,13	
	HP-114	CUSTODIAL RECEIVING 118	WGDH024	FULL PART	700	0.3	6.00	9.92 10.27	55.3 52.4	52.1 49.2	23646 17603	16532 12929	28756 20611	15.8 20.0	18.3 24.2	94.2 93.7	20338 17419	14539 13093	3.5 4.0	3.4	265/60/1	9.1	2.4	11.5	13.8	20	1,5,7,8,9,12,13	
	HP-115A	WELDING LAB 107	WGDH036	FULL PART	1350 1161	0.3 0.3	9.00 9.00	11.89 12.32	56.0 53.7	53.5 50.7	35366 25719	26877 20490	43344 30182	15.1 19.7	17.6 24.5	91.5 90.4	30581 25757	22178 19708	3.6 4.3	3.3	460/60/3	5.7	3.4	9.1	10.5	15	1,5,7,8,12	
	HP-115B	OA - WELDING LAB 107	WGOV024	FULL	2500	0.3	39.90	3.70	55.0	54.0	165755	96995	193596	-	-	56.4	151172	130554	6.7	-	460/60/3	21.6	10.4	32.0	35.0	45	3,6,12,13, 15	
	HP-116	AUTOMOTIVE LAB 110	WLVW1120	FULL FULL	4000 940	0.76 0.3	30.00 9.00	13.70 8.69	59.2 49.8	56.9 47.8	123100 37349	88266 24833	151043 44250	15.04 18.5	15.9 20.1	97.6 101.9	119132 31504	90155 23854	4.11 4.1	3.9 4.2	460/60/3	7.8	2.8	18.4	20.4	25	3,9,10,12,13	
	HP-201	OFFICES 200A 200B 200C 200D	WGTH0381	PART	940	0.3	9.00	9.00	50.5	47.8	26565	19285	30210	24.9	28.9	96.4	26065	20549	4.7	4.7	460/60/3	5.7	4.1	9.8	11.2	15	2,5,7,8,9,11,14	
_	HP-202	ADMIN WAITING 200 CONFERENCE 200E	WGSH0121	FULL FULL	402 2160	0.3	3.00 18.00	9.13 13.53	53.5 52.1	51.7 50.9	12332 70419	9072 51917	15015 85362	15.7 16.1	17.2	96.7 98.0	11259 63618	8379 46884	3.9 3.8	3.8	265/60/1	4.2	0.8	5.0	6.0	15	2,4,7,8,11,13	
	HP-203	MEDIA FLEX 216	WGTH0721	PART	1920	0.3	18.00	14.01	49.3	47.7	54873	41753	62862	23.4	26.1	96.5	53393	41023	4.3	4.2	460/60/3	8.5	6.9	15.4	17.5	25	2,5,7,8,11,13	
	HP-204	RR LOCKERS COMMON	WGSH0151	FULL FULL	2000	0.3	3.75 15.00	5.55 9.55	53.8 53.4	51.8 51.3	15158 62870	11156 45465	17999 75222	18.2 17.4	19.1 19.7	95.9 95.8	13635 54292	10322 40625	4.1	3.8	265/60/1	5.0	2.6	7.4	8.9	15	2,4,7,8,11,13	
	HP-205	SECURITY VESTIBULE V1	WGTH0641	PART	1750	0.3	15.00	9.89	50.3	48.6	46362 47974	36275	52888 57652	24.2	28	93.7	43551	33770 30500	4.5	4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,11,13	
	HP-206	STUDENT SHOWCASE 104	WGTH0491	FULL PART	1600 1400	0.3	12.00 12.00	5.93 6.14	54.0 51.9	51.9 49.2	34948	35249 26540	40020	16.9 23.5	19.2 28.2	94.3 92.8	40809 33594	26068	4.5	4.4	460/60/3	6.4	5.5	11.9	13.5	15	2,5,7,8,11,13	
	HP-207A	CARPENTRY LAB 203	WGTH0641	FULL PART	2000 1750	0.3	15.00 15.00	9.55 9.89	53.4 50.3	51.3 48.6	62870 46362	45465 36275	75222 52888	17.4 24.2	19.7 28	95.8 93.7	54292 43551	40625 33770	4 4.5	3.9 4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,9,12,13	
	HP-207B	CARPENTRY LAB 203	WGTH0641	FULL PART	2000 1750	0.3	15.00 15.00	9.55 9.89	53.4	51.3 48.6	62870 46362	45465 36275	75222 52888	17.4 24.2	19.7	95.8 93.7	54292 43551	40625 33770	4.5	3.9 4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,4,7,8,9,12,14	
	HP-208	CARPENTRY CLASSROOM 202	WGTH0261	FULL	800	0.3	6.00	4.92	50.3 51.8	50.9	25971	19463	30900	18	19.3	94.7	20733	15740	4.2	4.1	460/60/3	3.5	2.6	6.1	7.0	15	2,5,7,8,9,11,13	
	$\sim$			PART FULL	700 2000	0.3	6.00 15.00	5.10 9.55	50.3 53.4	47.9 51.3	19597 62870	14483 45465	22261 75222	25.1 17.4	26.8 19.7	93.9 95.8	17608 54292	13823 40625	4.7	4.6 3.9								
ADD #3	HP-210A	COMMONS C101	WGTH0641	PART	1750	0.3	15.00	9.89	50.3	48.6	46362	36275	52888	24.2	28	93.7	43551	33770	4.5	4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,11,13	
10/21/2022/3	HP-210B	COMMONS C101	WGTH0641	FULL PART	2000 1750	0.3	15.00 15.00	9.55 9.89	53.4 50.3	51.3 48.6	62870 46362	45465 36275	75222 52888	17.4 24.2	19.7 28	95.8 93.7	54292 43551	40625 33770	4.5	3.9 4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,11,13	
	HP-212	MULTIPURPOSE 208	WLVW1096	FULL FULL	3000 800	0.94 0.3	24.00 6.00	22.49 4.92	60.4	57.1 50.9	90449 25971	62384 19463	111026 30900	15 18	14.6 19.3	94.9 94.7	80520 20733	59920 15740	3.91 4.2	3.6 4.1	460/60/3	6.2	2.4	14.8	16.4	20	3,9,12,13	
<u>}</u>	HP-213	MECHANICAL CLASSROOM 215	WGTH0261	PART	700	0.3	6.00	5.10	50.3	47.9	19597	14483	22261	25.1	26.8	93.9	17608	13823	4.7	4.6	460/60/3	3.5	2.6	6.1	7.0	15	2,5,7,8,11,13	
>	HP-214	COMMONS RR2B	WGSH0151	FULL FULL	500 2160	0.3 0.3	3.75 18.00	5.55 13.53	53.8 52.1	51.8 50.9	15158 70419	11156 51917	17999 85362	18.2 16.1	19.1 18.1	95.9 98.0	13635 63618	10322 46884	4.1 3.8	3.8 3.7	265/60/1	5.0	2.6	7.4	8.9	15	2,4,7,8,11,13	
	HP-215	MECH LAB 214	WGTV0721	PART	1920	0.3	18.00	14.01	49.3	47.7	54873	41753	62862	23.4	26.1	96.5	53393	41023	4.3	4.2	460/60/3	8.5	6.9	15.4	17.5	25	3,5,7,9,12,13	
(	HP-216	ELECTRICAL CLASS POOM 242	WLVW1096	FULL FULL	3000 1250	0.94	9.00	22.49 8.69	53.8	57.1 51.6	90449 38437	62384 27854	111026 45761	15 17.9	14.6 20.1	94.9 94.5	80520 32176	59920 24460	3.91 4.2	3.6 4.2	460/60/3	6.2	2.4	14.8	16.4	20	3,9,12,13	
_	HP-217 HP-301A	ELECTRICAL CLASSROOM 212	WGTH0381	PART	1090	0.3	9.00	9.00	51.8	49.3	26984	20810	30766	24.3	28.9	93.0	26406	20869	4.8	4.7	460/60/3	5.7	4.1	9.8	11.2	15	2,5,7,8,11,13	
	HP-301B	CULINARY LAB 315 CULINARY LAB 315	WCCW2096 WCCW2096	FULL	3000	0.73 0.73	24.00	12.36 12.36	58.7 58.7	56.3 56.3	97273 97273	67826 67826	117123 117123	16.72 16.72	17.1	100.0 100.0	97094 97094	74390 74390	4.27 4.27	3.6 3.6	460/60/3 460/60/3	6.2	2.4	14.8 14.8	16.4 16.4	20 20	2,8,9,11,13 2,8,9,11,13	
	HP-302A	ADVANCED CULINARY 316	WCCW2096	FULL	3000	0.73	24.00	12.36	58.7	56.3	97273	67826	117123	16.72	17.1	100.0	97094	74390	4.27	3.6	460/60/3	6.2	2.4	14.8	16.4	20	2,8,9,11,14	
	HP-302B HP-303	ADVANCED CULINARY 316 INTERACTIVE CULINARY 317	WCCW2096 WCCW2120	FULL FULL	3000 4000	0.73 1.3	30.00	12.36 18.87	58.7 59.9	56.3 56.9	97273 122597	67826 85482	117123 150652	16.72 14.91	17.1 16.7	100.0 94.9	97094 107304	74390 78509	4.27 3.72	3.6	460/60/3 460/60/3	6.2 7.8	3.8	14.8 19.4	16.4 21.4	20 25	2,8,9,11,14 2,8,9,11,13	
	HP-304	RESTROOM COMMON RR3A	WGTH0261	FULL PART	800 700	0.3 0.3	6.00 6.00	4.92 5.10	51.8 50.3	50.9 47.9	25971 19597	19463 14483	30900 22261	18 25.1	19.3 26.8	94.7 93.9	20733 17608	15740 13823	4.2	4.1 4.6	460/60/3	3.5	2.6	6.1	7.0	15	2,5,7,8,11,13	
	HP-305	AVIATION CLASSROOM 314	WGTH0381	FULL	1250	0.3	9.00	8.69	53.8	51.6	38437	27854	45761	17.9	20.1	94.5	32176	24460	4.2	4.2	460/60/3	5.7	4.1	9.8	11.2	15	2,5,7,8,11,13	
_				PART FULL	1090 800	0.3	9.00	9.00 4.92	51.8 51.8	49.3 50.9	26984 25971	20810 19463	30766 30900	24.3 18	28.9 19.3	93.0 94.7	26406 20733	20869 15740	4.8 4.2	4.7 4.1								
	HP-306	CULINARY CLASSROOM 321	WGTH0261	PART	700	0.3	6.00	5.10	50.3 53.4	47.9	19597	14483 45465	22261 75222	25.1 17.4	26.8 19.7	101.9 95.8	23494	19612 40625	6.1	4.6	265/60/1	9.1	2.6	11.7	14.0	20	2,5,7,8,11,13	
	HP-307	AVIATION LAB 313	WGTH0641	FULL PART	2000 1750	0.3	15.00 15.00	9.55 9.89	53.4 50.3	51.3 48.6	62870 46362	36275	52888	24.2	19.7	95.8 93.7	54292 43551	33770	4.5	3.9 4.3	460/60/3	7.2	6.9	14.1	15.9	20	2,5,7,8,9,11,13	
	HP-308	AVIATION SIM LAB 313B & 312B	WGTH0381	FULL PART	940 940	0.3	9.00 9.00	8.69 9.00	49.8 50.5	47.8 47.8	37349 26565	24833 19285	44250 30210	18.5 24.9	20.1	101.9 105.9	31504 35446	23854 29801	4.1 6.3	4.2 4.7	460/60/3	5.7	4.1	9.8	11.2	15	2,5,7,8,9,11,13	
GF	ENERAL	1	1	1	<u> </u>	-					1	REMARKS		** =	<u> </u>			· - ·	-	<u> </u>		1	<u>.                                    </u>	I			<u>     l</u>	

1. OPERATING CONDITIONS: COOLING FULL CAPACITY 80 EDB / 67 EWB, 86 EWT (PART LOAD MODULATION 70 EDB / 59 EWB, 60 EWT)

2. OPERATING CONDITIONS: HEATING FULL CAPACITY 68 EDB, 32 EWT (PART LOAD MODULATION 70 EDB, 75 EWT)

3. ALL UNITS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

4. PROVIDE FLEXIBLE DUCT CONNECTIONS 5. PROVIDE LINE SIZE HOSE KITS WITH REDUCER AT UNIT CONNECTION.

6. ALL UNITS SHALL BE EXTENDED RANGE FOR GEOTHERMAL OR BOILER / TOWER OPERATION.

7. ALL UNITS ARE TO INCLUDE VIBRATION ISOLATION.

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: TRANE / DAIKIN / FLORIDA HEAT PUMP. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. HORIZONTAL UNIT

3. VERTICAL UNIT

4. SINGLE STAGE UNIT 5. TWO-STAGE UNIT

6. 100% OUTSIDE AIR PROCESSING UNIT WITHOUT ENERGY RECOVERY MUST BE ABLE TO HEAT 0° OUTSIDE

WITHOUT AUXILIARY HEAT

1. COMPACT HORIZONTAL UNIT (MAXIMUM UNIT HEIGHT 19") 7. PROVIDE WITH UNIT MOUNTED FACTORY DISCONNECT

8. PROVIDE WITH CONDENSATE OVERFLOW SENSOR 9. PROVIDE UNIT WITH HOT GAS REHEAT

10. UNIT TO BE PROVIDED WITH MOTORIZED DAMPERS FOR ECONOMIZER 11. UTILIZE HINGED FILTER GRILLES

12. UTILIZE FACTORY FILTER RACK

			OAT	HEAT		WAT	ΓER		FAI	NS	S	PRAY PUMF	)	BASIN H	EATER	E	LECTRICAL			SERIAL NUMBER
TAG	MANUFACTURER	MODEL	DB/WB	REJECTION MBH	EWT F	LWT F	FLOW GPM	WPD FT	QTY	TOTAL HP	QTY	HP	GPM	QTY	KW	V/Ø/Hz	MCA	MOCP	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
FC-1	BAC	FXV3-1426-24T-50	95/78	7,497	95	85	1,500	9.8	1	50	2	7.5	1,900	2	14	460/3/60	103.8	125	ALL	

1. INDUCED DRAFT CLOSED CIRCUIT FLUID COOLER

2. PROVIDE WITH PACKAGED CONTROL PANEL WITH SINGLE POINT POWER CONNECTION 3. CAPACITIES ARE BASED ON 20% PROPYLENE GLYCOL SOLUTION

4. WHISPER QUITE - LOW SOUND FAN 5. STANDARD WET COIL

6. PROVIDE ELECTRIC BASIN HEATER(S)

7. GALVANIZED STEEL COLD WATER BASIN 8. PROVIDE VFD FOR FAN MOTOR

9. PROVIDE VIBRATION CUT-OUT SWITCH WITH LOCAL RESET

10. PROVIDE WITH REQUIRED INTERNAL AND EXTERNAL LADDERS AND WALKWAYS REQUIRED FOR MAINTENANCE.

11. CONTROL PANEL SHALL BE PROVIDED BY THE UNIT MANUFACTURER, INSTALLED BY

THE MECHANICAL CONTRACTOR.

12. ELECTRICAL CONTRACTOR SHALL MAKE CONNECTION TO SINGLE POINT POWER CONNECTION AT CONTROL PANEL.

13. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL POWER CONNECTIONS

FROM CONTROL PANEL TO ALL COMPONENTS, I.E. FAN MOTOR(S), PUMP MOTOR(S) DAMPER ACTUATOR(S), ETC.

FLUID COOLER SCHEDULE - ADD ALTERNATE #1

14. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ANY SENSORS OR CONNECTIONS TO UNIT CONTROL PANEL REQUIRED TO INTEGRATE AS INDICATED IN CONTROLS SPECIFICATIONS,

DRAWINGS, SEQUENCES, AND POINTS LISTS. 15. DISCHARGE HOOD SHALL INCLUDE INSULATED POSITIVE CLOSE-OFF DAMPERS.

16. ALL EXTERIOR ABOVE GRADE PIPING SHALL BE HEAT TRACED AND INSULATED. THIS INCLUDES SUPPLY, RETURN, MAKE-UP WATER, AND SPRAY PUMP PIPING.

17. MECHANICAL CONTRACTOR SHALL PROVIDE BASE FOR FLUID COOLER PER MANUFACTURER'S

INSTALLATION REQUIREMENTS.

OTHER ACCEPTABLE MANUFACTURERS SHALL INCLUDE: EVAPCO AND MARLEY

REFER TO SPECIFCATIONS FOR ADDITIONAL REQUIREMENTS

13. TWO-WAY CONTROL VALVE BY T.C.C.

14. THREE-WAY CONTROL VALVE BY T.C.C.

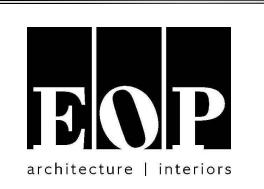
15. VARIABLE CAPACITY COMPRESSORS MINIMUM 8:1

# **NEW COMBINED CTE** SCHOOL

BG# 22-167 100 Midland Ave, Lexington, KY 40508

**BID DOCUMENTS** 

		F	REVISIONS
	#	DATE	DESCRIPTION
ı	1	10/14/22	ADDENDUM 1
ı	3	10/21/22	ADDENDUM 3
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PROJECT TEAM

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Element Design, PLLC. 366 S. Broadway Lexington, KY 40508



Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504



MEP Engineers 628 Winchester Rd. Lexington, KY 40505



Indianapolis, IN 46202



Vine Grove, KY 40175

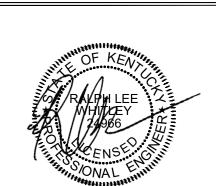
KEYPLAN

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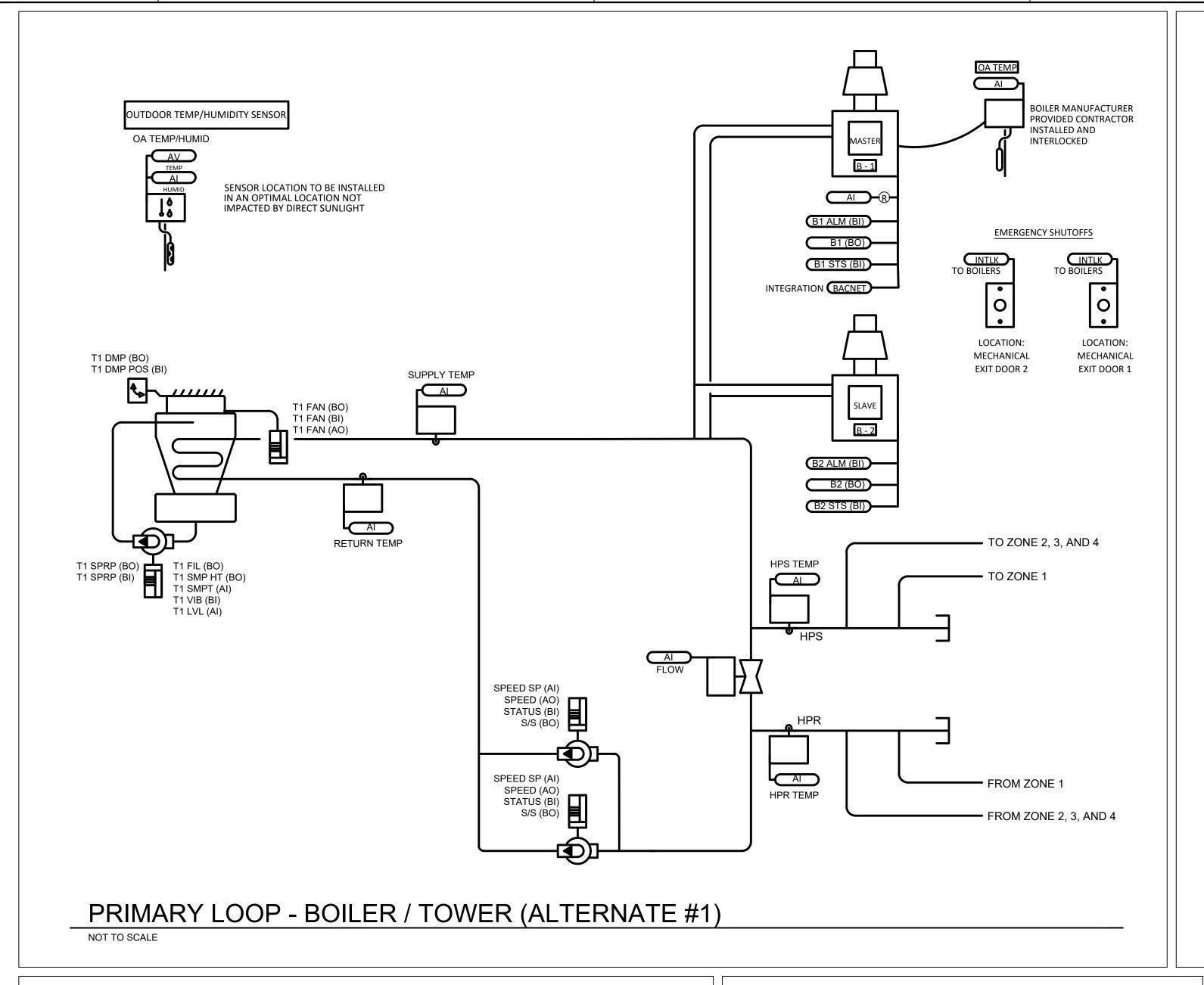
Job Number 2150 JC / CS Drawn By RLW Checked By 09/28/2022

