Western Campus
Preventative Maintenance of Main Electrical Equipment

Project Number: 7086

Cuyahoga Community College
Western Campus
11000 W. Pleasant Valley Rd.
Cleveland, Ohio 44130

REQUIREMENTS AND SPECIFICATIONS FOR WORK SCOPE
Electrical Contracting

Bid DUE Date: April 25, 2024 by 2:00 p.m. EST

Sealed Hard Copy and must include One Electronic (jump drive) copy bids will be received by:

Judi Cooper
Cuyahoga Community College District Office
700 Carnegie Avenue
Cleveland, Ohio 44115

Mandatory Pre-Bid meeting On-site: April 11, 2024 at 11:00 a.m. EST
Recreation Center entry at northwest corner of Main Building, Parking Lot #A off Letterman Dr.

RFI's Deadline: April 16, 2024 by 12:00 p.m. EST

Prepared by:
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Cleveland, Ohio 44115
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PROCUREMENT AND CONTRACTING REQUIREMENTS

Refer to contract drawing documents for equipment locations and one-line diagrams.

END OF DOCUMENT

Document 00 31 32 – Western Campus
Preventative Maintenance Program for Main Electrical Equipment

Equipment summary:

1. Base Bid Preventative Maintenance (PM) program includes medium voltage switchgear, medium voltage primary switches and transformers / unit substations, secondary switchboards, motor control centers, 480volt distribution panels 800amps and above, 208volt distribution panels 800amps and above, and associated distribution stepdown transformers. Include ancillary devices, overcurrent protection devices, busbars, conductors and grounding connections located within this equipment.
2. Alternate Bid Item #1 Preventative Maintenance (PM) program includes 480volt, 400amp and 600amp distribution panels, 208volt, 400amp and 600amp distribution panels, and associated distribution stepdown transformers. Include ancillary devices, overcurrent protection devices, busbars, conductors and grounding connections located within this equipment.
3. Alternate Bid Item #2 Preventative Maintenance (PM) program includes Thermal Imaging of Base Bid equipment.
4. Alternate Bid Item #3 Preventative Maintenance (PM) program includes Thermal Imaging of Alternate Bid Item #1 equipment.
5. Specific equipment to be included in this PM program is indicated on the accompanying drawings and one line diagram.
6. Equipment located in the Simulation Village buildings, Fire Center, Public Safety Training Center (PSTC, formerly Crile Building), Advanced Automotive Technology Center (AATC), Maintenance Garage, and the new STEM Center is EXCLUDED. Also excluded are "Site Watch" central monitoring equipment, generators, transfer switches, UPS's, panels rated below 600amps (and associated stepdown transformers), and standalone starters, VFD's and disconnect switches.

General Requirements:

1. Contractor shall perform preventative maintenance as recommended by equipment manufacturers and by industry recommended practices. Maintenance shall be performed in compliance with manufacturer's recommended specifications and test values. CCC does not have original operating and maintenance manuals. Contractor shall contact manufacturers to obtain the manuals for recommended PM guidelines. Should operating and maintenance manuals not be available for all equipment, Contractor shall reference the InterNational Electrical Testing Association's (NETA) standards for testing electrical equipment specific to this PM program, in particular the requirements and tables referenced in the most current NETA Maintenance Testing Specifications (MTS), or the guidelines in NFPA 70B (Recommended Practice for Electrical Equipment Maintenance).
2. Contractor shall provide evidence of similar experience and relevant qualifications such as being a NETA Accredited Company to perform testing and maintenance of the equipment included in this PM program. Maintenance shall be performed only by properly trained and qualified personnel. Provide a list of qualified personnel and evidence of training to CCC prior to commencing work. A minimum of two personnel is required while performing maintenance on equipment. Personnel shall demonstrate a

complete understanding of the equipment, the required work scope, and electrical hazards present.

3. All procedures and guidelines of CCC shall be adhered to, including required safety / lockout tagout procedures and relevant construction / contractor procedures. If not all contained in this RFP, CCC will provide copies of additional procedures and guidelines. Contractor shall also follow their own internal safety procedures, work plans, and hazard mitigations plans.
4. Contractor shall visit the site prior to bidding and shall become familiar with the existing conditions. Bid shall include contingencies related to relevant existing conditions.
5. Contractor will be required to notify designated CCC representative upon arrival to site and upon leaving the site each day.
6. Contractor shall make proper use of personal protective equipment (PPE), tools, shielding and test equipment, as well as precautionary techniques required by OSHA and NFPA 70E (Standard for Electrical Safety in the Workplace).
7. Any new work shall be installed in accordance with the latest version of the National Electrical Code.
8. Contractor shall provide temporary power and lighting to complete required testing during power shutdowns. 120 volt power utilized shall be ground fault protected.
9. Contractor will be required to provide a schedule, sequence of PM, and coordinate all shutdowns with CCC. It is CCC's intention that required shutdowns be performed during off hours, weekends, and during academic breaks (such as after spring semester is complete and before summer semester begins). Contractor shall make all attempts to limit the duration of outages.
10. CCC will identify any critical equipment or areas that cannot be without power - coordinate related temporary power requirements with CCC.
11. Contractor shall alert CCC representative immediately should any issues arise during maintenance procedures.
12. Contractor shall include standard corrective actions and expected parts required by routine maintenance in bid. Should replacement of devices or unanticipated components be required, coordinate with and obtain approval from CCC prior to procurement.
13. Contractor shall summarize maintenance procedures and findings in a written report in a standardized and consistent format. At a minimum, report shall include as-found conditions with photographs, observations, test values obtained compared to recommended values, deficiencies, corrective actions taken, further recommendations, settings, and as-left conditions with photographs. If bid alternate is accepted, include thermal imaging as summarized below.
14. Contractor shall provide maintenance tags with current dates and when the next inspection is required.

Preventive maintenance checklist:

1. **Alternate Bid Item #2 and #3 per above – Thermal Imaging:**
    - Before beginning the PM process, conduct Thermal Imaging Surveys to detect potential:
        - Excess heat in electrical components
        - Loose connections

        - Corroded elements
        - Short circuits
        - Overloaded circuits
        - Busbar-joint wear
    - Performing the thermal imaging prior to beginning PM may allow a better understanding of equipment needs, of potential repairs required during PM, and to expedite the procurement process for replacement parts.
    - Prepare reports for Owner's records. Reports should include:
        - Documentation of type and manufacturer of thermal imaging equipment used.
        - Description of equipment tested.
        - Areas inspected and any discrepancies or inaccessible components.
        - Images of thermal scans.
        - Load conditions at time of inspection (maximum loading is ideal).
        - Temperature difference between reference area and area of concern.
        - Potential cause of temperature difference.
        - Corrective actions taken.
        - Recommended courses of actions to addresses potential issues in the future.
    - Repeat imaging on areas after corrective actions are complete to document repairs were successful.

2. **Perform the following common maintenance on all equipment as applicable:**
    - Inspect electrical rooms and working space conditions. Note any evidence of water, moisture, excessive temperatures, working clearance violations, etc.
    - Check for any visible signs of damage, wear, or overheating on equipment exterior enclosures as well as inside equipment. Inspect mounting and alignment of equipment. Check for signs of insects or rodents within enclosures.
    - In general, clean, inspect, tighten, lubricate and exercise equipment.
    - Replace all filters, confirm all vents are clear.
    - Inspect equipment busbars. Check supports, alignment, straight runs, joints, directional change pieces, panel flanges and grounding connections / continuity.
    - Inspect electrical cables and wiring (5kV and 600V). Check for any signs of wear, damage, corrosion, or insulation deterioration. Verify cable connections are tight and properly secured. Check cable routing to ensure it complies with safety standards. <u>No additional testing shall be performed on 5kV cables</u>.
    - Wipe down busbars, insulators and conductors with a dry lint-free cloth.
    - Inspect grounding / bonding systems and connections for corrosion or damage. Measure ground resistance to ensure it falls within acceptable limits. Verify proper bonding between electrical equipment and grounding systems.
    - As applicable, perform electrical testing of equipment components as recommended by manufacturers as part of the PM process. Tests may include, but are not limited to:
        - Testing of bolted electrical connections using calibrated torque wrench method.
        - Insulation resistance tests.

        - Ground resistance tests.
    - Review 2013 Power systems study and Existing One Line Diagram and verify ratings and settings of equipment and associated overcurrent protective devices, relays, etc. Report discrepancies to CCC prior to adjusting. Ensure that proper labeling is in place.
    - Prior to de-energizing equipment for interior maintenance, inspect and record all relevant operating conditions in "as found" conditions. Include relevant photographs as necessary.
    - After maintenance is complete, verify proper operation of equipment as recommended by the manufacturer, including proper functioning of integral components such as:
        - Interlocks and safety devices
        - Sensing devices and alarms
        - Communication devices
        - Metering devices
    - Verify systems are left in normal operating mode after completion of functional testing.
    - After maintenance is complete, inspect and record all relevant operating conditions in "as left" conditions. Include relevant photographs as necessary.
    - Provide additional tests and inspections as listed for each type of equipment as summarized below.

3. **CCC Owned 4160V Metal-clad Switchgear:**
    - De-energizing the main disconnect in the primary switchgear lineup requires a campus-wide shutdown from the vault and coordination with the power company. (De-energization of the 480volt Chiller switchgear also requires coordination with the power company for shutdown.) Contractor shall contact power company upon award of contract to begin the coordination process. PM shall be performed on the switchgear as recommended by the manufacturer.
    - Check function of all power meters before shutdown.
    - Check function of lamps and indicators.
    - Clean thoroughly, vacuum to maintain proper ventilation, and perform full visual inspection of exterior and interior. Inspect for signs of overheating or deterioration. Inspect locking devices for signs damage or wear and that they are operating properly. Inspect all panels for paintwork damage and signs of corrosion.
    - Inspect control wiring, meters, monitors, interlocks, power supplies, instrument transformers, control power transformers, surge arrestors, batteries, overcurrent protection devices, etc. Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition. Verify all required grounding and shorting connections provide contact. Verify control circuit fuse ratings and continuity.
    - Confirm correct operation and sequencing of electrical and mechanical interlock systems.
    - Clean and lubricate components.
    - Verify that panel doors are secure and properly sealed.

- Protective relays, as applicable:
    - Inspect protective relays for physical damage.
    - Inspect for foreign material, particularly in disk slots of the damping and electromagnets.
    - Verify disk clearance; verify contact clearance and spring bias.
    - Inspect spiral spring convolutions.
    - Inspect disk and contacts for freedom of movement and correct travel.
    - Verify tightness of mounting hardware and connections.
    - Burnish contacts.
    - Inspect bearings and pivots.
    - Cases – inspect for physical damage; tighten case connections; inspect cover for correct gasket seal; clean glass cover; inspect shorting hardware, connection paddles, and/or knife switches; remove foreign materials; and verify target reset.
    - Verify relay settings are in accordance with coordination study.
    - Test targets and indicators per ANSI device number. Determine pickup and dropout of electromechanical targets. Determine time delays. Verify operation of all LED indicators. Set contrast for LCD displays.
- Medium Voltage Circuit Breakers, as applicable:
    - Inspect physical and mechanical condition.
    - Inspect anchorage, alignment and grounding.
    - Verify all maintenance devices are available for servicing and operating.
    - Prior to cleaning unit, perform as found tests.
    - Clean breakers and inspect arc chutes.
    - Inspect moving and stationary contacts for condition, wear and alignment.
    - If recommended by manufacturer, slow close/open breaker and check for binding, friction, contact alignment, contact sequence, and penetration. Verify contact sequence is in accordance with manufacturer's published data.
    - Perform recommended mechanical operation tests on the operating mechanism.
    - Verify cell fit and alignment.
    - Verify racking mechanism operation.
    - Inspect puffer operation.
    - Lubricate moving current-carrying parts and on moving and sliding surfaces.
    - Perform contact timing tests.
    - Perform static contact/pole resistance tests.
    - With breakers in test positions – rip and close breaker with control switch; trip breaker by operating each of its protective relays; and verify mechanism charge, trip free, and anti-pump functions.
    - Verify blowout coil circuit continuity.
    - Verify operation of heaters.
    - Perform as left tests.
    - Record as found and as left operation counter readings.

4. **Unit Substation Primary 4160V switches:**
    - De-energize both feeds of unit substation primary switches. Continue to coordinate impact of shutdowns with CCC. PM shall be performed as recommended by the manufacturer.
    - Perform full visual inspection of exterior and interior, looking for signs of damage or wear. Also inspect for signs of overheating.
    - Veirfy correct blade alignment, blade penetration, travel stops, arc interrupter operation, and mechanical operation.
    - Verify fuse sizes and types are in accordance with drawings and power systems study.
    - Verify expulsion-limiting devices are in place on all fuses having expulsion-type elements.
    - Verify each fuseholder has adequate mechanical support and contact integrity.
    - Verify operation and sequencing of interlocking systems.
    - Verify that phase barrier mounting is intact.
    - Veirfy correct operation of all indicating and control devices.
    - Clean and lubricate components subject to conditions outlined above.
    - Perform additional electrical / operational testing as recommended by manufacturer.

5. **Unit Substations, Switchboards, Motor Control Centers, Distribution Panels (as applicable):**
    - Check function of all power meters before shutdown.
    - Check function of lamps and indicators.
    - Clean thoroughly, vacuum to maintain proper ventilation, and perform full visual inspection of exterior and interior. Inspect for signs of overheating or deterioration. Inspect locking devices for signs damage or wear and that they are operating properly. Inspect all panels for paintwork damage and signs of corrosion.
    - Inspect control wiring, meters, monitors, interlocks, power supplies, instrument transformers, control power transformers, surge protection devices, overcurrent protection devices, etc. Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition. Verify all required grounding and shorting connections provide contact. Verify control circuit fuse ratings and continuity.
    - Confirm correct operation and sequencing of electrical and mechanical interlock systems.
    - Verify that panel doors are secure and properly sealed.
    - Refer to specific PM procedures below per overcurrent protection device type.

6. **Medium Voltage Vapor Tran Transformers:**
    - CCC is in the process of developing a plan to replace the General Electric Vapor Tran transformers on campus. Therefore, PM will be limited.

- General Electric Company has sold the product service rights and all component parts for these transformers to QualorTran, Inc. Contractor shall contact representatives at QualorTran as necessary to assist in the PM process.
- Check for any signs of refrigerant leakage, overheating, damage to paint, or abnormal noise/vibrations.
- Confirm transformer refrigerant levels and temperatures, tank pressures and proper condenser operation. Record values and compare to manufacturer's recommendations. Make-up electronic grade dielectric coolant should be added to bring the units back to original factory specifications.
- Purging condensers of non-condensable gases using the original service valves provides minimal improvement and is not required to be performed at this time. Just to note, seal and condenser upgrade kits are available from QualorTran to improve reliability and to provide a more efficient means to purge the non-condensable gases. Contractor shall advise the CCC if this is critically required for any of the transformers.
- If equipped with surge arresters, check for looseness, broken parts, dirt and other deposits. Clean and tighten.
- Verify that cooling systems (fans, radiators), heaters, auxiliary equipment, controls, alarms, and transformers in general are clean and operational.
- Vacuum any visible dust that could restrict air flow or build up on insulating surfaces. Replace any air filters.
- Check for any loose connections. Tighten or replace parts as necessary.
- Inspect any vibration isolators for deterioration.
- Perform Transformer Turns Ratio (TTR) tests at "as found" tap positions.
- Test and record primary and secondary voltages, adjust taps as necessary.

7. **Medium Voltage Dry Type Transformers:**
   - Check for any signs of overheating, damage to paint, or abnormal noise/vibrations.
   - Confirm transformer temperatures. Record values and compare to manufacturer's recommendations.
   - If equipped with surge arresters, check for looseness, broken parts, dirt and other deposits. Clean and tighten.
   - Verify that cooling fans, heaters, auxiliary equipment, controls, alarms, and transformers in general are clean and operational.
   - Vacuum any visible dust that could restrict air flow or build up on insulating surfaces. Replace any air filters.
   - Check for any loose connections. Tighten or replace parts as necessary.
   - Inspect any vibration isolators for deterioration.
   - Perform Transformer Turns Ratio (TTR) tests at "as found" tap positions.
   - Test and record primary and secondary voltages, adjust taps as necessary.

8. **Low Voltage Transformers:**
   - Check for any signs of overheating, damage to paint, or abnormal noise/vibrations.
   - Verify that transformers are clean and operational.

- Vacuum any visible dust that could restrict air flow or build up on insulating surfaces. Replace any air filters.
- Check for any loose connections. Tighten or replace parts as necessary.
- Verify any cooling fans operate correctly.
- Inspect any vibration isolators for deterioration.
- Perform Transformer Turns Ratio (TTR) tests at "as found" tap positions.
- Test and record primary and secondary voltages, adjust taps as necessary.

9. **Power Circuit Breakers:**
   - Chassis:
     - Verify cell fit and alignment, and racking mechanism operation. Rack out breaker.
     - Clean/ vacuum internal chassis.
     - Check operation of safety shutters closing.
     - Check shutter locking devices are intact.
     - Check operation and position of contacts.
     - Operate padlocking system.
     - Grease clusters as necessary.
   - Visually inspect breakers for damage, deterioration, or overheating.
   - Clean breaker surfaces.
   - Clean and vacuum breaker.
   - Check filters, clean and vacuum arc chutes.
   - Visual check for contact wear. Measure resistance.
   - Check auxiliary wiring insulation.
   - Check breaker locking devices.
   - Open/close manually.
   - Determine long-time pickup and delay by primary current injection.
   - Determine short-time pickup and delay by primary current injection.
   - Determine ground fault pickup delay by primary current injection.
   - Determine instantaneous pickup current by primary current injection.
   - Test integral trip unit by secondary injection, produce trip curve report.
   - Perform minimum pickup voltage test on shunt trip and close coils.
   - Verify correct operation of auxiliary features such as trip and pickup indicators, zone interlocking, electrical close and trip operation, trip-free, antipump function, and trip unit battery condition.
   - Reset all trip logs and indicators.
   - Verify operation of charging mechanism.
   - Check ground fault protection/ground leakage protection.
   - Grease contacts as necessary.
   - Re-rack breaker.
   - Perform adjustments to settings in accordance with coordination study if applicable. Record all adjustable settings for future CCC reference.

10. **Insulated and Molded Case Circuit Breakers:**
    - Visually inspect for damage, deterioration, or overheating.
    - Clean breaker surfaces.

- For solid state or electronic breakers, run any self-diagnostic programs if so equipped.
- Test and exercise circuit breakers to ensure proper operation, including any push to trip mechanisms.
- Inspect and clean contacts to maintain good electrical conductivity.
- Perform adjustments to settings in accordance with coordination study if applicable. Record all adjustable settings for future CCC reference.

11. **Motor Control Center Control Devices:**
    - Visually inspect for damage, deterioration, or overheating.
    - Clean device surfaces.
    - Remove draw out type control units.
    - Inspect primary contact stabs for signs of arcing or overheating. Report heavy pitting.
    - Inspect contactors. Verify operation, adjust gaps.
    - Veirfy overload element ratings / motor protection settings are correct.
    - Lubricate moving parts and sliding surfaces.
    - Inspect, test and exercise circuit breakers, switches, starters, and control devices to ensure proper operation.

12. **Fused Switches:**
    - Visually inspect for damage, deterioration, or overheating.
    - Clean device surfaces.
    - Check for any blown fuses and replace them as necessary.
    - Veirfy correct blade alignment, blade penetration, travel stops, and mechanical operation.
    - Verify each fuseholder has adequate mechanical support and contact integrity
    - Inspect and tighten fuse holders.
    - Inspect and clean contacts to maintain good electrical conductivity.
    - Lubricate operating mechanisms.
    - Exercise switches to ensure proper operation.
    - Inspect cover interlock for proper operation.
    - Document all fuse types and ratings for future CCC reference.

13. **Integral Monitoring Equipment and Meters:**
    - Note: CCC has incorporated a “Site Watch” central power and energy monitoring system. System components are not part of the PM process, and shall be protected during PM activities.
    - Inspect covers, gaskets, conditions of spiral springs, disk clearances, contacts, and case shortening contacts, as applicable.
    - Verify freedom of movements, end plays, and alignment of rotating disks.
    - Inspect voltage connections, CT connections and Modbus connections.
    - Inspect and test settings and accuracy of meters.
    - Calibrate as recommended by manufacturer.
    - Inspect and test any shunt trip circuits, alarm circuits, electro-mechanical circuits, and electronic relaying circuits.

14. **Surge Arresters and Surge Protection Devices:**
    - Visually inspect for damage, deterioration, or overheating.
    - Inspect for proper operation. If equipped with monitor, make note of unusual trends.
    - Verify that the ground lead on each device is individually attached to a ground bus or ground electrode.

15. **Grounding Systems:**
    - Verify grounding systems are in compliance with NEC Article 250. Confirm system electrical and mechanical connections are free of corrosion.
    - Perform fall-of-potential or alternative test in accordance with IEEE81 on the main grounding electrode system.
    - Perform point-to-point tests to determine resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.

16. **Electrical Safety Equipment:**
    - Inspect and test safety equipment such as ground fault protection systems. Verify correct operation of all functions and self-test components.
    - Ground Fault Protection systems shall be tested using high current, primary injection method.
    - Verify correct connections and polarities.
    - Verify pickup and time-delay settings.
    - Verify that safety labels and warning signs are in place and legible.

END OF DOCUMENT 00 31 32

Document 00 41 13 - Bid Form (Electrical Contracting Project)

Sealed Hard Copy and must include One Electronic (jump drive) Copy bids will be received by the Cuyahoga Community College District at 700 Carnegie Avenue, Cleveland, Ohio, 44115 for:

Project: Western Campus – Preventative Maintenance of main Electrical Equipment
Project Number: 7086

at

Cuyahoga Community College
Western Campus
11000 W. Pleasant Valley Rd.
Cleveland, Ohio 44130

for the

Cuyahoga Community College District

The time for Substantial Completion of all Work is 45 consecutive days from the Notice to Proceed.

Having read and examined the proposed Contract Documents prepared by the Architect/Engineer for the above-referenced Project and the following Addenda:

Addendum Number	Date Received
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The undersigned Bidder proposes to perform all Work for the applicable Contract in accordance with the proposed Contract Documents, for the following sum(s):

Bid Package 101 - GENERAL CONTRACT

ALLOWANCES (Include Allowance amount(s) in the respective Base Bid below. The below schedule of value unit prices are to be used for determining the final Allowance amount(s) due to the Contractor.)

Item	Description	Amount
NONE	NONE	$0

SCHEDULE OF VALUE UNIT PRICES TO BE USED FOR ALLOWANCE AMOUNT (Unit prices shall be used for the purpose of determining the adjustment to the Final Payment of Contract Sum for actual field measured quantities of discovered, adjusted alternate bid items, or owner requested work items. The Contractor's Fee and Costs for unloading and handling on the Site, labor, installation costs, incidentals, and other expenses contemplated for the Unit Prices are included in the stated Unit Prices.)

Item	Description	Unit Price	Unit of / Measure
NONE	NONE	$ 0	/ NONE

BASE BID Preventative Maintenance:

ALL LABOR AND MATERIALS, for the sum of $ _____

Sum in words: _____ and _____/100 dollars.

Alternate Bid Item #1 — Perform Maintenance on 400mp and 600amp Distribution Panels (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: $ _____

Sum in words: _____ and _____/100 dollars.

Alternate Bid Item #2 — Thermal Imaging of Base Bid Equipment (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: $ _____

Sum in words: _____ and _____/100 dollars.

Alternate Bid Item #3 — Thermal Imaging of Alternate Bid Item #1 Equipment (Circle appropriate choice below and insert amount)

If Alternate is accepted, ADD TO / DEDUCT FROM Base Bid: $ _____

Sum in words: _____ and _____/100 dollars.

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BIDDER AFFIRMATION AND DISCLOSURE

Bidder acknowledges that by signing the Bid Form on the Bidder Signature and Information page, that it affirms, understands, and will abide by the requirements of Executive Order 2019-12D. If awarded a Contract, the Bidder will become the Contractor and affirms that both the Contractor and its Subcontractors shall perform no services requested under this Contract outside of the United States.

The Bidder shall provide the locations where services under this Contract will be performed in the spaces provided below or by attachment. Failure to provide this information as part of its Bid may cause the Bidder to be deemed non-responsive and no further consideration will be given to its Bid. If the Bidder will not be using Subcontractors, indicate "Not Applicable" in the appropriate spaces.

1. Principal business location of Contractor:

   Address City, State, Zip

2. Location where services will be performed by Contractor:

   Address City, State, Zip

   Locations where services will be performed by Subcontractors, if known at time of Bid Opening:

   Address City, State, Zip

   Address City, State, Zip

   Address City, State, Zip

3. Location where state data will be stored, accessed, tested, maintained, or backed-up, by Contractor:

   Address City, State, Zip

   Locations where state data will be stored, accessed, tested, maintained, or backed-up by Subcontractors, if known at time of Bid Opening:

   Address City, State, Zip

   Address City, State, Zip

   Address City, State, Zip

BIDDER'S CERTIFICATIONS

The Bidder hereby acknowledges that the following representations in this Bid are material and not mere recitals:

1. The Bidder has read and understands the proposed Contract Documents and agrees to comply with all requirements of the proposed Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder, which might indicate a contrary intention.

2. The Bidder represents that the Bid is based upon the Basis of Design and Acceptable Components specified by the proposed Contract Documents.

3. The Bidder has visited the Site, become familiar with local conditions, and has correlated personal observations about the requirements of the proposed Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the proposed Contract Documents.

4. The Bidder understands that the execution of the Project will require sequential, coordinated, and interrelated operations, which may involve interference, disruption, hindrance, or delay in the progress of the Bidder's Work. The Bidder agrees that the Contract Sum, as amended from time to time, shall cover all amounts due from the State resulting from interference, disruption, hindrance, or delay that is not caused by the State or its agents and employees. The Bidder agrees that any such interference, disruption, hindrance, or delay is within the contemplation of the Bidder and the State and that the Contractor's sole remedy from the State for any such interference, disruption, hindrance, or delay shall be an extension of time in accordance with the proposed Contract Documents.

5. During the performance of the Contract, the Bidder agrees to comply with Ohio Administrative Code ("OAC") Chapters 123:2-3 through 123:2-9 and agrees to incorporate the monthly reporting provisions of OAC Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands the State's Equal Opportunity Coordinator or the Contracting Authority may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program, and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.

6. The Bidder and each Person signing on behalf of the Bidder certifies, and in the case of a Bid by a joint venture each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices, and any Alternate bid in the Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the Bid have not been knowingly disclosed by the Bidder and shall not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or shall be made by the Bidder to induce any other Person to submit or not to submit a Bid for the purpose of restricting competition.

