

ADDENDUM NO. 1

City of Spring Valley, MN
Wastewater Treatment Facility Improvements
Bid Date: October 27, 2026
Bid Time: 2:00 PM
BMI Project No. 0M2.131536

This addendum forms a part of the Contract Documents and modifies the original Specifications and Drawings. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject Bidder to disqualification.

For clarity, some Addendum items call for the complete replacement of a Plan Sheet or Specification section.

The following items shall become part of the original Bidding Documents:

I SPECIFICATIONS

Item I.1.1 Section 09 91 00 – Wastewater Treatment Facility Painting

- a. Paragraph 3.8 A. 9. (Schedules): Replace 'Seal exterior brick (System N)' with 'Paint new and existing block (System K)'.

Item I.1.2 Section 23 81 26 –Split System Air Conditioners

- a. Add Paragraph 2.1 A. 7. Samsung.

Item I.1.3 Section 23 82 16 – Electric Heating

- a. Add attached Section 23 82 16 – Electric Heating, dated 10/12/2026.

Item I.1.4 Section 26 24 11 – Electrical Service

- a. Replace Paragraph 2.2 CURRENT TRANSFORMER ENCLOSURE with:
 - 2.2 SERVICE SECONDARY CONNECTION AND METERING CABINET
 - A. NEMA 3R enclosure, front and rear doors which have continuous hinges and 3-point latching mechanisms with provisions for padlocking.
 - B. 12-gauge galvanized steel construction. Green enamel finish which matches the transformer.
 - C. Flanged bottom opening for pad mounting and conductor access.
 - D. Galvanized steel channels for mounting current transformers, mounted as required by the Power Company.
 - E. End panel opposite the transformer shall have backing angles or stiffeners to support the Power Company's meter socket.
 - F. Dimensions shall be as required by the Power Company and/or cable bending radius limitations per the NFPA 70.
 - G. Conduits and conductors as required by the Power Company, to be provided between the transformer and the connection cabinet.
- b. Remove Paragraph 2.3 VOLTAGE TRANSFORMER ECNLOSURE.
- c. Revise Paragraph 3.4 B. 5. to read as follows:
 - 5. Secondary connection cabinet, conduits and conductors between transformer and connection cabinet.

Item I.1.5 Section 26 32 13 – Engine Generators

a. Add Paragraph 1.4 E. 4. to read as follows:

4. The following loads shall be started and operated in the order mentioned below:

- a. Step 1:
 - i. LP-1-1 loads
 - ii. LP-2-1 loads
 - iii. LP-3-1 loads
 - iv. LP-4-1 loads
 - v. LP-5-1 loads
 - vi. MAU-1 & MAU-2
 - vii. Pretreatment building electrical room heating
 - viii. Disinfection building heating loads
 - ix. Blower building heating loads
 - x. Admin building condensing unit
 - xi. Electrical building heating load
- b. Step 2:
 - i. Raw Water Pump No.1
 - ii. Raw Water Pump No.4
 - iii. Bar Screen
 - iv. Grit Collector
- c. Step 3:
 - i. Raw Water Pump No.2
 - ii. Raw Water Pump No.5
- d. Step 4:
 - i. Blower No.1
 - ii. RAS Pump No.1
- e. Step 5:
 - i. Blower No.2
 - ii. RAS Pump No.3
- f. Step 6:
 - i. Blower No.4
 - ii. Clarifier No.1
- g. Step 7:
 - i. Blower No.5
 - ii. Clarifier No.2
- h. Step 8:
 - i. Jet Mix Pump No.1
 - ii. Jet Mix Pump No.2
- i. Step 9:
 - i. Jet Mix Pump No.3
 - ii. Jet Mix Pump No.4
- j. Step 10:
 - i. Mix Liquor Pump No.1
- k. Step 11:
 - i. Re-Aeration Blower
 - ii. Utility Water Pump No.1