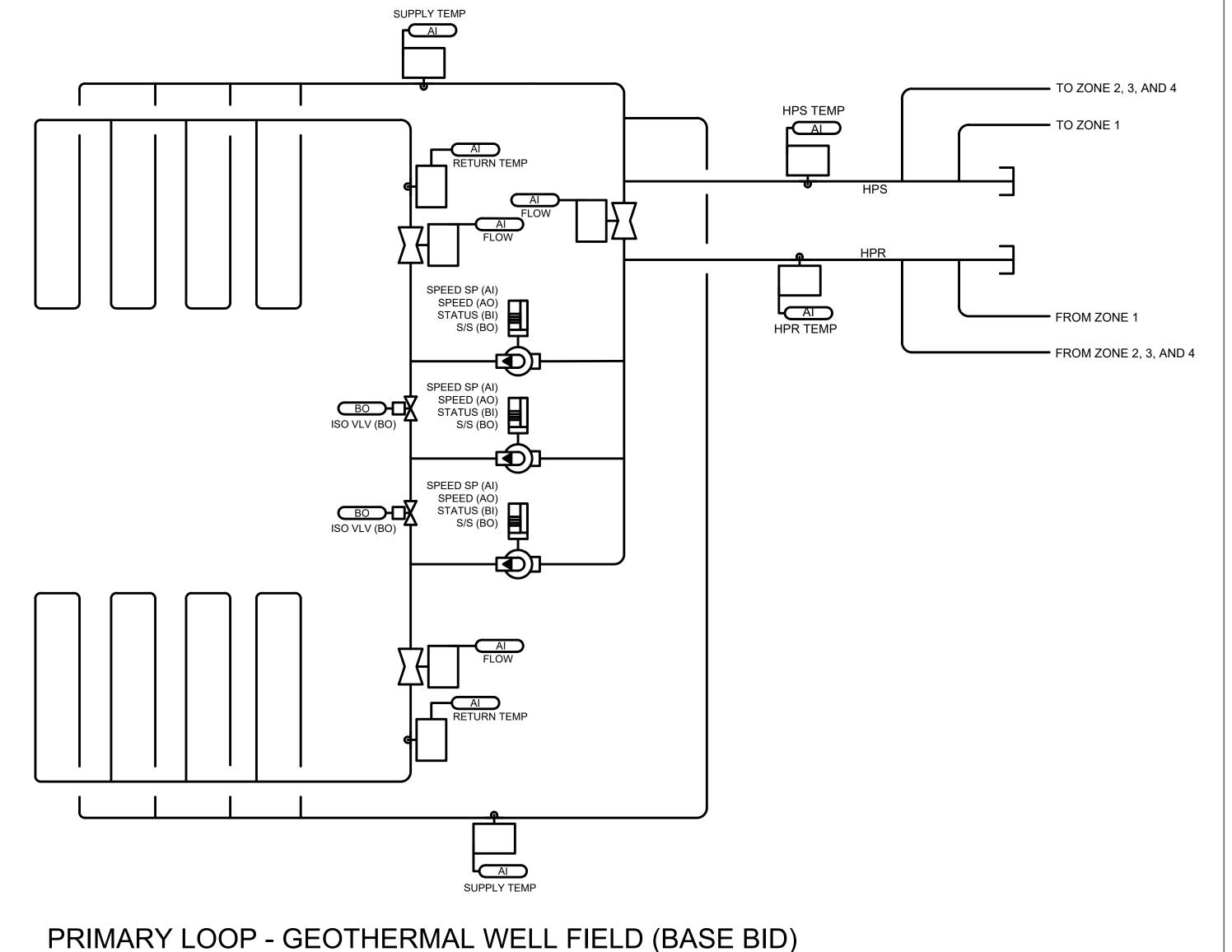


MECHANICAL SCHEDULES

ADD #3 10/21/2022

M603





SPEED SP (AI)
SPEED (AO)
STATUS (BI)
S/S (BO)

SPEED SP (AI)
SPEED SP (AI)
SPEED SP (AI)
SPEED SP (AI)
SPEED (AO)
STATUS (BI)
SPEED (AO)
STATUS (BI)
S/S (BO)

TO PRIMARY LOOP

TO PRIMARY LOOP

TO PRIMARY LOOP

SECONDARY LOOP (TYPICAL OF 2)

SERVING ZONES 1, 2, 3, AND 4

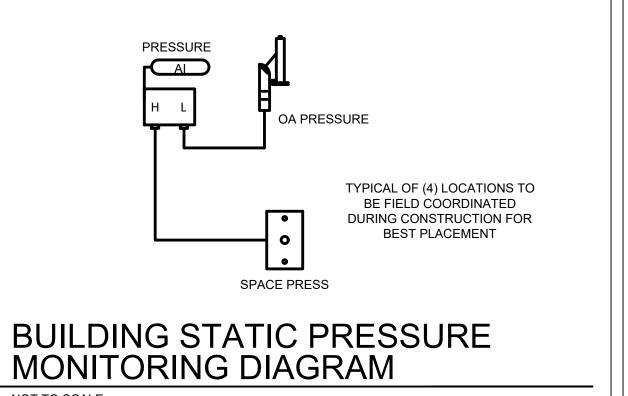
OA TEMP/HUMID

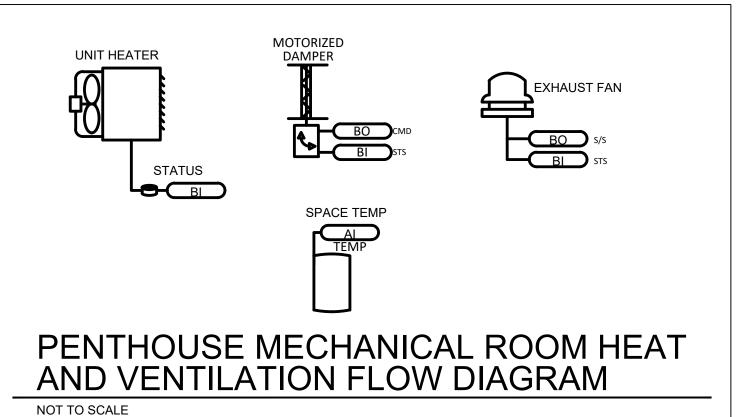
AV
TEMP
AI
HUMID

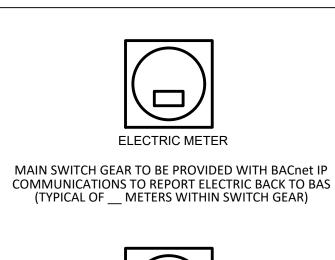
SENSOR LOCATION TO BE INSTALLED IN AN OPTIMAL LOCATION NOT IMPACTED BY DIRECT SUNLIGHT

OUTSIDE AIR TEMP / HUMIDITY

MONITORING SENSOR DIAGRAM







DOMESTIC WATER METER

PROVIDE A METER ON DOMESTIC WATER

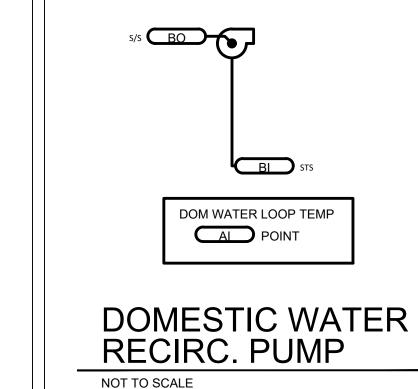
NATURAL GAS METER

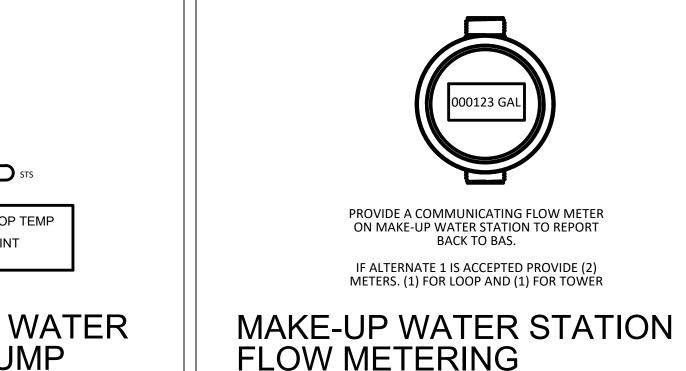
PROVIDE A METER ON NATURAL GAS SERVICE

**BUILDING UTILITIES** 

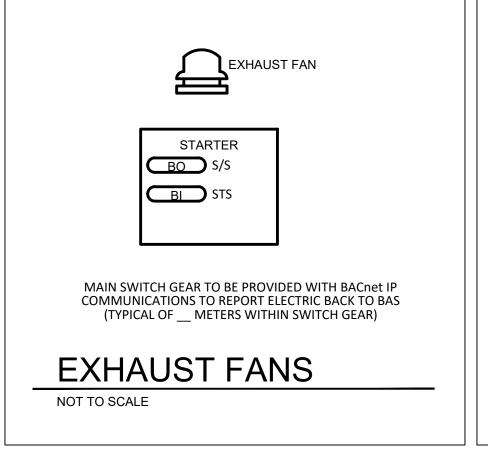
MONITORING

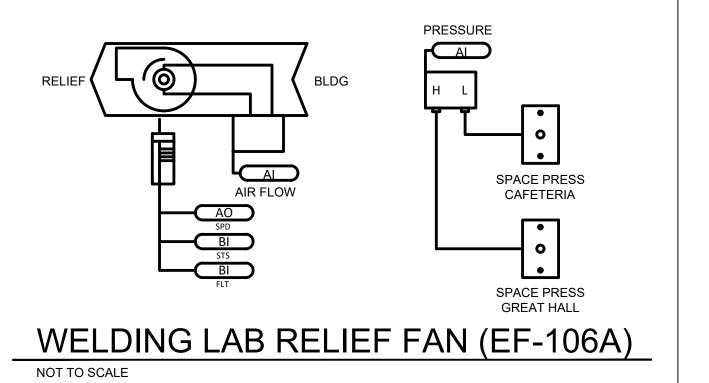
NOT TO SCALE





NOT TO SCALE

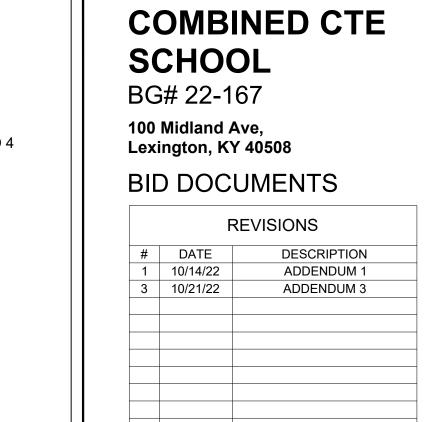




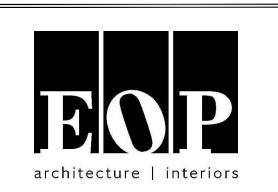
CONTROLS DIAGRAMS MAY NOT BE PROVIDED FOR ALL EQUIPMENT OR CONTROLS. REFER TO SEQUENCES OF OPERATIONS AND POINTS LISTS FOR ALL POINTS AND ANY ADDITIONAL REQUIREMENTS.

TEMPERATURE CONTROLS CONTRACTOR IS
RESPONSIBLE FOR PROVIDING ALL POINTS INDICATED ON
POINTS LIST, DIAGRAMS, AND SEQUENCES OF
OPERATIONS REGARDLESS OF AVAILABILITY FROM THE
EQUIPMENT MANUFACTURER.

ADD #3
10/21/2022 
ALL TEMPERATURE / HUMIDITY / CO2 SENSORS FOR
WATER-SOURCE HEAT PUMP UNITS SHALL BE PROVIDED
BY THE TEMPERATURE CONTROLS CONTRACTOR.



**NEW** 



PROJECT TEAM

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Element Design, PLLC. 366 S. Broadway Lexington, KY 40508

# **POAGE**ENGINEERS

Poage Engineers & Associates Inc Structural Engineers 880 Sparta Ct. Ste. 200 Lexington, KY 40504



Shrout Tate Wilson Consulting Engine MEP Engineers 628 Winchester Rd. Lexington, KY 40505



Reitano Design Group 302 N. East Street, Studio One Indianapolis, IN 46202



Specifications, LLC.
307 Oakwood Circle
Vine Grove, KY 40175

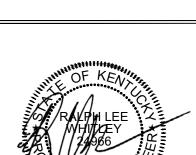
KEYPLAN

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Job Number 2150
Drawn By JBC
Checked By RLW



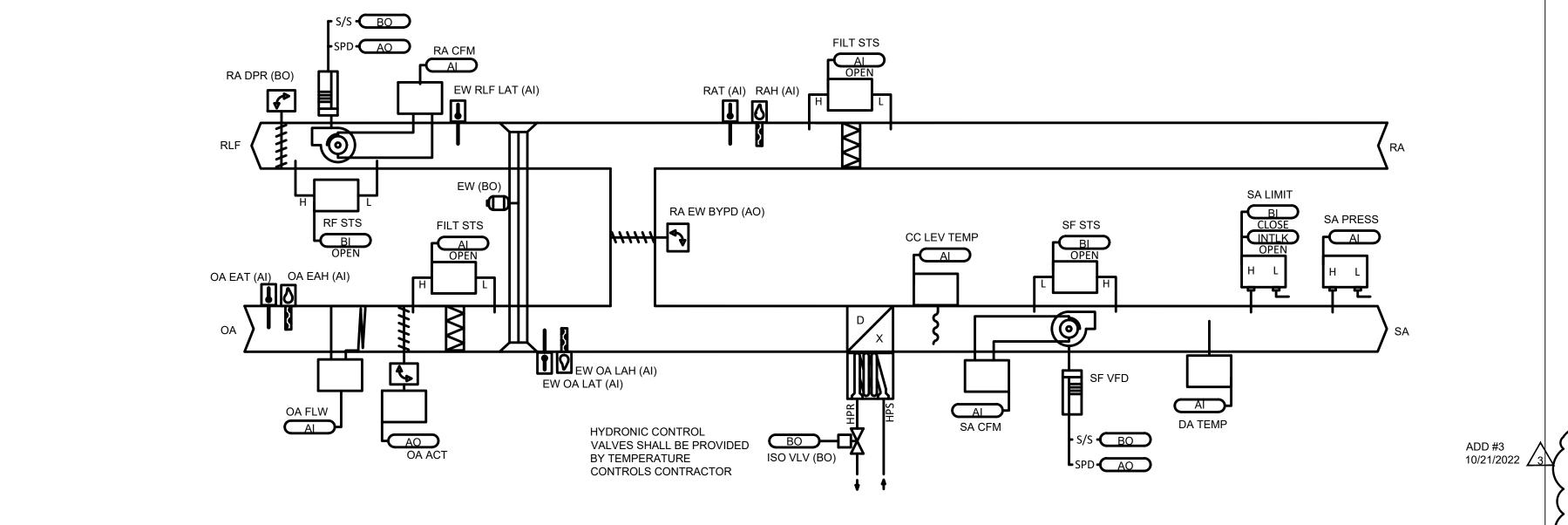


BUILDING
AUTOMATION SYSTEM
- TEMPERATURE
CONTROLS

ADD #3
10/21/202

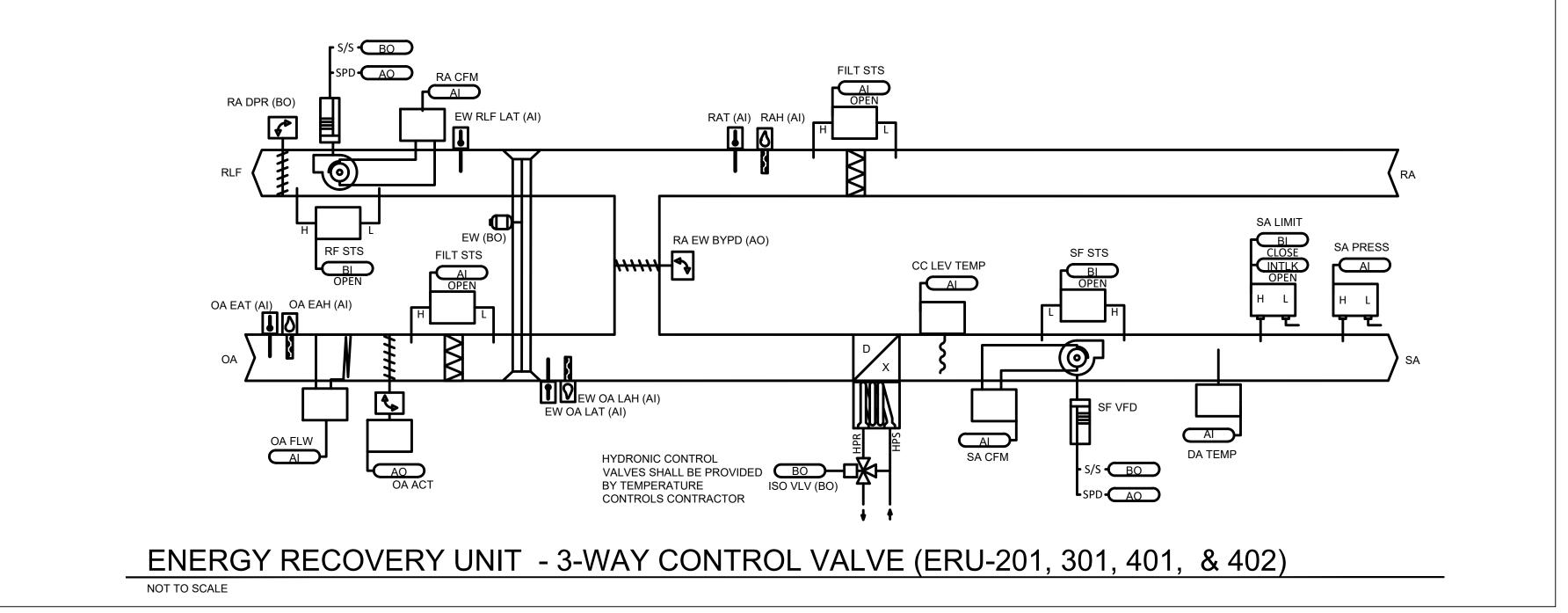
M701

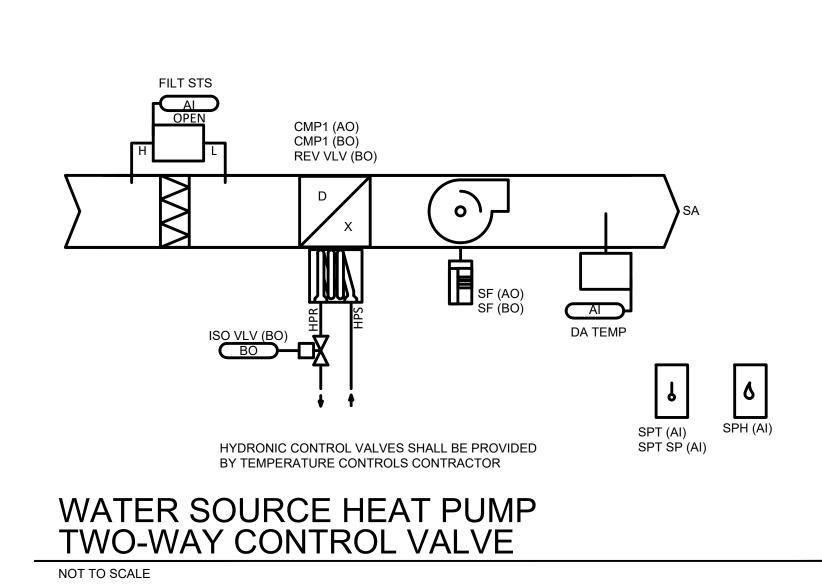
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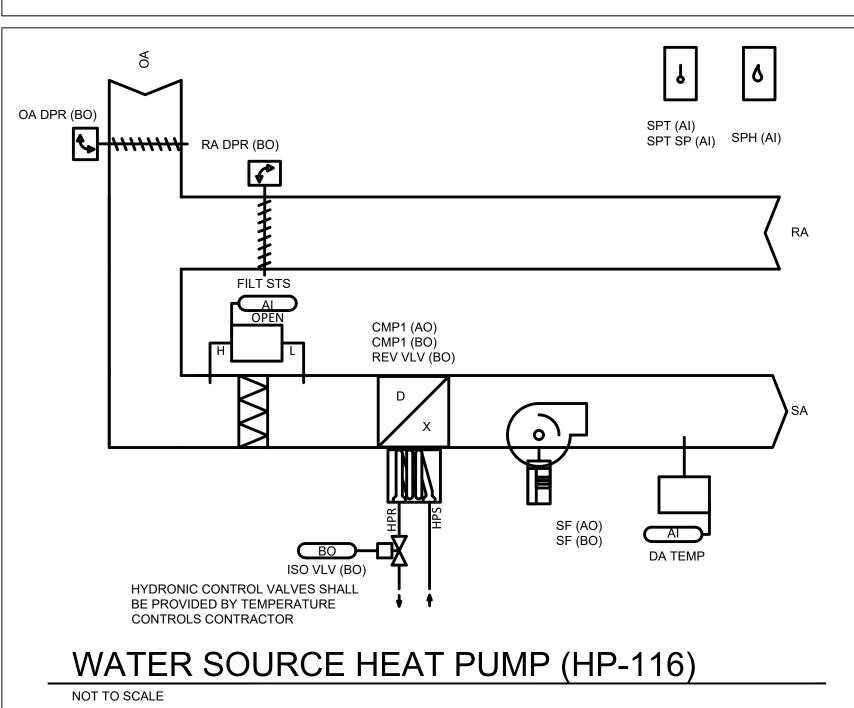


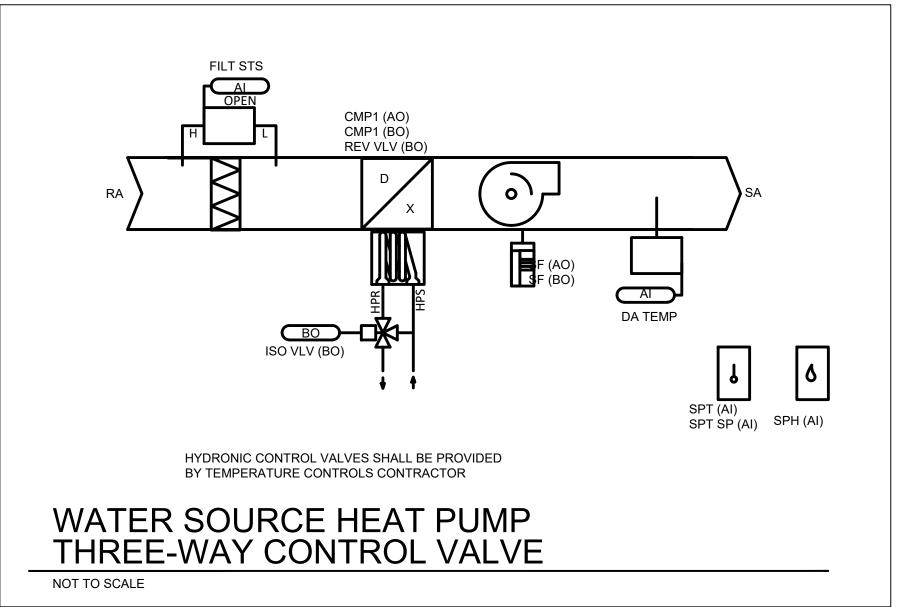
ENERGY RECOVERY UNIT - 2-WAY CONTROL VALVE (ERU-202)

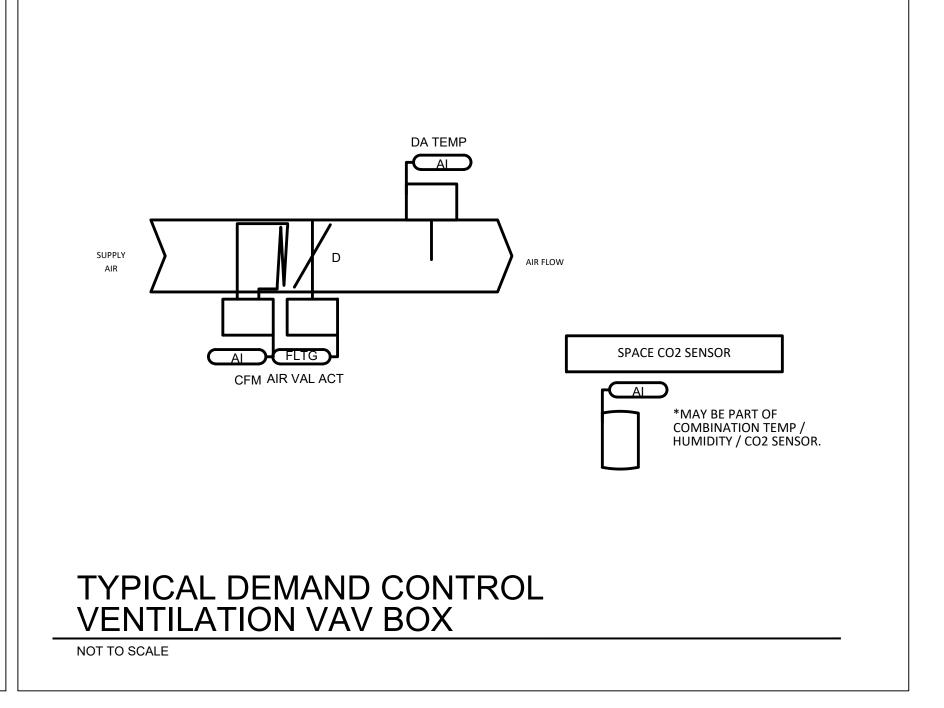
NOT TO SCALE











CONTROLS DIAGRAMS MAY NOT BE PROVIDED FOR ALL EQUIPMENT OR CONTROLS. REFER TO SEQUENCES OF OPERATIONS AND POINTS LISTS FOR ALL POINTS AND ANY ADDITIONAL REQUIREMENTS.