7. The Bidder understands that the Contract is subject to all the provisions, duties, obligations, remedies and penalties of Ohio Revised Code Chapter 4115 and that the Bidder shall pay any wage increase in the locality during the term of the Contract.

8. The Bidder shall execute the Agreement with the Contracting Authority, if a Contract is awarded on the basis of this Bid, and if the Bidder does not execute the Agreement for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the State as provided in **Article 5** of the Instructions to Bidders.

9. The Bidder certifies that the upon the award of a Contract, as the Contractor it shall make a good faith effort to ensure that all of the Contractor's employees, while working on the Site, shall not purchase, transfer, use, or possess illegal drugs or alcohol or abuse prescription drugs in any way.

10. The Bidder acknowledges that it read all of the **Instructions to Bidders**, and in particular, **Section 2.10** - Submittals With Bid Form, and by submitting its Bid certifies that it has read the Instructions to Bidders and it understands and agrees to the terms and conditions stated in them.

11. The Bidder agrees to furnish any information requested by the Contracting Authority or Architect/Engineer to evaluate the responsibility of the Bidder.

12. The Bidder agrees to furnish the submittals required by **Section 6.1** of the **Instructions to Bidders** for execution of the Agreement within 10 days of the date of the Notice of Intent to Award.

13. When the Bidder is a corporation, partnership or sole proprietorship, an officer, partner or principal of the Bidder, as applicable, shall print or type the legal name of the Bidder on the line provided, and **sign the Bid Form**.

14. When the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall print or type the legal name of the applicable member on the line provided, and **sign the Bid Form**.

15. Bidder acknowledges that by signing the Bid Form on the following Bidder Signature and Information page that it is signing the actual Bid and when submitted as a part of its bid package, shall serve as the Bidder's authorization for the further consideration and activity in the bidding and contract process.

16. All signatures must be original.

-- remainder of page left blank intentionally --

BIDDER SIGNATURE AND INFORMATION

Bidder's Authorized **Signature**: _____

Please print or **type the following**:

Name of Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone Number: _____

Facsimile Number: _____

E-Mail Address: _____

Where Incorporated: _____

Federal Tax Identification Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____/ _____/ _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

JOINT VENTURE ADDITIONAL BIDDER SIGNATURE & INFORMATION

Joint Venture Bidder's Authorized Signature: _____

Please print or type the following:

Name of Joint Venture Bidder's Authorized Signatory _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone Number: _____

Facsimile Number: _____

E-Mail Address: _____

Where Incorporated: _____

Federal Tax Identification Number: _____

Date enrolled in an OBWC-approved DFSP (month/date/year): _____/ _____/ _____

Contact person for Contract processing: _____

President's or Chief Executive Officer's Name / Title: _____

END OF DOCUMENT

State of Ohio
Ohio Facilities Construction Commission

DELINQUENT PERSONAL PROPERTY TAX AFFIDAVIT

(Section 5719.042, ORC)

State of Ohio }
} SS.
County of _____ }

The undersigned individual, or duly authorized representative of the identified company, having been first duly cautioned and sworn, alleges and states that said individual or company has been advised that he has or it has received a Notice of Intent to Award a Contract(s) let by competitive bid by **Cuyahoga Community College District,** on behalf of the State of Ohio under Section 3318.10, ORC, but prior to the execution of said Contract(s), and pursuant to Section 5719.042, ORC, provides this statement to the Treasurer under oath that he or it was not charged, on the date the Bid(s) was submitted, with any delinquent personal property taxes on the general tax list of personal property of _____County, Ohio, or that he or it is so charged in the following amount:

Delinquent Tax: _____

Penalties and interest due and unpaid: _____

Total (if none, indicate "NONE") _____

A copy of this sworn statement will be attached to and incorporated into the Contract(s) for this Project which shall enable payments to be made under said Contract(s).

By: _____ Date:_____, _____

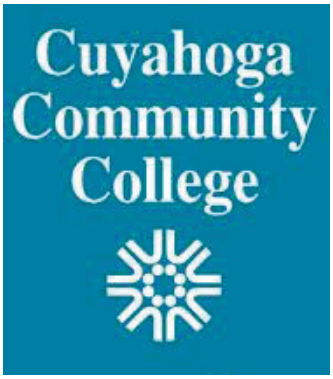
Company:_____

Project:

_____

Sworn to and executed before me this_____day of _____ _____

_____
Notary Public
My commission expires: _____



Contractors Safety Guide

MUST READ & SIGN

Established 3/2019

Table of Contents

All contractors and their employees performing work activities in facilities or on properties of Cuyahoga Community College (Tri-C) shall be issued a copy of this guide as part of the pre-bid material for bid and capital projects and prior to beginning work on any campus or facility. If you are using a cell phone, please inform the Police Department of the city you are in to patch you through to the Tri-C Police dispatching center so they can properly guide emergency crews to the correct location(s)

Important Phone Numbers:

Campus Emergency ----------4911

Campus Police Non-Emergency ----------216-987-4325

EHS ----------216-987-3557

West Plant Manager ----------216-987-5346

East Plant Manager ----------216-987-2347

Metro Plant Manager ----------216-987-4508

Westshore Plant Manager ----------216-987-5807

CCW Plant Manager ----------216-987-5856

CCE Plant Manager ----------216-987-2931

Brunswick University Center ----------216-987-2930

STJC/HMC/TIC ----------216-987-4718

Accidents
Please refer to the Tri-C Office of Environmental Health & Safety (EHS) web site for the following:

- Procedures for Injuries/Illnesses at Work
  If you become injured at work, injured (ill) employees shall follow these procedures
- Report Accidents/Incidents on Campus by downloading Accident Report Form
  Employee Rights and Responsibilities

Asbestos
Many Tri-C buildings have asbestos or material that has not been tested and is considered presumed asbestos-containing material (PACM). These locations will be made known to the Project Manager upon request. The Project Manager will make known the asbestos hazards in the work area before work is initiated.

All renovations or demolitions have to be approved by the Project Manager and Environmental Health & Safety prior to any project start up. All documentation (i.e. testing, clearances, etc.) must be provided to the Project Manager.

Only trained and certified contract workers will handle all asbestos projects.

Automatic Sprinkler Work
The Executive Director, Emergency Manger, Fire & Safety Systems must approve all plans for contract work dealing with fire suppression equipment and Campus Police will be notified before work starts. No Hot Work Permits will be issued for the contracted work area until fire suppression work has been completed.

Barricades and Guardrails
Hazardous areas must be cordoned off with barricades or tape to restrict access to employees, students and the general public, and Tri-C staff and students. All guardrails must meet the Occupational Safety & Health (OSHA) Standards for guardrail construction and standards for fall protection of workers must also be met. When barricades, guardrails or opening covers must be removed for work to proceed, permission to remove them must be obtained from the Tri-C Project Manager. Fall protection devices must be used to protect workers in conjunction with appropriate tie-off locations. Barricades, guardrails and covers must be replaced immediately after work is completed.

Blasting Operations
Advance notification of blasting operations must be provided to the Project Manager, Environmental Health & Safety, Campus Police Department, Cleveland Fire Department and local officials. The contractor is solely responsible to obtain all necessary permits from the appropriate agencies to conduct these operations and must also supply a copy

of these permits to the Project Manager prior to project initiation. Final authority to proceed must be granted by the Tri-C Project Manager prior to the onset of the operation.

All explosives and detonation caps must be removed from the Tri-C property at the end of each workday unless the contractor has made arrangements with the Tri-C Project Manager and the Tri-C Police Department, and blasting equipment must be stored in an approved magazine while on Tri-C property.

Break Rooms
Contractors are only allowed access to break rooms as determined by the Project Manager.

Burning, Welding or Cutting
A Tri-C Hot Work Permit must be obtained from the Plant Manager before any burning, welding or cutting operations. Non-combustible, flame-proof shields or screens must be used to protect Tri-C employees, general public, and students from direct rays and/or arc flash. A fire watch must be maintained and all adjacent combustible materials must be removed or protected from the area. All work practices must conform to those of the American Welding Society as well as the instructions on the Hot Work Permit. Contractors must furnish their own 10 pound ABC rated fire extinguisher. All smoke detectors in the area must be covered or bagged to prevent contaminants and smoke from getting into to the detector and causing alarm. Also, if the fire system needs to be taken out of service temporarily. The Executive Director, Emergency Manger, Fire & Safety Systems must be notified and grant approval prior to any temporary shutdowns or the covering of fire detection equipment.

Chemicals
Contractors must assure the safe use and disposal of any chemicals, tools, equipment or other materials with which they are working. Under no circumstances are chemicals to be emptied into drains or left behind for Tri-C to dispose of.

Contractor must provide the Tri-C Project Manager and EHS with a list of chemicals to be used on Tri-C property and a copy of the Safety Data Sheet (SDS) that is compliant with the current OSHA Hazard Communication Standard (i.e., Global Harmonization System-compliant). The SDS must be accessible at all times when contractors are working with said chemical(s).
Each chemical container that is brought on Tri-C's property must be labeled with the identity of the chemical, any hazard rating, the name of the contractor and any subcontractor using the chemical. Contractors must follow the safety procedures recommended by the manufacturer of any chemicals, tools and equipment or other materials used on Tri-C property, including but not limited to the procedures set forth in the SDS, those described in additional literature distributed with the items used, and those described in labels attached to the items or containers.

Combustion Engines
Liquefied petroleum (LP) or any combustion-type engine may be used with restrictions. Permission must be obtained from the Project Manager before using such equipment on, around or near any Tri-C building.

Compressed Air
Compressed air should never be used to clean dust from a worker's clothes or body.

Compressed Gas Cylinder
All compressed gas cylinders, whether in use or in transit, must be fastened securely in an upright position by a chain, suitable strap or a rigid retaining bar or structure. Compressed gas cylinders shall be secured on approved carriers or holders and must always be maintained in an upright position.

Regulators are required to reduce compressed gases to safe operating pressures. If a leak develops in a cylinder, it shall be immediately removed to a safe location outside. The supplier of the cylinder shall be notified if necessary. Cylinders must be permanently marked or stenciled to identify the type of gas in the cylinder in accordance with the requirements of ANSI Standards.

Confined Space Entry Permits
A confined space is a space that: (1) Contains or has a potential to contain a hazardous atmosphere. A hazardous atmosphere is an atmosphere that may expose employees to the risk of death, incapacitation, or impairment of ability to self-rescue that is, escape unaided from a permit space, injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor or mist in excess of 10 percent of its lower explosion limit (LEL).
- Combustible dust at a concentration that meets or exceeds its LEL (approximated to a visibility of 5 feet or less).
- Atmospheric oxygen concentration below 19.5% or above 23.5%.
- Atmospheric concentration of any substance for which a dose or permissible exposure limit has been established.
- Any other atmospheric condition that is immediately dangerous to life or health.

(2) Contains a material that has the potential for engulfing an entrant such as water, sand, and soil; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) Contains any other recognized serious safety or health hazard.

The contractor must have a copy of their Confined Space Entry Program on site and have all necessary equipment for entry. Prior to entering, the contractor must notify EHS staff of their intent to enter a confined space. A contractor may not enter any confined space until authorized to do so by the Project Manager. Once approved, the Project Manager will issue the permit.

Contractor Access
For security reasons, a contractor's access to Tri-C buildings is restricted to designated entrances. Emergency exits shall only be used in the event of an emergency. Doors locked from the outside (emergency exits) must never be propped open without the prior approval of the Project Manager.
Before work starts:

1. Contractors must provide key loss insurance up to $250,000.00.

2. Contractors who will be working with asbestos must show certification to the Project Manager and EHS of attendance to an approved asbestos awareness course for all workers.

3. Contractors must provide PPE (personal protective equipment) for their workers at all times.
4. Contractors must provide evidence of safety training to the Project Manager and EHS.

Electrical
All electrical installations must comply with the requirements of the National Electrical Code, NFPA 70E and Tri-C's Electrical Standards. All equipment being worked on at Tri-C will be at a zero state for energy potential if possible to minimize the risk of injury.

Whenever work is to be performed on systems exceeding 600 volts, special instructions must be obtained and followed from the Plant Manager. An Energized Work Permit must be completed and approved by the Plant Manger before work may begin. Contractor must coordinate access/ shutdown of any electric system with the Plant Manager. New equipment will use the same labeling used on existing equipment. Proposed grounding must be approved by the Plant Manager. The Project Manager must receive Lockout / Tag out documents from the General Contractor who would then forward to EHS for review before the project starts. See Appendix A for minimum requirements for Lockout / Tag out.

Emergency Equipment
Tri-C fire or emergency equipment must not be moved, blocked or have access restricted, unless specific permission to do so has been granted. This permission will be granted on a case-by-case basis by the Executive Director, Emergency Manger, of Safety and Security Systems. Fire protection and detection systems must not be moved, modified or disabled without the permission of the Access Control Manager or the Fire Prevention Officer.

Excavation and Trenches
Before beginning any excavation work, the existence and location of all underground pipes, tanks and equipment must be determined. The OSHA construction standard for excavation must be followed in all excavation projects.

Eyewash and Safety Shower
Water supply to eyewash and safety shower stations must be assured at all times. If work requires a shut-down of the water supply, building occupants must be notified in advance. Contact the Project Manager and EHS for additional information.

Facilities
The use of Tri-C owned equipment such as electrical trucks, machinery, and power/hand tools is not permitted except where specifically authorized by the Tri-C Plant Manager.
Contractor personnel are not to operate valves or controls to shutdown, isolate, start or adjust operating systems or equipment without specific permission of the Tri-C Plant Manager. When

working on systems which could be activated or on isolated sections of active systems, the isolation device must be locked and tagged out (Appendix A). The Tri-C Project Manager will arrange the notification and scheduling of Lockout/Tag out with affected Tri-C areas in accordance with the project specifications.

Fall Protection
All safety belts and lanyards must meet OSHA requirements. When a lanyard is a wire rope or nylon webbing, a shock absorber must be used.

Fire

1. Contractors shall preview work areas to identify components of the fire alarm detection, notification and activation devices, sprinkler and or special suppression systems that may be affected by their work. Contractors shall work with the Executive Director, Emergency Manger, Fire and Safety Systems and make necessary provisions to reduce accidental damage or activation of all life safety systems.
2. Contractors requiring a sprinkler or fire alarm system to be deactivated or put into test mode shall give a minimum of 48 hours' notice prior to commencement of their work.
3. Only contractors licensed by the State of Ohio Department of Commerce Division of State Fire Marshal for fire alarm and or sprinkler systems may initiate any modifications to the system, including but not limited to new installations, relocations, or removals of any and all devices.
4. Contractors will provide their own fire extinguishers and apply for a Hot Work Permit when appropriate.
5. Contractors and all Contractor employees must know how to call Tri-C Police in the event of an emergency. This information is provided during the Contractor Training session that is required before contractors are permitted to work on campus.
6. Contractors who need a Hot Work Permit must plan work accordingly and provide 48 hour notice to AC&SS before permit is issued.

First Aid Kits
Every contractor is required to have a first aid kit and contractor employees must be made aware of its location. All injuries requiring first aid assistance by local hospitals must be reported to the Tri-C Project Manager and EHS.

Hot Work Procedure - Tri-C Employees (See Appendix B for full procedures)

1. Obtain a Hot Work Permit from the Plant Manager.
2. The Plant Manager will consult with Applicant to verify as much detail as possible.
3. If fire alarms need to be taken out of a service or if any modification to the fire prevention systems is deemed necessary to safely perform hot work, contact the Executive Director, Emergency Manger, Fire and Safety Systems for assistance in this process and approval of fire watch measures. **The signature of authorized Plant Manager is required for permit to be issued**.
4. Employees' signature is verification that applicable precautions have been taken.

5. Departmental representatives reserve the right to inspect all job sites prior to issuing the permit. Fire Prevention Officer maintains original application and Applicant receives carbon copy.
6. Post and maintain permit(s) in work area throughout the duration of the hot work activity and restrict access to the area until work is complete and the area restored to its original condition.
7. Additional permits are required should work extend twenty-four (24) hours beyond the start time indicated on the permit. A permit may be issued for a period of time longer than twenty-four (24) hours for longer remodeling/repair jobs but no longer than one (1) week.

Hot Work Procedure – Outside Contracted Employee (See Appendix B flor full procedures)

1. Obtain a blank Hot Work Permit from Tri-C's Plant Manager.
2. Fire Prevention Official will consult with Applicant to verify as much detail as possible.
3. If fire alarms systems need to be taken out of a service or if any modification to fire prevention systems is deemed necessary to safely perform hot work, contact the Executive Director, Emergency Manger, Fire and Safety Systems for assistance in this process and approval of fire watch measures. **The signature o f authorized Plant Manager is required for permit to be issued**. (Permit is attached as Appendix C)
4. Employees' signature is verification that applicable precautions have been taken.
5. Departmental representatives reserve the right to inspect all job sites prior to issuing the permit
6. Fire Prevention Officer maintains original application and Applicant receives carbon copy.
7. Post and maintain permit in work area throughout the duration of the hot work activity and restrict access to the area until work is complete and the area is restored to its original condition.
8. Additional permits are required should work extend twenty-four (24) hours beyond the start time indicated on the permit. A permit may be issued for a period of time longer than twenty-four (24) hours for longer remodeling/repair jobs but no longer than one (1) week.
9. All work practices must conform to the American Welding Society and the instructions on the hot work permit.
10. Contractors must furnish their own 10 pound ABC rated fire extinguisher.

Keys

Tri-C has installed electronic key boxes to provide access to work areas. A *Key Box Access Request Form* must be signed by each contractor and your Tri-C Point-of-Contact, and approved by the Plant Manager for processing. Following approval, each contractor will be given a key code that will allow access to the key boxes needed for their work activities.

1. Do not loan, transfer, give possession of, misuse, modify, or alter Tri-C keys or the key ring.
2. Never allow others to use your PIN (code), nor is it permissible to use another's PIN/ code.

3. Upon noticing any damage to a key, key ring, or key box, the contactor must report it to Tri-C's Police Department immediately.
4. Contractors must have suitable key loss insurance to the value of $250,000.00 and must show proof of said insurance coverage.
5. Never cause, allow, or contribute to the making of a copy/duplicate of any Tri-C key.
6. Loss of a key can be a significant financial responsibility for you, ranging from $58 to $500,000. The contractor (and his or her company) are responsible for costs associated with replacing all locks/keys affected by your loss.
7. Ask the value of your particular key(s) before you sign the *Key Box Access Request Form* to be aware of the liability.
8. Abide by the Tri-C *Access Control Regulations* described on the Tri-C website.
9. Prior to departure from the Tri-C campus, contractors must lock and verify all doors in areas they have worked in are locked and return all keys.
10. For any questions or concerns, please contact the Executive Director, Emergency Manger, Fire and Safety System.

Ladders
Ladders must conform to OSHA design requirements and be free of defects. Wooden ladders must not be painted. Ladders must be secured to keep them from shifting, slipping, being knocked over or blown over by climatic conditions. Wooden ladders should be used during electrical work or activities

Mechanical Equipment
Contractor must follow Tri-C's Mechanical Standards. All access/shutdowns of mechanical equipment must be coordinated with the Plant Manager. All work must be scheduled off hours unless permission has been otherwise granted. All equipment installed must be connected to the Building Automation System, and all electrical connections must comply with Tri-C's electrical safety requirements.

Mercury Spills
Every effort should be made to prevent all spills of metallic mercury. For mercury spills of any volume, all personnel shall leave the area and contact Tri-C Police Department to arrange for cleanup. The Contractor should also notify Campus Police when there has been a spill. The spill area must to roped, taped or barricaded to prevent accidental exposure. The contractor may be held responsible for the cost of cleanup and disposal.

Mercury Bulbs
All fluorescence light bulbs and high intensity mercury lights will be recycled by a licensed bulb recycler and removed off site by the contractor. Contractors should never leave waste behind. All broken bulbs will be handled as hazardous waste. For further information, contact EHS.

Overhead Work
Overhead work must not be performed above Tri-C’s employees, students or the general public. Access to areas affected by overhead work shall be restricted.

Parking

All vehicles parked outside a fenced staging area on Tri-C's property must display a valid Tri-C Parking permit unless parked in a pay-per-hour space. If parked at a meter, the meter must be paid. Use of any parking facilities for construction related activity must be approved in advance by Tri-C Police Department. Tri-C Contractors are subject to Tri-C Parking Rules and Regulations. Violations of these rules are subject to issuance of parking citations and/or vehicle impound.

PCBs
Before starting work that involves PCBs or PCB containing material, the contractor must submit two copies of their procedures for handling, packaging, shipping and disposal of PCBs to the Project Manager and EHS. The contactor must also label all items and containers with the appropriate labels for removal from Tri-C property. The contractor must ensure that the manifest and land disposal requirements
(LDR) are properly completed and signed in accordance with Federal and State regulations.

Environmental Health & Safety staff will review and sign all Hazardous Waste Manifests.

Personal Protective Equipment
In certain construction and maintenance operations personal protective equipment, including but not limited to safety glasses, goggles, respirators, hardhats and other protective clothing must be worn at all times. The type of PPE to be worn will be determined by the physical and chemical hazards of the contracted job. The contractor is responsible for the selection of PPE for their employees that is necessary to perform the job safely and correctly. All OSHA requirements for employee safety must be strictly adhered too.

Plumbing

All plumbing work and installations must comply with the requirements in the Ohio Plumbing Code with points of emphasis/special importance given to:

- Backflow protection must be provided for all domestic water installations that use water for a non-potable use. For Non-health (Non-Toxic - no chemicals added cross connections) an ASSE 1015 double-check backflow preventer shall be installed. This is defined as any point on a water supply system where a polluting substance may come in contact with potable water aesthetically affecting the taste, odor or appearance of the water, but not hazardous to health.
- For Health Hazard (Toxic - cross-connections defined as any point on a water supply system where a contaminating substance may come in contact with potable water creating an actual health hazard, causing sickness or death) an ASSE 1013 shall be installed. Irrigation systems must be protected from backflow by either a pressure vacuum breaker, or a reduced pressure backflow preventer. The device must be protected from freezing the temperature shall be maintained at 40 degrees Fahrenheit or higher inside the enclosure.
- When any mechanical or plumbing line penetrates any floor surface or a brick/block/ concrete wall it must be sleeved. The sleeve shall be 2 times the diameter of the pipe penetrating the surface. Annular spaces between sleeves and pipes shall be filled or tightly caulked in an approved manner. Annular spaces between sleeves and pipes in fire-resistance rated assemblies shall be filled or tightly caulked in accordance with the Ohio Building Code.

- All storm drains shall receive water only from the following sources: rainwater; surface water; subsurface water; and similar liquid wastes. Drain disposal of chemicals is never permitted (i.e., cement; rubber/silicone based products; or paints, etc.). In addition, the maximum discharge temperature into any drain shall be 140 degrees Fahrenheit.

Refrigerants
Only certified technicians may perform work on equipment with refrigerants. The contractor must provide a copy of the technician's certifications prior to project start-up. The contractor must provide documentation to the Tri-C Project Manager indicating the date, type of service, amount and type of refrigerant used. All work must conform to the 40 CFR parts 82 for the protection of stratospheric ozone.

Roof Safety
At least two of the contractor's employees must be present during all work on campus roofs. All construction projects that have the potential for a fall hazard must comply with OSHA's 29 CFR 1926 sub part M, and 1910.23. It is the contractor's responsibility to train all of their employees on all relevant safety issues.

Safety Representative
It is the responsibility of all contractors to appoint a Safety Representative (holding at least a foreman position), to oversee all contract work at Tri-C. The foreman will perform daily job inspections and correct any unsafe conditions. It is the contractor's responsibility to train all of their employees on all relevant safety issues. The foreman must investigate any accident and report to the Tri-C Project Manager, Environmental Health & Safety and Risk Management.

Safety Rules and Procedures
To report a medical emergency:

- Call 216-987-4235 or dial 4911 to contact Tri-C Police Department.
- Police will provide or arrange required services, including Local Emergency Medical Services.

Security Requirements
The following items are not permitted on Tri-C's property: alcoholic beverages, illicit drugs, drug related paraphernalia, explosives, firearms and ammunition.

Smoking
Smoking, vaping and chewing tobacco in Tri-C buildings is prohibited. Tri-C is a tobacco-free campus. If you chose to smoke, you must do so outside in a location no closer than 20 feet from building doorways.

Solvents and Paints
The use of solvents, chemicals or paints requires prior approval of Tri-C. An SDS for each substance must be submitted to the Project Manager and EHS for review and approval. Adequate ventilation must be maintained at all times when paints, chemicals or solvents are used. Personnel must use proper respiratory protection and protective equipment when toxicity of the material requires such protection. Flammable solvents and materials must be

used with caution when possible sources of ignition exist.

When flammable solvents are being used, the contractor must post signs in the area to identify the hazard(s) present in the area. Flammable paint and solvents must be stored in an approved flammable liquids storage cabinet when storage is required. Corrosives (acid, bases) and flammables must never be stored together. If a cabinet is not available, all chemicals must be removed from Tri-C property by the end of the workday. The Contractor, not Tri-C, is responsible for the proper disposal of all waste chemicals.

Tar Pots
Tar pots are never permitted on roofs and each pot must have its own 10 pound ABC fire extinguisher. Tar pots must be kept a minimum of 10 feet from any building. Before using a tar pot, the contractor must have approval from the Project Manager.

Tri-C Telephones
Use of telephones is restricted to Tri-C business-related calls. See your foreman for phone locations.

Tools – Hand and Power
All hand tools and operations of hand tools shall conform to the OSHA construction standard 1926.302.

Vehicles
All contractor personnel shall park their vehicles in areas designated as appropriate by the Project Manager. Refer to the Parking section contained in this document.

Warning Signs
The contractor must provide all warning signs, barriers, barricades etc., whenever such notification is warranted. Where signs and barricades do not provide adequate protection, flagmen must be used.

Worksite Housekeeping
Waste material and debris must be removed from the job site at the end of each workday. Waste material and debris must never be thrown from any level to another. Material must be piled, stacked or otherwise stored to prevent tipping or collapse.
Overhead storage of tools, equipment etc., by the contractor is prohibited. No waste material will be left by the contractor in the space above suspended ceiling panels.

The foreman will perform daily job inspections and correct any unsafe conditions. It is the contractor's responsibility to train all of their employees on all relevant safety issues. The foreman must investigate any accident and report to the Tri-C Project Manager, Environmental Health & Safety and Risk Management. "Contractors should be aware of air intake without exposing residents to foul air, high levels of exhaust or particulate matter and potential problems".