Item I.1.6 Section 26 90 02 – Wastewater Treatment Control System

- a. Revise Paragraph 1.12.A ANOXIS BASIN JET MIX PUMP CONTROL DESCRIPTION to describe Six (6) jet mix pumps control.
- b. Revise Paragraph 1.25 L. 1. to refer to FE-08 instead of FE-10.
- c. Add Paragraph 1.27 E. and 1.27 F. as follows:
 - E. Sulfur Valve Emergency Shut-off system:
 1. Each cylinder is to be provided with a solenoid to shut the cylinder valve upon a chemical leak. When a chemical leak alarm is generated by the gas detection system, the valve system shall close all valves and signal an alarm to the SCADA system.
 2. Emergency pushbuttons are to be provided with the cylinder shut off system. Upon activation of any pushbutton, the cylinders valves shall close, and an alarm shall be indicated on the SCADA system.
 3. A fire suppression flow and tamper switch signal shall also activate the cylinder shut off system.
 - F. Exhaust Fan:
 1. The sulfur room exhaust fan shall be turned on using dedicated switches.
 2. When the door is opened in the room, the exhaust fan shall be required to operate. When required to operate, a timer shall be provided to set the minimum run time the equipment shall operate when the required signal is initiated. This timer is only applicable for door contact, so that fan runs for a timed period after the door is closed.
 3. A green pilot light at the outdoor station shall illuminate when exhaust fan is in operation.
 4. A red pilot light at the outdoor station shall illuminate if sulfur is detected by the gas detector. This shall be via dry contact at the gas detector.
- d. Rename Paragraph 2.22 CONTROL PANEL MANAGED ETHERNET SWITCH to SCADA MANAGED ETHERNET SWITCH.
- e. Revise Paragraph 2.24 A. Network Rack to read as follows:
 1. EIA-standard 19" enclosure to field mount network equipment. Minimum 24 rack units of usable 19-inch mounting space.
 2. After all equipment, patch panels, cable managers, shelves, power distribution, and UPS are installed, not less than eight (8) rack units shall remain unoccupied and available for future equipment, fitted with blanking panels.
 3. Usable equipment mounting depth shall be not less than 20 inches, and in no case less than the depth of the deepest device to be installed plus 4 inches for patch cord bend radius and strain relief. Contractor shall verify device depths against the selected enclosure before ordering.
 4. Heavy duty steel with black powder-coated finish.
 5. Maximum load capacity of not less than 200 lbs. Contractor shall verify that the total installed equipment weight does not exceed the rated capacity of the enclosure or of the wall mounting.
 6. Hinged, lockable front door with vented or clear acrylic panel. Removable or hinged side panels. Locks keyed alike with other control panels furnished under this Contract.
 7. Vented top and bottom panels and a thermostatically controlled fan kit sized for the total installed heat load.

8. Brush-guarded cable entry ports or removable knockouts at both top and bottom of the enclosure.
9. Ground studs on front and back door frames.
10. Ground kit.
11. Manufacturer:
 - a. Eaton Tripp-Lite SmartRack Series,
 - b. Or equal.
12. Contractor is responsible for verification of compatibility for all rack accessories with vendor.
- f. Revise Paragraph 2.23 E. Approved Manufacturer to read as follows:
 1. Allen Bradley Stratix 5950 Security Appliance
 2. WatchGuard
 3. Or Equal.
- g. Revise Paragraph 2.24 E. 2. to read as follows:
 2. Number of ports – as required.
- h. Revise Paragraph 2.24 F. 1. to read as follows:
 1. Pre-assembled end connections. Connector type shall be per Owner's standard.
- i. Revise Paragraph 2.25 B. 1. to read as follows:
 1. Break room, office and operations rooms to be covered with Wi-Fi Signal.
- j. Add paragraph 2.27 as follows:

2.27 SCADA HMI SOFTWARE

 - A. Approved Manufacturer:
 1. Aveva (Wonderware) InTouch
 2. VTScada
 3. Rockwell FactoryTalk
 - B. SCADA PC is to be provided with SCADA HMI software. Software is to be provided with a runtime license.
 - C. Provide alarm notifying software to communicate alarm notifications via phone calls, emails and text message to Owner's wireless or cellular devices.
- k. Add Paragraph 2.28 as follows:

2.28 CELLULAR ALARM DIALER

 - A. Alarm Dialer to be mounted in the supervisory control panel.
 - B. Communication Method: 4G/LTE Cellular Modem for use on Verizon and AT&T
 - C. Solid-state, microprocessor-based unit with digital voice storage.
 - D. Monitor 12 dry alarm contacts.
 - E. Ethernet communication.
 - F. Field-recorded, electronically stored voice message.
 - G. Eight-hour rechargeable battery backup.
 - H. The system shall send alarm notification messages via email, text message and/or voice telephone call.
 - I. Alarm messages will be delivered in English. Alarm messages sent via telephone shall be delivered in digitized human voice using text-to-speech technology.

- J. The system will continue to call telephone numbers and send text and email messages in succession until a positive acknowledgment of the alarm message is received. Acknowledgment is accomplished by entering a numeric code from the called telephone, or by replying to a text or email message, or by logging-in to the website or App and requesting acknowledgement. The alarm may also be acknowledged by pressing the 'Acknowledge' button on the Sentinel device itself.
 - K. The system will call each programmed telephone number up to 4 times. Once the alarm is acknowledged the system shall halt the dialing process. The system shall allow for an unlimited number of users with an unlimited number of contact methods per user. The system shall allow for tiered alarm delivery schedules so that a time delay may be inserted between tiers.
 - L. Provide manufacturer antenna and antenna cabling between the unit and antenna. In areas of low cellular coverage provide manufacturer's high gain antenna.
 - M. If cellular dialer has issue with cellular connection, and high gain antenna is not provided, Contractor shall provide high gain antenna at no additional cost to owner.
 - N. Owner shall be given full access to the cloud based server website. Contractor shall assist Owner in setting up the account and access information.
 - O. Contractor shall fully setup and program the alarm dialer under the Owner's guidance.
 - P. Approved Manufacturer
 - 1. Sensaphone Sentinel
 - 2. Or approved equal
 - I. Add Paragraph 2.29 as follows:
- 2.29 INDUSTRIAL 900 MHZ ETHERNET RADIO
- A. Performance:
 - 1. Operate in the 902–928 MHz license-free ISM frequency band.
 - 2. Frequency Hopping Spread Spectrum (FHSS) technology.
 - 3. Support point-to-point and point-to-multipoint network topologies.
 - 4. Configurable RF output power up to 1 Watt.
 - 5. Minimum line-of-sight communication range of 10 miles with appropriate antennas.
 - 6. Minimum 128-bit AES encryption.
 - B. Communications:
 - 1. Minimum of one (1) 10/100 Mbps RJ45 Ethernet port.
 - 2. Support transparent Ethernet bridge communications.
 - 3. Compatible with Ethernet/IP, TCP/IP, UDP/IP, and Modbus TCP protocols without protocol conversion.
 - 4. Support local configuration and diagnostics through the Ethernet port.
 - C. Power:
 - 1. 10–30 VDC.
 - D. Environmental:
 - 1. Operating temperature: -40 to 158°F.
 - 2. Humidity (non-condensing): 5 to 95% RH.
 - E. Equipment:
 - 1. DIN rail mountable.