TEMPERATURE CONTROLS CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL POINTS INDICATED ON POINTS LIST, DIAGRAMS, AND SEQUENCES OF OPERATIONS REGARDLESS OF AVAILABILITY FROM THE EQUIPMENT MANUFACTURER.

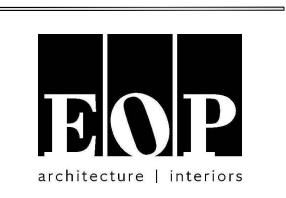
ALL TEMPERATURE / HUMIDITY / CO2 SENSORS FOR WATER-SOURCE HEAT PUMP UNITS SHALL BE PROVIDED BY THE TEMPERATURE CONTROLS CONTRACTOR.

COMBINED CTE
SCHOOL
BG# 22-167
100 Midland Ave,

100 Midland Ave, Lexington, KY 40508 BID DOCUMENTS

**NEW** 

	RE	VISIONS
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



PROJECT TEAM

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IHS

Indianapolis, IN 46202



KEYPLAN

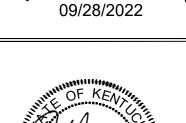
Vine Grove, KY 40175

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Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown by these drawings.

Job Number 2150
Drawn By JBC
Checked By RLW





9/28/2022

BUILDING
AUTOMATION SYSTEM
- TEMPERATURE
CONTROLS

ADD #3
10/21/202

**M702** 

# MECHANICAL SYSTEM SEQUENCES OF OPERATIONS

PRIMARY GEOTHERMAL LOOP SYSTEM

The associated BAS controller shall activate and deactivate the geothermal loop per building occupancy schedule and loop supply temperature.

Pumps part of Primary Loop System: P-01A, 01B, AND 01C

manually change the lead/lag sequence.

- Unoccupied Mode In unoccupied mode geothermal loop pump(s) shall be off. o During unoccupied mode if any secondary loop is activated and supply temperature exceeds 85deg F (adj.) in cooling or drops below 55deg F (adj.) in heating, the primary loop pumps shall
- Occupied Mode In occupied mode the geothermal loop pump(s) shall be energized based on the
- o Pump(s) shall be energized when any of the secondary loop pump(s) are active, and the primary loop supply temperature exceeds 75deg F (adj.) in cooling or supply temperature drops below 55deg F (adj.) in heating.
- o When primary loop supply temperature falls below 70deg F (adj.) in cooling mode for more than 10 minutes (adj.) the primary pumps shall be deactivated. o When primary loop supply temperature exceeds 65deg F (adj.) in heating mode for more than 10
- minutes (adj.) the primary pumps shall be deactivated.
- Pump Lead / Lag Control o The pump lead/lag sequence shall be rotated on a weekly schedule. The sequence shall be
- based on calculated run time with the pump having the least run time designated as lead; the pump with the next lowest run time shall be the second in the sequence (or lag pump) and so on. o From the system human-interface panel or a BAS operator interface an operator shall be able to
- o If lead pump is unable to meet flow requirement after a 5 min (adj.) the lag pump shall be
- Pump VFD Control When the distribution pump variable speed drive is enabled, the associated controller shall modulate the pump variable speed drive to maintain the loop flow. Primary loop shall be set at 200gpm greater than secondary loop flow. Flow shall be set by BAS controller by monitoring flow meters on secondary loops.
- Pump Status The BAS controller shall detect distribution pump run status by a variable speed drive current switch.
  - o Distribution Pump Failure: If the lead Start/Stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the associated controller shall annunciate a distribution water pump failure alarm to the BAS and shall start the lag pump.
  - Pump 01B shall operate as lag pump for both 01A and 01C. If P-01B is required to operate for either primary lead pump the BAS will command control valve open to divert water to correct well field. Refer to schematic plan on M400A
  - o Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller, from a BAS or by manually overriding the pump on momentarily. This shall re-enable the lead/lag sequence.
- Make-up Water Flow The BAS controller shall monitor the make-up water meter continually. The
- values shall be available on graphic at all times. o Data - The controller shall monitor and record water meter readings and provide trend usage
- history. History shall record daily, month-to-date, and year-to-date data. o Alarm - The BAS system shall record flow from flow meter and if a flow is detected a CRITICAL ALARM, shall be initiated and an alert shall be emailed / texted to appropriate FCPS Maintenance Personnel.
- System Flow The BAS controller shall monitor flow meter on primary loop located in the neutral bridge. Flow and Direction shall be monitored and reported on BAS system. o BAS shall also monitor supply and return temperatures and provide BTU/h calculation on the graphic to show total system BTU/h usage.
- Alarms o High Loop Temp Alarm - Loop Temp exceeds 95deg F. (adj.)
- o Low Loop Temp Alarm Loop Temp falls below 50deg F. (adj.)
- o Pump Fail If any pump fails to prove status. o VFD Fail - If VFD indicates failure
- o Low Flow If primary pump(s) fail to meet required flow (Total Secondary Loop plus 200 GPM; when pump enable command is active.

IF ALTERNATE # 1 IS ACCEPTED THE SYSTEM WILL CHANGE TO BOILER / TOWER SYSTEM WITH A CLOSED CIRCUIT FLUID COOLER AND GAS FIRED CONDENSING BOILERS. REFER TO ALTERNATE 1 SEQUENCE OF OPERATIONS FOR PRIMARY LOOP.

#### SECONDARY WSHP LOOP SYSTEM(S)

The associated BAS controller shall activate and deactivate the secondary WSHP loop system(s) per building occupancy schedule and zone heating / cooling requests.

- Pumps part of Secondary System: P-02A, 02B, 03A, & 03B
- Unoccupied Mode In unoccupied mode secondary WSHP loop pump(s) shall be off. o During unoccupied mode if any zone requires heating, cooling, or dehumidification, the zone shall send a request to BAS system, and BAS shall energize the required secondary loop pump.
- Occupied Mode In occupied mode the secondary WSHP loop pump(s) shall be energized based on o During occupied hours the secondary WSHP loop pump(s) shall be energized and shall maintain loop differential pressure setpoint.
- Pump Lead / Lag Control -
- o The pump lead/lag sequence shall be rotated on a weekly schedule. The sequence shall be based on calculated run time with the pump having the least run time designated as lead; the pump with the next lowest run time shall be the second in the sequence (or lag pump) and so on. o From the system human-interface panel or a BAS operator interface an operator shall be able to
- manually change the lead/lag sequence. o If the distributed water loop differential pressure falls 0.5 psig (adj.) below setpoint and the lead
- pump is at 100% (adj.) for more than 5 minutes (adj.), the next pump in the sequence shall start. o If the pump speed control output is below 40% (adj.) for more than 5 minutes (adj.), the last
- operating pump in the sequence shall be disabled.
- Pump VFD Control When the distribution pump variable speed drive is enabled, the associated controller shall modulate the pump variable speed drive to maintain the distribution loop water differential pressure setpoint (adj.).
- Pump Status The BAS controller shall detect distribution pump run status by a variable speed drive current switch. o Distribution Pump Failure: If the lead Start/Stop relay is enabled and the current switch status is
- off for more than 30 seconds (adj.), the associated controller shall annunciate a distribution water pump failure alarm to the BAS and shall start the lag pump.
- o Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller, from a BAS or by manually overriding the pump on momentarily. This shall re-enable the lead/lag sequence. System Flow - The BAS controller shall monitor the supply and return loop temperature(s), and flow
- meter(s) on secondary loop(s) o BAS shall provide BTU/h calculation on the graphic to show total secondary loop BTU/h usage for each zone.
- Differential Pressure Transducer BAS system shall monitor differential pressure transducer on each of the secondary loops. (Refer to plans for DP Transducer Locations, (1) for each zone)
- Alarms o High Secondary Loop Temp Alarm - Loop Temp exceeds 95deg F. (adj.) o Low Secondary Loop Temp Alarm - Loop Temp falls below 50deg F. (adj.)

command to provide flow and prevent possible freezing.

- o Pump Fail If any pump fails to prove status. Pump Command on but status is off. o VFD Fail - If VFD indicates failure
- o High Loop Pressure
- o Low Loop Pressure
- Emergency Shutdown o If secondary loop temp exceeds 105deg F. (adj.) command shall be given to shutoff compressors to all Water-Source Heat Pump Units and Water-Source Heat Pump Energy Recovery Units. o If secondary loop temps drop below 40deg F. (adj.) command shall be give to shutoff

compressors to all Water-Source Heat Pump Units and Water-Source Heat Pump Energy

Recovery Units, and Pumps secondary pumps for the loop shall be given a 100% speed

#### **WATER-SOURCE HEAT PUMP UNITS**

Building Automation System Interface: The Building Automation System (BAS) shall send the controller Occupied Bypass. Morning Warm-up/Pre-Cool. Occupied/Unoccupied and Heat/Cool/Dehumidification modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

WSHP units shall operate per the manufacturer's unitary controllers. Manufacturer's controller shall control compressors, TXV, HGRH (where applicable), fan speed, and motorized water flow control valve (2-way and 3-way valves).

- Occupied -During occupied periods, the supply fan shall run continuously. The DX heating and cooling shall control to maintain the active space temperature setpoint.
- o Occupied Setpoints : - 68 deg. F (adj.) Heating - 72 deg. F (adj.) Cooling

55% RH

Unoccupied -

When the space temperature is below the unoccupied heating setpoint of 55.0 deg. F (adj.) the supply fan shall start, and the DX heating shall be enabled. When the space temperature rises above the unoccupied heating setpoint of 55.0 deg. F (adj.) plus the unoccupied differential of 4.0 deg. F (adj.) the supply fan shall stop, and the DX heating shall be disabled. When the space temperature is above the unoccupied cooling setpoint of 85.0 deg. F (adj.) the supply fan shall start, and the DX cooling shall be enabled. When the space temperature falls below the unoccupied cooling setpoint of 85.0 deg. F minus the unoccupied differential 4.0 deg. F (adj.) the supply fan shall stop, and the DX cooling shall be disabled. Unit shall be able to perform Dehumidification during unoccupied as well to maintain a maximum space humidity level.

- Unoccupied Setpoints : 55 deg. F (adj.) Heating
- 85 deg. F (adj.) Cooling 55% RH
- Zone Temperature / Humidity / Carbon Dioxide Sensor: Each space shall be provided with a zone temperature sensor, humidity sensor, and carbon dioxide
- sensor as indicated on drawings. o Public Spaces / Cafeteria / Auditorium / Gymnasium / Locker Rooms shall be sensors only; without display, user adjustments, or override buttons.
- o Classrooms / Resource Rooms shall be sensors with user adjustment slide and override button. No Digital Displays. o Offices / Kitchen / Media Center shall have a sensor with digital display, user adjustment, and
- Optimal Start -

override button.

- The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.
- Morning Warm-Up Mode -
- During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode shall be activated. When morning warm-up is initiated, the unit shall enable the heating and supply fan. When the space temperature reaches the occupied heating setpoint (adj.), the unit shall
- transition to the occupied mode.
- Pre-Cool Mode -During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated, the unit shall enable the fan and cooling. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.
- Optimal Stop -The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to
- calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint.
- The BAS shall monitor the status of the ON and CANCEL buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.). o Override shall be timed as follows:
  - (1st) Push 30 minutes (2nd) Push 60 minutes
- (3rd) Push 90 minutes (4th) Push 120 minutes

ADD #3

10/21/2022<u>/ 3 \</u>

- Cooling Mode -The unit controller shall use space temperature and space temperature setpoint to determine when to stage the cooling. When the space temperature rises above the setpoint, the unit controller shall stage the DX cooling as required to maintain the space temperature setpoint. When the space temperature falls below the setpoint the controller shall disable DX cooling. The unit shall be capable of performing advanced dehumidification shall be allowed to perform this whenever space temp is satisfied and humidity is above setpoint. When the space humidity is greater than the active dehumidification setpoint, the supply fan speed shall be modified to increase the dehumidification capability of the unit.
- · Heating Mode -The unit controller shall use the space temperature and space temperature setpoint to determine when to initiate requests for heat. When the space temperature drops below the setpoint, the unit controller shall enable DX heating to maintain the space temperature setpoint. Once the space temperature rises
- Dehumidification (Units with HGRH Option per Schedule) The BAS controller shall monitor space humidity level and shall initialize dehumidification mode of WSHP utilizing the factory installed hot gas reheat. Space Humidity setpoint shall be 55% RH (adj.)
- o HGRH shall be enabled whenever: - The space temp is below setpoint AND the space humidity is above setpoint
- AND the compressors are operating

above the setpoint the DX heating shall be disabled.

- AND the supply fan status is on.
- During Dehumidification Mode the BAS shall monitor the unit Discharge Air Temperature, and shall modulate the water control valve as necessary to ensure unit LAT is room neutral 70°F +/- 1°F) The BAS shall modulate flow to restrict the flow to ensure that the Water Source Heat Pump is receiving correct entering water temp for dehumidification process utilizing HGRH.
- Supply Fan -The supply fan shall be enabled while in the occupied mode and cycled on during the unoccupied
- Supply Air Temperature The controller will monitor the supply air temperature.
- o Alarms will be provided as follows: High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.). Condensate Overflow Shutdown -
- The unit will shut down and generate an alarm upon receiving a condensate overflow signal.
- Return Air Smoke Detection -The unit will shut down when the detector goes into alarm. Units over 2,000 CFM supply air. Coordinate with Electrical Contractor providing duct smoke detector.
- Unit Fault Status -The controller will monitor the fault status of the unit. When normal, the contact to the controller is closed. Should one of the safeties activate or the disconnect on the unit is pulled, the fault status will open - indicating an alarm.
- Unit Remote Reset Should the unit be tripped on any software safeties (low temperature, high/low suction pressure,
- condensate), the controller can be used to restart the unit from the BAS system. This restart is accomplished by cycling the Y1 input for 10 secs.
- Return Air Filter Differential Pressure Monitor -The controller shall monitor the differential pressure across the return air filter.
- Alarms shall be provided as follows: Return Air Filter Change Required: Filter differential pressure exceeds a user definable limit
- Ventilation -Ventilation for zones shall be provided by combination of VAV boxes served by ERUs, or by direct outside air connections.

#### **ENERGY RECOVERY UNITS**

**Building Automation System Interface:** The Building Automation System (BAS) shall send the controller Occupied/Unoccupied and discharge air temperature setpoints based on reset schedule. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Energy Recovery Units shall operate per the manufacturer's unitary controllers. Manufacturer's controller shall control WSHP compressors, TXV, HGRH (where applicable), fan speed, energy recovery wheel, and dampers.

- The BAS shall send occupied signal to ERU that building is occupied. During occupied hours the ERU shall initialize the Supply and Exhaust Fans.
- Unoccupied -The BAS shall send unoccupied signal to ERU that building is unoccupied. During unoccupied hours,
- the ERU shall be commanded off. Supply and Exhaust fans shall be off, and all dampers closed.
- Variable Air Volume System -
- BAS shall monitor the duct static pressure sensor. BAS shall send signal to modulate supply fan and exhaust fan to required air flow. Exhaust fan shall track supply fan and shall modulate to be 150cfm (ADJ.) less than supply to maintain a net positive supply air volume.
- Discharge Air Setpoints The BAS shall send Discharge Air Temperature (DAT) setpoint to unit controller. The unit controller shall monitor the supply air temperature and humidity, and shall maintain a supply air temperature setpoint via dehumidification, cooling, or heating modes. Setpoint optimization shall be disabled during ventilation mode. Dewpoint control shall always have
- precedence over dry bulb control. Cooling -The supply air temperature setpoint shall be reset for cooling based on zone cooling requirements as
- o The initial supply air temperature setpoint shall be 70°F (adj.). o As cooling demand increases, the setpoint shall incrementally reset down to a minimum of 55°F o As cooling demand decreases, the setpoint shall incrementally reset up to a maximum of 70°F
- (adj.) . Heating -If more zones require heating than cooling, then the supply air temperature setpoint shall be reset for
- heating as follows: o The initial supply air temperature setpoint shall be 70°F (adj.). o As heating demand increases, the setpoint shall incrementally reset up to a maximum of 75°F
- o As heating demand decreases, the setpoint shall incrementally reset down to a minimum of
- 70°F (adj.). Operation Modes -
- The ERU shall operate in the required mode to maintain discharge air conditions as set by the BAS. o Dehumidification mode: The unit will operate in dehumidification when the outdoor air dew point is above 55°F (adj.) as measured after the enthalpy wheel
- o Cooling mode: The unit will operate in the cooling mode when the outdoor air dew point is below 55°F (adj.) AND the outdoor air dry bulb is greater than 70°F (adj.) as measured after the enthalpy wheel
- below 55°F (adj.) AND the outdoor air temp is between 55°F (adj.) and 70°F (adj.) as measured before the enthalpy wheel. o Heat mode: The unit will operate in heating mode when the outdoor air dew point is below 55°F (adj.) AND the outdoor air temperature is below 55°F (adj.) as measured after the enthalpy

o Ventilation mode: The unit will operate in the ventilation mode when the outdoor air dew point is

- Outside/Exhaust Air Dampers -The outside/exhaust air dampers will open anytime the unit runs and will close anytime the unit stops. The supply fan will start only after the damper status has proven the damper is open.
- o Alarms shall be provided as follows: Damper fails to make position switch Damper is commanded open / closed but not in correct position.
- Outdoor Air Filter Differential Pressure Monitor o The controller shall monitor the differential pressure across the outdoor air filter. o Alarms shall be provided as follows:
  - Filter Change Required: Filter differential pressure exceeds a user definable limit (adj.). Return Air Filter Differential Pressure Monitor -
- o The controller shall monitor the differential pressure across the return air filter. o Alarms shall be provided as follows:
- Return Air Filter Change Required: Filter differential pressure exceeds a user definable limit Return Air Smoke Detection -
- The unit shall shut down and generate an alarm upon receiving a return air smoke detector status.
- BAS shall integrate or provide alarms as follows: o High Supply Air Temp: If the supply air temperature is 3°F (adj.) greater than setpoint.
- o Low Supply Air Temp: If the supply air temperature is 3°F (adi.) lower than setpoint. o Supply Fan Failure: Commanded on, but the status is off.
- o Supply Fan in Hand: Commanded off, but the status is on. o Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).
- o High Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) greater than o Low Supply Air Static Pressure: If the supply air static pressure is 25% (adj.) less than setpoint.
- o Supply Fan VFD Fault. o Exhaust Fan Failure: Commanded on, but the status is off. o Exhaust Fan in Hand: Commanded off, but the status is on.

VARIABLE AIR VOLUME BOXES FOR VENTILATION

- o Exhaust Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.). Exhaust Fan VFD Fault.
- o Heat Wheel Rotation Failure: Commanded on, but the status is off. o Heat Wheel in Hand: Commanded off, but the status is on.
- Building Automation System Interface: The Building Automation System (BAS) shall send the VAV controller CFM setpoint based on zone Carbon Dioxide (CO2)
- levels. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and VAV Boxes shall operate per the manufacturer's unitary controllers. BAS controller shall provide units setpoints.
- During unoccupied hours the VAV boxes shall be fully closed and off.
- During occupied hours the BAS shall set each VAV box to minimum occupied setpoint. The BAS shall monitor the CO2 levels in each space and if the level increases above 900ppm (adj.) the BAS will increase the CFM of VAV box incrementally based on CO2 levels, until maximum setpoint. VAV will begin closing back to minimum setpoint when CO2 level drops below 850ppm (adj.).
- The VAV minimum and maximum setpoints shall be per the VAV Box Schedule.

### DIRECT OUTSIDE AIR VENTILATION-

Building Automation System Interface: The Building Automation System (BAS) shall send the enable / disable / setpoint to motorized dampers serving WSHP unit ventilation. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes

Motorized dampers shall be driven to positions per BAS setpoints.

- Unoccupied -During unoccupied hours the motorized dampers shall be fully closed.
- · Occupied -During occupied hours the BAS shall set each motorized damper to minimum occupied setpoint. The BAS shall monitor the CO2 levels in each space and if the level increases above 900ppm the BAS will increase the position
- Units Served by Direct Outside Air Connections -
- HP-127A, 127B, 128, 129, and 130 HP-127A & 127B Setpoints:
- 0 CFM Unoccupied; 1,400 CFM Occupied Minimum; 2,700 CFM Occupied Maximum EF-01: This exhaust fan shall also serve as relief air fan for Cafeteria. Under normal operation when emergency fan switch is off EF-01 shall be energized and controlled to maintain Cafeteria Space Pressure in relation to Great Hall. Cafeteria shall remain negative by 0.05 in H2O (adj). during occupied

of motorized damper / CFM incrementally based on CO2 levels, until maximum setpoint. Motorized dampers will

- HP-128 Setpoints:
- 0 CFM Unoccupied; 1,200 CFM Occupied Min/Max Setpoint

begin closing back to minimum setpoint when CO2 level drops below 850ppm.