The Contractor agrees to provide for a safe and healthy work environment, and to maintain compliance with all applicable provisions of the Occupational Safety and Health Administration's (OSHA) regulations as set forth in the Chapter 29 of Code of Federal Regulations pertaining to health and safety in the workplace (29 CFR 1910 and 1926). The Contractor also agrees to provide to Environmental Health and Safety evidence of applicable written programs prior to beginning work. These include but are not limited to Lockout/Tag Out (Control of Hazardous Energy), Confined Space, Hazard Communication, and Hearing Conservation.

The Contractor understands the signatures below represent an authorization to proceed with work space activities only, and do not, nor are they intended to, represent approval of plans, designs, methods, specifications and work practices of the Contractor.

As an agent of the above company, I have read and agree to the above outlined conditions in this book on behalf of the company and understand all employees and sub-contractors are beholden to it:

Contractor Authorized Representative _____

Date _____

Contractor name_____(please print)

Registration # _____

_____

Cuyahoga Community College Authorized Representative

Name_____Dept._____

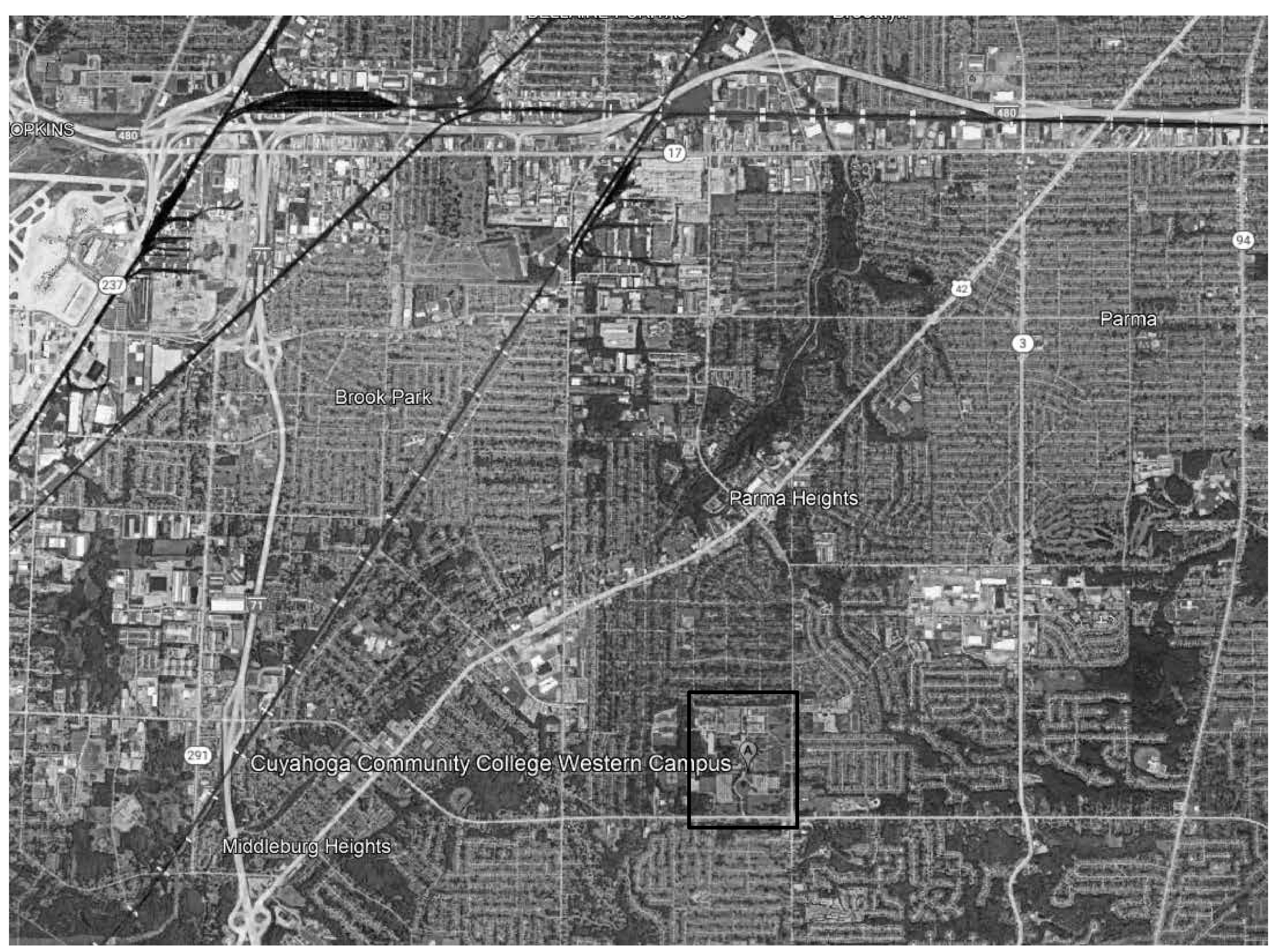
Date_____

Cuyahoga Community College

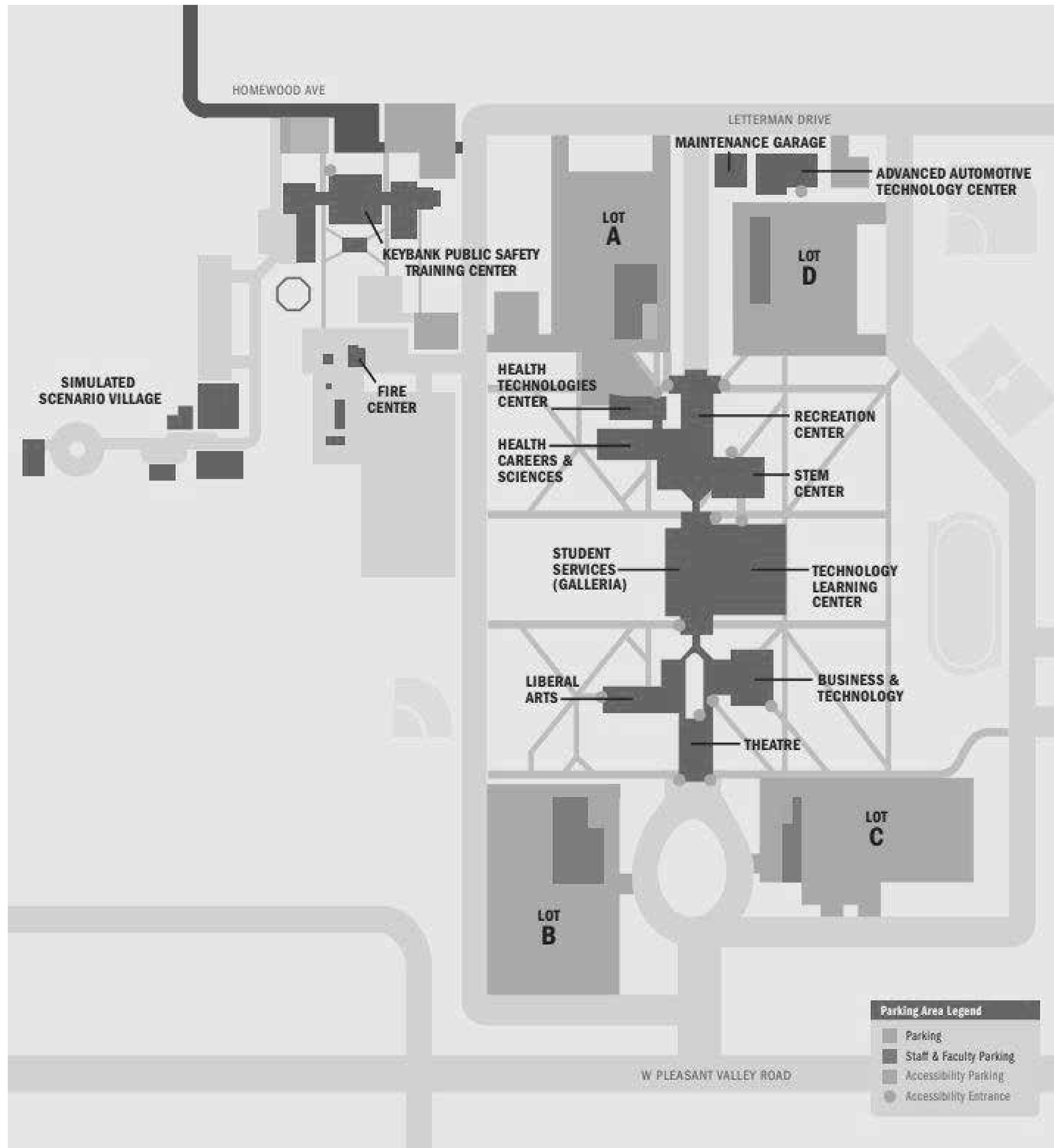
CUYAHOGA COMMUNITY COLLEGE

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

11000 W PLEASANT VALLEY ROAD, CLEVELAND, OH 44130



VICINITY MAP



CAMPUS MAP

DRAWING LIST - ELECTRICAL	
NUMBER	NAME
E0-1	TITLE SHEET, VICINITY MAPS, DRAWING INDEX, AND ELECTRICAL LEGENDS
E100AF	BASEMENT POWER PLAN - BUILDING A & F
E100B	BASEMENT POWER PLAN - BUILDING B
E100G	BASEMENT POWER PLAN - BUILDING G
E101A	FIRST FLOOR POWER PLAN - BUILDING A
E101B	FIRST FLOOR POWER PLAN - BUILDING B
E101D	FIRST FLOOR POWER PLAN - BUILDING D
E101GT	FIRST FLOOR POWER PLAN - BUILDING GT
E101T	FIRST FLOOR POWER PLAN - BUILDING T
E102B	SECOND FLOOR POWER PLAN - BUILDING B
E102C	SECOND FLOOR POWER PLAN - BUILDING C
E102D	SECOND FLOOR POWER PLAN - BUILDING D
E102GT	SECOND FLOOR POWER PLAN - BUILDING GT
E102H	SECOND FLOOR POWER PLAN - HTC BUILDING
E103D	THIRD FLOOR POWER PLAN - BUILDING D
E103G	THIRD FLOOR POWER PLAN - BUILDING G PENTHOUSES
E500	EXISTING ONE LINE DIAGRAM - MAIN DISTRIBUTION & CH-SWGR
E501	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION A
E502	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION B
E503	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION C
E504	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION D
E505	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION F
E506	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION T
E507	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATIONS GE
E508	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION GW
E509	EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION HTC

LEGEND - ELECTRICAL DISTRIBUTION	
SYMBOL	DESCRIPTION
DP-X	DISTRIBUTION PANELBOARD (480Y/277V, 3Ø, 4 WIRE)
DP-X	DISTRIBUTION PANELBOARD (208Y/120V, 3Ø, 4 WIRE)
	TRANSFORMER
	SWITCHBOARD

LEGEND - ONE LINE DIAGRAM	
SYMBOL	DESCRIPTION
	BRANCH PANELBOARD
XXX/3	MOLDED CASE CIRCUIT BREAKER (NON-ADJUSTABLE)
(PCB)(MCCBE) XXX/3AF XXX/3AT LSIG(LSI)	CIRCUIT BREAKER WITH SOLID STATE ELECTRONIC TRIP, ADJUSTABLE TRIP SETTING. FRAME SIZE AND TRIP SIZE AS INDICATED
LVPCB XXX/3AF XXX/3AT LSIG(LSI) EO(MO)	DRAW OUT LOW VOLTAGE POWER CIRCUIT BREAKER
XXXAF XXX/3AF	FUSED SWITCH AND FUSE SIZE
SPD	SURGE PROTECTIVE DEVICE
	TRANSFORMER (SECONDARY 600 VOLTS OR LESS)
	TRANSFORMER (SECONDARY 600 VOLTS OR LESS)
	MEDIUM VOLTAGE CIRCUIT BREAKER, DRAW-OUT
GF	GROUND FAULT
ST	SHUNT TRIP

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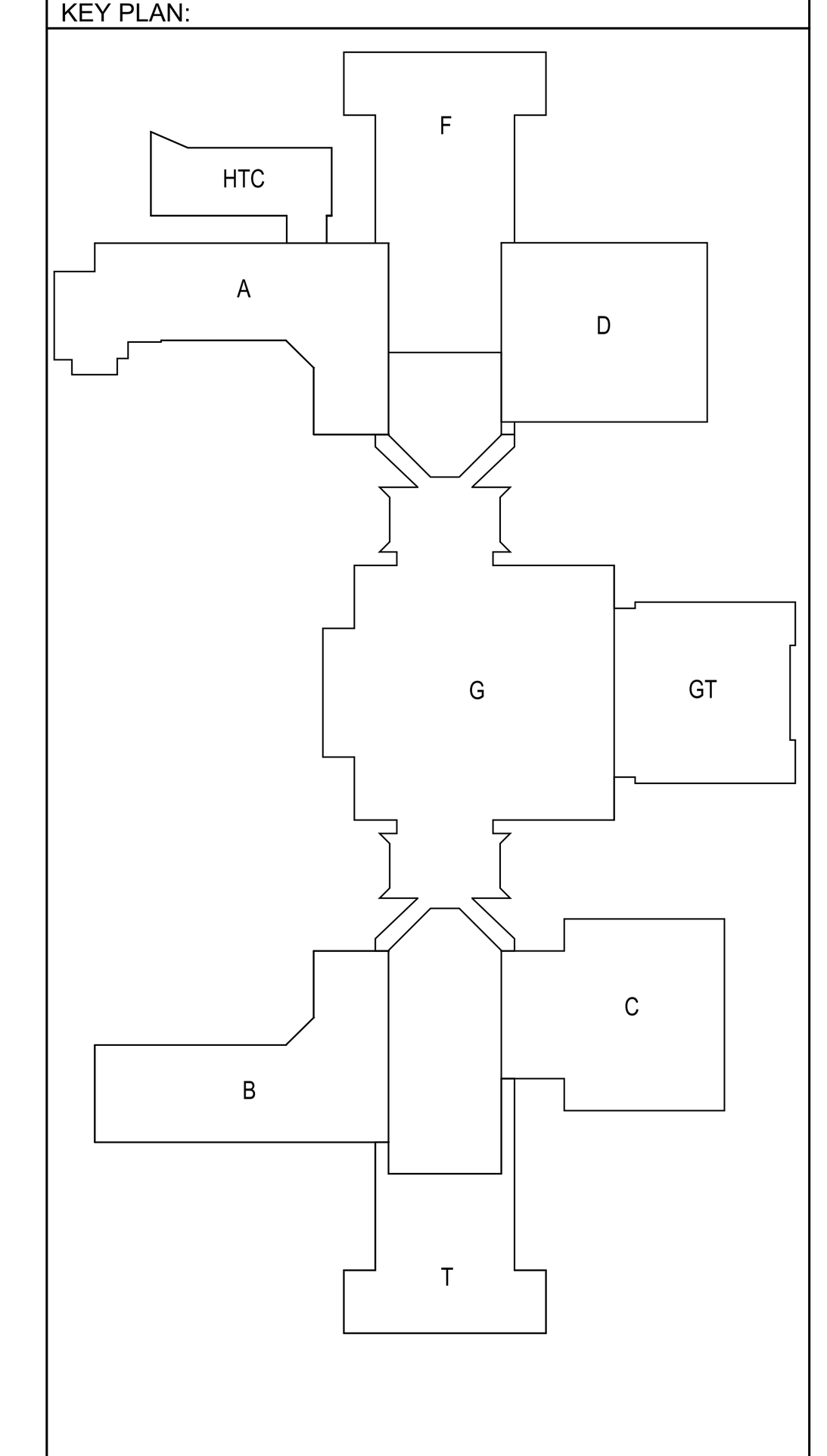
NOTES:

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

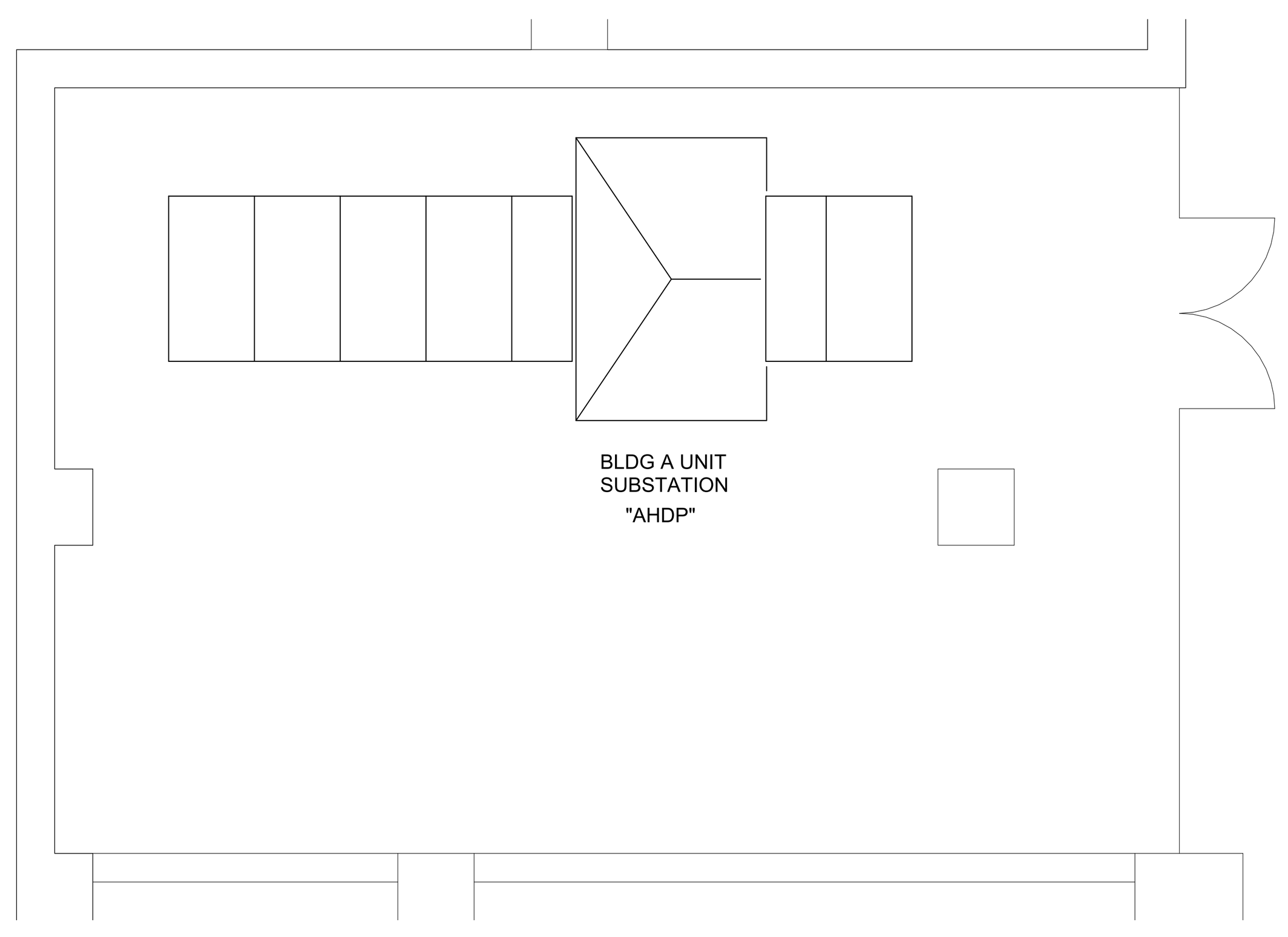
SCALE:

SHEET TITLE

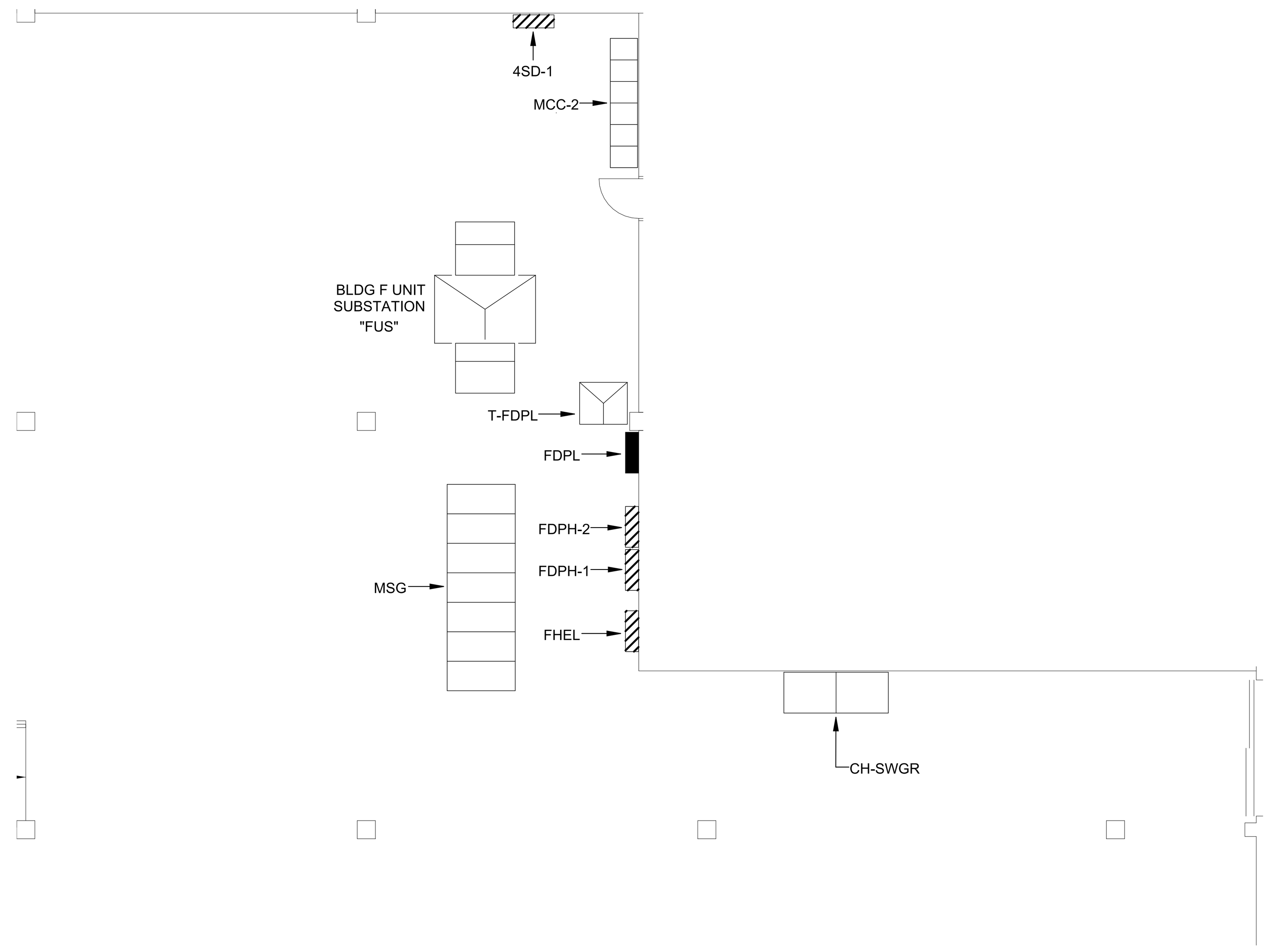
TITLE SHEET, VICINITY MAPS, DRAWING INDEX, AND ELECTRICAL LEGENDS

SHEET NUMBER

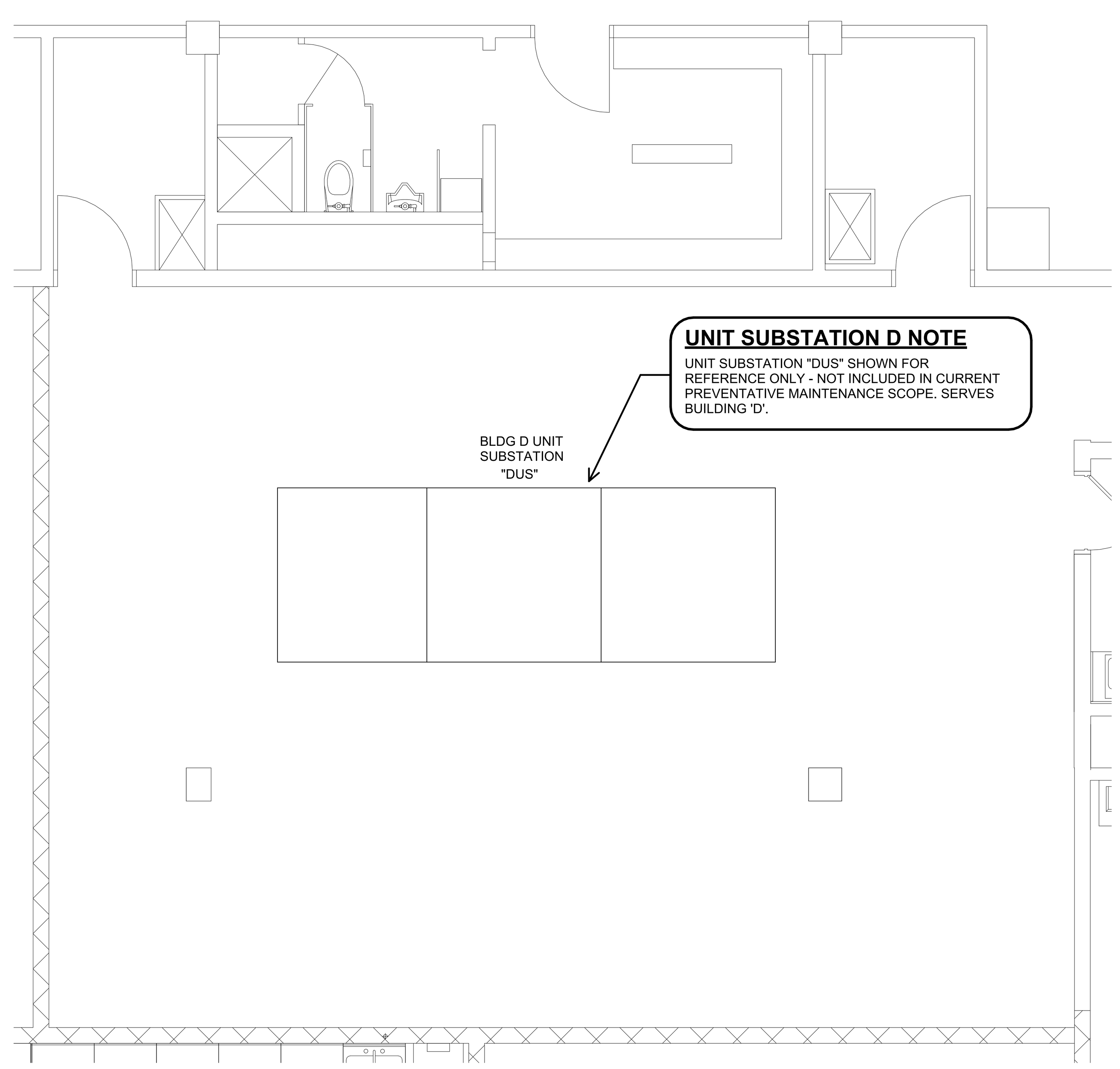
E0-1



BASEMENT POWER PLAN - BUILDING A - UNIT SUBSTATION ROOM (A) 2 E100AF
1/4" = 1'-0"



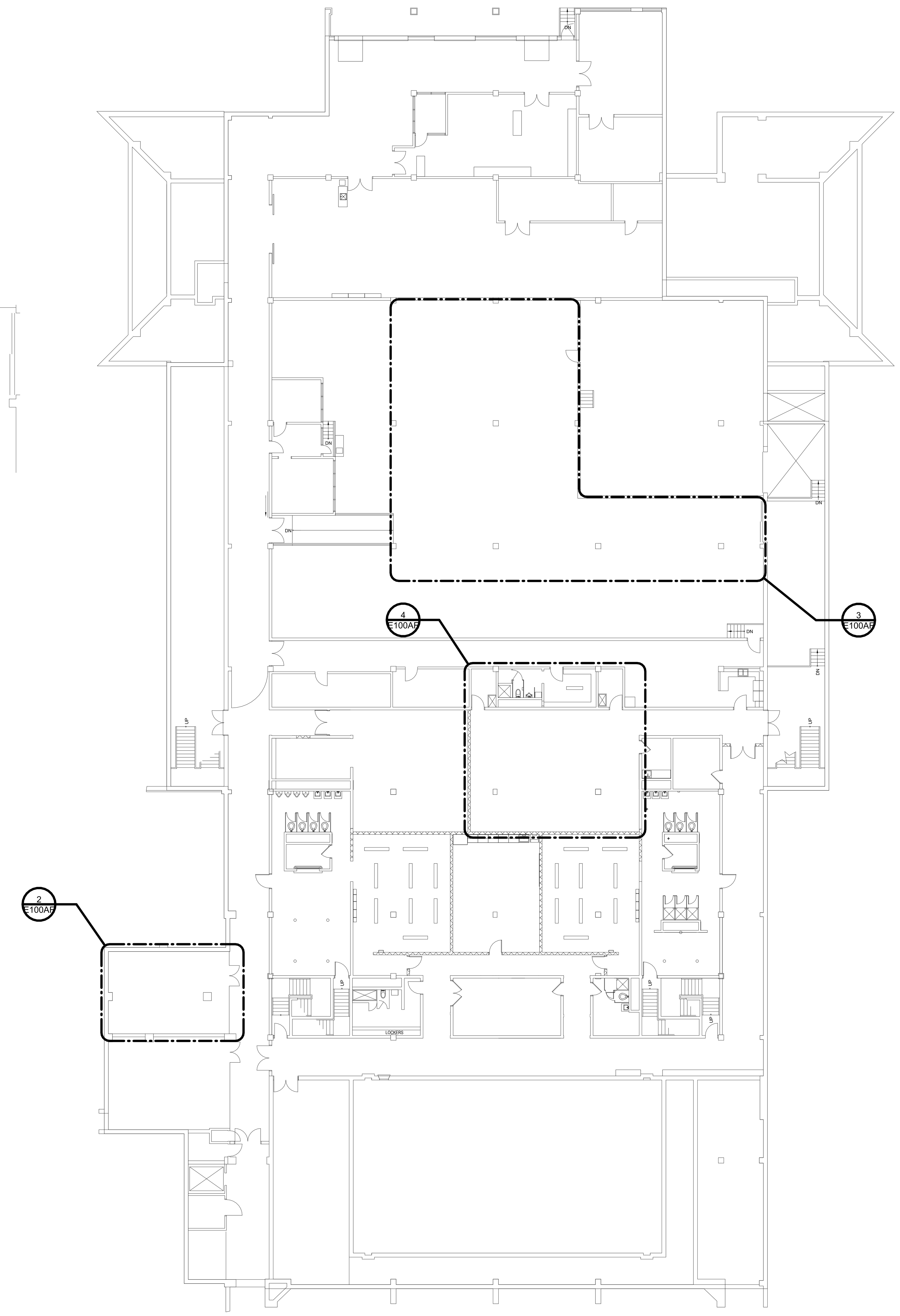
BASEMENT POWER PLAN - BUILDING F - UNIT SUBSTATION ROOM (F) 3 E100AF
1/8" = 1'-0"



UNIT SUBSTATION D NOTE

UNIT SUBSTATION "DUS" SHOWN FOR REFERENCE ONLY - NOT INCLUDED IN CURRENT PREVENTATIVE MAINTENANCE SCOPE. SERVES BUILDING 'D'.

BASEMENT POWER PLAN - BUILDING F - UNIT SUBSTATION ROOM (D) 4 E100AF
1/4" = 1'-0"



BASEMENT POWER PLAN - BUILDING F
1/16" = 1'-0"

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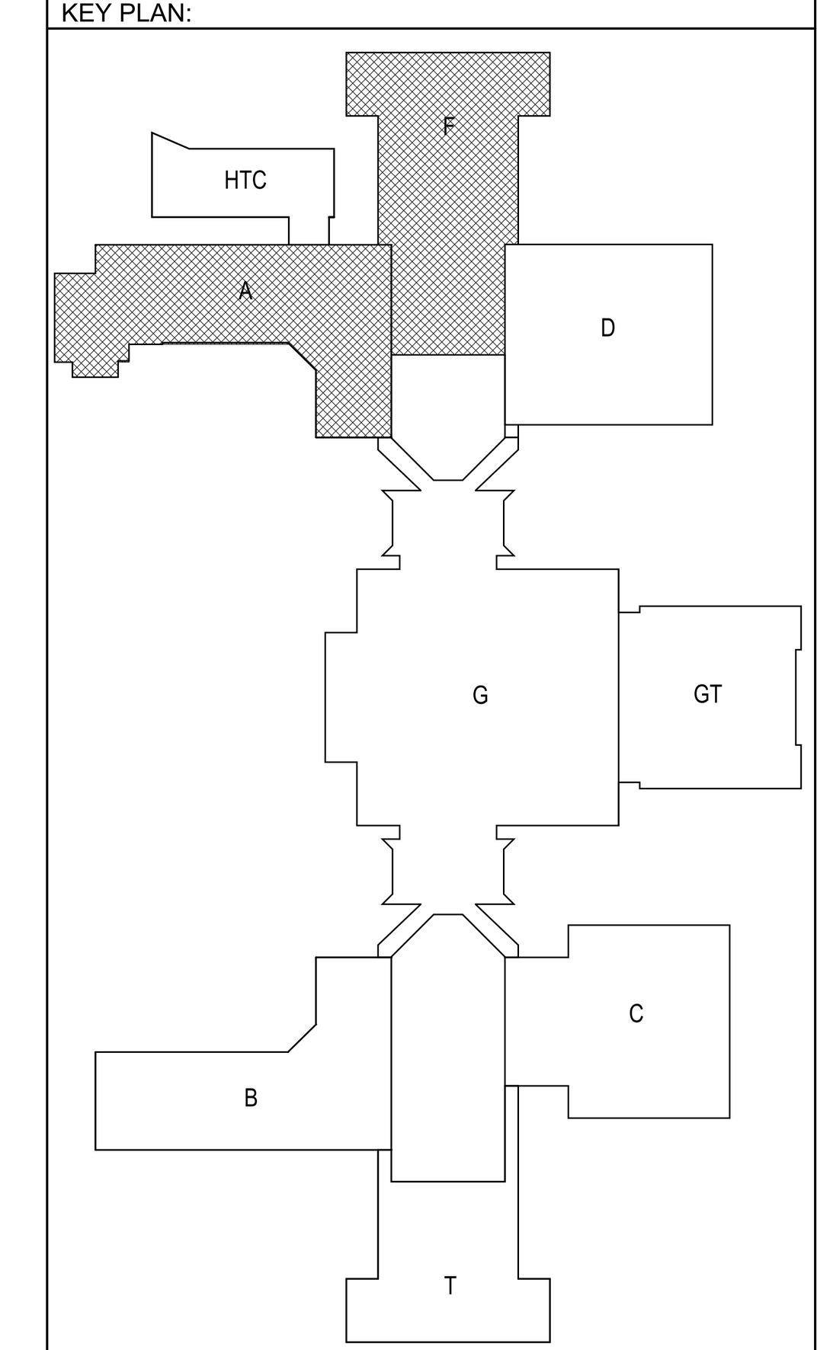
NOTES:

PROGRAM REFERENCE NOTE

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS.

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

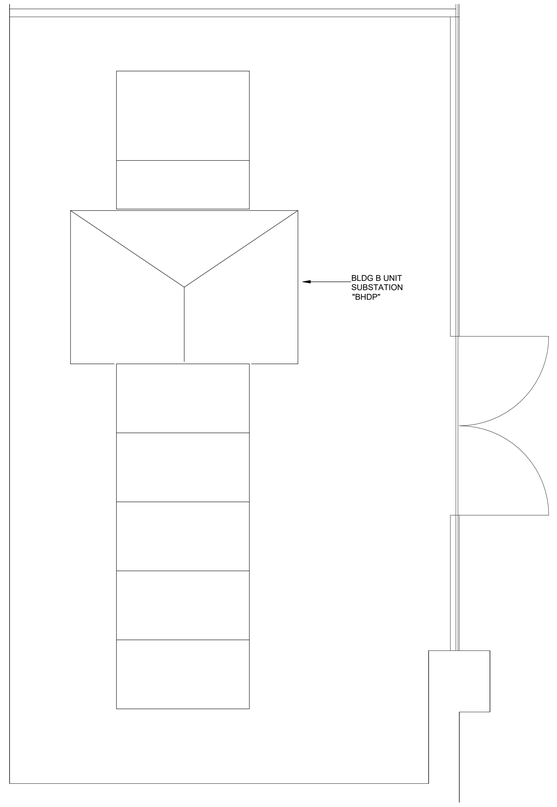
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE

BASEMENT POWER PLAN - BUILDING A & F

SHEET NUMBER

E100AF

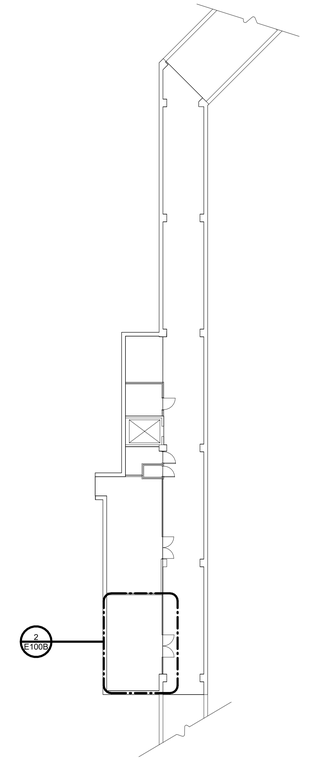


BASEMENT POWER PLAN - BUILDING B - UNIT SUBSTATION ROOM (B)

2
E100B

1/2" = 1'-0"

0 1' 2' 3' 4'



BASEMENT POWER PLAN - BUILDING B

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'

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NOTES:

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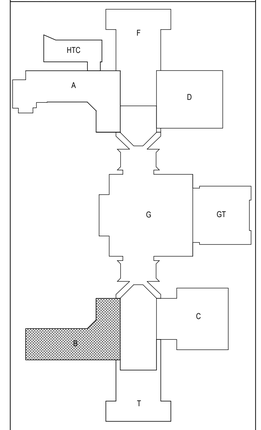
KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
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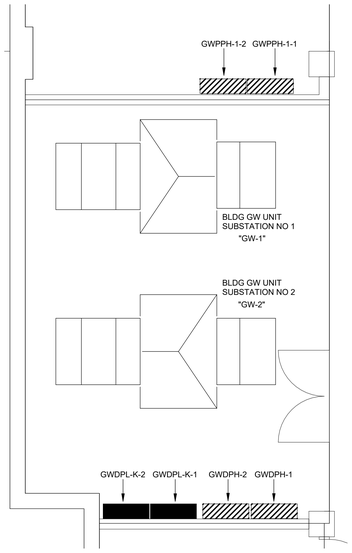
APPROVED BY: DW
DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE
BASEMENT POWER PLAN - BUILDING B

SHEET NUMBER
E100B

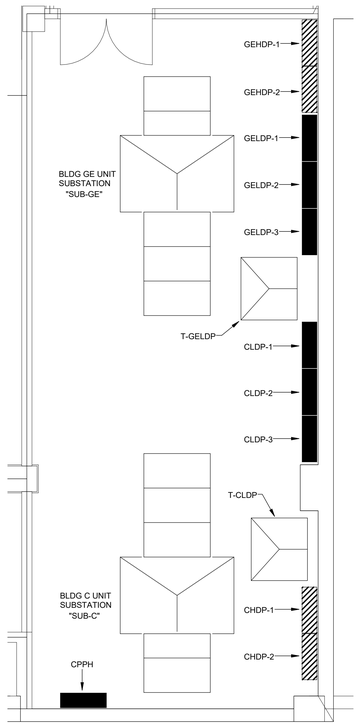


BASEMENT POWER PLAN - BUILDING G - UNIT SUBSTATION ROOM (GW)

4 E100G

1/4" = 1'-0"

0 2' 4' 6' 8'

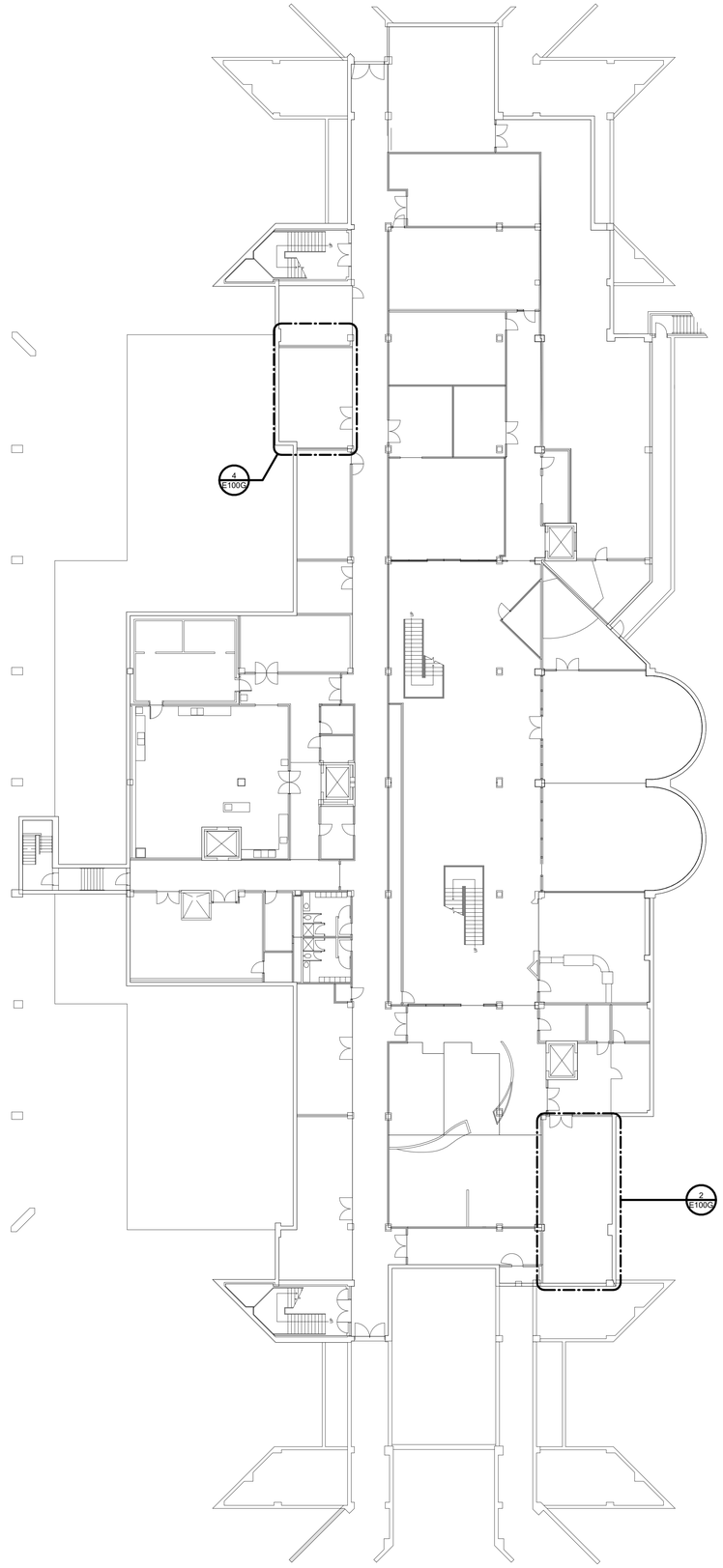


BASEMENT POWER PLAN - BUILDING G - UNIT SUBSTATION ROOM (C & GE)

2 E100G

1/4" = 1'-0"

0 2' 4' 6' 8'



BASEMENT POWER PLAN - BUILDING G

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'

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Cleveland, OH 44115
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NOTES:

PROGRAM REFERENCE NOTE

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KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

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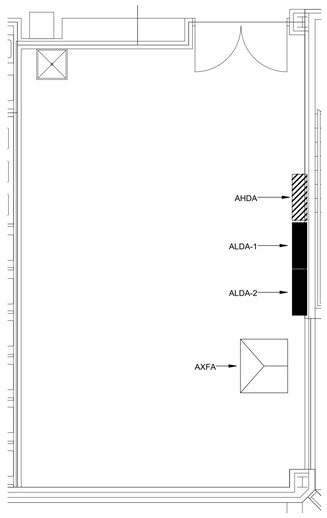
SHEET TITLE
BASEMENT POWER PLAN - BUILDING G

SHEET NUMBER
E100G

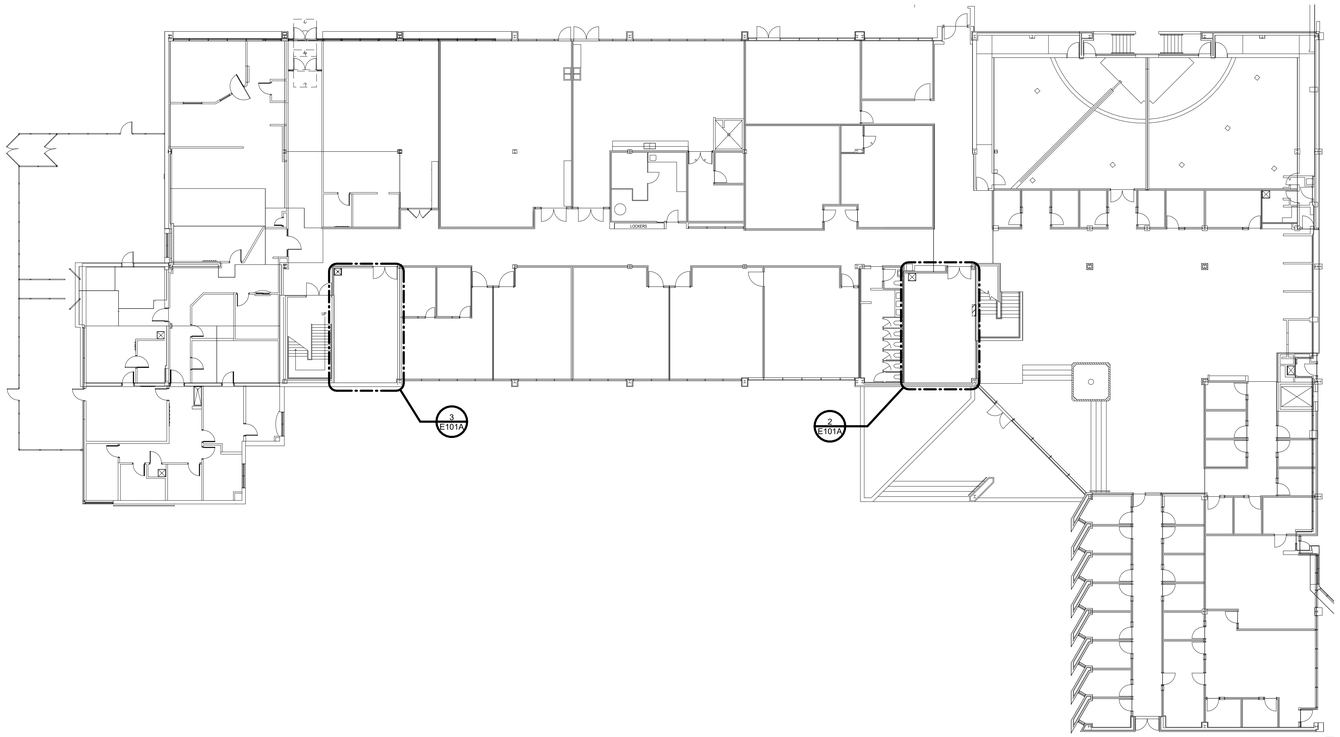


FIRST FLOOR POWER PLAN - BUILDING A - ELECTRICAL ROOM A147

2 / E101A

1/4" = 1'-0"

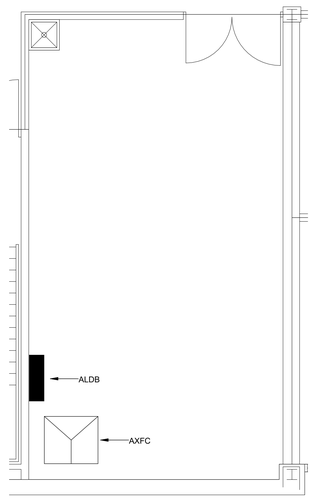
0 2' 4' 8' 8'



FIRST FLOOR POWER PLAN - BUILDING A

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'



FIRST FLOOR POWER PLAN - BUILDING A - ELECTRICAL ROOM A149

3 / E101A

1/4" = 1'-0"

0 2' 4' 8' 8'

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NOTES:

PROGRAM REFERENCE NOTE

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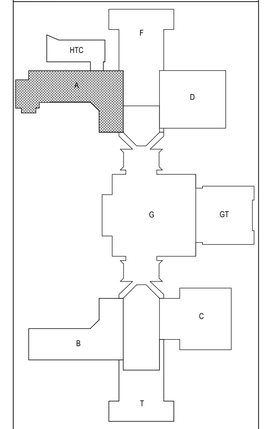
KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

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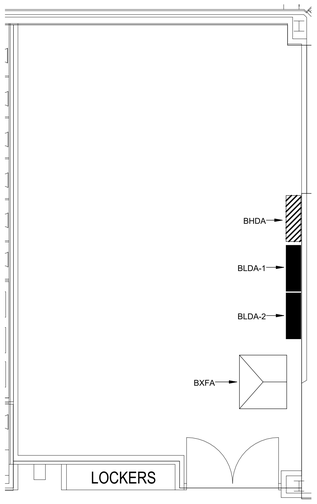
DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE

FIRST FLOOR POWER PLAN - BUILDING A

SHEET NUMBER

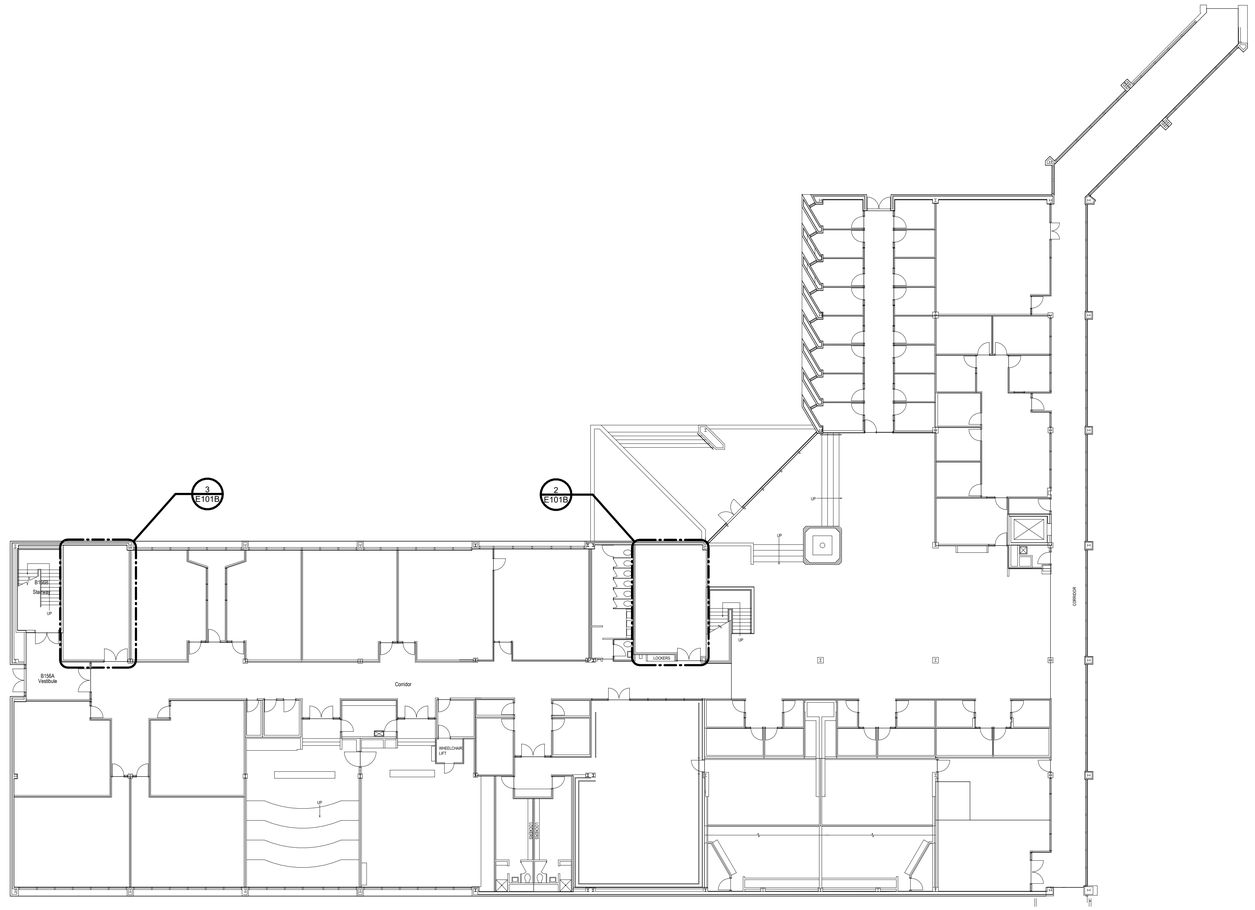
E101A



FIRST FLOOR POWER PLAN - BUILDING B - ELECTRICAL ROOM B161 (2 / E101B)

1/4" = 1'-0"

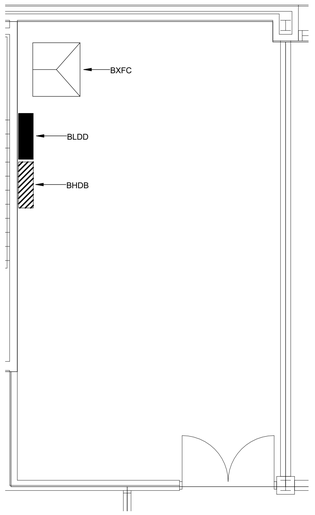
0 2' 4' 6' 8'



FIRST FLOOR POWER PLAN - BUILDING B

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'



FIRST FLOOR POWER PLAN - BUILDING B -ELECTRICAL ROOM B163 (3 / E101B)

1/4" = 1'-0"

0 2' 4' 6' 8'

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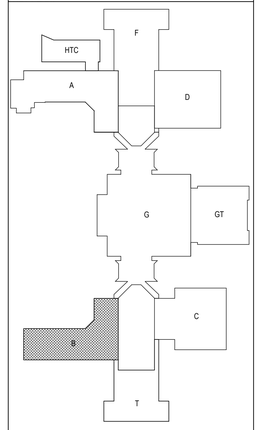
Cuyahoga Community College

NOTES:

PROGRAM REFERENCE NOTE

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS.