- HP-129 Setpoints: 0 CFM Unoccupied; 250 CFM Occupied Minimum; 565 CFM Occupied Maximum
- HP-130 Setpoints: 0 CFM Unoccupied; 250 CFM Occupied Minimum; 565 CFM Occupied Maximum
- Return Air Dampers -Units served by direct outside air shall have a motorized damper in the return air duct. The return air motorized damper will track the outside air damper position. (If outside air is at 10% open; return air damper will be 90%

#### **EXHAUST FAN VENTILATION & MAKEUP AIR**

Building Automation System Interface: Building Automation System Interface: The Building Automation System (BAS) shall send the enable / disable / setpoint to motorized dampers serving WSHP unit The Building Automation System (BAS) shall integrate the Kitchen Exhaust & Make-up Air systems via ventilation. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes manufacturer's BACnet Interface.

#### Motorized dampers shall be driven to positions per BAS setpoints.

- This sequence applies to EF-29. EF-30, EF-37, L-15, L-16, L-17, located in Rooms 234 & 235
- Off Conditions: o Exhaust Fans shall be controlled by wall switch. When exhaust fans are off, the motorized damper on louvers shall be closed.
- On Conditions: o When Exhaust Fans are energized by the wall switch, the motorized dampers shall be opened to allow for
- Heat Pump Lockout Sequence: o If either EF-29 or EF-30 are energized for longer than 10 minutes (adj.) continuously, the BAS shall disable

#### **MECHANICAL ROOM VENTILATION AND HEATING**

the operation of HP-129 until exhaust fan is deactivated.

**Building Automation System Interface:** The Building Automation System (BAS) shall send the enable / disable / setpoint to exhaust fan, motorized dampers, and electric unit heater(s). If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Ventilative Exhaust Fan:

o Zone Setpoint Adjust:

safeties.

- o Run Conditions Scheduled: The unit shall be enabled according to a user definable time schedule in the following modes: Occupied Mode: The unit shall maintain a zone temperature cooling setpoint of 80°F (adj.).
- Unoccupied Mode (night setback): The unit shall maintain a zone temperature cooling setpoint of 85°F (adj.). o Alarms shall be provided as follows: High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable
- amount (adj.). o Fan: - The fan shall run anytime the zone temperature rises above cooling setpoint unless shutdown on
- o Exhaust Air and Intake Air Damper:
- The exhaust air and intake air damper shall open anytime the unit runs and shall close anytime the unit stops. The dampers shall close 30 sec (adj.) after the fan stops.
- o Fan Status: - The controller shall monitor the fan status.
- o Alarms shall be provided as follows: - Fan Failure: Commanded on, but the status is off. - Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

Where an area is served by both ventilative cooling fans and unit heaters the equipment may be controlled via a single controller. Space temperature sensors shall be located as shown on the plans.

- o Run Conditions Scheduled: The unit shall run according to a user definable time schedule in the following modes: - Occupied Mode: The unit shall maintain a heating setpoint of 60°F (adj.).
- Unoccupied Mode (night setback): The unit shall maintain a heating setpoint of 50°F (adj.). o Alarms shall be provided as follows: Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.)
- The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor. o Zone Unoccupied Override: - A timed local override control shall allow an occupant to override the schedule and place the unit into an occupied mode for an adjustable period of time. At the expiration of this time, control of
- the unit shall automatically return to the schedule. The fan shall run anytime the zone temperature drops below heating setpoint unless shutdown on
- o Electric Heating Stage: - The controller shall measure the zone temperature and stage the heating to maintain its heating setpoint. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime. o The heating shall be enabled whenever:

AND the fan is on. Where multiple heaters serve a single area all the heaters can be enabled simultaneously. Individual control of each

#### unit heater is not required. **AUTOMOTIVE / DIESEL ENGINE GAS DETECTION SYSTEMS**

Outside air temperature is less than 60°F (adj.).

AND the zone temperature is below heating setpoint.

Building Automation System Interface: The Building Automation System (BAS) shall continuously monitor Carbon Monoxide (CO) and Nitrogen Dioxide (NO2) levels within the required spaces. BAS Gas Detection system shall provide the following:

- System Enable o System shall be enabled for monitoring 24/7. o System shall monitor both CO and NO2 levels for each space as indicated on plans.
- Occupied Mode o During occupied hours the BAS shall energize the Primary Exhaust Fan to run continuously. Upon a rise in CO levels above 15 ppm (adj.), the secondary exhaust fan shall be enabled to run until CO levels fall below 10 ppm (adj.). o During occupied hours the BAS shall energize the Primary Exhaust Fan to run continuously. Upon a rise in NO2 levels above 5 ppm (adj.), the secondary exhaust fan shall be enabled to run until NO2
- levels fall below 2 ppm (adj.). Unoccupied Mode o During unoccupied hours the Primary Exhaust Fan and Secondary Exhaust Fan shall be off.

o Upon a rise in CO levels above 15 ppm (adj.), the primary and secondary exhaust fans shall be

o Upon a rise in NO2 levels above 5 ppm (adj.), the secondary exhaust fan shall be enabled to run until NO2 levels fall below 2 ppm (adj.).

o If Carbon Monoxide levels exceed 25 ppm, an alarm will be indicated at the BAS and local

- audio/visual indicators will be activated until the Carbon Monoxide level falls below 20 ppm(adj). Refer to plans for location of Audio/Visual Devices o If Nitrogen Dioxide levels exceed 8 ppm, an alarm will be indicated at the BAS and local audio/visual
- indicators will be activated until the Nitrogen Dioxide level falls below 6 ppm(adj). Refer to plans for location of Audio/Visual Devices
- o If the primary or secondary fan enable and operating status do not match following a 30 second(adj) startup span, an alarm will be indicated at the BAS. o If alarms are generated during unoccupied hours the BAS shall be capable of sending an emergency

Unit Fault Monitoring -

Fan Status -

Unit fault alarm

- uilding Automation System Interface: The Building Automation System (BAS) shall integrate the mini-split systems via Mini-Split BACnet Interface.
- Unit Control o Unit runs under factory controls continuously.

text / email to select FCPS personnel.

Monitoring shall remain active.

enabled to run until CO levels fall below 10 ppm (adj.).

- Zone Temperature Monitoring o The controller will monitor the temperature of the zone.
- The alarms will be provided as follows o High Zone Temp: If the space temp is greater than the user adj setpoint. o Low Zone Temp: If the space temp is lower than the user adj setpoint
- o The controller will monitor the unit fault contacts. Alarms will be provided as follows -

GENERAL EXHAUST FANS (LOW VOLTAGE SWITCH / OCCUPANCY CONTROL Building Automation System Interface: The Building Automation System (BAS) shall monitor fan status. Fan enable / disable shall be by local occupancy

#### The controller will monitor the fan status. o Alarms will be provided as follows: Fan Failure: Commanded on, but the status is off.

switch or wall switch as indicated on plans / schedules.

# - Fan in Hand: Commanded off, but the status is on.

### CULINARY HOOD SYSTEMS

- Kitchen Hood Make Up Air Unit & Hood Exhaust Fans -
- o The makeup air fan and hood exhaust fans are interlocked to run simultaneously through
- their factory controls.
- o The BAS controller will monitor the fan status for runtime hours and reporting. Kitchen Hood Exhaust Fan(s) Status -
- Alarms will be provided as follows o Fan Failure: If the status of the MUA fan and the status of the Exhaust fan(s) do not match

o The BAS controller will monitor the fan status for runtime hours and reporting.

- Supply Air Temperature -
- o The BAS controller will monitor the supply air temperature
- Alarms will be provided as follows o High Supply Air Temp: If the supply air temperature is greater than alarm setpoint 95 deg. o Low Supply Air Temp: If the supply air temperature is less than alarm setpoint 55 deg.

## KITCHEN FREEZER / COOLER MONITORING

Kitchen Hood Make Up Air Unit Fan Status -

uilding Automation System Interface: The Building Automation System (BAS) shall monitor and report the temperatures of the walk-in freezers and coolers located in kitchen. No integration to refrigeration equipment shall be required. BAS shall provide temperature sensors only.

- Alarm will be generated as follows -
- o High Freezer Temperature: Temperature in freezer rises to 15.F (adi)
- o High Cooler Temperature: Temperature in cooler rises to 45.F (adj) o Low Freezer Temperature: Temperature in freezer falls to -20.F (adj) o Low Cooler Temperature: Temperature in cooler falls to 34.F (adj)
- Temperature History o The controller will monitor and record the high and low temperature readings for the freezer and cooler. These readings will be recorded on a daily, month-to-date, and year-to-date

## DOMESTIC WATER HEATING SYSTEM

Domestic Hot Water System Run Conditions -

Building Automation System Interface: The Building Automation System (BAS) shall monitor domestic water heating system and domestic hot water recirculation pump. BAS shall provide enable / disable command to water heaters and recirculation pumps based on schedules.

- o The domestic water heaters will run based on user defined schedule. BAS will provide enable / disable. Water heater temperature setpoints shall be by unit internal controls. Domestic Hot Water Pump Control & Monitoring -
- o The domestic hot water recirculation pump will be enabled to run by the BAS based on schedule defined by owner.

o High Primary Hot Water Supply Temp: If greater than 125°F (adj.).

o Low Primary Hot Water Supply Temp: If less than 115°F (adj.).

 Primary Hot Water Heater Supply Temperature Monitoring o The hot water supply water temperature is monitored by the BAS. Alarms will be provided as follows -

## **OUTSIDE AIR CONDITIONS**

Cooling Degree Day -

Heating Degree Day -

Building Automation System Interface: The Building Automation System (BAS) shall monitor outside air conditions (temperature and humidity) on a continual basis. These values shall be made available to the system at all times.

- Outside Air Temperature History o The controller will monitor and record the high and low temperature readings for the outside air. These readings will be recorded on a daily, month-to-date, and year-to-date basis.
- o The controller will provide a Degree Day history index that reflects the energy consumption for the facilities cooling demand. Computations will use a mean daily temperature of 65°F (adj.). The Degree Day peak value readings will be recorded on a daily, month-to-date, and year-to-date basis.

o The controller will provide a Degree Day history index that reflects the energy consumption

for the facilities heating demand. Computations will use a mean daily temperature of 65°F

(adj.). The Degree Day peak value readings will be recorded on a daily, month-to-date, and year-to-date basis.

# o Sensor Failure: Sensor reading indicates shorted or disconnected sensor.

Usage History -

Building Automation System Interface:

DOMESTIC WATER METER

Alarm will be generated as follows

Building Automation System Interface: The Building Automation System (BAS) shall monitor domestic water meter on a continual basis. These values shall be made available to the system at all times.

 Peak Demand History -The controller shall monitor and record the peak (high and low) demand readings from the water meter. These readings shall be recorded on a daily, month-to-date, and year-to-date basis.

The controller shall monitor and record water meter readings to provide a water consumption

The Building Automation System (BAS) shall monitor natural gas meter on a continual basis. These values

meter. These readings shall be recorded on a daily, month-to-date, and year-to-date basis.

- history. Usage readings shall be recorded on a daily, month-to-date, and year-to-date basis. **NATURAL GAS METER**
- shall be made available to the system at all times. The controller shall monitor and record the peak (high and low) demand readings from the water

#### The controller shall monitor and record water meter readings to provide a water consumption history. Usage readings shall be recorded on a daily, month-to-date, and year-to-date basis.

**ELECTRICAL POWER MONITORING** uilding Automation System Interface: The Building Automation System (BAS) shall monitor electrical power consumption on a continual basis. This

shall be through the electrical switchgear which is to be provided with MODBUS / BACnet interface for

integration to BAS. These values shall be made available to the system at all times.

 Electrical Power Monitoring -Current status and operating conditions will be monitored through the power meter communications port. The interface will monitor and trend the points as shown on the Points List.

The controller will monitor and record the peak (high and low) demand readings from the electric

meter. Peak readings will be recorded on a daily, month-to-date, and year-to-date basis. The controller will monitor and record electric meter readings to provide a power consumption

history. Usage readings will be recorded on a daily, month-to-date, and year-to-date basis

#### Alarm will be generated as follows o Meter Alarm: Sensor reading indicates an invalid value from the electric meter.

EMERGENCY GENERATOR MONITORING Building Automation System Interface: The Building Automation System (BAS) shall integrate to the Emergency Generator via a BACnet interface provided by generator manufacturer. Generator shall operate per internal manufacturer's controls.

- The BAS shall monitor the status of the emergency generator.
- o Transfer Switch Command o Transfer Switch Status

o Generator Command

o Generator Status

BAS shall monitor generator alarms and shall display alarm upon generator failure.







Structural Engineers

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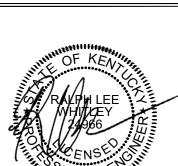
whatsoever without the permission of EOP Written dimensions shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job. Notify EOP Architects immediately of any variation from the dimensions and conditions shown

by these drawings.

Drawn By

Checked By

Job Number 2150



09/28/2022

**REVISIONS** # DATE DESCRIPTION ADDENDUM 1 10/14/22 10/21/22 ADDENDUM 3

BID DOCUMENTS

**COMBINED CTE** 

**NEW** 

**SCHOOL** 

BG# 22-167

100 Midland Ave.

Lexington, KY 40508

PROJECT TEAM



Poage Engineers & Associates Inc.



Reitano Design Group 302 N. East Street, Studio One

Calvert - Independent Hardware

Specifications, LLC. 307 Oakwood Circle

KEYPLAN

All designs, arrangements and plans indicated or represented by this drawing are the property of EOP Architects and were created and developed for use

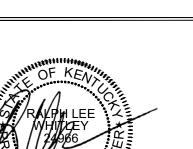
on and in connection with the specified project.

disclosed to any person or entity for any reason

None of this information shall be used by or

JBC

RLW



BUILDING **AUTOMATION SYSTEM** - TEMPERATURE CONTROLS  $\sqrt[\Lambda]{_{3}}$  ADD #3  $\sqrt[\Lambda]{_{10/21/2022}}$ 

# MECHANICAL SYSTEM SEQUENCES OF OPERATIONS CONT'D

CULINARY MAKEUP AIR - MAU-101 & 102 -

Building Automation System Interface: The Building Automation System (BAS) shall send the enable / disable / setpoint to Makeup Air Unit. If a BAS is not present, or communication is lost with the BAS the

controller shall operate using default modes and setpoints.

FACTORY CONTROLLER: Controller shall be provided with required sensors and programming for rooftop unit. Controller shall be factory programmed, mounted and tested. Controller shall have a LCD readout for changing set points and monitoring

UNIT START COMMAND (Unit will be enabled to start once a jumper is placed between R to G):

 Factory mounted and wired outdoor air damper actuator is powered Supply fan starts after after a (adj.) delay.

Tempering options to function as described below.

UNIT STOP COMMAND (OR DE-ENERGIZED): Supply fan, exhaust fan and tempering options de-energized. Outdoor air damper actuator is spring return close.

OCCUPIED/UNOCCUPIED MODES: Shall be based on a 7-day time clock internal to the controller. The schedule shall be set by the end user. When a user initiates an override input, the controller will switch from unoccupied to occupied mode. The controller will return to the scheduled occupied/unoccupied mode after the override time has expired. If internal time clock is disabled, a remote contact or a BMS can

> Occupied Mode: Damper control per below.

control the occupied/unoccupied mode.

 Supply fan ON. Heating per below. Cooling per below.

Unoccupied Mode (Unit Off): Unit remains off when in unoccupied mode. Supply fan OFF Tempering OFF Outdoor air damper closed.

MORNING WARMUP/COOL DOWN: Prior to occupancy, the unit will run using the warmup or cool down sequence until the occupied set point is achieved. The heating or cooling mode must not be locked out and the space temperature is below or above set point by the unoccupied hysteresis (adj.) (This Sequence must be field configured.)

SUPPLY BLOWER SEQUENCE: The supply blower is provided with a factory mounted variable frequency drive. The supply blower speed will be controlled with the following sequence.

Constant Volume-Adj. Setpoint: The supply blower will operate at a constant speed set point (adj.) during operation.

BMS Control: The supply blower is modulated based upon a command from the Building Management System. (This Sequence must be field configured.)

Outdoor Air Damper Control: The outdoor air damper is factory mounted and wired with a non-modulating actuator. When the unit is enabled/occupied the outdoor air damper will open to 100%

COOLING SEQUENCE: The cooling is controlled to maintain the supply temperature set point. The mechanical cooling will be locked out when the outside air is < 55 F

Packaged DX Cooling (Inverter Scroll): The controller will provide a modulating signal for cooling. From 0-100%, the inverter scroll will be controlled to maintain discharge temperature. The electronic expansion valve will modulate to maintain 8.0 F of superheat.

Modulating Head Pressure Control: Lead condenser fan will have an EC motor

DEHUMIDIFICATION CONTROL SEQUENCE: The cooling is controlled to maintain the cooling-coil set point. The dehumidification sequence will be locked out when the OA is < 10 F(adj.) above the cold-coil set point (adj.).

Cold Coil Set Point Control: The controller will control the cooling to maintain a cold coil set point. The active set point will set to local control (55 F, adj.) from the factory and can be field adjusted locally or by the BMS.

HEATING SEQUENCE: The heating is controlled to maintain the supply temperature set point. The heating will be locked out when the outside air is > 80 F (adi.). Maximum allowable discharge air set point is 100 F.

Indirect Gas Furnace: The controller will modulate the indirect gas furnace to maintain

the supply temperature set point (adj.). TEMPERATURE CONTROL SEQUENCE: The unit will maintain the supply air discharge setpoint per the following. Adjustable locally or by BMS.

Supply Discharge Temperature Control: The supply setpoint will be a constant temperature setpoint from the controller (adj.). Adjustable locally or by BMS.

BUILDING FREEZE PROTECTION: If the supply air temperature drops below 35 F (adj.) for 300s (adj.), the controller will de-energize the unit and activate the alarm output.

TEMPERATURE PROTECTION: The controller will enable the supply fan to modulate down to help the unit keep up with heating demand in the event of wheel failure or the unit operating outside design conditions. (This can be enabled under the manufacturer menu in the

ALARMS INDICATION: The controller will display alarms and have one digital output for remote indication of an alarm condition. Possible alarms include:

Building Management System: The controller will send all alarms to the BMS.

Supply Air Alarm: The controller monitors the proving switch on supply blower and sends an alarm in the case of the blower proving switch not engaging for 30s (adj.).

DX Alarm: The controller monitors the refrigerant pressure. In the case of low refrigerant pressure the compressors will shut down until refrigerant pressure returns to normal values and the controller will send an alarm. In the case of high refrigerant pressure the compressors will shut down, requiring a manual reset and the controller will send

Temperature Sensor Alarm: The controller sends an alarm in the case of a failed air

ACCESSORIES: The following accessories will be included with the unit to expand the functionality or usability of the controller.

BMS Interfacing: A BMS port or serial card is provided with the controller for field interfacing with a building management system. Each card is sent out with the default parameters, and the controls contractor must change the appropriate addresses to match the BMS settings.

Phase and Brownout Protection: Factory mounted and wired component which monitors the main power coming into the unit. If a phase drops out, or if the incoming voltage exceeds the acceptable range, the component will turn off the unit to help protect the

Damper End Switch: Damper end switched will be provided to ensure the supply and exhaust fans do not enable until the dampers are proven open.

#### GEOTHERMAL LOOP MONITOR AND PUMPS W/ VFD (PRIMARY PUMPS) **Point Name** Sched Trend I/O Point Abreviation × PRM HPWS T rimary Loop Water Supply Temp rimary Loop Water Return Temp × PRM HPWR 1 × PRM HPW FLW_RT rimary Loop Water Flow Rate (BI DIRECTIONAL) rimary Loop Water Pump 01A / 01B / 01C VFD Speed × HPWP-1 VFD SPD × PRM HPW FLW S × HPWP-1 VFD FAILALM S rimary Loop Water Pump 1 VFD Fault × HPWP-1 RUN S Primary Loop Water Pump 1 Status Primary Loop Water Pump 1 Start/Stop × HPWP-1 RUN C × PRM HPW FLW SPT Loop Water Flow Setpoint PRM HPW FLW LOALM S No Loop Flow High Primary Loop Water Supply Temp Shutdown PRM HPWS T HIFAIL S PRM HPWS T LOFAIL S Low Primary Loop Water Supply Temp Shutdown PRM HPWS T HIALM S High Loop Water Supply Temp PRM HPWS T LOALM S Low Primary Loop Water Supply Temp High Primary Loop Water Flow Rate PRM HPW DP HIALM S Low Primary Loop Water Flow Rate PRM HPW DP+LOALM S Prirmary Loop Water Pump 01A / 01B Failure HPWP-1 FAIL S Primary Loop Water Pump 01A / 01B Running in Hand HPWP-1 HAND S

BUILDING LOC	OP MO	NITO	R AN	D PU	MPS	W/ VF	D (SE	CON	DAR	/ PUN	MPS)
Point Name	Al	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Loop Water Supply Temp (Mech Room)	×							×		×	HPWS_T
Loop Water Return Temp (Mech Room)	×							×		×	HPWR_T_PRM_LOOP
Loop Water Flow Rate (Typ of 2)	×							×		×	HPW_FLW_RT_SEC_Z_#
Loop Water Return Temp (Typ of 2)	×							×		×	HPWR_T_SEC_Z_#
Loop Water Differential Pressure (Typ of 2)	×							×		×	HPW_DP_SEC_Z_#
Loop Water Pump 02A / 02B VFD Speed		×						×		×	HPWP-2_VFD_SPD
Loop Water Pump 03A / 03B VFD Speed		×						×		×	HPWP-3_VFD_SPD
Loop Water Flow Status (Typ of 2)			×							×	HPW_FLW_S_Z_#
Loop Water Pump 02A / 02B VFD Fault			×						×	×	HPWP-2_VFD_FAILALM_S
Loop Water Pump 03A / 03B VFD Fault			×						×	×	HPWP-3_VFD_FAILALM_S
Loop Water Pump 02A / 02B Status			×					×		×	HPWP-2_RUN_S
Loop Water Pump 03A / 03B Status			×					×		×	HPWP-3_RUN_S
Loop Water Pump 02A / 02B Start/Stop				×						×	HPWP-2_RUN_C
Loop Water Pump 03A / 03B Start/Stop				×						×	HPWP-3_RUN_C
Loop Water Pump 02A / 02B Start/Stop				×						×	HPWP-4_RUN_C
Loop Water Pump 03A / 03B Start/Stop				×						×	HPWP-5_RUN_C
Loop Differential Pressure Setpoint (Typ of 2)					×					×	HPW_DP_SPT_Z_#
No Loop Flow (Typ of 2)									×		HPW_FLW_LOALM_S_Z_#
High Loop Water Supply Temp Shutdown (Typ of 2)									×		HPWS_T_HIFAIL_S_Z_#
Low Loop Water Supply Temp Shutdown (Typ of 2)									×		HPWS_T_LOFAIL_S_Z_#
High Loop Water Supply Temp (Typ of 2)									×		HPWS_T_HIALM_S_Z_#
Low Loop Water Supply Temp (Typ of 2)									×		HPWS_T_LOALM_S_Z_#
High Loop Water Differential Pressure (Typ of 2)									×		HPW_DP_HIALM_S_Z_#
Low Loop Water Differential Pressure (Typ of 2)									×		HPW_DP+LOALM_S_Z_#
Loop Water Pump 02A / 02B Failure									×		HPWP-2_FAIL_S
Loop Water Pump 02A / 02B Running in Hand									×		HPWP-2_HAND_S
Loop Water Pump 03A / 03B Failure	1								×		HPWP-3_FAIL_S
Loop Water Pump 03A / 03B Running in Hand	1								×		HPWP-3_HAND_S
Loop Water Pump 02A / 02B Failure	1				1				×		HPWP-2_FAIL_S
Loop Water Pump 02A / 02B Running in Hand	1				†		1		×		HPWP-2_HAND_S
Loop Water Pump 03A / 03B Failure	1				1		1		×		HPWP-3_FAIL_S
Loop Water Pump 03A / 03B Running in Hand	1				†		†		×		HPWP-3_HAND_S
· · · · · · · · · · · · · · · · · · ·	+	+		<del>                                     </del>	+	+	+	+	+	+	

# MECHANICAL SYSTEM SEQUENCES OF OPERATIONS (ALT #1)

#### PRIMARY BOILER / TOWER LOOP SYSTEM

The associated BAS controller shall activate and deactivate the boiler / tower loop per building occupancy schedule and loop supply temperature.