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

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DATE: 04/02/2024

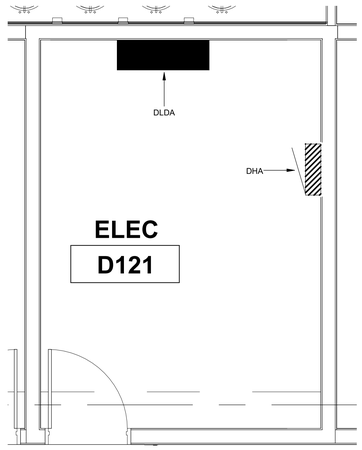
SCALE: As indicated

SHEET TITLE

FIRST FLOOR POWER PLAN - BUILDING B

SHEET NUMBER

E101B

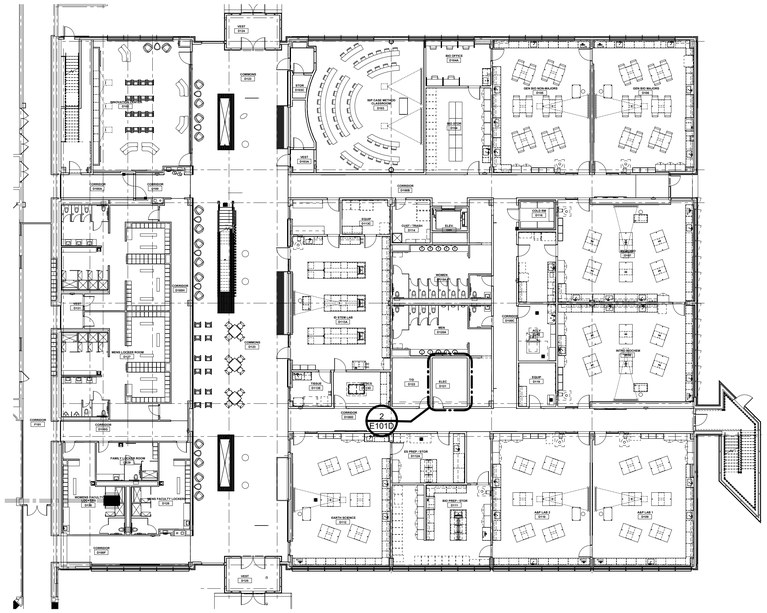


FIRST FLOOR POWER PLAN - BUILDING D - ELECTRICAL ROOM

2 E101D

1/2" = 1'-0"

0 1" 2" 3" 4"



FIRST FLOOR POWER PLAN - BUILDING D

1/16" = 1'-0"

0 4" 8" 12" 16" 24" 32"

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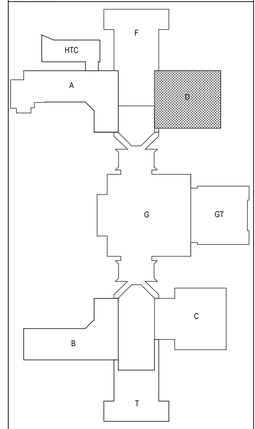
NOTES:

BUILDING 'D' REFERENCE NOTE

ALL EQUIPMENT IN BUILDING 'D' SHOWN FOR REFERENCE ONLY - NOT INCLUDED IN CURRENT PREVENTATIVE MAINTENANCE SCOPE.

KEY PLAN:



PROJECT NAME

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CLIENT NAME

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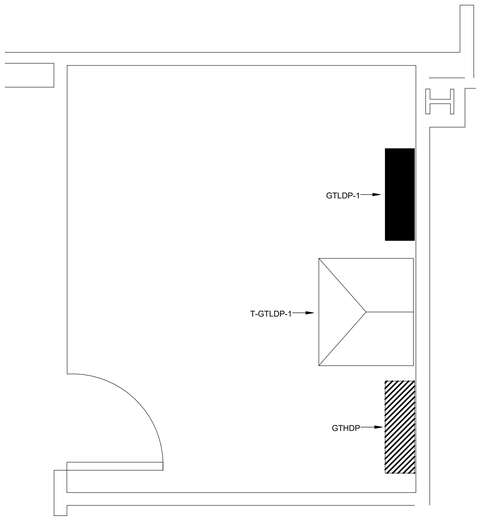
SHEET TITLE

FIRST FLOOR POWER PLAN - BUILDING D

SHEET NUMBER

E101D

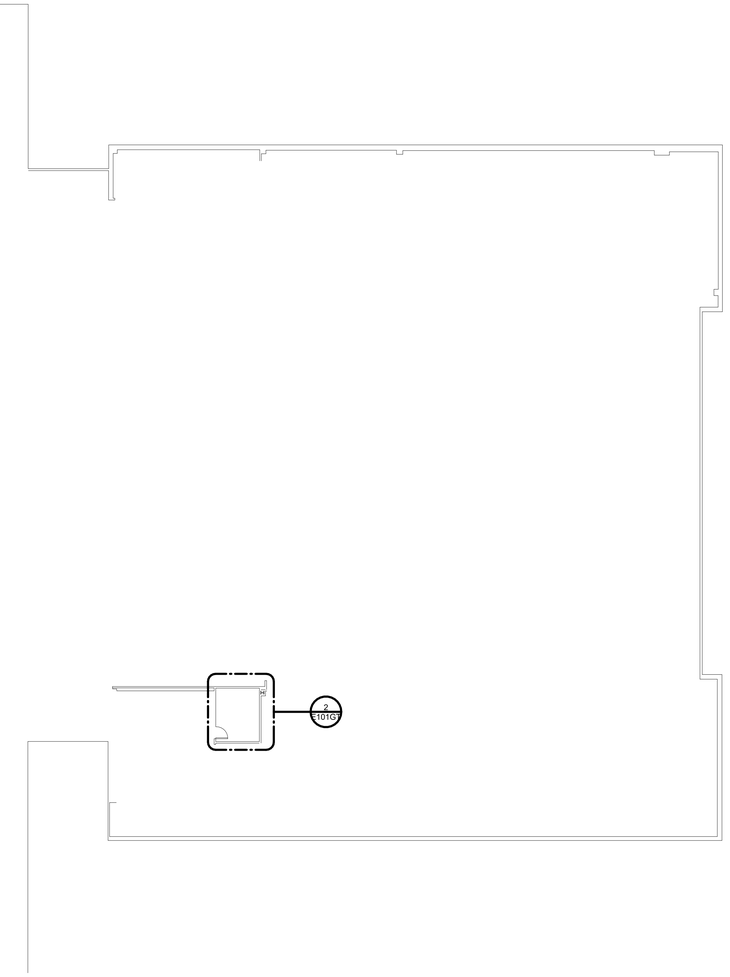


FIRST FLOOR POWER PLAN - BUILDING GT - ELECTRICAL ROOM GT103

2 / E101GT

1/2" = 1'-0"

0 1' 2' 3' 4'



FIRST FLOOR POWER PLAN - BUILDING GT

1/16" = 1'-0"

0 2' 4' 6' 8' 12' 16'

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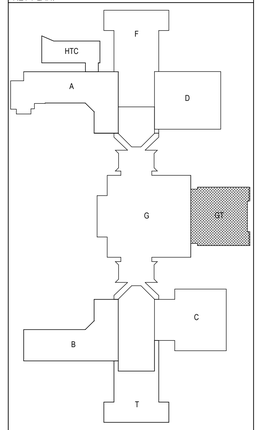
Cuyahoga Community College

NOTES:

KEY PLAN:



PROJECT NAME

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CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

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SCALE: As indicated

SHEET TITLE

FIRST FLOOR POWER PLAN - BUILDING GT

SHEET NUMBER

E101GT

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Cleveland, OH 44115
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Cuyahoga Community College

NOTES:

PROGRAM REFERENCE NOTE

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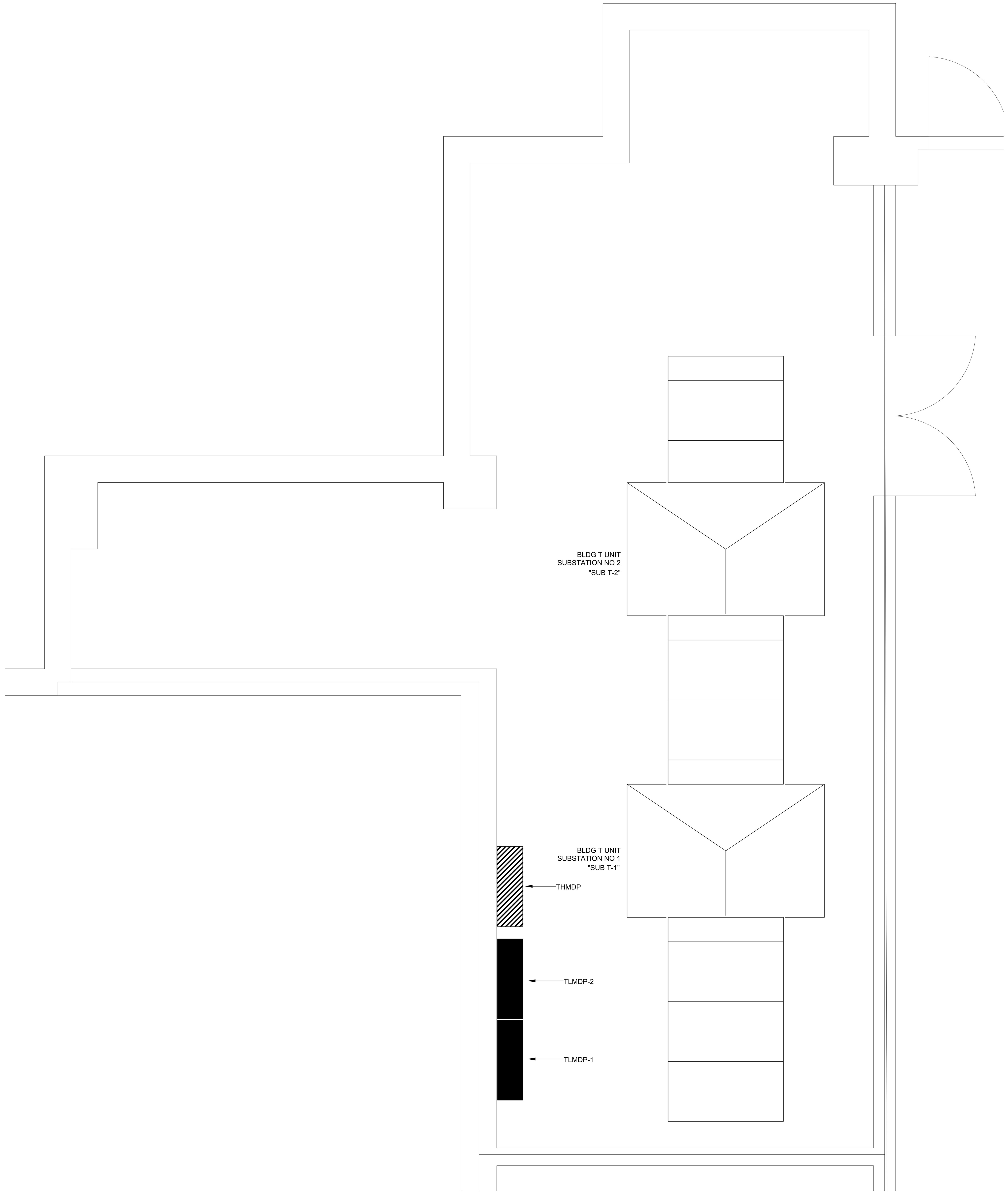
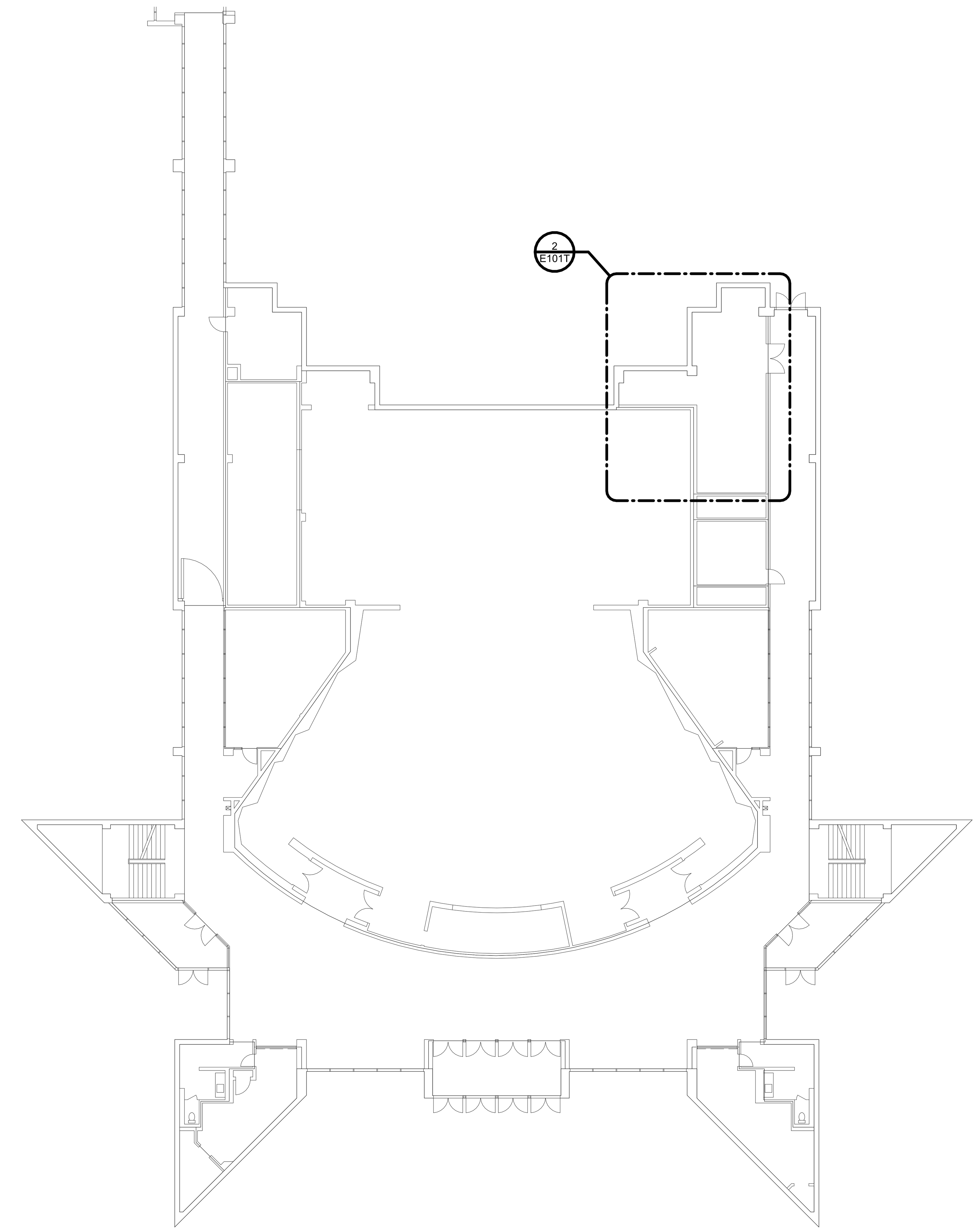


FIRST FLOOR POWER PLAN - BUILDING T - UNIT SUBSTATION ROOM (2 / E101T)

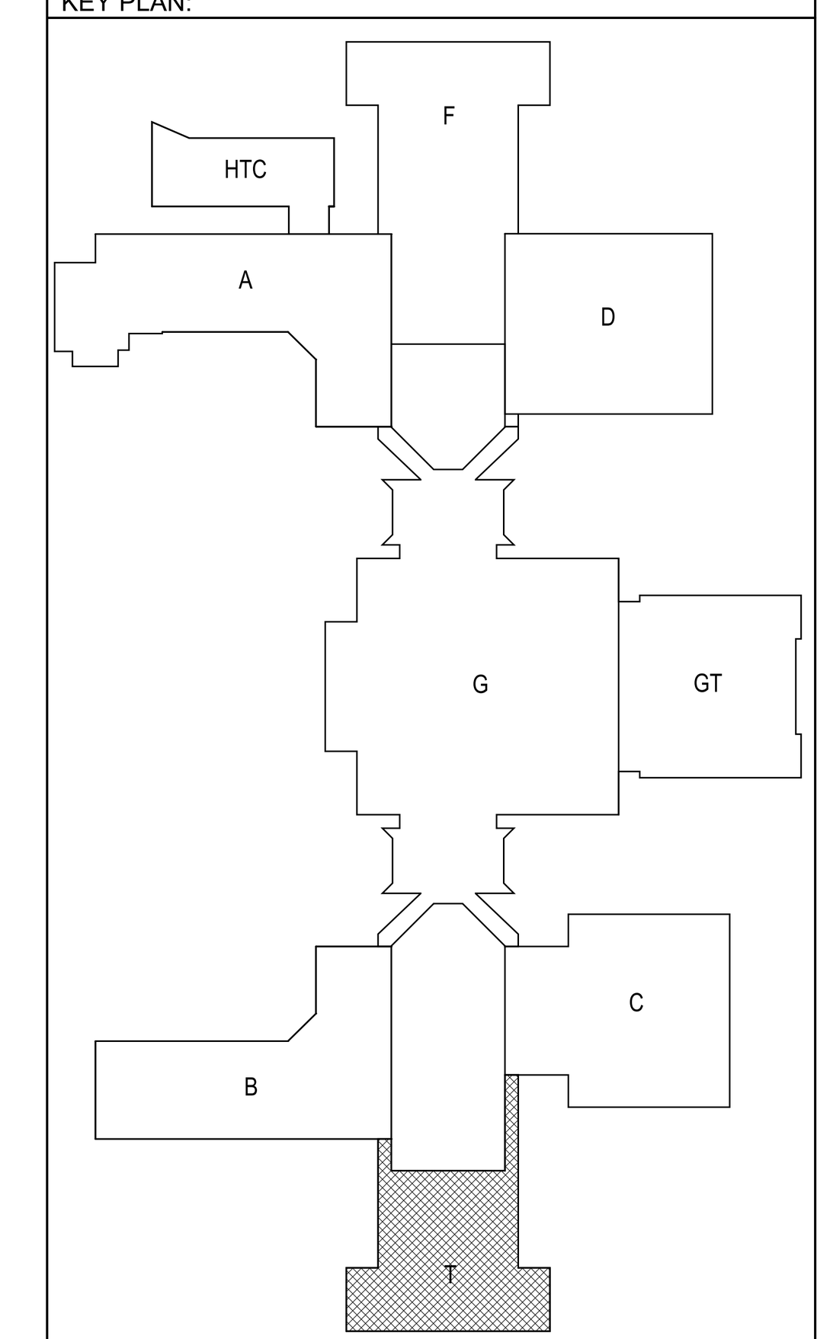
1/2" = 1'-0"



FIRST FLOOR POWER PLAN - BUILDING T

1/16" = 1'-0"

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

**CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130**

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DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE

FIRST FLOOR POWER PLAN - BUILDING T

SHEET NUMBER

E101T

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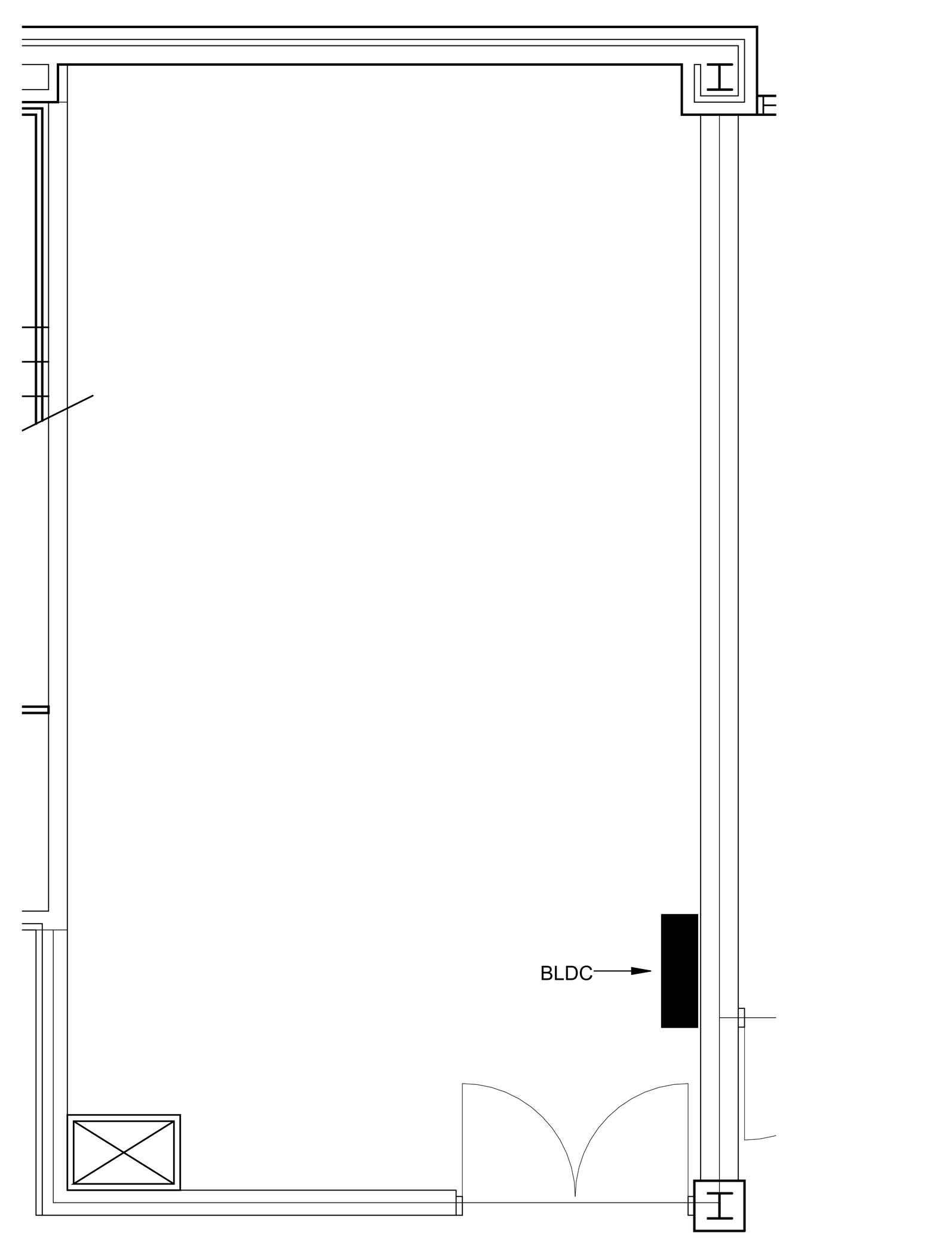
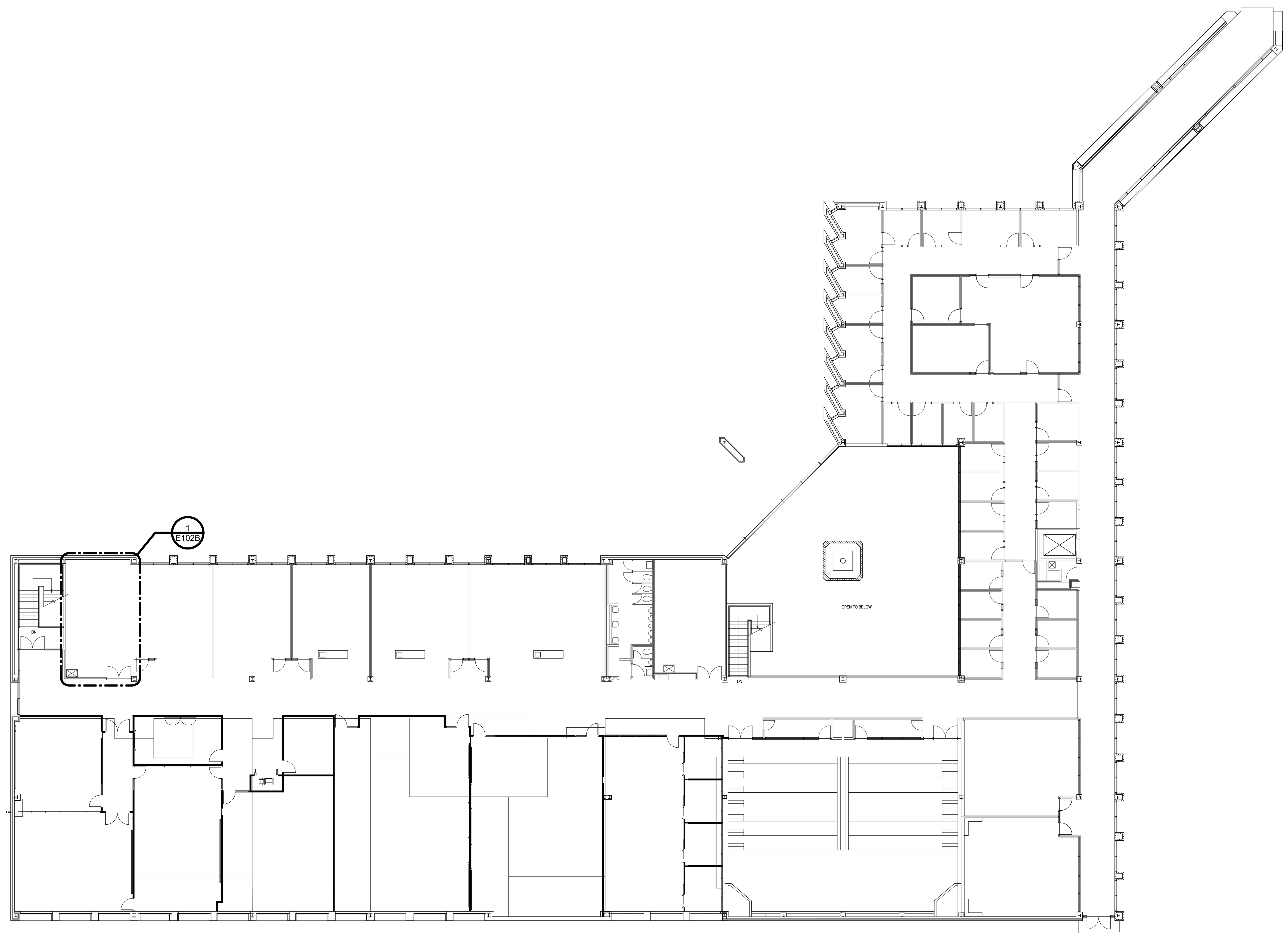


SECOND FLOOR POWER PLAN - BUILDING B - ELECTRICAL ROOM 246 1 E102B

1/4" = 1'-0"

0 2' 4' 6' 8'



SECOND FLOOR POWER PLAN - BUILDING B

1/16" = 1'-0"

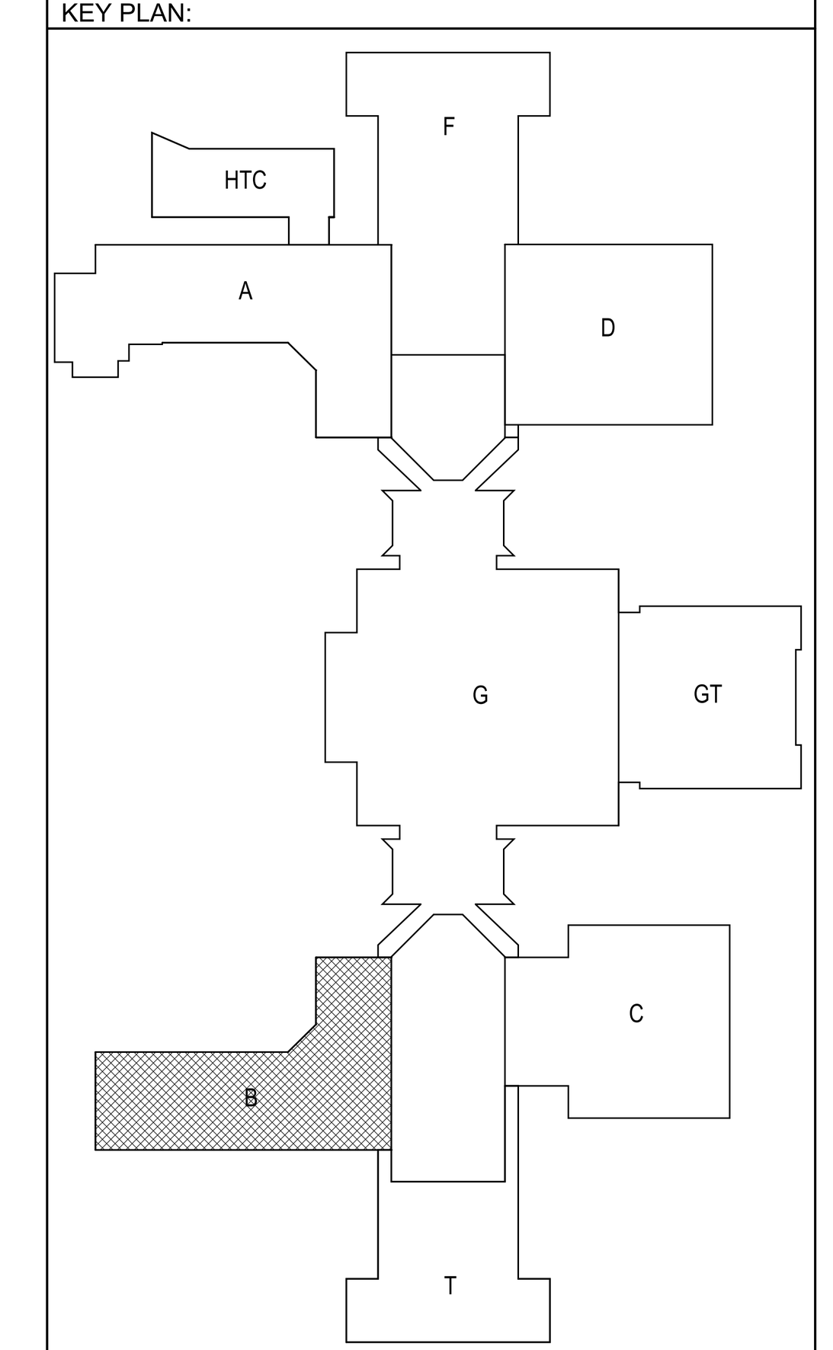
0 4' 8' 12' 16' 24' 32'

NOTES:

PROGRAM REFERENCE NOTE

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS.

KEY PLAN:



PROJECT NAME

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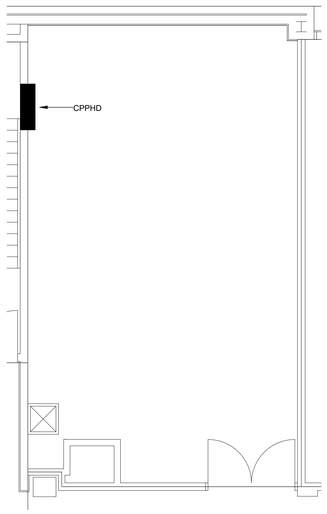
SHEET TITLE

SECOND FLOOR POWER PLAN - BUILDING B

SHEET NUMBER

E102B

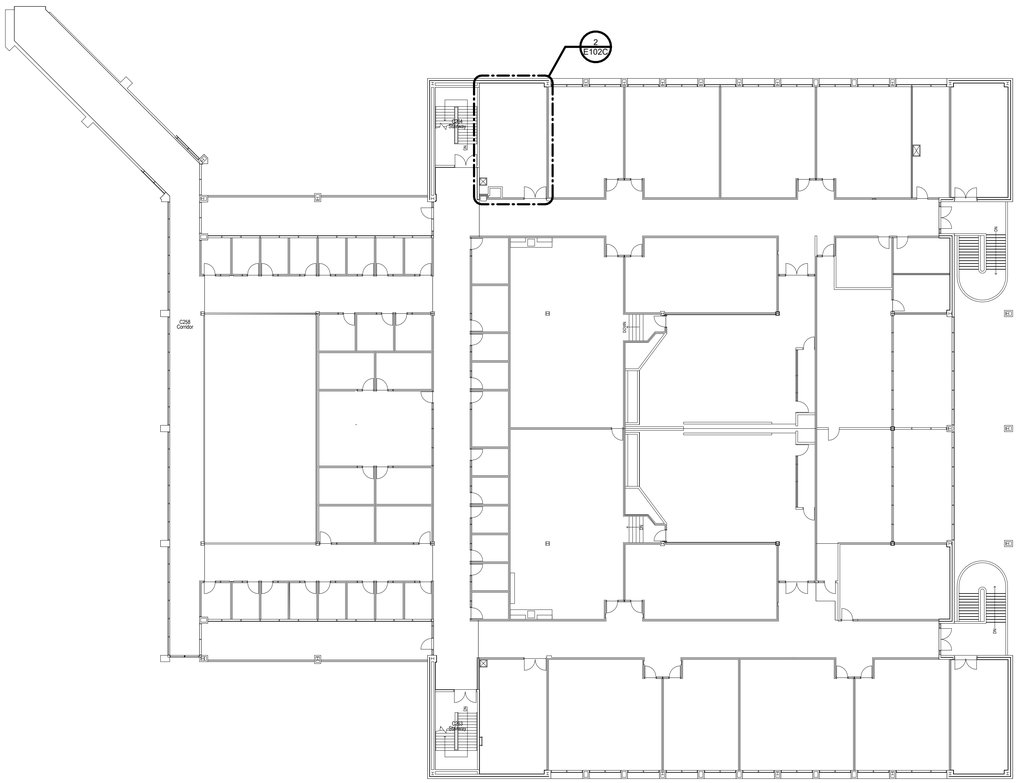


SECOND FLOOR POWER PLAN - BUILDING C - ROOM C257

2 E102C

1/4" = 1'-0"

0 2' 4' 6' 8'



SECOND FLOOR POWER PLAN - BUILDING C

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'

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Cleveland, OH 44115
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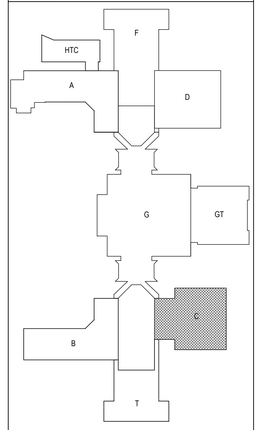
Cuyahoga Community College

NOTES:

PROGRAM REFERENCE NOTE

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS.

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

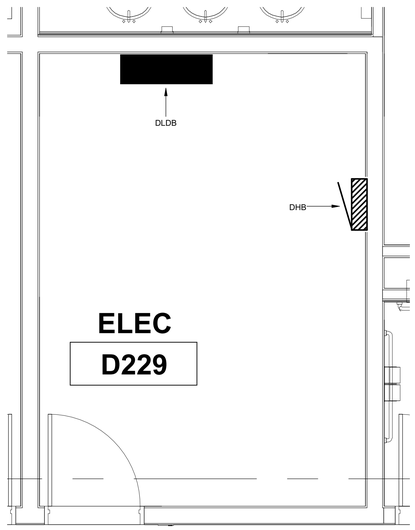
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE

SECOND FLOOR POWER PLAN - BUILDING C

SHEET NUMBER

E102C

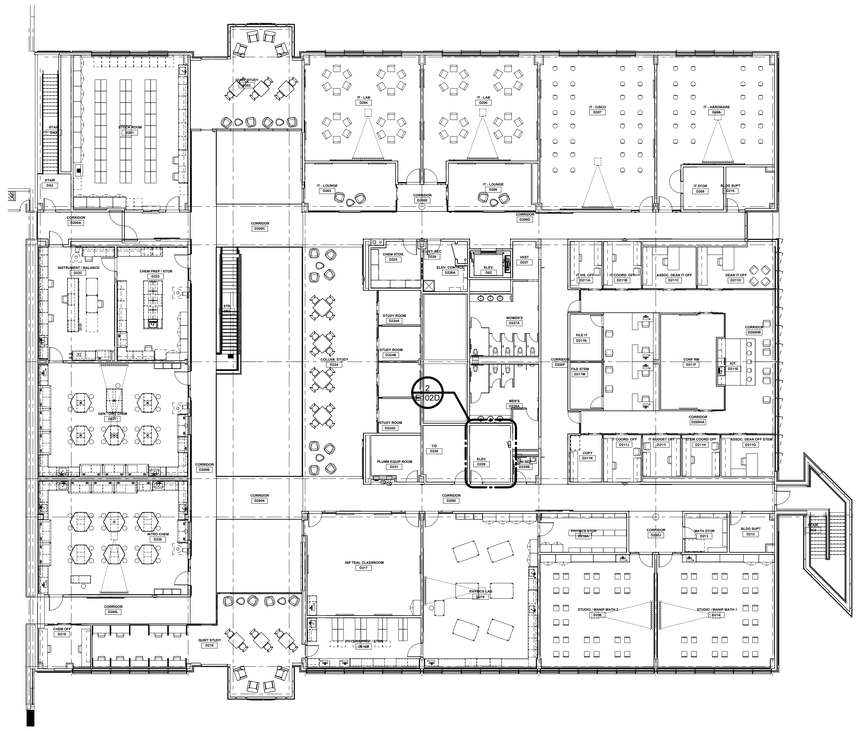


SECOND FLOOR POWER PLAN - BUILDING D - ELECTRICAL ROOM

2 / E102D

1/2" = 1'-0"

0 1' 2' 3' 4'



SECOND FLOOR POWER PLAN - BUILDING D

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'

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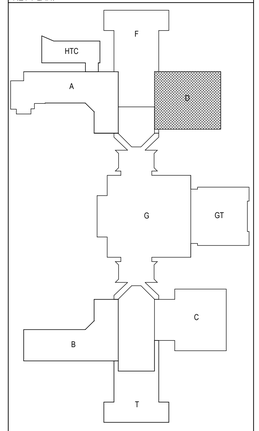
NOTES:

BUILDING 'D' REFERENCE NOTE

ALL EQUIPMENT IN BUILDING 'D' SHOWN FOR REFERENCE ONLY - NOT INCLUDED IN CURRENT PREVENTATIVE MAINTENANCE SCOPE.

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

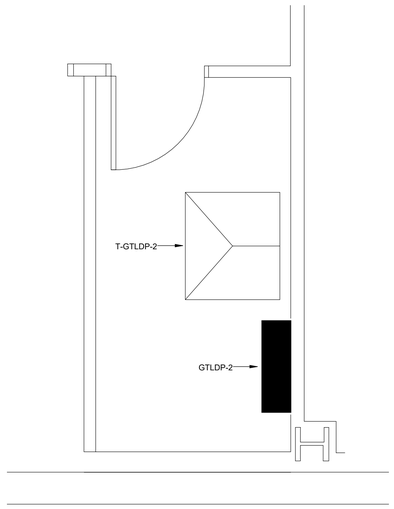
SCALE: As indicated

SHEET TITLE

SECOND FLOOR POWER PLAN - BUILDING D

SHEET NUMBER

E102D

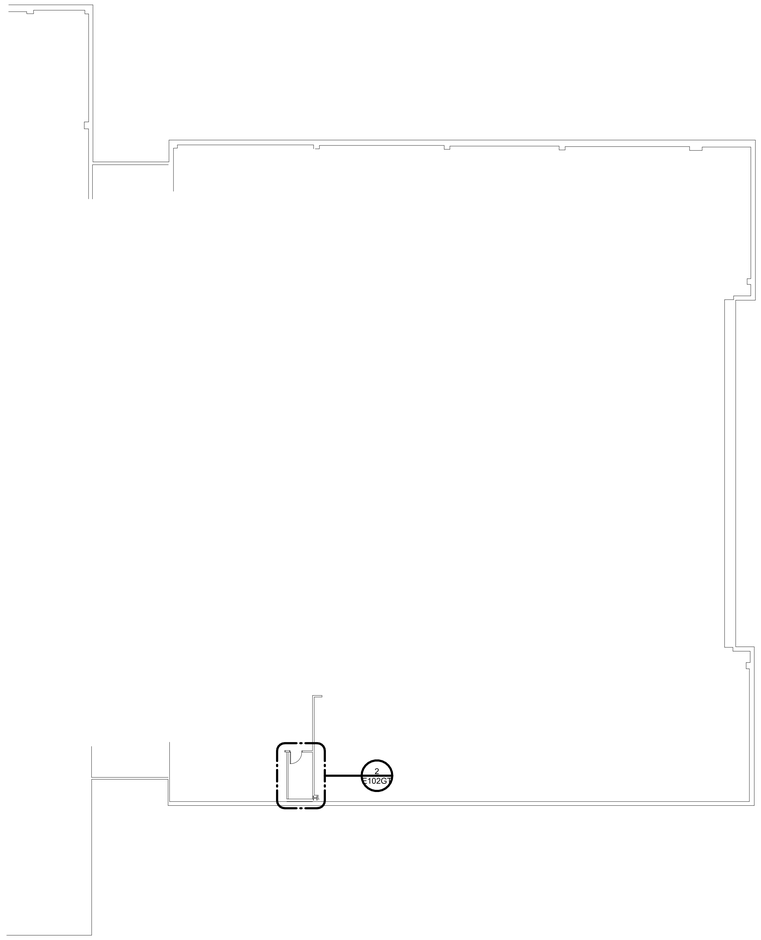


SECOND FLOOR POWER PLAN - BUILDING GT - ELECTRICAL ROOM GT218

2 E102GT

1/2" = 1'-0"

0 1' 2' 3' 4'



SECOND FLOOR POWER PLAN - BUILDING GT

1/16" = 1'-0"

0 2' 4' 6' 8' 12' 16'

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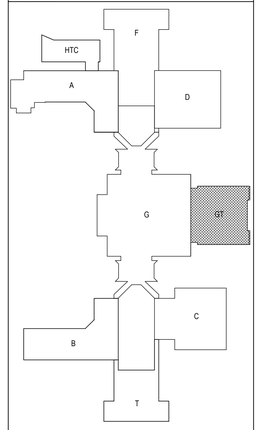
Cuyahoga Community College

NOTES:

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027

DRAWN BY: IP

APPROVED BY: DW

DATE: 04/02/2024

SCALE: As indicated

SHEET TITLE

SECOND FLOOR POWER PLAN - BUILDING GT

SHEET NUMBER

E102GT

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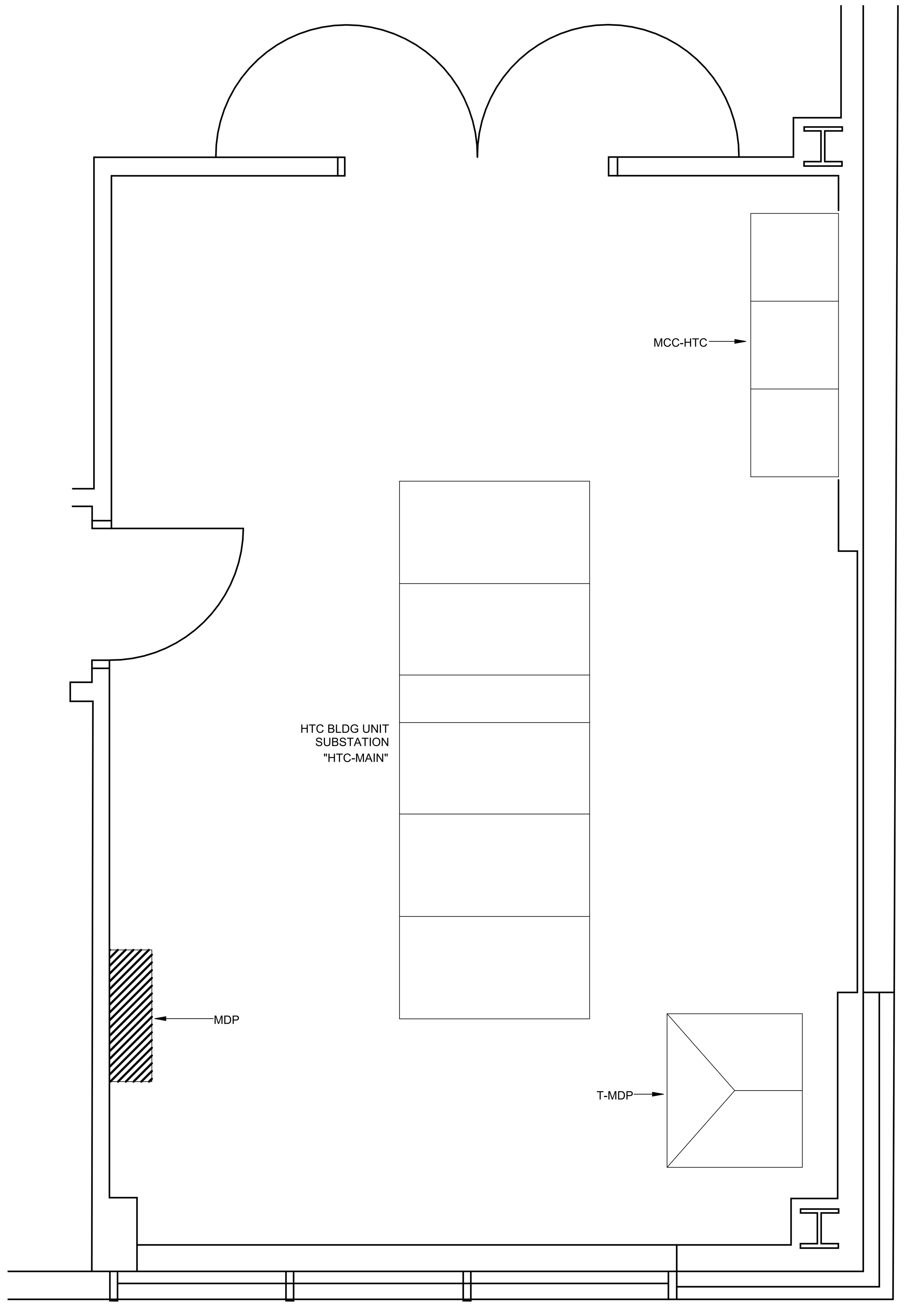
NOTES:

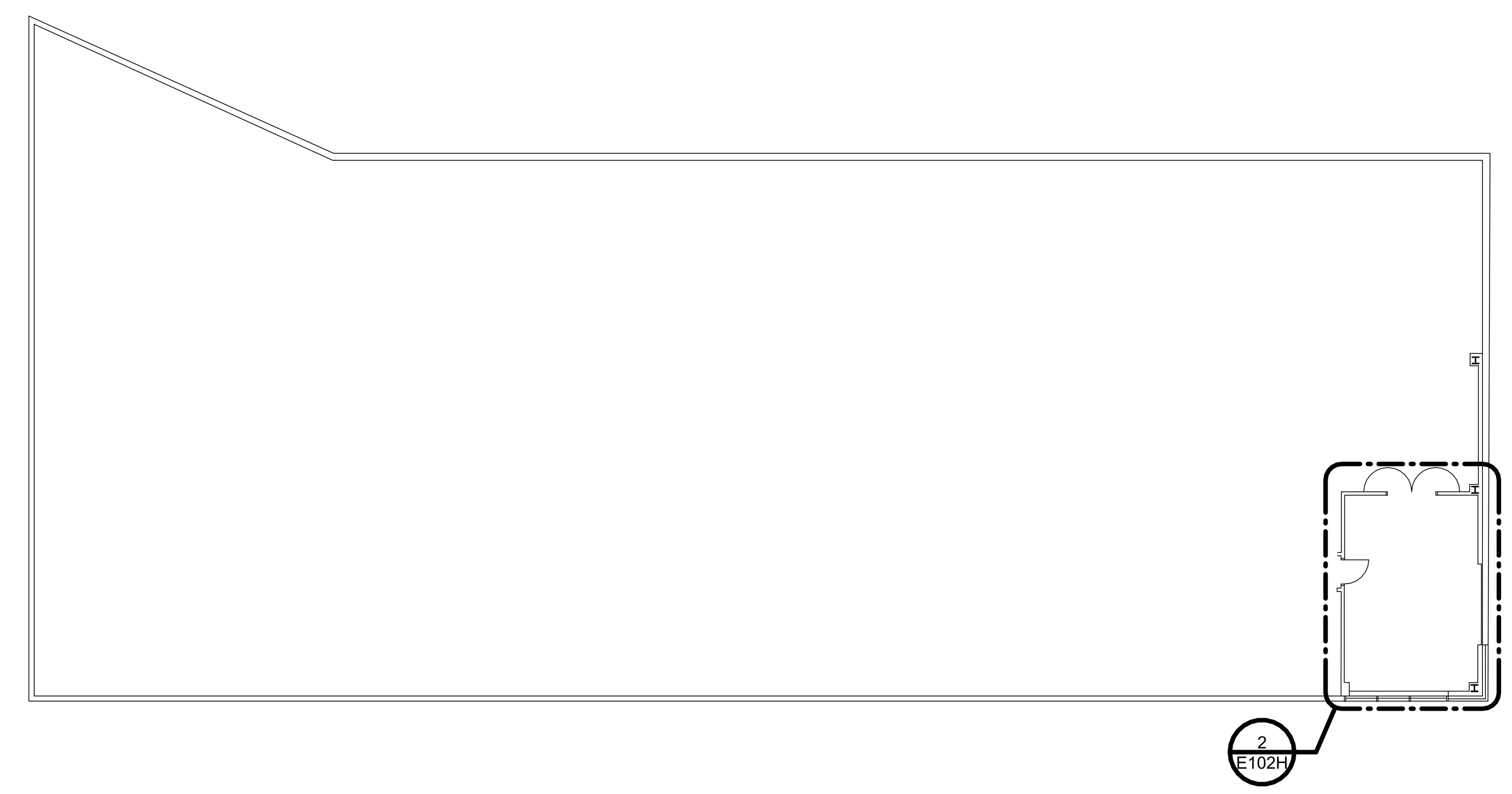
PROGRAM REFERENCE NOTE

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS.