Pumps part of Primary Loop System: P-01A and 01B

• Unoccupied Mode - In unoccupied mode geothermal loop pump(s) shall be off. o During unoccupied mode if any secondary loop is activated and supply temperature exceeds 85deg F (adj.) in cooling or drops below 55deg F (adj.) in heating, the primary loop pumps shall

• Occupied Mode - In occupied mode the geothermal loop pump(s) shall be energized based on the o Pump(s) shall be energized when any of the secondary loop pump(s) are active, and the primary loop supply temperature exceeds 75deg F (adj.) in cooling or supply temperature drops below

55deg F (adj.) in heating. o When primary loop supply temperature falls below 70deg F (adj.) in cooling mode for more than 10 minutes (adj.) the primary pumps shall be deactivated. o When primary loop supply temperature exceeds 65deg F (adj.) in heating mode for more than 10

minutes (adj.) the primary pumps shall be deactivated. • Pump Lead / Lag Control -

o The pump lead/lag sequence shall be rotated on a weekly schedule. The sequence shall be based on calculated run time with the pump having the least run time designated as lead; the pump with the next lowest run time shall be the second in the sequence (or lag pump) and so on. o From the system human-interface panel or a BAS operator interface an operator shall be able to manually change the lead/lag sequence.

o If lead pump is unable to meet flow requirement after a 5 min (adj.) the lag pump shall be • Pump VFD Control - When the distribution pump variable speed drive is enabled, the associated controller shall modulate the pump variable speed drive to maintain the loop flow. Primary loop shall be

set at 200gpm greater than secondary loop flow. Flow shall be set by BAS controller by monitoring flow meters on secondary loops. • Pump Status - The BAS controller shall detect distribution pump run status by a variable speed drive

pump failure alarm to the BAS and shall start the lag pump.

o Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller, from a BAS or by manually overriding the pump on momentarily. This shall re-enable the lead/lag sequence.

o Distribution Pump Failure: If the lead Start/Stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the associated controller shall annunciate a distribution water

 Gas-Fired Hot Water Boilers o The BAS shall reset the boiler leaving water temperature set point to maintain a minimum building loop temperature of 65F (adjustable). The boiler manufacturer's control panel shall receive a 4-20mA or 0-10VDC analog signal to reset the boiler leaving water temperature. The boiler control panel provided by the boiler manufacturer shall stage the boilers to achieve the leaving hot water temperature set point input by BAS. When the boiler and boiler controls are enabled by BAS, the boiler manufacturer's control panel shall start the applicable boiler loop pump. Refer to the points list for complete monitoring and control points. o The BAS contractor shall install and wire the control panel and sensors provided by the boiler manufacturer. See boiler specifications.

Closed Loop Fluid Cooler

specifications.

o The closed loop fluid cooler will have a sump heater, a sump circulating pump, and two fans with VFD. The sump heater shall be controlled to maintain the minimum recommended sump fluid temperature (adjustable). o The fluid cooler shall be sequenced to maintain the loop temperature between 70F (adjustable) and 85F (adjustable). The fluid cooler staging shall be as follows when called upon to reject the build loop heat:

o Stage 1: Start Circulating Pump o Stage 2: Open dampers (if required by equipment manufacturer) and start to ramp up fan. o The Control Contractor shall interface with the fluid cooling control panel. See fluid cooler

o Provide a 5 degree F (adj.) dead band between heat addition and heat rejection setpoints to prevent simultaneous heating and cooling.

 Make-up Water Flow - The BAS controller shall monitor the make-up water meter continually. The values shall be available on graphic at all times. There shall be (2) make-up water meters. (1) meter for building loop and (1) meter for tower make-up.

o Data - The controller shall monitor and record water meter readings and provide trend usage history. History shall record daily, month-to-date, and year-to-date data. o Alarm - The BAS system shall record flow from flow meter and if a flow is detected a CRITICAL ALARM, shall be initiated and an alert shall be emailed / texted to appropriate FCPS Maintenance Personnel.

• System Flow - The BAS controller shall monitor flow meter on primary loop located in the neutral bridge. Flow and Direction shall be monitored and reported on BAS system. o BAS shall also monitor supply and return temperatures and provide BTU/h calculation on the graphic to show total system BTU/h usage.

Alarms o High Loop Temp Alarm - Loop Temp exceeds 100deg F. (adj.) o Low Loop Temp Alarm - Loop Temp falls below 50deg F. (adj.)

o Pump Fail - If any pump fails to prove status. o VFD Fail - If VFD indicates failure

o Low Flow - If primary pump(s) fail to meet required flow (Total Secondary Loop plus 200 GPM; when pump enable command is active.

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INTS LIST NAMES THAT HAVE # INDICATED SHALL BE TIED TO THE ZONE NUMBER THE POINT SERVES. EXAMPLE: ZONE FLOW RATE POINT NAME TYPICAL SHALL BE HPW_FLW_RT_SEC_Z_# FOR ZONE NUMBER 1 THE POINT SHALL BE HPW_FLW_RT_SEC_Z_1

WATER SOURCE HEAT PUMPS

Point Name	Al	AO	ВІ	ВО	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abbreviation
Zone Temp	×							×		×	ZN_T
Zone Setpoint Adjust	×									×	ZN_SPT
Discharge Air Temp	×							×		×	DA_T
Zone Carbon Dioxide PPM	×							×		×	ZN_CO2
Zone Humidity	×							×		×	ZN_RH
Mixed Air Dampers		×						×		×	MA_DMPR_C
Zone Override			×					×		×	ZN_T_OVRD
Emergency Shutdown			×					×	×	×	EMER_OVRD
Freezestat			×					×	×	×	FZ_S
Smoke Detector			×					×	×	×	SD_S
Fan Status			×					×		×	FAN_S
Fan Start/Stop				×				×		×	FAN_C
Reversing Valve				×						×	RVS_VLV_C
Compressor Stage 1				×				×		×	CMPR1_C
Compressor Stage 2				×				×		×	CMPR2_C
Zone Carbon Dioxide PPM Setpoint					×			×		×	ZN_CO2_SPT
Compressor Soft Shutdown						×				×	CMPR_SFTSTOP_S
Schedule							×				occ_s
Heating Setpoint								×		×	HTGOFFSET_SPT
Cooling Setpoint								×		×	CLGOFFSET_SPT
High Zone Temp									×		ZT_HIALM_S
Low Zone Temp									×		ZT_LOALM_S
Compressor 1 Runtime Exceeded									×		CMPR1_RUNALM_S
Compressor 2 Runtime Exceeded									×		CMPR2_RUNALM_S
Filter Change Required									×		FLTR_RUNALM_S
High Discharge Air Temp									×		DAT_HIALM_S
Low Discharge Air Temp									×		DAT_LOALM_S
Fan Failure									×		FAN_FAILALM_S
Fan in Hand									×		FAN_HAND_S
Fan Runtime Exceeded									×		FAN_RUNALM_S
High Zone Carbon Dioxide Concentration									×		ZN_CO2_HIALM_S
High Zone Humidity									×		ZN_RH_HIALM_S
Low Zone Humidity									×		ZN_RH_LOALM_S
											_

## VARIABLE AIR VOLUME TERMINAL UNIT POINTS LIST

Point Name	Al	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Airflow	×							×		×	SA_FL_S
Discharge Air Temp	×							×		×	DA_T
Zone Damper		×								×	ZN_DPR_C
Airflow Setpoint					×			×		×	SA_FL_SPT
Zone Carbon Dioxide Level (ppm)	×										ZN_CO2_S
Schedule							×				occ_s
Zone Occ Status			×							×	OCC_ZN
High Discharge Air Temp									×	×	DAT_HIALM_S
Low Discharge Air Temp									×	×	DAT_LOALM_S

1. ZONE OCC STATUS SHALL BE VIA OCCUPANCY SENSOR PROVIDED BY ELECTRICAL CONTRACTOR.

	ENE	RGY	RECO	VER	Y UNI	T (TY	PICA	L FO	R ALL	ERU	ls)	
	Point Name	AI	AO	BI	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abbreviation
	Outside Air Temperature	×							×		×	OA_T
	Outside Air Enthalpy	×							×		×	OA_ENTH
_	Supply Airflow Volume	×							×	×	×	SA_V
_	Exhaust Airflow Volume	×							×	×	×	EA_V
	Building Static Pressure	×							×		×	BLDG_SP
	Exhaust Air Enthalpy					×			×		×	EA_ENTH
	Heat Wheel Entering Air Temp	×							×		×	HTWHL_EA_T
	Heat Wheel Leaving Air Temp	×							×		×	HTWHL_LA_T
S	Heat Wheel Rotation Sensor			×					×	×	×	HTWHL_RUN_S
	Heat Wheel Differential Pressure	×							×	×	×	HTWHL_DP_S
	Return Air Temp	×							×		×	RA_T
	Return Air Enthalpy					×			×		×	RA_ENTH
	Return Air CO2	×							×	×	×	RA_CO2
	Supply Air Temp	×							×		×	SA_T
	Supply Air Temp Setpoint					×			×		×	SA_T_SPT
	Supply Air Enthalpy					×			×		×	SA_ENTH
	Supply Fan Speed	×							×		×	SFAN_VFD_SPD_C
	Exhaust Fan Speed	×							×		×	EXFAN_VFD_SPD_C
	Compressor Speed	×							×		×	COMP_SPD_C
	Smoke Detector			×					×	×	×	RA_SD_S
	Demand Control Ventilation			×					×		×	DCV_S
	Supply Air Static Pressure Setpoint					×			×		×	SA_SP_SPT
	Outside Air Filter Differential Pressure	×								×	×	OAFLTR_DP_S
	Outside Air Filter Change Required									×	×	OAFLTR_RUNALM_S
	Return Air Filter Differential Pressure	×							×		×	RAFLTR_DP_S
	Return Air Filter Change Required									×	×	RAFLTR_RUNALM_S
	Outside Air Damper	×							×		×	OA_DPR_C
	Outside Air Damper Fail			×					×	×	×	OA_DPR_FAIL
	Unit Operating State (Cool, Heat, Fan Only)	×			×				×		×	UNIT_STATE
	Reversing Valve Status			×					×		×	REV_S
_	Hot Gas Reheat Valve Position	×							×		×	HGRH_C
	Emergency Shutdown			×			×			×	×	EMER_OVRD
_	Schedule							×				occ_s
_	Supply Air Temp High Alarm									×		SA_T_HIALM
_	Supply Air Temp Low Alarm									×		SA_T_LOALM
	Supply Air Humidity High Alarm									×		SA_H_HIALM
$\dashv$	Supply Air Temp High Shutdown									×		SA_T_HIFAIL
$\dashv$	Supply Air Temp Low Shutdown									×		SA_T_LOFAIL
$\dashv$	Supply Air Humidity High Shutdown									×		SA_H_HIFAIL
$\dashv$												
:	Notes:											

. Temperature Controls Contractor (TCC) shall be responsible to provide all points indicated on points list, piping diagrams, and sequences of operations. If the point is not available via BACnet integration from manufacturer the TCC shall provide additional controllers and sensors to provide points.

# VARIABLE FREQUENCY DRIVE INTERFACE

	Point Name	Al	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abbreviation
1	Motor Speed RPM					×			×		×	VFD_SPD_S
	Motor Frequency Hertz					×			×		×	VFD_HZ_S
	Motor Current Amps					×			×		×	VFD_CUR_S
	Motor Runtime					×					×	VFD_RUNTIME_S
	VFD Status						×		×		×	VFD_RUN_S
	In Fault Condition						×		×	×	×	VFD_FAILALM_S
_	In Bypass						×		×	×	×	VFD_BYPASS_S

### **GENERAL EXHAUST FAN POINTS LIST**

									_		
Point Name	Al	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Fan Status			×					×		×	FAN_S
Fan Start/Stop				×				×		×	FAN_C
Schedule							×				occ_s
Fan Failure									×	×	FAN_FAILALM_S
Zone Temp	×							×		×	ZN_T
Zone Setpoint (Adj)	×									×	ZN_SPT
Zone Override			×					×		×	ZN_T_OVRD
Schedule							×				occ_s

## **RELIEF FAN POINTS LIST (EF-106A)**

Point Name	AI	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Fan Status			×					×		×	FAN_S
Fan Start/Stop				×				×		×	FAN_C
Fan Failure									×	×	FAN_FAILALM_S
Space Differential Pressure	×							×		×	SPA_DP
Space Differential Pressure Setpoint					×					×	SPA_DP_SPT
High Space Differential Pressure									×	×	SPA_DP_HIALM_S
Low Space Differential Pressure									×	×	SPA_DP_LOALM_S

# **ELECTRIC UNIT HEATER**

Point Name	AI	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Zone Temp	×							×		×	ZN_T
Zone Setpoint (Adj)	×									×	ZN_SPT
Discharge Air Temp	×							×		×	DA_T
Zone Override			×					×		×	ZN_T_OVRD
Fan Status			×					×		×	FAN_S
Heating Stage 1				×				×		×	HT_1_C
Schedule							×				occ_s
Heating Setpoint								×		×	HTGOFFSET_SPT
Low Zone Temp									×		ZT_LOALM_S
High Discharge Air Temp									×		DAT_HIALM_S
Low Discharge Air Temp									×		DAT_LOALM_S
Fan Failure									×		FAN_FAILALM_S

# MINI SPLIT UNITS POINTS LIST

Point Name	AI	AO	ВІ	во	AV	BV	Sched	Trend	Alarm	Show On Graphic	I/O Point Abreviation
Zone Temp	×							×		×	ZN_T
Zone Setpoint (Adj)	×									×	ZN_SPT
Zone Override			×					×		×	ZN_T_OVRD
Zone Hi / Low Temp Alarm					×			×	×	×	ZONE_T_HI_LO_ALM_S
Schedule							×				occ_s
Unit Fault Alarm			×					×		×	UNIT_ALM_S
	ı	I	1	1	I	1	I	1	I	I	

1. MINI-SPLIT SYSTEMS ARE TO BE PROVIDED WITH BACNET MSTP COMMUNICATIONS. T.C.C. WILL INTEGRATE SYSTEMS. 2. T.C.C. SHALL PROVIDE 4-WIRE THERMOSTAT FOR UNIT.

**NEW COMBINED CTE SCHOOL** 

BG# 22-167

100 Midland Ave. Lexington, KY 40508

BID DOCUMENTS **REVISIONS** 

DESCRIPTION ADDENDUM 1 10/14/22 10/21/22 ADDENDUM 3



PROJECT TEAM

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Indianapolis, IN 46202

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KEYPLAN

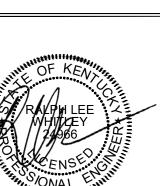
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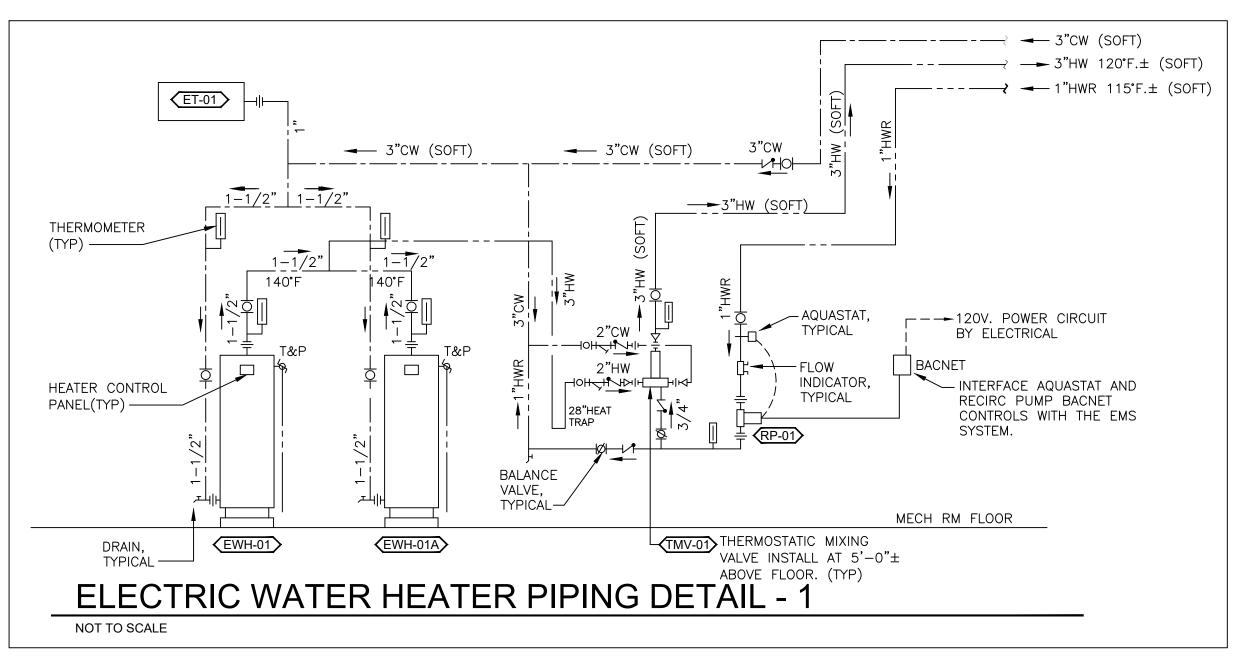
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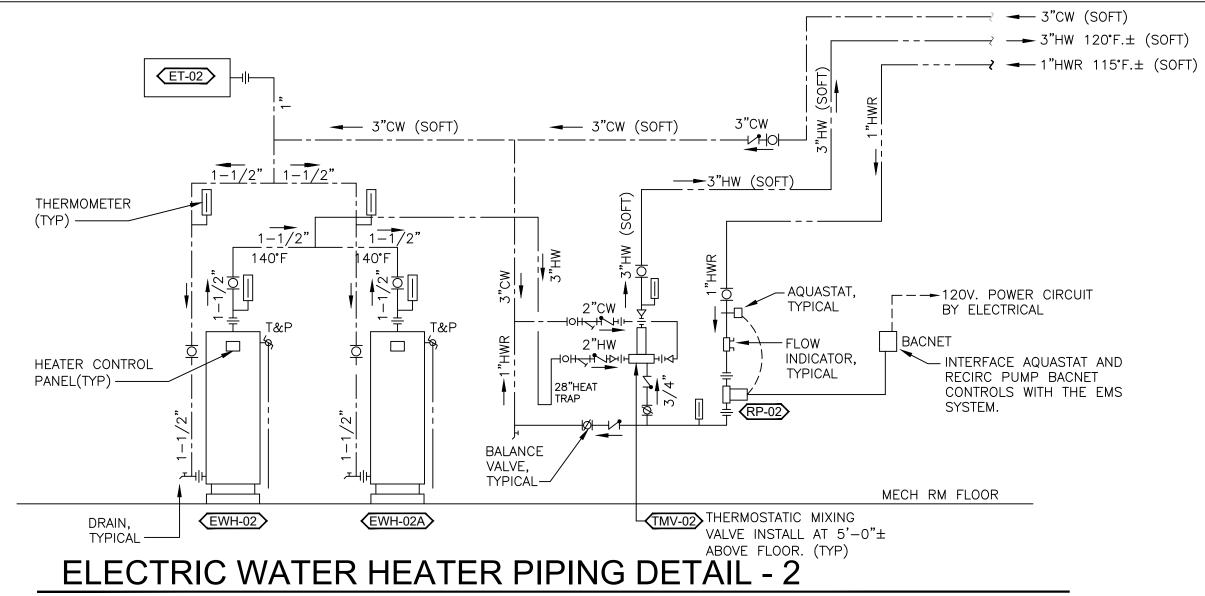
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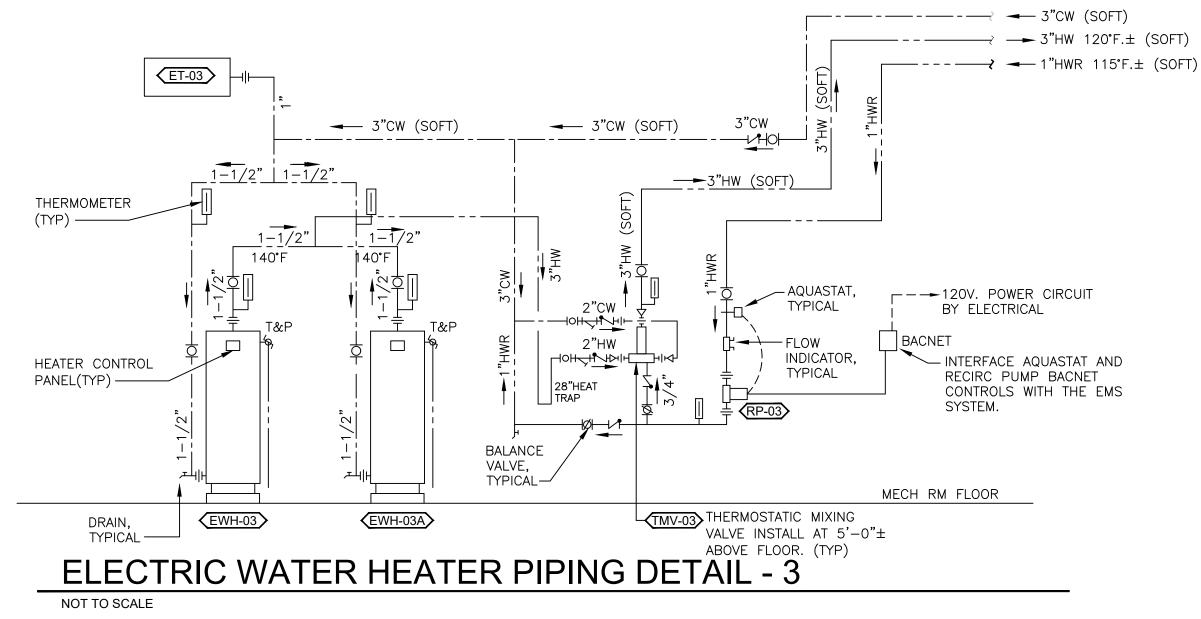
Job Number Drawn By Checked By RLW 09/28/2022

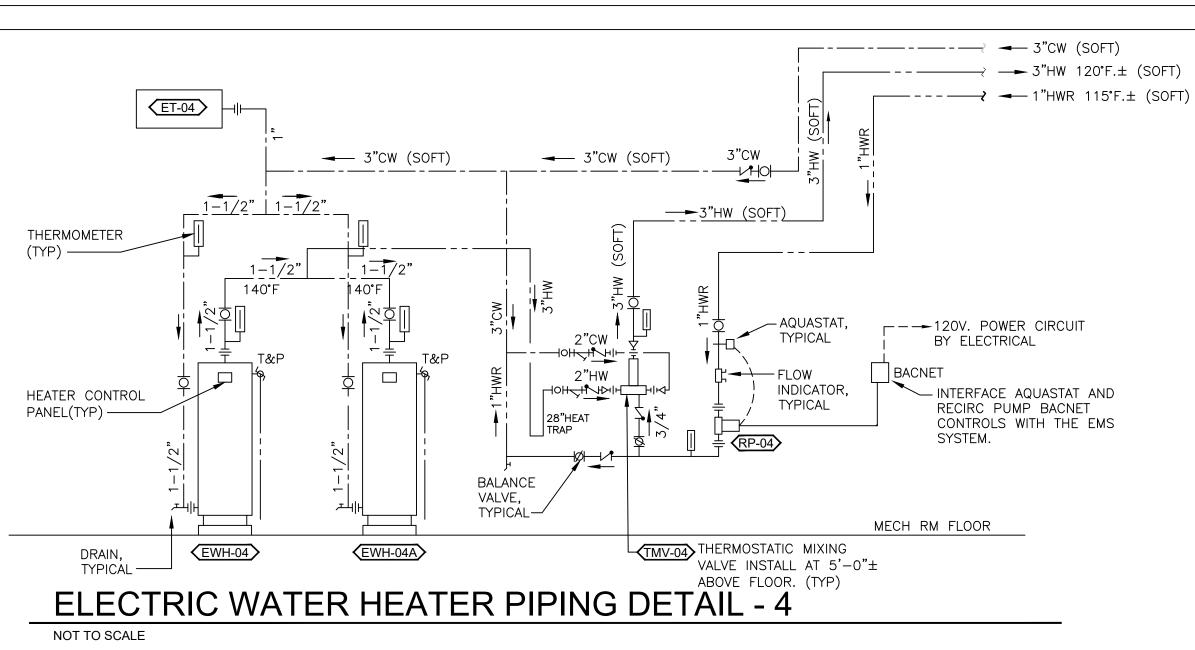


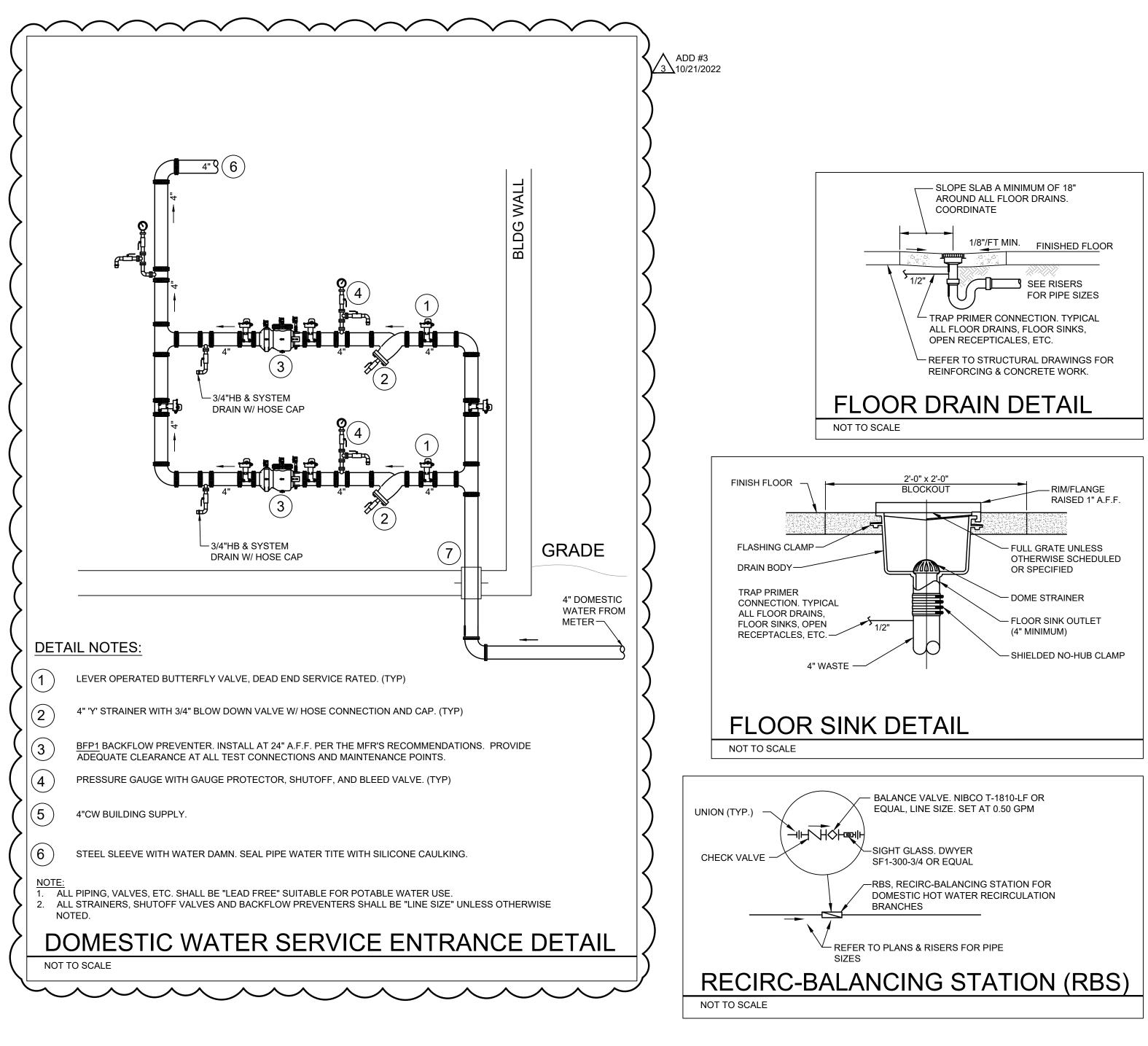
BUILDING **AUTOMATION SYSTEM** - TEMPERATURE CONTROLS

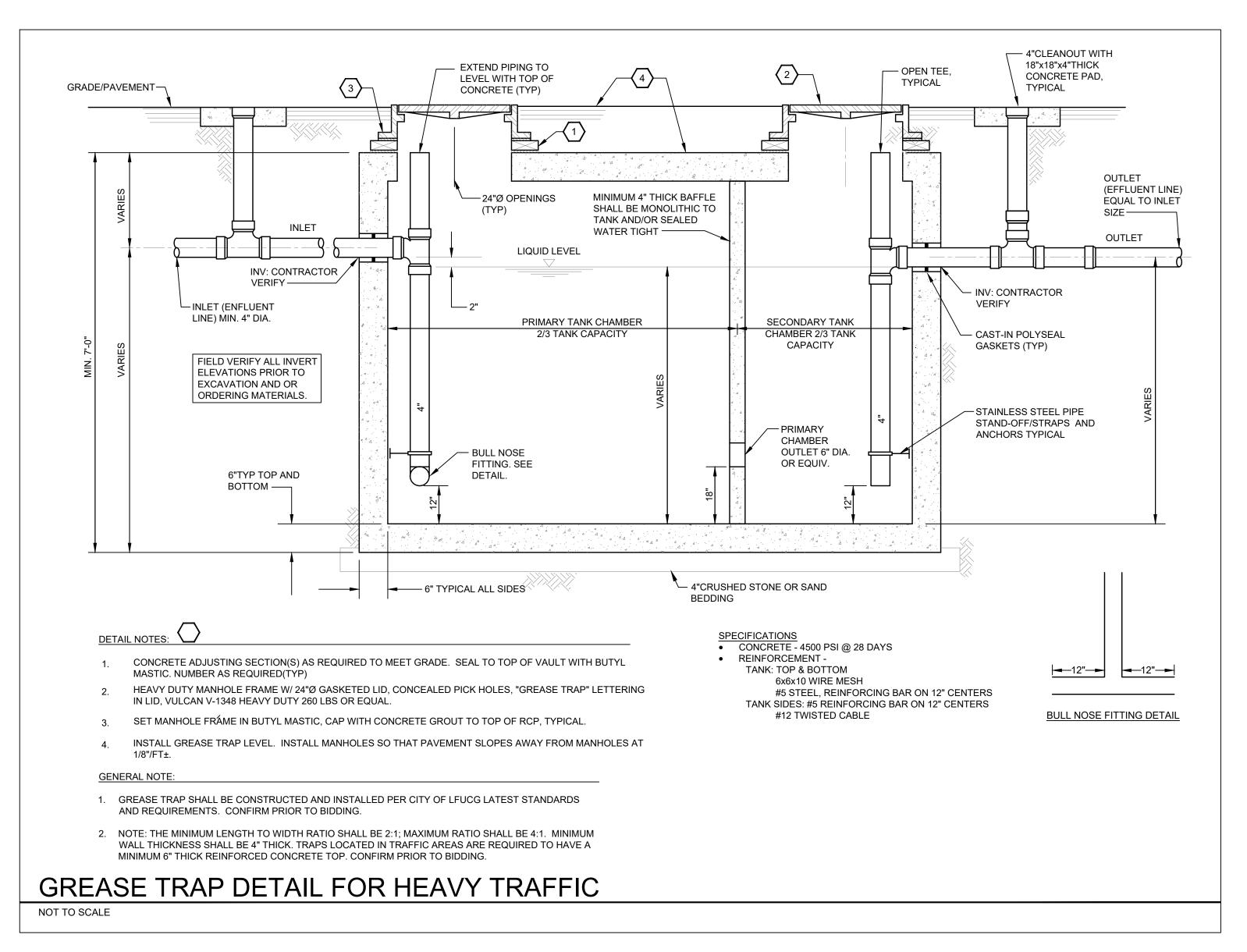








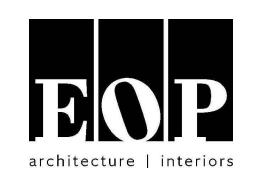




BG# 22-167 100 Midland Ave, Lexington, KY 40508

BID DOCUMENTS

	R	EVISIONS
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



PROJECT TEAM

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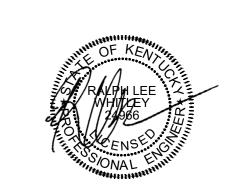
KEYPLAN

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Job Number 2150 RLW Checked By 09/28/2022



PLUMBING DETAILS

ADD #3 10/21/2022

BYPASS VALVE (NORMALLY CLOSED)		_VACUUM		
SOFT WATER OUT	- 5	BREAKER (TYP)		HARD WATER
POWER RECETICLE ON DEDICATED CIRCUIT LOCATED WITHIN 5'-0" OF EQUIP. COORDINATE LOCATIONS WITH ELECTRICAL CONTRACTOR (TYP)  SIPHON BREAKER (TYP)  PRAIN. SPILL FULL SIZE TO FLOOR DRAIN (HARD PIPE COPPER) (TYP)  4" THICK CONCRETE			LINE SIZE FLEXIB CONNECTOR PEF MFGR'S. RQMT'S.  BALL VALVE (TYP) DIELECTRIC UNITON (TYP)  CONTROLLER (TYP)  BRINE TANK (TYP)	₹
HOUSEKEEPING PAD, 6" LARGER THAN EQUIPMENT IN EACH DIRECTION——				

			PL	.UMB	ING F	IXTUR	E SCH	IEDU	LE			
MARK	MANUFACTURER	MODEL / TYPE	TRIM	CW	HW	TRAP	WASTE	VENT	MOUNTING	REMARKS	OTHER ACCEPTABLE MANUFACTURERS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
WC1 / WC1A	AMERICAN STANDARD	2257.101 WATER CLOSET, WALL HUNG	FLUSH VALVE: SLOAN 111 REGAL, MANUAL SEAT: AMERICAN STANDARD 5905.100	1"		INTEGRAL	4"	2"	WALL HUNG: WC1 - RIM 15" WC1A - RIM 17"	ADA COMPLIANT, ELONGATED BOWL, TOP SPUD, 1.6 GPF MANUAL FLUSH VALVE, EXTRA HEAVY DUTY OPEN FRONT SEAT LESS COVER, WITH CARRIER	WC1/WC1A: KOHLER, CRANE FV: ZURN	
<u>U1 / U1A</u>	AMERICAN STANDARD	6590.001 URNIAL, WALL HUNG	FLUSH VALVE: SLOAN 186-1 REGAL, MANUAL	3/4"		INTEGRAL	2"	2"	<u>WALL HUNG:</u>	TOP SPUD, 1.0 GPF MANUAL FLUSH VALVE, WITH CARRIER	U1/U1A: KOHLER, CRANE FV: ZURN	
<u>L1 / L1A</u>	AMERICAN STANDARD	0355.012 ADA WALL HUNG LAVATORY	FAUCET: AMERICAN STANDARD 6114.116.002, SINGLE LEVER TRIM: CHROME PLATED GRID DRAIN, LOOSE KEY OPERATED SUPPLY STOPS, ADA COMPLIANT INSULATION WRAP.	1/2"	1/2"	1-1/4"	2"	2"	WALL HUNG: RIM 34"	20-1/2 " X 18-1/4", VITREOUS CHINA, 4" CENTERS, BACK AND SIDE SPLASH, HEAVY DUTY CONCEALED ARM CARRIERS, SINGLE HANDLE FAUCET, 0.5 GPM, LESS POP UP	L1/L1A: KOHLER, CRANE FAUCET: ZURN, MOEN, DELTA, CAMBRIDGE, T&S	
L2A	AMERICAN STANDARD	FAUCET ONLY	FAUCET: AMERICAN STANDARD 7385.003 TRIM: CHROME PLATED GRID DRAIN, LOOSE KEY OPERATED SUPPLY STOPS, ADA COMPLIANT INSULATION WRAP.	1/2"	1/2"	1-1/4"	2"	2"	COUNTER SET	4" CENTERS, SINGLE HANDLE FAUCET	FAUCET: ZURN, MOEN, DELTA, CAMBRIDGE, T&S	
<u>S1</u>	ELKAY	LRAD2521-5 ADA SINGLE COMPARTMENT SINK	FAUCET: AMERICAN STANDARD 4205.000 TRIM: CHROME PLATED GRID STRAINER, LOOSE KEY OPERATED SUPPLY STOPS.	1/2"	1/2"	1-1/4"	2"	2"	COUNTER SET	21" X 15-3/4" X 5" INSIDE BOWL, #18 GAUGE 304 STAINLESS STEEL, OFF-CENTER REAR DRAIN, 3 HOLE PUNCH, SINGLE HANDLE FAUCET	JUST, AMERICAN STANDARD, KOHLER, MOEN, DELTA,T&S	
<u>S2</u>	ELKAY	LRAD3322-5 ADA TWO COMPARTMENT SINK	FAUCET: AMERICAN STANDARD 4205.001 TRIM: CHROME PLATED GRID STRAINER, LOOSE KEY OPERATED SUPPLY STOPS.	1/2"	1/2"	1-1/4"	2"	2"	COUNTER SET	16" X 13-1/2" X 5" INSIDE BOWLS, #18 GAUGE 304 STAINLESS STEEL, OFF-CENTER REAR DRAIN, 4 HOLE PUNCH, SINGLE HANDLE FAUCET W/ HAND SPRAY	JUST, AMERICAN STANDARD, KOHLER, MOEN, DELTA,T&S	
<u>\$3</u>	ADVANCE TARCO	7-PS-54 S.S. SINK, WITH BACKSPLASH MOUNTED FAUCET	304 S.S. CONSTRUCTION, ONE-PIECE BOWL DESIGN, SPLASH MOUNTED GOOSENECK FAUCET, 4" O.C., 1-1/2" BASKET DRAIN, CHROME PLATED P-TRAP	1/2"	1/2"	1-1/2"	2"	2"	WALL HUNG	COORDINATE FINAL INSTALLATION WITH ARCHITECT	JOHN BOOS, JUST MFG.	
<u>DF1A</u>		VRCTLRDDWSK HI/LO DRINKING FOUNTAIN WITH BOTTLE FILLER	VANDAL-RESISTANT, STAINLESS STEEL, NON-FILTERED, NON-REFRIGERATED. PROVIDE MODEL 98324C CANE APRON.	1/2"	_	1-1/4"	2"	2"	WALL MOUNTED	ELECTRONIC BOTTLE FILLER BUTTON WITH MECHANICAL FRONT BUBBLER BUTTON. FIVE YEAR LIMITED WARRANTY.	HALSEY-TAYLOR, HAWS, ACORN	
WF1		3424-ES-ADA-1-H-ST 4 PERSON WASH FOUNTAIN	TRIM: -ES CONTOURED BASE, MANUAL OPERATED, -ST SINGLE TEMPERATURE VALVE, LOOSE KEY OPERATED SUPPLY STOPS.	1/2"	1/2"	1-1/2"	2"	2"	RIM 34"	ADA COMPLIANT	ACORN, WILLOUGHBY, SLOAN	
MB1		TSB3000 TERRAZZO MOP SINK 12" DEEP WITH 6" DROP FRONT	FAUCET: T&S BRASS B-0665-BSTR-963, CONTINUOUS PRESSURE VACUUM BREAKER, TOP BRACE, PAIL HOOK  TRIM: 832AA HOSE AND HANGER, MSG WALL GUARDS  ACCESSORY: GAURDIAN G5012 DRENCH HOSE UNIT	3/4"	3/4" + 1/2" TEPID	3"	3"	2"	FLOOR SET ADD #3 10/21/2022	24" X 24" X 12" w/ 6" DROP FRONT, STAINLESS STEED CAPS ON ALL SIDES, ACCESSIBLE CHECK VALVES ON SUPPPLIES, PROVIDE THERMOSTATIC MIXING VALVE FOR DRENCH HOSE.	STERN WILLIAMS, MUSTEE	
EEW1	BRADLEY	S19-310DC PEDESTAL MOUNTED COMBINATION DRENCH SHOWER & EYEWASH	TRIM: S19-2200 NAVIGATOR EFX60 THERMOSTATIC MIXING VALVE	1"	1"				PEDESTAL FLOOR SET	1-174" TEMPERED WATER FROM VALVE TO FIXTURE. FIXTURES LOCATED IN KITCHEN AND CULINARY SHALL BE HARD PIPED DWV.	EEW: GUARDIAN, HAWS	
<u>EW1</u>		S19214 PEDESTAL MOUNTED EYEWASH, PLASTIC BOWL AND COVER	TRIM: S19-2000 NAVIGATOR EFX8 THERMOSTATIC MIXING VALVE,	1/2"	1/2"				PEDESTAL FLOOR SET	1/2" TEMPERED WATER FROM VALVE TO FIXTURE. FIXTURES LOCATED IN KITCHEN AND CULINARY SHALL BE HARD PIPED DWV.	EW: GUARDIAN, HAWS	
WB1		MM-500-MLB METAL WASHING MACHINE OUTLET BOX	TRIM: QUARTER TURN BALL VALVES, WITH HAMMER ARRESTORS	1/2"	1/2"	2"	2"	2"	48" AFF	WITH METAL FRAME, SUPPLY CONNECTION TYPE TO MATCH PIPING SYSTEM	WB: ZURN, GUY GRAY, OATEY, JAY R SMITH	
<u>IMB1</u>		MM-500-MIMB METAL WASHING ICE MAKER OUTLET BOX	TRIM: QUARTER TURN BALL VALVES, WITH HAMMER ARRESTORS	1/2"					48" AFF	WITH METAL FRAME, SUPPLY CONNECTION TYPE TO MATCH PIPING SYSTEM	ON THE PROPERTY OF THE PROPERT	
HB1	WOODFORD	B24, HOSE BIBB, BOXED	WITH VACUUM BREAKER, POLYCORBONATE WHEEL HANDLE AND LOOSE TEE KEY	3/4"					18" AFF	BOXED, RECCESSED IN WALL	HB1: MURDOCK, ZURN	
<u>HB2</u>	WOODFORD	24, HOSE BIBB, EXPOSED	WITH VACUUM BREAKER, METAL HANDLE	3/4"					36" AFF	EXPOSED	HB2: MURDOCK, ZURN	
WH1	WOODFORD	MODEL B68 FREEZELESS WALL HYDRANT, ENCLOSED BOX	FLIP DOWN S.S. COVER, ALL BRONZE INTERIOR PARTS, REPLACEABLE BRONZE SEAT AND WASHER, LOOSE TEE KEY	3/4"					18" A.F.G.	WALL MOUNTED	WH1: WATTS, MURDOCK	
<u>BFP-01</u>	FEBCO (A WATTS BRAND)	MASTER SERIES LF880V-OSY Z- PATTERN,, REDUCED PRESSURE ZONE BACK FLOW ASSEMBLY	DUCTILE IRON BODY, OS&Y SHUT-OFF VALVES, STRAINER, FULL SIZE AIR GAP FITTING.	4"					24" A.F.F.	SPILL AIR GAP FULL SIZE THRU WALL AND ELL DOWN.	BFP: WATTS, AMES SILVER BULLET, APOLLO, WILKENS ZURN	
FD1	JOSAM	30004-A FLOOR DRAIN	7" SATIN FINISH BRONZE STRAINER, 1/2" TRAP PRIMER CONNECTION	1/2"			4"		FLUSH IN FLOOR	TRAP PIMER PIPING MAY BE PEX TYPE.	WATTS, JAY R SMITH, MIFAB, WADE, ZURN	
FD2	JOSAM	37810 FLOOR DRAIN, MEDIUM SUMP, HEAVY-DUTY TOP, REMOVABLE SEDIMENT BUCKET	12" DUCTILE IRON STRAINER, 1/2" PRIMER CONNECTION	1/2"			4"		FLUSH IN FLOOR	TRAP PIMER PIPING MAY BE PEX TYPE.	WATTS, JAY R SMITH, MIFAB, WADE, ZURN	
FD3	JOSAM	37810 FLOOR DRAIN, MEDIUM SUMP, HEAVY-DUTY TOP, REMOVABLE SEDIMENT BUCKET, HINGED GRATE, ACID RESISTANT EPOXY COATING	12" DUCTILE IRON STRAINER, 1/2" PRIMER CONNECTION, SEDIMENT BUCKET	1/2"			4"		FLUSH IN FLOOR	TRAP PIMER PIPING MAY BE PEX TYPE.	WATTS, JAY R SMITH, MIFAB, WADE, ZURN	
<u>FS1</u>	JOSAM	49324A-LF FLOOR SINK	CAST IRON BODY WITH ACID RESTITANT EPOXY COATED INTERIOR, LESS FLANGE, 3/4 GRATE				4"		RIM 1" AFF	TRAP PIMER PIPING MAY BE PEX TYPE.	WATTS, JAY R SMITH, MIFAB, WADE, ZURN	
TD1	JOSAM	PRO-PLUS 200C, 8" INTERNAL WIDTH, POLYMER TRENCH DRAIN, WITH DUCTILE IRON CLASS "C" GRATE	BOTTOM OUTLET, END CAPS, SLOPED CHANNEL, SUPPORT BRACKETS CAPABLE OF ACCEPTING REBAR.				4"		FLUSH IN FLOOR	TRAP PIMER PIPING MAY BE PEX TYPE.	WATTS, JAY R SMITH, MIFAB, WADE, ZURN	
<u>OR</u>		PIPE HUB RIM 2"A.F.F.				2" OR 4" SEE RISER	2" OR 4" SEE RISER	2"	RIM 2" A.F.F.	PIPE HUB ONE SIZE LARGER THAN WASTE SIZE. SEE RISER		
<u>CB1</u>	WADE	5810-H20 OIL/SEDIMENT INTERCEPTOR	24"x24" SQ., TWO PIECE DUCTILE IRON				4"	2"	SEE PLANS	FABRICATED, ACID RESISTANT COATED (A.R.C STEEL, H20 LOAD RATED, INTEGRAL TRAP	JOSAM, MIFAB	
<u>AP</u>	PRECISION PLUMBING PRODUCTS	S.S. ACCESS PANEL F-1212SS	12"x12" ACCESS PANEL, KEYED LOCK CYLINDER, VANDAL RESISTANT						SEE PLANS	ALL LOCATIONS SHALL BE REVIEWED AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION	WADE, MIFAB	
CRD1	WADE	3042 COMBINATION MAIN/OVERFLOW ROOF DRAIN, CAST IRON, ALUMINUM DOME, 13" DIA., INSIDE CAULK, ADJUSTABLE DRAIN EXTENSION, UNDERDECK CLAMP	BOTTOM OUTLET, END CAPS, SLOPED CHANNEL, SUPPORT BRACKETS CAPABLE OF ACCEPTING REBAR.				8"		ROOF		JOSAM, ZURN	
CRD2	\/\/∆I)⊦	3042 COMBINATION MAIN/OVERFLOW ROOF DRAIN, CAST IRON, ALUMINUM	BOTTOM OUTLET, END CAPS, SLOPED CHANNEL, SUPPORT BRACKETS CAPABLE OF ACCEPTING REBAR.				4"		ROOF		JOSAM, ZURN	
DSN	7HPN	ZF199 DOWNSPOUT NOZZLE WITH FLAPPER	ALL ALUMINUM BODY WITH POWDER COATED WALL FLANGE, PERFORATED HINGED FLAPPER				2" - 10"		SEE PLANS	LINE SIZE, REFER TO PLANS. GASKET FOR CAST IRON OR PVC CONNECTION.	JOSAM, MIFAB	
<u>FCO</u>		55000-1-Y INTERIOR CLEANOUT	COATED CAST IRON BODY, WITH SATIN FINISH NIKALOY TOP				2"-4"		FLOOR	LINE SIZE UP TO 4", 4" MAXIMUM. COORDINATE FLOOR TYPE WITH ARCH. DRAWINGS. COLOR/FINISH SHALL BE SELECTED BY ARCHITECT.	WADE, ZURN	
<u>ECO</u>		55000-Y HEAVY DUTY EXTERIOR CLEANOUT	COATED CAST IRON				2"-4"		GROUND	LINE SIZE UP TO 4", 4" MAXIMUM. COORDINATE FLOOR TYPE WITH ARCH. DRAWINGS. COLOR/FINISH SHALL BE SELECTED BY ARCHITECT.	WADE, ZURN	
WCO	JOSAM		D.C.C.I. BODY GAS/WATER TIGHT TAPERED THREAD PLUG, ROUND STAINLESS STEEL ACCESS COVER WITH SECURING SCREW				2"-4"		WALL	LINE SIZE UP TO 4", 4" MAXIMUM. COORDINATE FLOOR TYPE WITH ARCH. DRAWINGS. COLOR/FINISH SHALL BE SELECTED BY ARCHITECT.	WADE, ZURN	
				$\overline{}$								