SECOND FLOOR POWER PLAN - HTC BUILDING - UNIT SUBSTATION ROOM 2 E102H

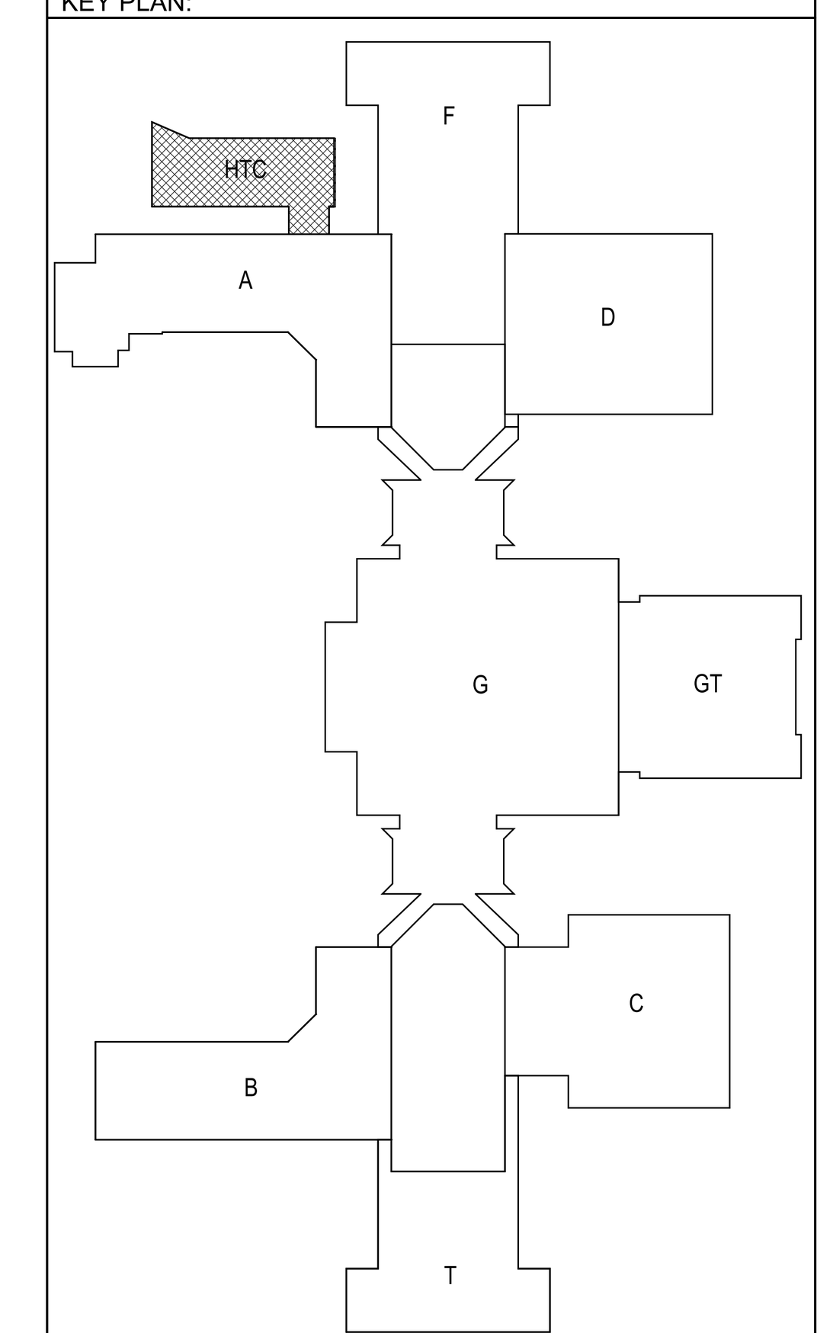
1/2" = 1'-0"



SECOND FLOOR POWER PLAN - HTC BUILDING

1/16" = 1'-0"

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

**CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130**

REV. NO.	DESCRIPTION	DATE

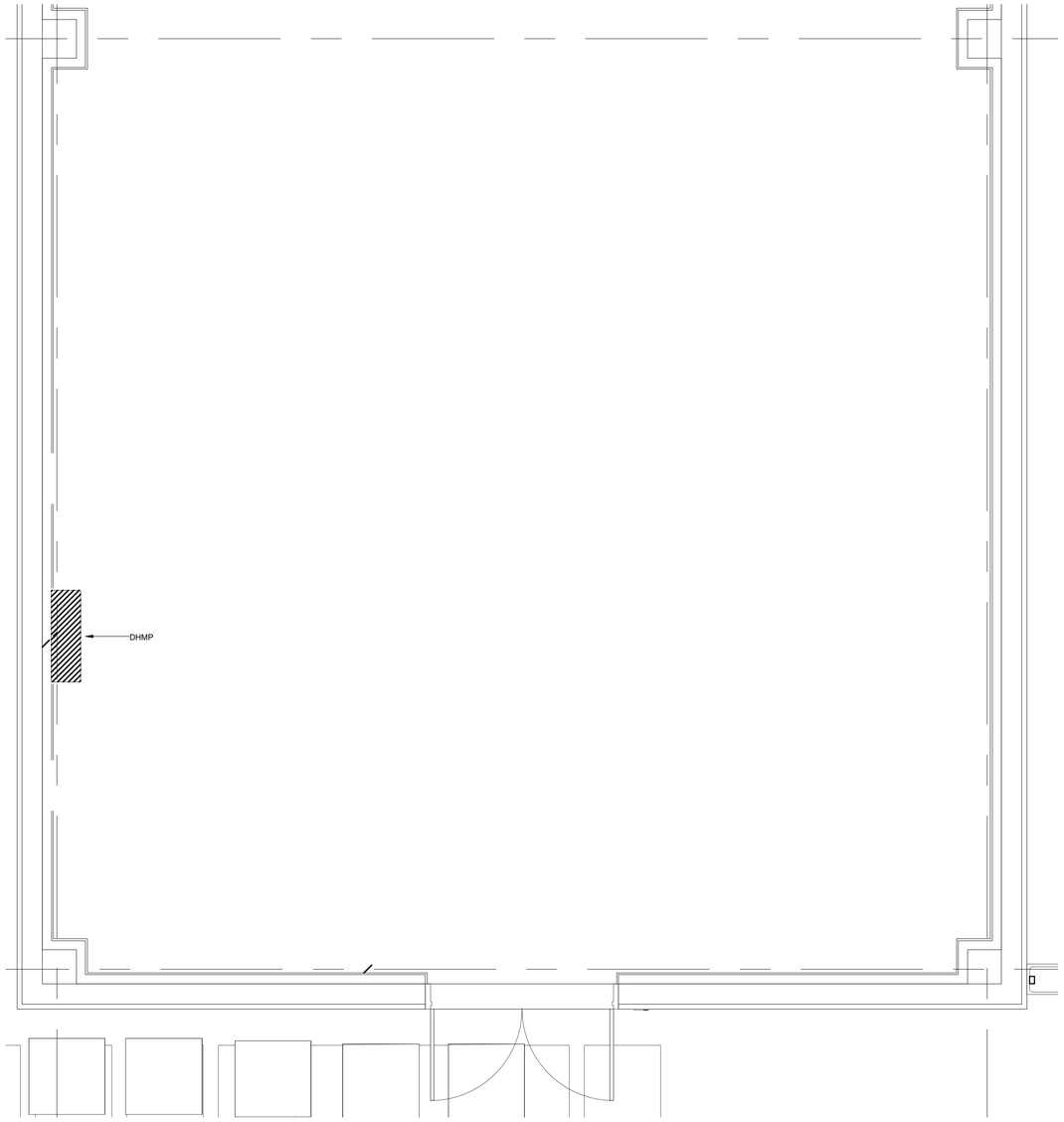
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: As indicated

SHEET TITLE

SECOND FLOOR POWER PLAN - HTC BUILDING

SHEET NUMBER

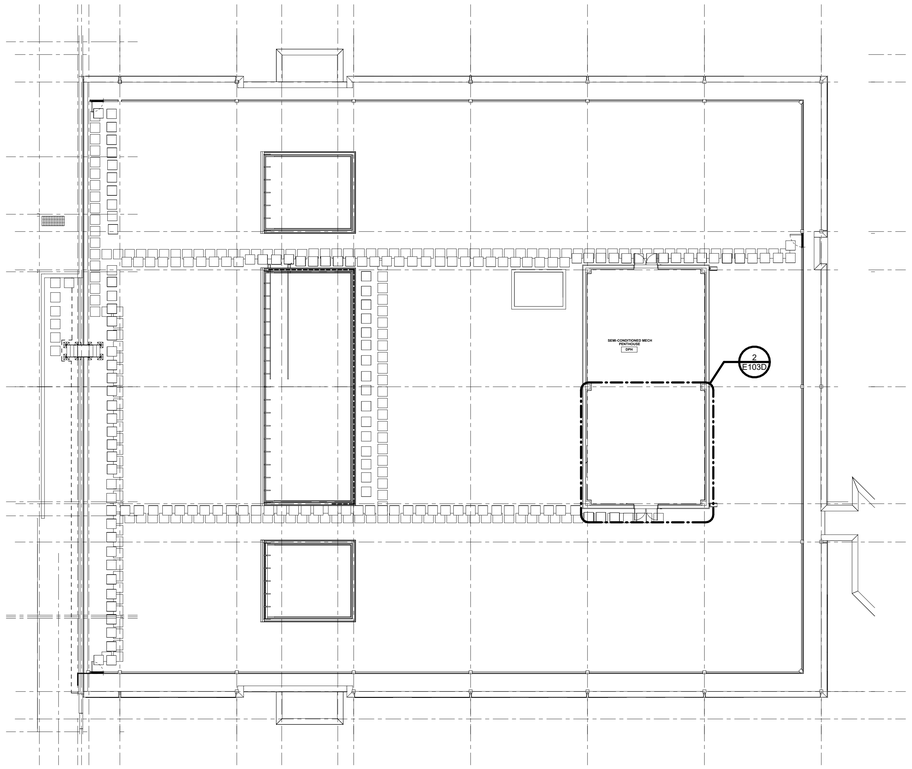
E102H



THIRD FLOOR POWER PLAN - BUILDING D - ELECTRICAL ROOM (2 / E103D)

1/2" = 1'-0"

0 1' 2' 3' 4'



THIRD FLOOR POWER PLAN - BUILDING D

1/16" = 1'-0"

0 4' 8' 12' 16' 24' 32'

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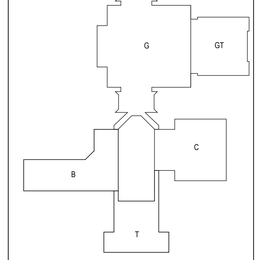
Cuyahoga Community College

NOTES:

BUILDING 'D' REFERENCE NOTE

ALL EQUIPMENT IN BUILDING 'D' SHOWN FOR REFERENCE ONLY - NOT INCLUDED IN CURRENT PREVENTATIVE MAINTENANCE SCOPE.

KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

SCALE: As indicated

SHEET TITLE
THIRD FLOOR POWER PLAN - BUILDING D

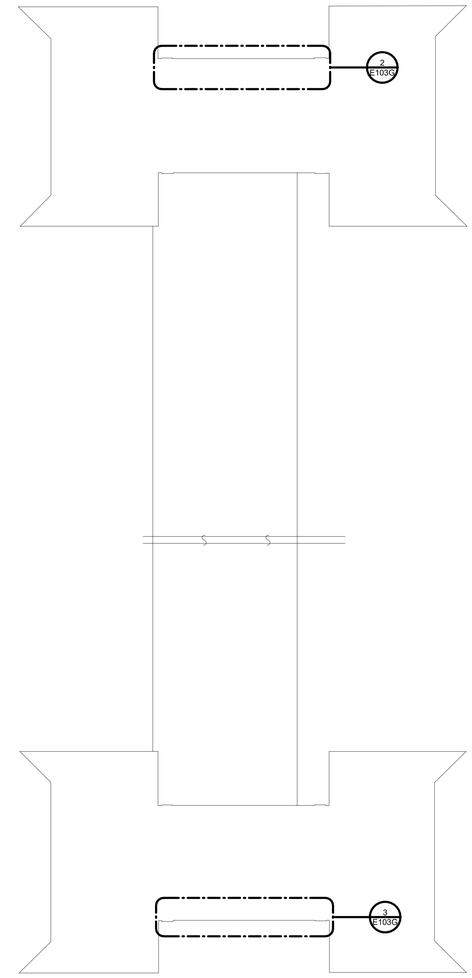
SHEET NUMBER
E103D

THIRD FLOOR POWER PLAN - BUILDING GW PENTHOUSES - NORTH

1/2" = 1'-0"

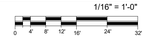
THIRD FLOOR POWER PLAN - BUILDING GW PENTHOUSES - SOUTH

1/2" = 1'-0"



THIRD FLOOR POWER PLAN - BUILDING GW PENTHOUSES

1/16" = 1'-0"



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NOTES:

PROGRAM REFERENCE NOTE

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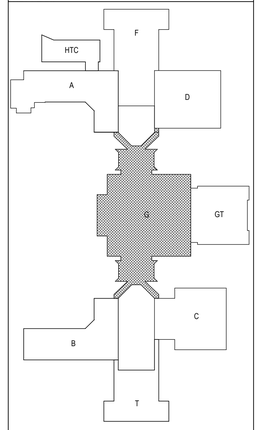
KEY PLAN:



PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

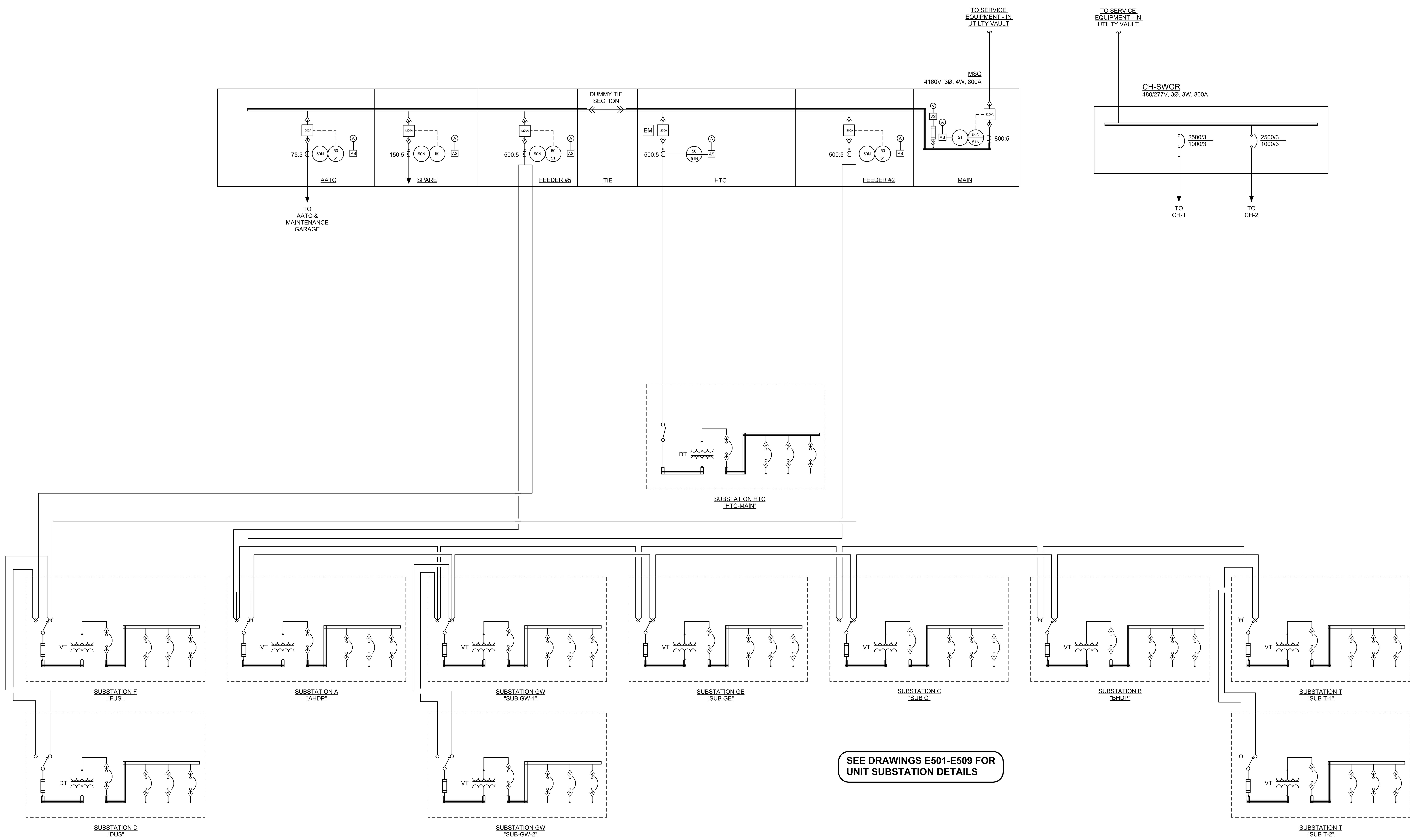
SCALE: As indicated

SHEET TITLE

THIRD FLOOR POWER PLAN - BUILDING G PENTHOUSES

SHEET NUMBER

E103G



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Cleveland, OH 44115
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Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS. MAIN ELECTRICAL EQUIPMENT SHOWN ON FLOOR PLANS AND ONE LINE DIAGRAMS ARE INTENDED TO BE SERVICED AS PART OF THE PM PROGRAM.

ONE LINE FIELD VERIFICATION NOTE

AN ATTEMPT HAS BEEN MADE TO DOCUMENT FIELD CONDITIONS AND COORDINATE WITH EXISTING DOCUMENTS. CONTRACTOR SHALL MARK UP ONE LINE DIAGRAMS WITH UPDATED INFORMATION (ACTUAL QUANTITY OF DEVICES, RATINGS, ETC.) AS CONFIRMED IN FIELD AND TURN OVER TO CCC UPON PROJECT COMPLETION. ENGINEER TO PROVIDE CCC WITH UPDATED ELECTRONIC ONE LINE DIAGRAMS.

VT = G.E. VAPOR-TRAN TRANSFORMER

DT = DRY TYPE TRANSFORMER

KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

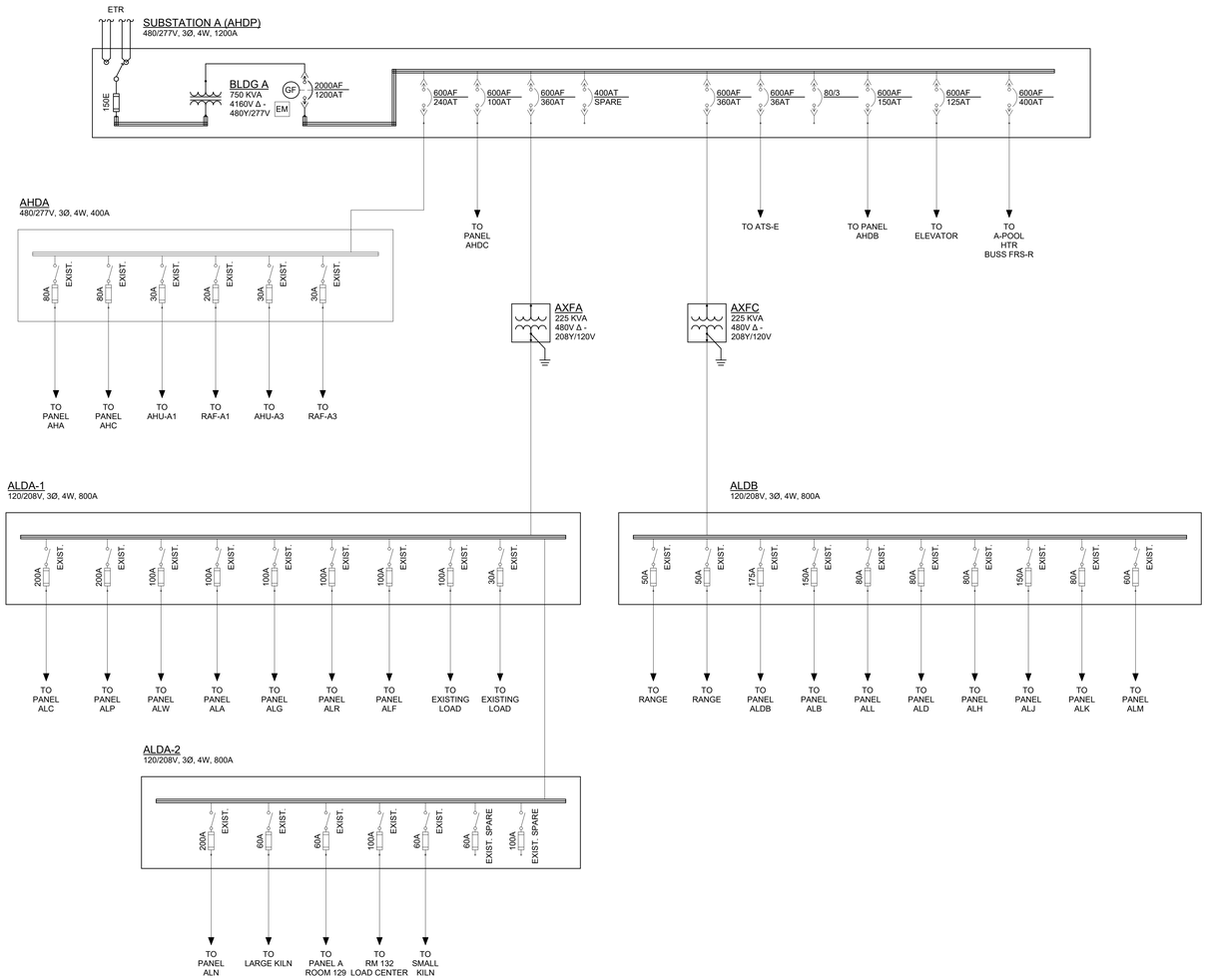
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: 1/8" = 1'-0"

SHEET TITLE

EXISTING ONE LINE DIAGRAM - MAIN DISTRIBUTION & CH-SWGR

SHEET NUMBER

E500



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Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

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ONE LINE FIELD VERIFICATION NOTE

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KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

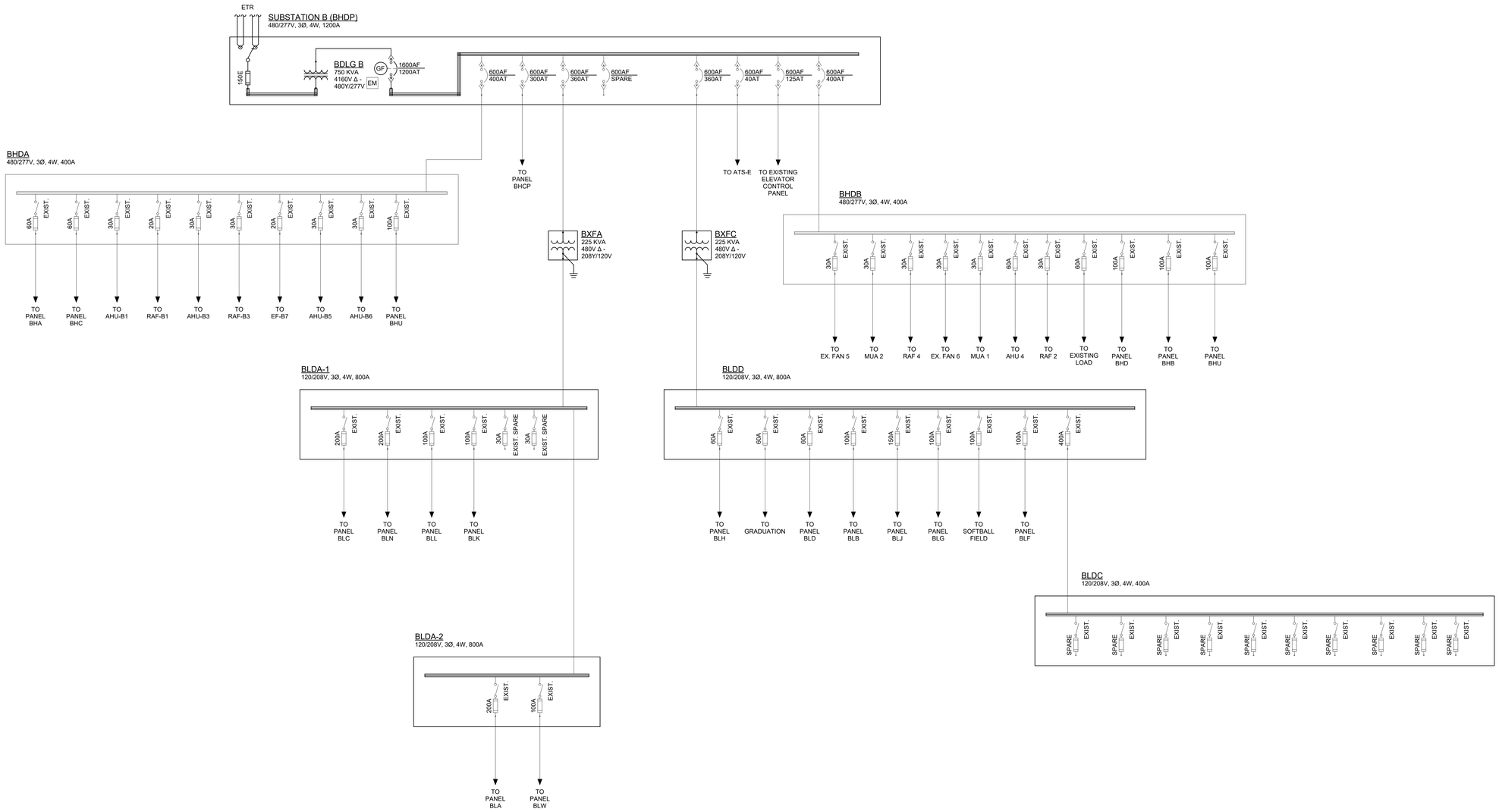
SCALE: 1/8" = 1'-0"

SHEET TITLE

EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION A

SHEET NUMBER

E501



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Cleveland, OH 44115
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Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

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ONE LINE FIELD VERIFICATION NOTE

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KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024