			THERM	OSTATIC I	WIXING \	/ALVE SO	CHEDULE	=		
				FLOW RANGE	FLOW AT	OUTLET	CONNEC	TIONS		SERIAL NUMBER
MARK	MANUFACTURER	MODEL	LOCATION	GPM	5 PSIG DROP	TEMP °F (ADJ.)	CW/HW INLET	OUTLET	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
TMV-01	LAWLER	805-96	SEE PLANS	5 - 96	64	120°	2" / 2"	2"	1,2,3,4	
TMV-02	LAWLER	803-60	SEE PLANS	3 - 60	43	120°	2" / 2"	2"	1,2,3,4	
TMV-03	LAWLER	805-96	SEE PLANS	5 - 96	64	120°	2" / 2"	2"	1,2,3,4	
TMV-04	LAWLER	803-60	SEE PLANS	3 - 60	43	120°	2" / 2"	2"	1,2,3,4	

1. LOCKABLE BRASS BALL VALVES AT INLET CONNECTIONS AND TEMPERATURE GAUGE WITH PETCOCK AT OUTLET 🔪 2. ASSE 1017 COMPLIANT, LEAD FREE, SOLID BRASS MASTER MIXING VALVE WITH INTEGRAL CARTRIDGE STYLE CHECKS AND SCREENS 3. FACTORY TEST CONNECTION WITH GARDEN HOSE CONNECTION, SHUT-OFF AND THERMOMETER.

4. ALL BRASS FINISHES.

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: LAWLER, STINGRAY SYSTEMS, POWERS, LEONARD. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ADD #3
10/21/2022

				ELECTF	RIC WATE	R HEATI	ER SCH	EDULE							
					TANK	RECOVERY	EXPANSION	CIRCULATION	MIXING		ELECTRI	ICAL			SERIAL NUMBER
MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	CAPACITY (GAL)	AT 100°F RISE	TANK #	PUMP#	VALVE#	KW	V / Ø / Hz	MCA	MOCP	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
EWH-01	AO SMITH	DRE-52-18	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	18	208/3/60	62.5	65	ALL	
EWH-01A	AO SMITH	DRE-52-18	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	18	208/3/60	62.5	65	ALL	
EWH-02	AO SMITH	DRE-52-36	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	36	208/3/60	124.9	125	ALL	
EWH-02A	AO SMITH	DRE-52-36	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	36	208/3/60	124.9	125	ALL	
EWH-03	AO SMITH	DRE-52-36	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	36	208/3/60	124.9	125	ALL	
EWH-03A	AO SMITH	DRE-52-36	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	36	208/3/60	124.9	125	ALL	
EWH-04	AO SMITH	DRE-52-18	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	18	208/3/60	62.5	65	ALL	
EWH-04A	AO SMITH	DRE-52-18	SEE PLANS	GENERAL	50	74	ET-01	RP-01	TMV-01	18	208/3/60	62.5	65	ALL	

1. PROVIDE WITH ASME APPROVED TEMPERATURE AND PRESSURE RELIEF VALVE.

2. SET AT 140 DEGREES.

3. SURFACE MOUNTED THERMOSTAT.

4. ANODE RODS. 5. BRASS DRAIN VALVE.

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: STATE, LOCHINVAR, BRADFORD WHITE, RHEEM. REFER TO SPECIFICIATIONS FOR ADDITIONAL REQUIREMENTS.

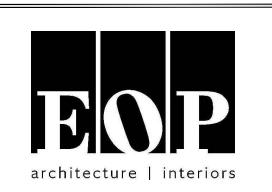
ADD #3
10/21/2022

# **NEW COMBINED CTE** SCHOOL

BG# 22-167 100 Midland Ave,

Lexington, KY 40508 **BID DOCUMENTS** 

		F	REVISIONS
	#	DATE	DESCRIPTION
	1	10/14/22	ADDENDUM 1
	3	10/21/22	ADDENDUM 3



PROJECT TEAM

**EOP Architects** 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380 www.eopa.com



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628 Winchester Rd. Lexington, KY 40505

Reitano Design Group 302 N. East Street, Studio One Indianapolis, IN 46202



Vine Grove, KY 40175 KEYPLAN

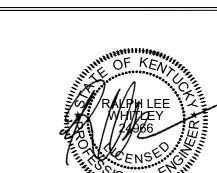
307 Oakwood Circle

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Job Number 2150 Drawn By BRG Checked By RLW 09/28/2022



**PLUMBING** SCHEDULES

ADD #3 10/21/2022

					PUMP	SCH	EDUL	E						
				FLOW	HEAD		CONNE	CTIONS		ELECTF	RICAL			SERIAL NUMBER
MARK	MANUFACTURER		ADD #3 LOCATION 10/21/2022	(GPM)	(FT)	RPM	INLET	OUTLET	HP	V / Ø / Hz	MCA	MOCP	REMARKS	(TO BE COMPLETED BY CONTRACTOR
RP-01	TACO	00e-VR15L-SF	SEE PLANS	11.0	15	3,250	1"	1"	1/8	115/1/60	1.76	20	1 - 11	
RP-02	TACO	00e-VR15L-SF	SEE PLANS	11.0	15	3,250	1"	1"	1/8	115/1/60	1.76	20	1 - 11	
RP-03	TACO	00e-VR15L-SF	SEE PLANS	11.0	15	3,250	1"	1"	1/8	115/1/60	1.76	20	1 - 11	
RP-04	TACO	00e-VR15L-SF	SEE PLANS	11.0	15	3,250	1"	1"	1/8	115/1/60	1.76	20	1 - 11	
SP-01 8	ZOELLER	940-0012	ELEVATOR SHAFT	53.0	15	3,450		2"	4/10	115/1/60	8.50	20	12	
SP-02∰ 🕄	ZOELLER	N152	GEOTHERMAL VAULT	53.0	15	3,450		2"	4/10	115/1/60	8.50	20	13,14,15	
DD 0/21														

5. ANTI-CONDENSATE BAFFLE

7. FIELD SERVICEABLE REPLACEABLE CARTRIDGE

8. SELF LUBRICATING 9. STAINLESS STEEL CASING CONSTRUCTION

10. NON-METALIC IMPELLER

6. DIRECT DRIVE

11. CERAMIC SHAFT

12. OIL GUARD PACKAGE SYTEM: ALARM PANEL, OIL SMART PUMP SWITCH, N152-0028 PUMP

13. HARD WIRE. COORDINATE REQUIREMENTS WITH ELECTRICAL CONTRACTOR 14. PIGGY BACK VARIABLE LEVEL FLOAT SWITCH WITH TWENTY-FOOT (20') CORD.

15. CAST IRON BASE

OTHER ACCEPTABLE MANUFACTURERES INCLUDE: WEIL, LIBERTY. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. 

						WATER	SOFTENER	SCHEDU	JLE						
MARK	MANUFACTURER	MODEL	RESIN VOL. (CU. FT.)PER TANK	PIPE SIZE	(CDAINS) MIN / MAY	CONTINUOS FLOW (GPM) @ 15 PSI PRESSURE DROP	PEAK FLOW (GPM) @ 25 PSI PRESSURE DROP	QTY. OF TANKS (SOFTENERS / BRINE)	SOFTENER TANK DIA. X HEIGHT	BRINE TANK DIA. X HEIGHT	OVERALL LENGTH	ELECTRICAL (V/PH/HZ)	WATTS	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
WS-01	CUSTOM CARE	C43-0090-20	3	2"	60,000 - 90,000	39.00	54	1/1	14"x65"	24"x41"	38"x24"x80"	120/1/60	10	ALL	

1. MOUNT TANKS ON 4" THICK CONCRETE HOUSEKEEPING PAD.

2. LOCATE POWER RECEPTICLE WITHIN FIVE (5) FEET OF EACH SOFTENER. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

2. CONTRACTOR SHALL PROVIDE ALL PIPING, VALVES, FITTIINGS, ETC., AND MAKE FINAL CONNECTIONS FOR A COMPLETE INSTALLATION. 4. SKID MOUNTED.

5. OTHER MANUFACTURERS EQUAL BUT NOT LIMITED TO CULLIGAN, MARLO

					AIF	RCOM	<b>IPRES</b>	SOR SCHE	DULE						
				PRESSURE	CAPACITY	RECEIVER		DIMENSIONS (IN)	ENCLOSED WEIGHT		ELEC	TRICAL			SERIAL NUMBER
MARK	MANUFACTURER	MODEL	LOCATION	(PSIG)	(CFM)	VOL. GAL.	(dba) @ 1	L×W×H	(POUNDS)	HP	V/Ø/Hz	MCA	MOCP	REMARKS	(TO BE COMPLETED BY CONTRACTOR
AC-01	SULLIVAN - PALATEK	HH50UD	SEE PLANS	175	160		75	66x34x48	1,515	50	460/3/60			ALL	

1. MICROPROCESSOR CONTROLLED PROGRAMMABLE DAILY SCHEDULE 2. VFD MAGNETIC STARTER WITH 120V CONTROLS; NEMA 4 ENCLOSURE

3. CLASS 20 SOLID STATE OVERLOAD RELAY

4. ANTI-REVERSE

5. HIGH TEMPERATURE AND HIGH PRESSURE SHUT-DOWN SWITCHES

6. ONE PIECE FLUID FILL, AND SIGHT GLASS

7. A.S.M.E. RATED, 200 PSIG SEPARATOR TANK, WITH RELIEF VALVE 3. DEDICATED COOLING SYSTEM FAN MOTOR, SIDE BY SIDE LUBE COOLER AND AFTERCOOLER

9. AIR INTAKE FILTER, HEAVY DUTY TYPE. MULTI-STAGE DRY TYPE WITH CLEANABLE/REPLACEABLE ELEMENT

10. FLANGE MOUNTED COMPRESSOR/MOTOR

11. NO LOAD STARTING WITH 0 - 100% MODULATION 12. ROTARY SCREW

13. AIR COOLED, ENCLOSED

14. TEFC COMPRESSOR AND COOLING FAN MOTOR 15. SYNTHETIC LUBRICANT

16. AMBIENT TEMERATURE RANGE 35° F TO 104° F

OTHER ACCEPTABLE MANUFACTURERS INCLUDE: CURTIS, QUINCY. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

			OIL/WATER	SEPARATOR	SCHEDULE			
MARK	MANUFACTURER	MODEL	LOCATION	DIMENSIONS LxWxD	INLET/ OUTLET (IN)	WEIGHT (LBS)	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
OWS-01	STRIEM	OS-100	SEE PLANS	68"X33"X51-1/2"	4" / 4"	230	ALL	

1. 4" INLET/OUTLET SCHEDULE 40 PLAIN END.

2. MAXIMUM RATED FLOW 100 GPM. 3. LIQUID CAPACITY 275 GALLONS.

4. MAXIMUM OIL CAPACITY 147.50 GALLONS.

5. ACCESS COVER/HATCH SHALL BE H-20 TRAFFIC RATED. 6. MAXIMUM OPERATING TEMPERATURE 190°F CONTINUOUS.

7. POLYETHYLENE BODY.

8. INSTALL OIL/WATER SEPARATOR OUTSIDE BUILDING AS SHOWN AND DETAILED ON PLANS.

9. OTHER ACCEPTABLE MANUFACTURERS INCLUDE: ZURN, JOSAM 10. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

# COMPRESSED AIR FILTER SCHEDULE

)	MARK	MFR. & MODEL	MIN. / MAX. FLOW (SCFM)	MAX OPERATING PRESSURE (PSI)	DESCRIPTION	CONDENSATE DRAIN VOLTAGE/PHASE	REMARKS	SERIAL NUMBER (TO BE COMPLETED BY CONTRACTOR)
	PF-1	BEKO CLEARPOINT M020FWF	25 / 1,900	232	1 µm PARTICLE AND RESIDUAL OIL FILTER	120/1	ALL	
	AF-1	BEKO CLEARPOINT M020SWF	25 / 1,900	232	0.01 µm PARTICLE AND RESIDUAL OIL FILTER	120/1	ALL	

REMARKS:

1. PROVIDE DIFFERENTIAL PRESSURE GAUGE.

2. PROVIDE 1/2" CONNECTION SET WITH INTEGRAL BALL VALVE.

3. PROVIDE BEKOMAT AUTOMATIC CONDENSATE DRAIN WITH 6' UL/CSA APPROVED CABLE AND

PLUG. SIZE PER MANUFACTURER'S RECOMMENDATIONS. 4. THREADED NPT CONNECTIONS.

ANODIZED POWDER COATED ALUMINUM CONSTRUCTION.

# COMPRESSED AIR RECEIVER TANK SCHEDULE

1. PROVIDE SKIRT FOR VERTICAL SUPPORT.

MANUFACTURER'S RECOMMENATIONS. DRAIN TO BE 120V/1Φ.

2. PROVIDE WITH SAFETY VALVE AND SAFETY VALVE CONNECTION LOCATION. 3. PROVIDE 1" NPT CONDENSATE CONNECTION AT BOTTOM OF TANK.

4. PROVIDE SYSTEM BLEED OFF VALVE. 5. PROVIDE PRESSURE GAUGE.

6. RATED PRESSURE: 300 PSI

7. PROVIDE BEKOMAT AUTOMATIC CONDENSATE DRAIN WITH 6' UL/CSA APPROVED CABLE AND PLUG. SIZE PER

#### TRAP PRIMER SCHEDULE

						<del></del>		
				NUMBER	ELEC ⁻	TRICAL		SERIAL NUMBER
MARK	MANUFACTURER	MODEL	LOCATION	OF PORTS	V/PH/HZ	WATTS	REMARKS	(TO BE COMPLETED BY CONTRACTOR)
ETP-01	PRECISION PLUMBING PRODUCTS	PTS-8	SEE PLANS	8	120/1/60	6	1,3,4,6,7	
ETP-02	PRECISION PLUMBING PRODUCTS	PTS-1320	SEE PLANS	20	120/1/60	6	1,2,3,4,7	
TP	PRECISION PLUMBING PRODUCTS	PRO1-500	SEE PLANS	4			2,3,5,7	
REMARKS:	•		•			•	•	

1. SURFACE MOUNTED BOX WITH COVER MOUNTED 60" AFF. PAINT AS DIRECTED BY ARCHITECT. REFER TO ARCHITECTURAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. FOUR PORT DISTRIBUTION UNIT (DU SERIES).

3. LEAD FREE .

4. FACTORY CIRCUIT BREAKER, TEST SWITCH, TIMER, SOLENOID VALVE, U.L. LISTED. 5. FLOW THRU TRAP PRIMER INSTALLED ON 1/2" FIXTURE SUPPLY. REFER TO PLANS.

6. VERIFY OUTLET NUMBER WITH FLOOR DRAIN, FLOOR SINK, AND KITCHEN LAYOUTS

7. OTHER ACCEPTABLE MANUFACTURERS INCLUDE: MIFAB, SIOUX CHIEF.

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

# WATER HAMMER ARRESTOR SCHEDULE

				PIPE SIZE	FIXTURE	
MARK	MANUFACTURER	MODEL	LOCATION	INCHES	UNITS	REMARKS
HA-A	PRECISION PLUMBING PRODUCTS	SC-500A	SEE PLANS	1/2"	1-11	ALL
HA-B	PRECISION PLUMBING PRODUCTS	SC-750B	SEE PLANS	3/4"	12-32	ALL
HA-C	PRECISION PLUMBING PRODUCTS	SC-1000C	SEE PLANS	1"	33-60	ALL
HA-D	PRECISION PLUMBING PRODUCTS	SC-1250D	SEE PLANS	1"	61-113	ALL
HA-E	PRECISION PLUMBING PRODUCTS	SC-1500E	SEE PLANS	1"	114-154	ALL
HA-F	PRECISION PLUMBING PRODUCTS	SC-2000F	SEE PLANS	1"	155-330	ALL

1. SIZING PER PLUMBING DRAINAGE INSTITUTE (PDI) STANDARD PDI-WH201, LATEST EDITION

2. ASSE 1010 CERTIFIED 3. LEAD FREE

4. OTHER ACCEPTABLE MANUFACTURERS INCLUDE: SIOUX CHIEF, WATTS 5. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS

6. OTHER ACCEPTABLE MANUFACTURERS: JOSAM, WATTS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

		E	EXPANSION	I TANK S	CHEDUI	_E		
NAA DIK	MANUEACTURER	MODEL	LOGATION	TANK	ACCEPTANCE	DEMARKS	SERIAL NUMBER	١.
MARK	MANUFACTURER	MODEL	LOCATION	VOLUME (GAL)	VOLUME (GAL)	REMARKS	(TO BE COMPLETED BY CONTRACTOR)	\
ET-01	TACO	PAX42-150	SEE PLANS	11	5	ALL		<
ET-02	TACO	PAX42-150	SEE PLANS	11	5	ALL		l
ET-03	TACO	PAX42-150	SEE PLANS	11	5	ALL		
ET-04	TACO	PAX42-150	SEE PLANS	11	5	ALL		<b>&lt;</b>

ADD #3 10/21/2022

. ASME RATED

. 150 PSIG PRESSURE RATING 3. BLADDER TYPE.

4. PRE-CHARGED TO 40 PSI 5. 304 S.S. SYSTEM CONNECTION

6. BULLS EYE SIGHT GLASS

7. HORIZONTAL INSTALLATION

8. FACTORY PRIMER PAINTED OTHER ACCEPTABLE MANUFACTURERS INCLUDE: WESSELS, WATTS.

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ADDITIONAL COST.

ALL WORK SHALL BE DONE IN ACCORDANCE THE UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION (AHJ) REQUIREMENTS. ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL PRIOR TO BACKFILLING. ANY PIPING, STRUCTURES OR APPURTENCES COVERED OR CONCEALED PRIOR TO INSPECTION AND APPROVAL SHALL BE UNCOVERED TO ALLOW INSPECTIONS AT NO

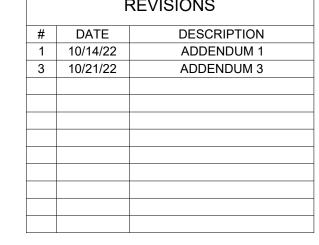
"KY BUD" BEFORE YOU DIG: (811) UNDERGROUND UTILITY LOCATIONS WERE DETERMINED FROM SITE SURVEY AND VISUAL INSPECTION OF THE PROPERTY AND SHOULD BE CONSIDERED APPROXIMATE ONLY. CONTACT ALL INDIVIDUAL UTILITY COMPANIES AND "KY BUD" PRIOR TO BEGINNING ANY EXCAVATION.

# **NEW COMBINED CTE** SCHOOL

BG# 22-167 100 Midland Ave,

Lexington, KY 40508 BID DOCUMENTS

REVISIONS 10/14/22 3 10/21/22





PROJECT TEAM

**EOP Architects** 201 W. Short Street, Suite 700 Lexington, KY 40507 p. 859-231-7538 | f. 859-255-4380 www.eopa.com



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MEP Engineers 628 Winchester Rd. Lexington, KY 40505



302 N. East Street, Studio One Indianapolis, IN 46202



KEYPLAN

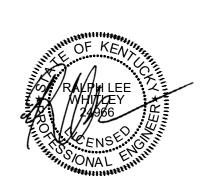
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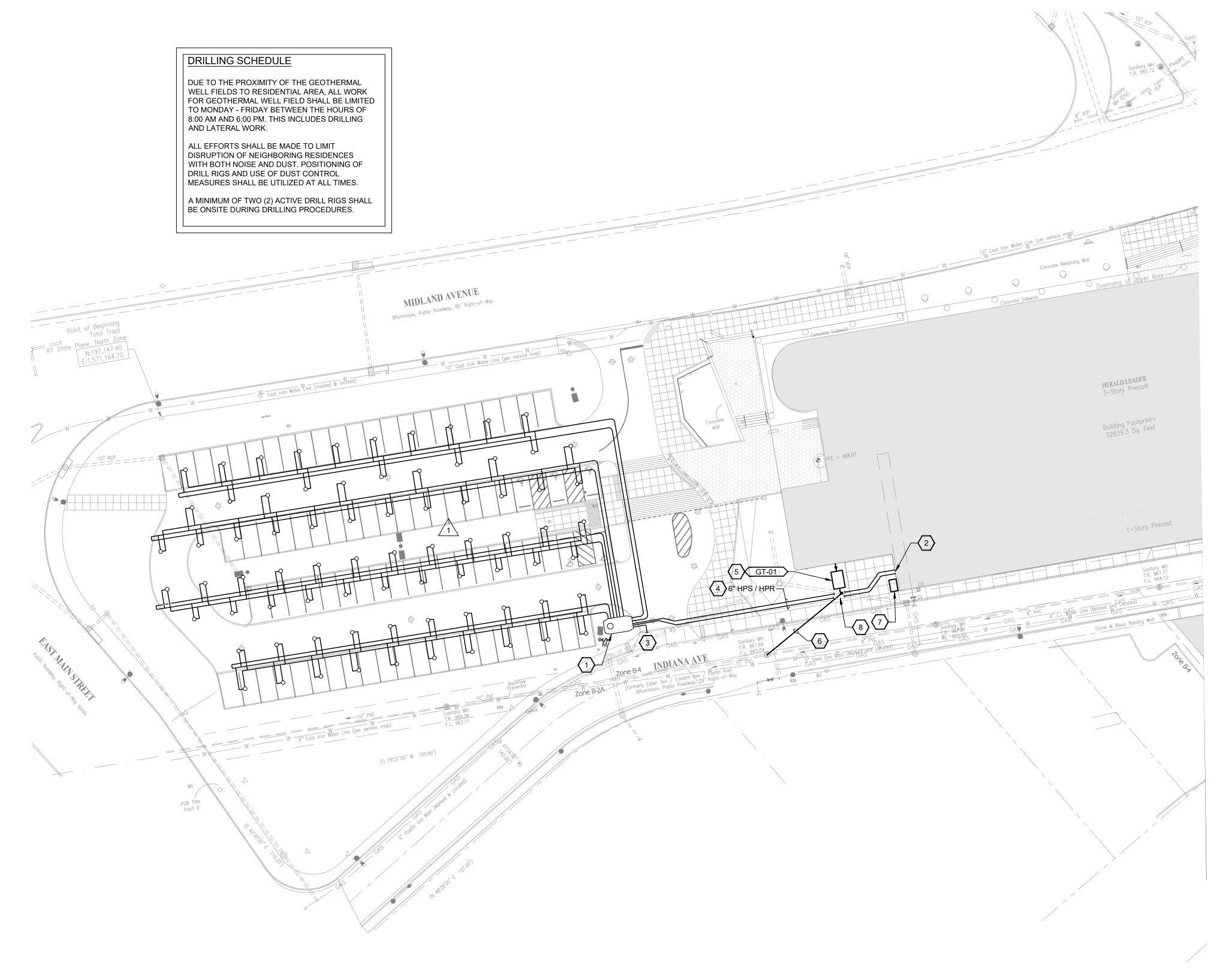
Job Number 2150 Drawn By BRG Checked By RLW 09/28/2022



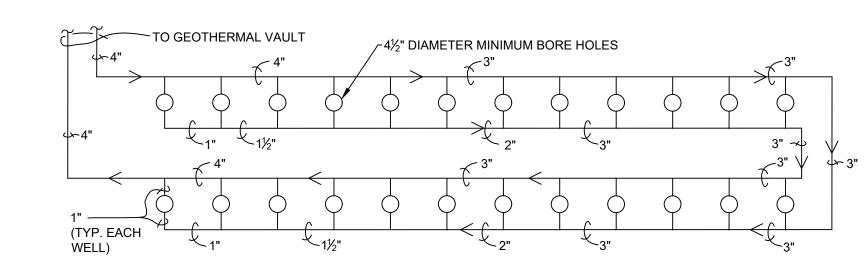
**PLUMBING** 

ADD #3 10/21/2022

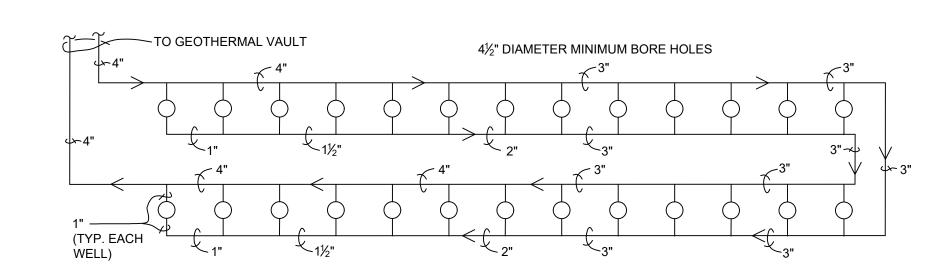
**SCHEDULES** 



# PARTIAL GEOTHERMAL SITE PLAN - MECHANICAL

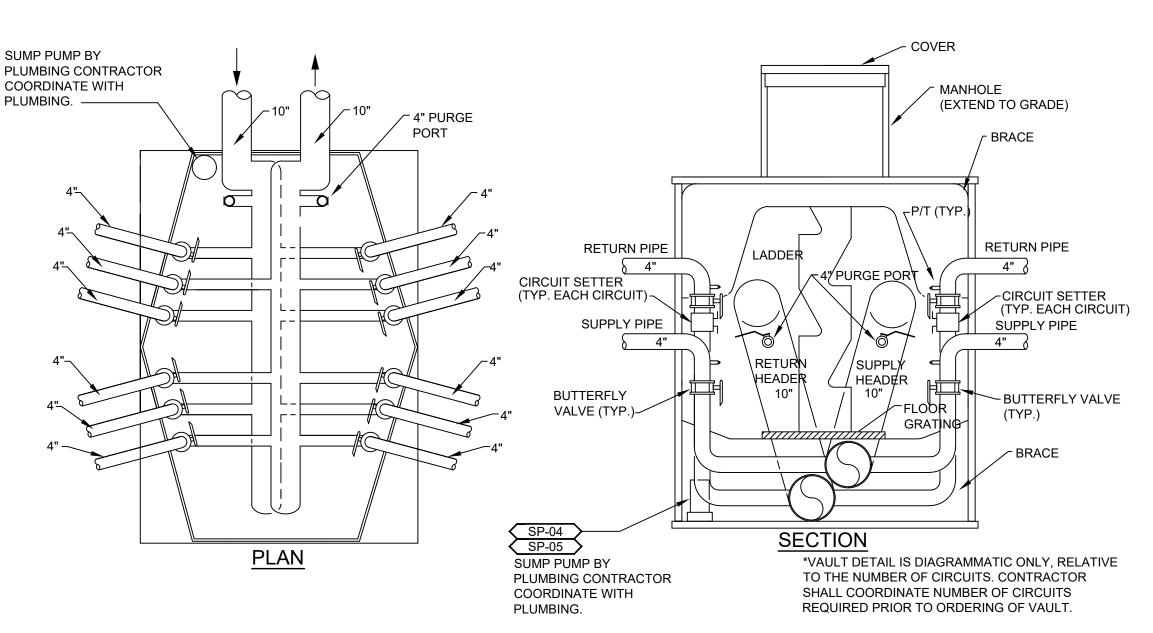


# GEOTHERMAL LOOP PIPING DIAGRAM - 24 VERTICAL BORES *AROWS INDICATE DIRECTION OF FLOW



## GEOTHERMAL LOOP PIPING DIAGRAM - 26 VERTICAL BORES

SCALE * AROWS INDICATE DIRECTION OF FLOW



# TYPICAL GEOTHERMAL VAULT DETAIL NOT TO SCALE NOTE:

AT CONTRACTOR'S OPTION, A CONCRETE VAULT MAY BE USED IN LIEU OF THE POLYETHYLENE VAULT DETAILED ABOVE.

SUMP PUMP DISCHARGE SHALL BE ROUTED OUT OF VAULT AND SHALL BE DISCHARGED INTO THE ROCK BACKFILL OF THE MAIN TRENCH. COORDINATE WITH PLUMBING CONTRACTOR AND GEOTHERMAL LATERAL AND VAULT INSTALLER.

# **GENERAL NOTES:**

- 1. THE CONTRACTOR UNDER THIS SCOPE SHALL CONTACT ALL UTILITIES TO HAVE ALL EXISTING UNDER GROUND SERVICES MARKED. <u>CONTRACTOR SHALL HAVE THE ABILITY TO LOCATE SERVICES USING THEIR OWN INSTRUMENTS.</u> ANY DAMAGED UNDERGROUND UTILITIES UNDER THIS SCOPE DUE TO FAILURE TO LOCATE UTILITIES, WILL BE RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO OWNER.
- THE CONTRACTOR UNDER THIS SCOPE SHALL BE REQUIRED TO COORDINATE THE INSTALLATION OF BORINGS AND LATERALS WITH ALL OTHER PROPOSED SITE UTILITIES AND SITE DRAINAGE. THIS INCLUDES BUT IS NOT LIMITED TO SCHEDULING.
  - 3. INSTALL GEOTHERMAL BORE HOLES AT 20'-0" ON CENTER. REFER TO WELL FIELD LOOP SCHEDULE FOR DEPTHS.
- CONTRACTOR UNDER THIS SCOPE SHALL BRING THE DISTURBED AREAS OF WELL FIELD AND LATERALS BACK TO WITHIN 12" OF FINAL GRADE. COORDINATE WITH CIVIL
- 5. CONTRACTOR UNDER THIS SCOPE SHALL KEEP A DETAILED DRILL LOG. DRILL LOG SHALL INCLUDE A LOG FOR EACH BORING. LOG SHALL INDICATE BORE DIAMETER. EARTH CONDITIONS DURING DRILLING, WATER(GPM), GAS(PPM), LINEAR FEET OF CASING IF REQUIRED. DRILL LOG SHOULD INCLUDE GPS COORDINATES OF BORE HOLE UNLESS OTHER MEANS OF SURVEY/MARKING IS PROVIDED.
- 6. (2) GEOTHERMAL TEST WELLS WERE DRILLED ON SITE. THE FOLLOWING ARE THE RESULTS.
  - 0' 1' ASPHALT 1' - 10' - CLAY
  - 1' 10' CLAY 10' - 80' - LIMESTONE - HARD 80' - 400' - LIMESTONE
- * VERTICAL BORING RESULTED IN 3GPM WATER AT 80 81'
- 7. CONTRACTOR(S) RESPONSIBLE FOR FIRE PROTECTION AND DOMESTIC WATER SERVICES SHALL COORDINATE INSTALLATION WITH ALL OTHER TRADES. REFER TO ENTIRE SET OF CONTRACT DOCUMENTS FOR SITE UTILITIES.
- 8. GEOTHERMAL INSTALLER SHALL REVIEW ALL CIVIL DRAWINGS FOR GRADES AND OTHER SITE RELATED WORK.

# ○ SHEET KEYNOTES:

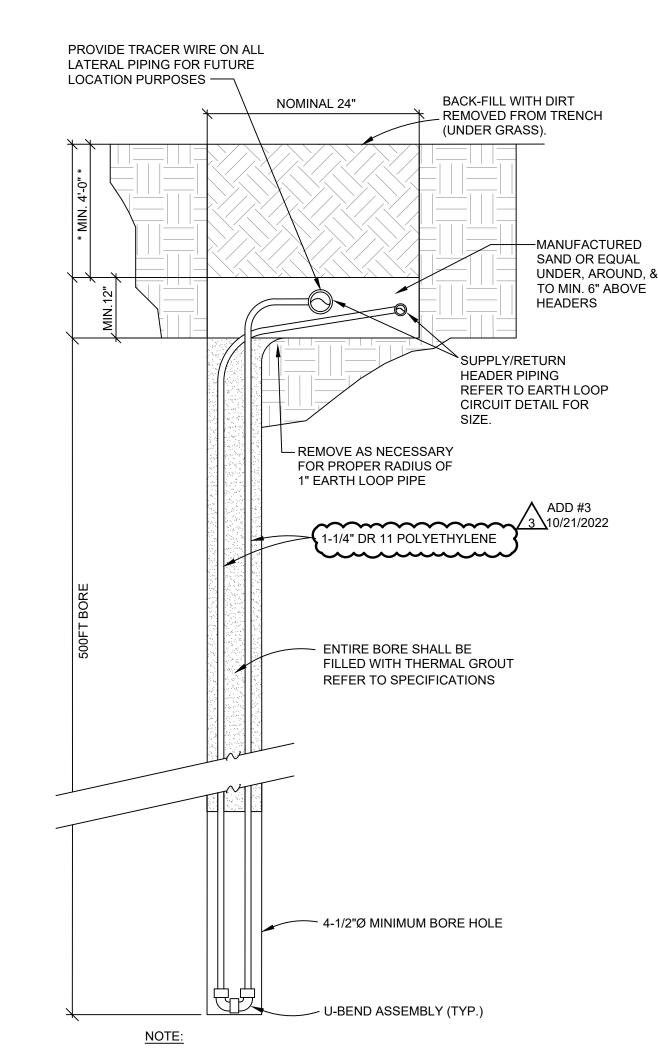
- 1. PROVIDE AND INSTALL A GEOTHERMAL HEADER VAULT, PER DETAILS ON THIS SHEET. COORDINATE WITH PLUMBING CONTRACTOR TO INSTALL VAULT SUMP PUMP.
- 2. HEAT PUMP SUPPLY AND RETURN PIPING INTO BUILDING.
  REFER TO FIRST FLOOR PLAN AREA A MECHANICAL PIPING,
  ON SHEET M201a, FOR CONTINUATION.
- 3. SUMP PUMP DISCHARGE LINE TO BE ROUTED AND DISCHARGED TO MAIN TRENCH LINE OR TO NEAREST STORM DRAIN INLET.
- ROUTE 6" HPS AND HPR AS INDICATED. REFER TO DETAILS FOR ADDITIONAL REQUIREMENTS.
- 5. PROVIDE A 1,000 GALLON GREASE TRAP FOR CULINARY PROGRAM WHERE INDICATED. REFER TO PLUMBING
- SCHEDULES AND DETAILS FOR ADDITIONAL REQUIREMENTS.

  NEW SANITARY CONNECTION FROM GREASE TRAP TO EXISTING
- MANHOLE. REFER TO CIVIL DRAWINGS FOR THIS WORK.

  7. NEW GAS METER ASSEMBLY BY COLUMBIA GAS. CONNECTED
- 8. CONTRACTOR SHALL COORDINATE WITH NEW SANITARY AND EXISTING STORM PIPING FOR INSTALLATION OF NEW

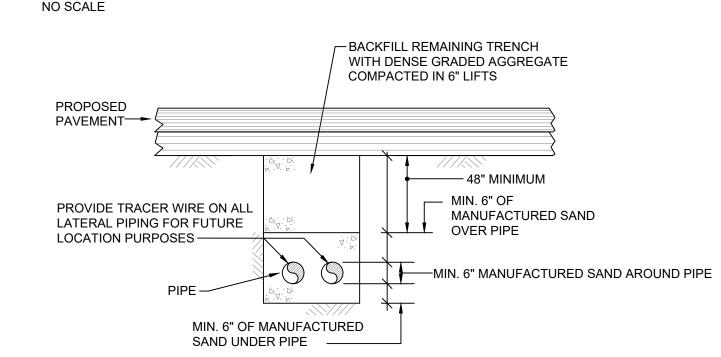
LOAD: 17,089 CFH. DELIVERY PRESSURE 2.0 PSI.

GEOTHERMAL PIPING.



* ALL LATERAL PIPING SHALL BE INSTALLED A MINIMUM OF 48" BELOW FINISHED GRADE, UNLESS OTHERWISE NOTED.

# VERTICAL EARTH LOOP BORE DETAIL



TRENCH DETAIL FOR UNDER PAVEMENT / PARKING LOT

NOT TO SCALE

NEW
COMBINED CTE
SCHOOL

BG# 22-167 100 Midland Ave, Lexington, KY 40508

Lexington, KY 40508

BID DOCUMENTS

ı			
		I	REVISIONS
ı	#	DATE	DESCRIPTION
ı	1	10/14/22	ADDENDUM 1
	3	10/21/22	ADDENDUM 3
ı			
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Reitano Design Group 302 N. East Street, Studio One Indianapolis, IN 46202



Calvert - Independent Hardware Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

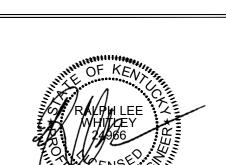
KEYPLAN

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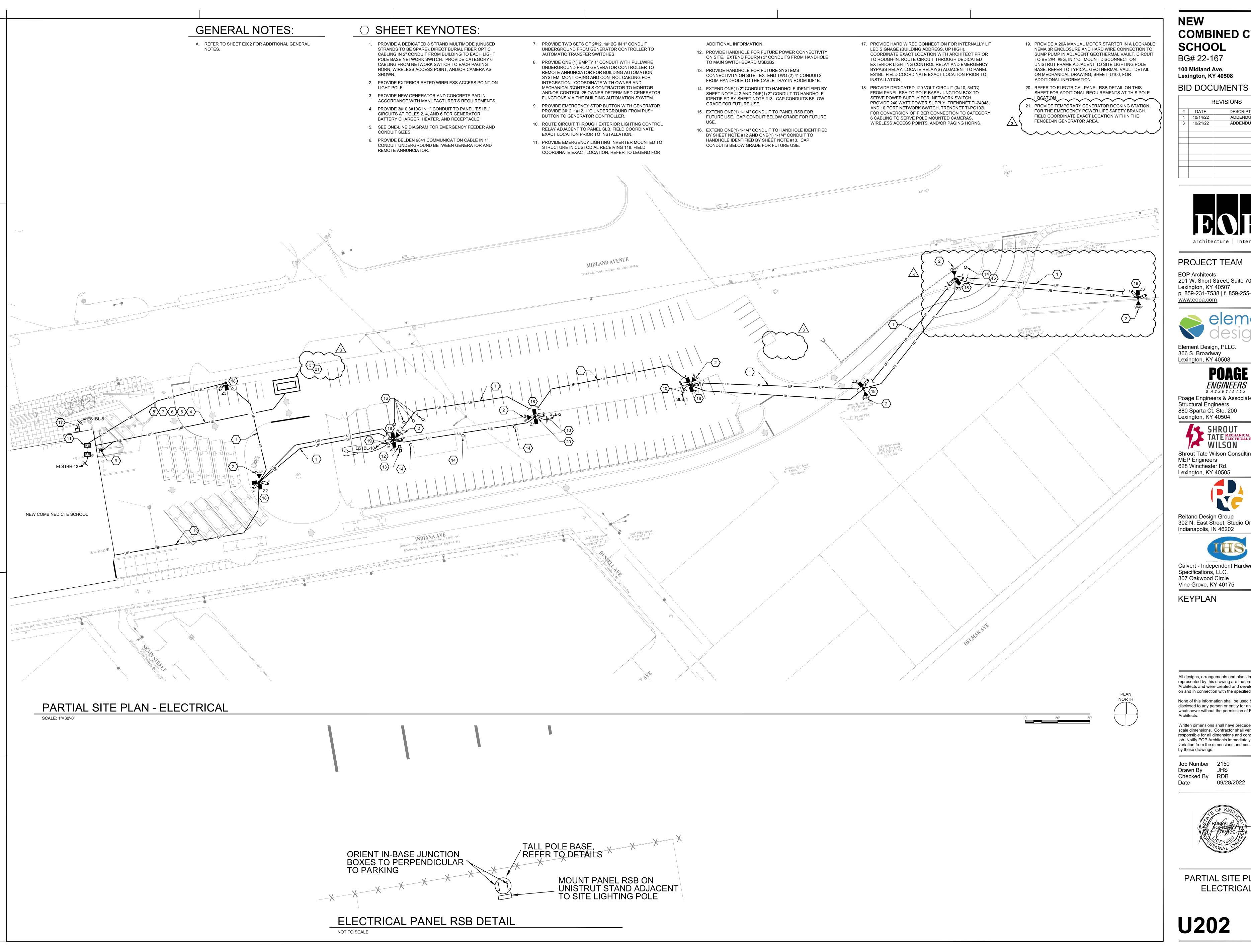
Job Number 2150
Drawn By JBC
Checked By RLW



O/28/2023

PARTIAL GEOTHERMAL SITE PLAN -MECHANICAL

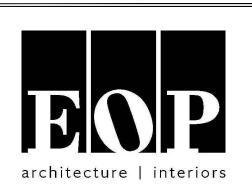
U101



BG# 22-167 100 Midland Ave,

Lexington, KY 40508

	F	REVISIONS
#	DATE	DESCRIPTION
1	10/14/22	ADDENDUM 1
3	10/21/22	ADDENDUM 3



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MEP Engineers 628 Winchester Rd. Lexington, KY 40505



Indianapolis, IN 46202



Specifications, LLC. 307 Oakwood Circle Vine Grove, KY 40175

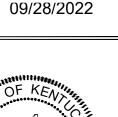
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Job Number 2150 Drawn By RDB Checked By





PARTIAL SITE PLAN -**ELECTRICAL** 

**U202**