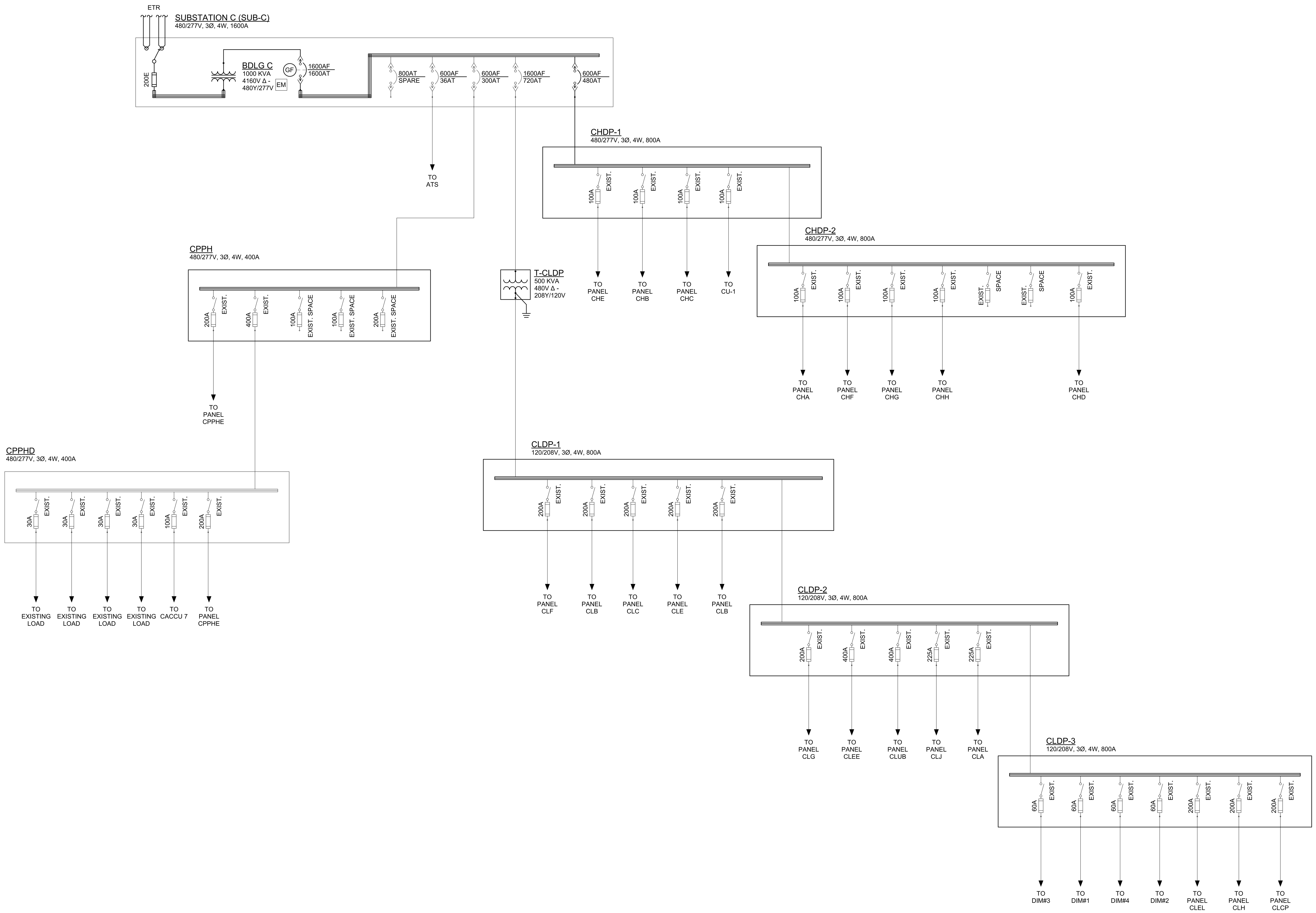
SCALE: 1/8" = 1'-0"

SHEET TITLE

EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION B

SHEET NUMBER

E502



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Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

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KEY PLAN:

PROJECT NAME
WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

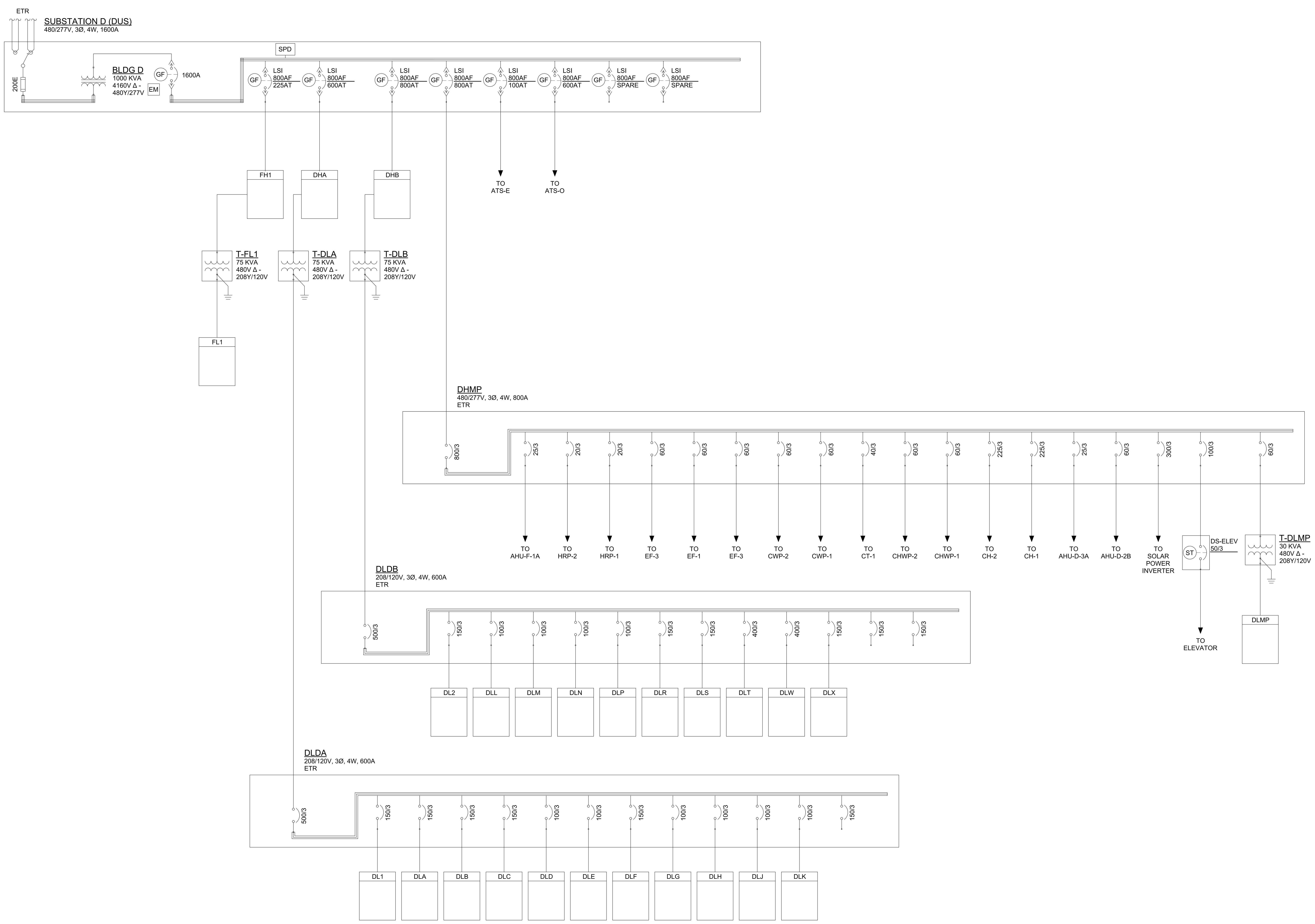
CLIENT NAME
CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: 1/8" = 1'-0"

SHEET TITLE
EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION C

SHEET NUMBER
E503



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Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

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BUILDING 'D' REFERENCE NOTE

ALL EQUIPMENT IN BUILDING 'D', AND UNIT SUBSTATION "DUS" IN BUILDING F SHOWN FOR REFERENCE ONLY - NOT INCLUDED IN CURRENT PREVENTATIVE MAINTENANCE SCOPE.

KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

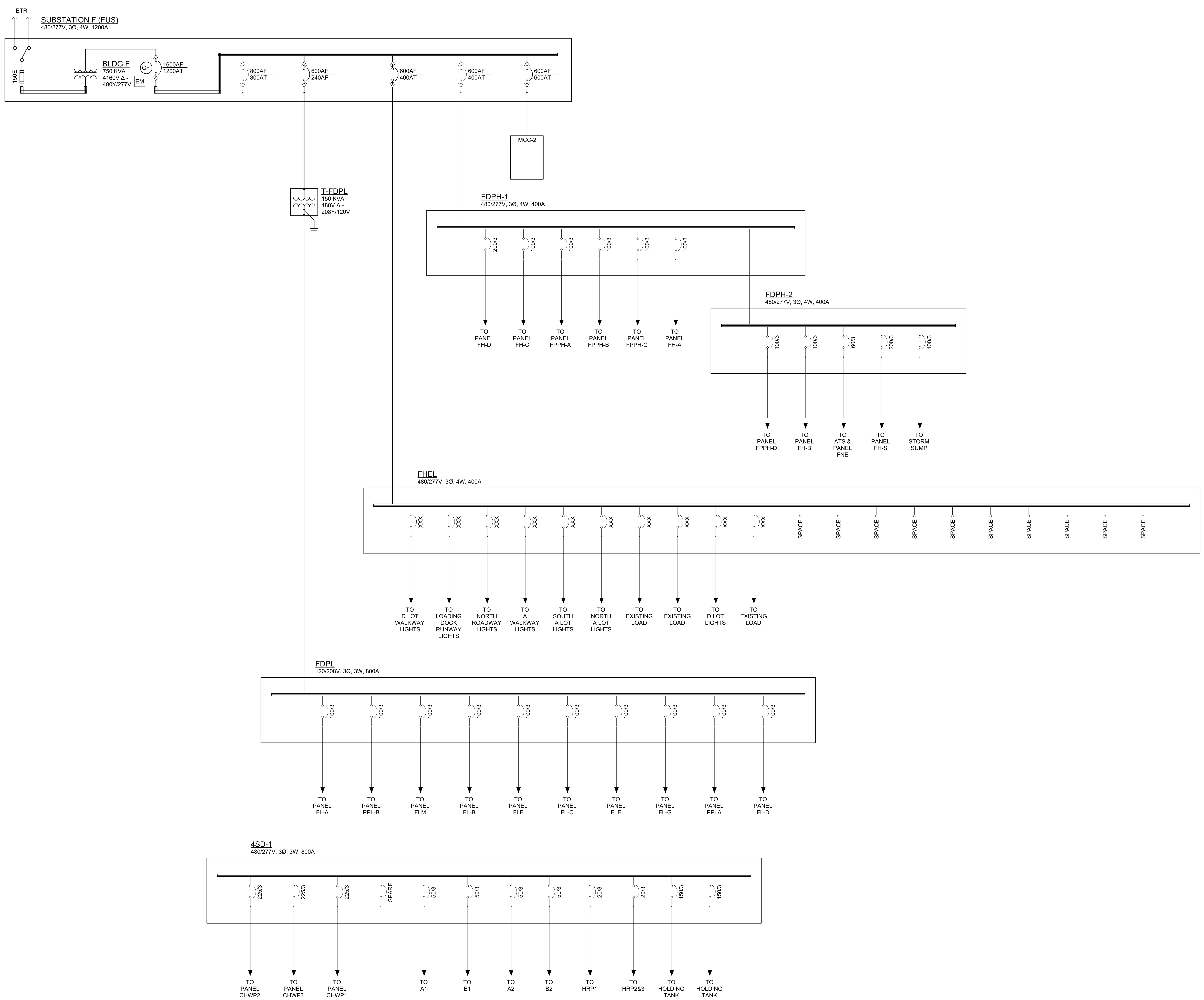
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: 1/8" = 1'-0"

SHEET TITLE

EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION D

SHEET NUMBER

E504



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Cleveland, OH 44115
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Cuyahoga Community College

NOTES:

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ONE LINE FIELD VERIFICATION NOTE

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KEY PLAN:

PROJECT NAME
WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

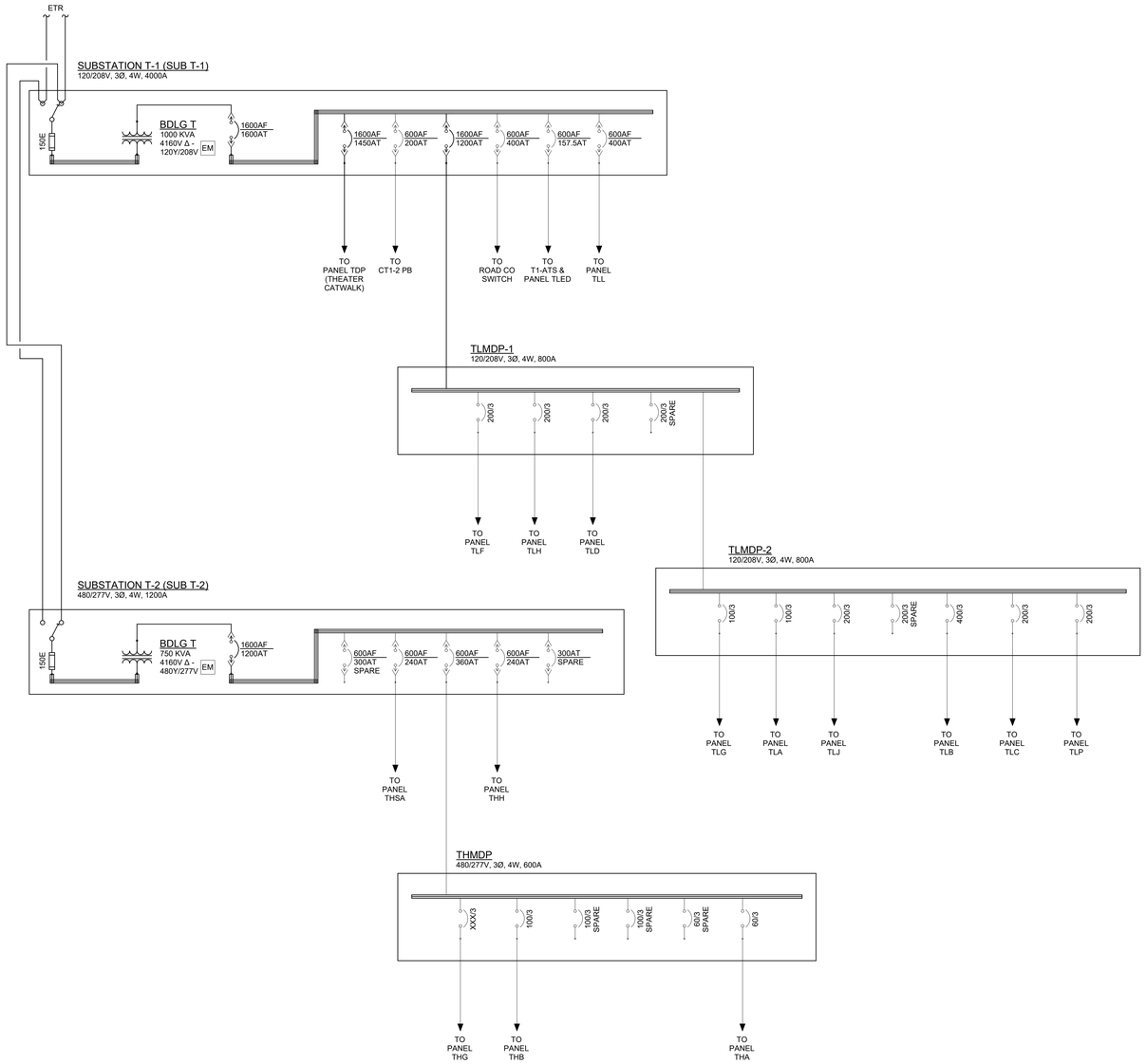
CLIENT NAME
CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS 11000 PLEASANT VALLEY ROAD PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: 1/8" = 1'-0"

SHEET TITLE
EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION F

SHEET NUMBER
E505



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NOTES:

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KEY PLAN:

PROJECT NAME

WESTERN CAMPUS PREVENTATIVE MAINTENANCE OF MAIN ELECTRICAL EQUIPMENT

CLIENT NAME

CUYAHOGA COMMUNITY COLLEGE - WESTERN CAMPUS
11000 PLEASANT VALLEY ROAD
PARMA, OH 44130

REV. NO.	DESCRIPTION	DATE

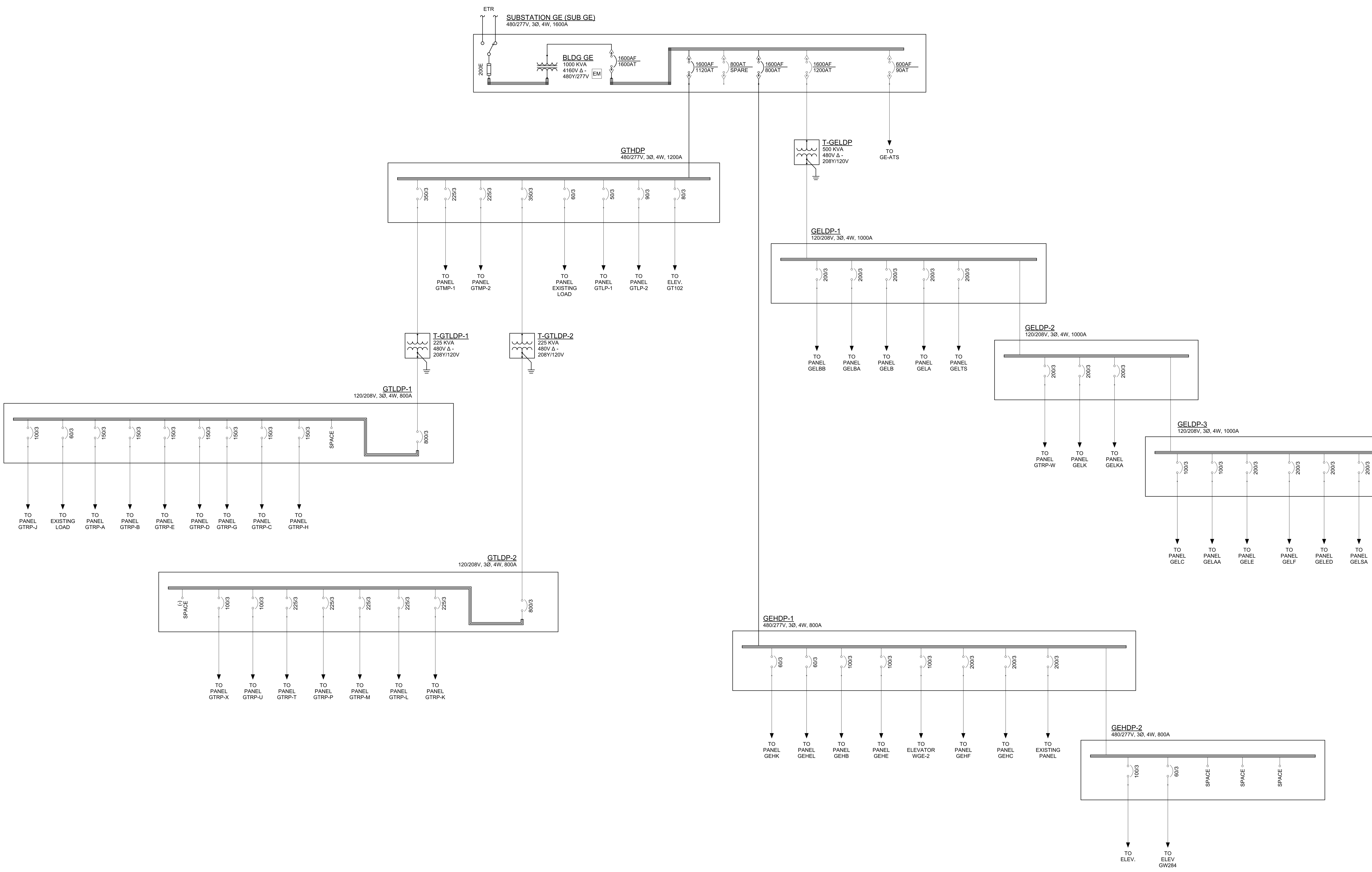
PROJECT NO: 2024-0027
DRAWN BY: IP
APPROVED BY: DW
DATE: 04/02/2024
SCALE: 1/8" = 1'-0"

SHEET TITLE

EXISTING ONE LINE DIAGRAM - UNIT SUBSTATION T

SHEET NUMBER

E506



Karpinski ENGINEERING
3135 Euclid Ave.
Cleveland, OH 44115
216-391-3700 | karpinskieng.com

Cuyahoga Community College

NOTES:

REFERENCE NOTE - ONE LINE DIAGRAMS

CONTRACTOR SHALL REFER TO PREVENTATIVE MAINTENANCE PROGRAM INCLUDED IN THE RFP FOR DETAILED PROGRAM REQUIREMENTS AND EXPECTATIONS. MAIN ELECTRICAL EQUIPMENT SHOWN ON FLOOR PLANS AND ONE LINE DIAGRAMS ARE INTENDED TO BE SERVICED AS PART OF THE PM PROGRAM.

ONE LINE FIELD VERIFICATION NOTE

AN ATTEMPT HAS BEEN MADE TO DOCUMENT FIELD CONDITIONS AND COORDINATE WITH EXISTING DOCUMENTS. CONTRACTOR SHALL MARK UP ONE LINE DIAGRAMS WITH UPDATED INFORMATION (ACTUAL QUANTITY OF DEVICES, RATINGS, ETC.) AS CONFIRMED IN FIELD AND TURN OVER TO CCC UPON PROJECT COMPLETION. ENGINEER TO PROVIDE CCC WITH UPDATED ELECTRONIC ONE LINE DIAGRAMS.

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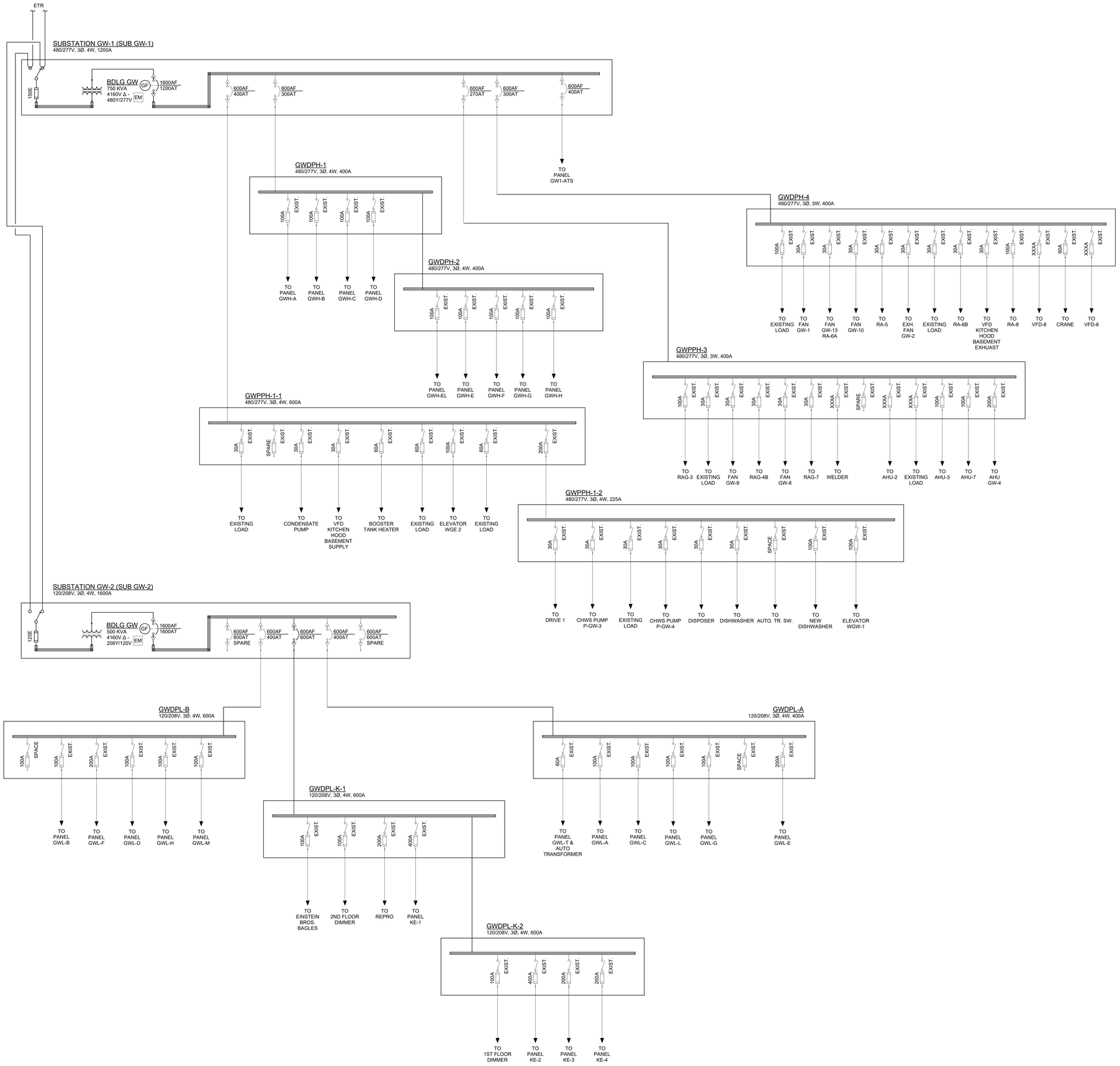

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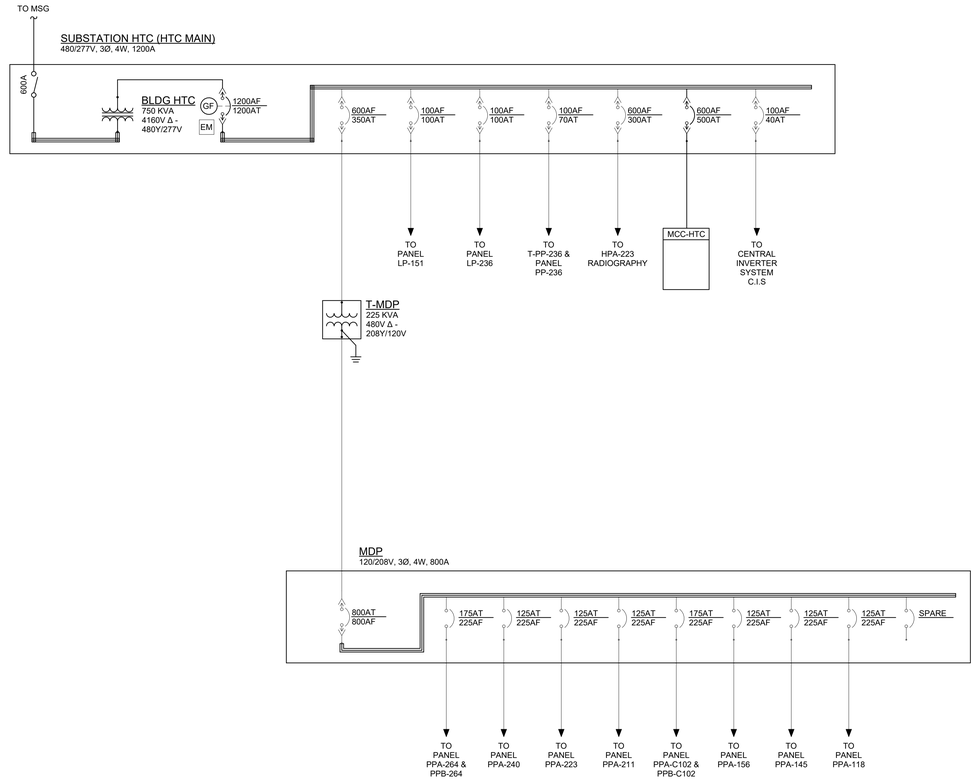

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