2. Provide antennas, surge protection, power supply, low-loss antenna cable, mounting hardware, weatherproof connectors, and all accessories required for a complete operating system.
- F. Licensing:
 1. Does not require Owner to hold or maintain recurring software licenses or subscription fees for normal operation of the radio system.
- G. Manufacturer/Model:
 1. GE Vernova MDS,
 2. Banner,
 3. ProSoft,
 4. Phoenix Contact,
 5. Or Equal.
- m. Add Paragraph 3.3 P. to 3.3 SCADA SYSTEM PROGRAMMING
 1. Add paragraph 3.3 P. to read as follows:
 - P. All Factory-default usernames, passwords, and network settings shall not remain in service. All devices shall be configured with project-specific credentials and network addressing prior to commissioning.
- n. Add Paragraph 3.6 F. to 3.6 SYSTEM COMMISSIONING & DEMONSTRATION
 1. Add paragraph 3.6 F. to read as follows:
 - F. Control System Integrator shall provide the Owner with a complete record of all configured usernames, passwords, IP addresses, communication settings, and other access credentials for all SCADA system devices, including PLCs, HMIs, network equipment, and other control devices. Documentation shall include all information required to access, configure, program, operate, and maintain the system and shall be provided prior to final acceptance.

Item I.1.7 Section 43 25 00 – Submersible Centrifugal Pumps (Allowance)

- a. Revise Paragraph 2.2 Pump Operation and Performance Requirements:
 1. Anoxic Basin Jet Mix Pumps (P-JM-1,2,3,4): 540 gpm at 17-ft TDH
 2. Aeration Basin Jet Mix Pumps (P-JM-5,6): 2520 gpm at 17-ft TDH

Item I.1.8 Section 46 41 21 – Jet Mixing/Aeration System

- a. Revise Paragraph 1.1 A. as follows:
 - A. The equipment furnished under this section shall be for submerged jet mixing. The Anoxic system shall be designed to uniformly mix the Anoxic Basin without use of the supplemental jet aeration nozzles. The Aeration Basin mixing system shall be designed to uniformly mix the Aeration Basins allowing the fine bubble diffused aeration system to operated as air flow rates below minimum mixing requirements. The Aeration mixing systems do not require an aeration header. All systems include the header(s), nozzles, flush-out systems, and all in-basin piping and supports. Motive liquid pumps are provided separately as indicated in Section 43 25 00 – Submersible Centrifugal Pumps. Jet Mixing supplier shall provide any requested modifications to the motive pump design requirements.
- b. Revise Paragraph 2.1 as follows.
 - A. Fluidyne
 - B. JetTech Products
 - C. Parkson
 - D. Kila Systems

II PLANS

Item II.1.1 Sheet 1.02 – Sheet Index

- a. Replace Sheet 1.02 Rev 0 9-29-26 with attached Sheet 1.02 Rev 1 10-09-26 that contains updated sheet titles for Sheets 2.01-2.33.
- b. Revise Sheet 7.25 from 'Electrical Plan – Main Lift Station' to 'Electrical Plan – Main Lift Station Details'.

Item II.1.2 Sheet 1.05 – Design Data

- a. Replace Sheet 1.05 Rev 0 9-29-26 with attached Sheet 1.05 Rev 1 10-09-26. The revised sheet reflects jet mix pump details for the Anoxic and Aeration Basins.

Item II.1.3 Sheet 1.08 – Standard Details

- a. Replace Sheet 1.08 Rev 0 9-29-26 with attached Sheet 1.08 Rev 1 10-09-26. The revised removes details 2/1.08-9/1.08. Refer to Civil Standard Details.

Item II.1.4 Sheet 6.23 – Mechanical Plan – Blower Building Upper Level

- a. Replace Sheet 6.23 Rev 0 09/29/2026 with attached Sheet 6.23 Rev 1 10/08/2026.
- b. Revised MAU-2 dimensions.
- c. Added keynote 8.

Item II.1.5 Sheet 6.33 – Mechanical Schedules

- a. Replace Sheet 6.33 Rev 0 09/29/2026 with attached Sheet 6.33 Rev 1 10/08/2026.
- b. Revised MAU-2 selection.
- c. Revised EF-8 selection.

Item II.1.6 Sheet 7.10 – Electrical Site Plan

- a. Replace Sheet 7.10 Rev 0 09/29/2026 with attached Sheet 7.10 Rev 1 10/08/2026.
- b. Revise keynote #1. Contractor to coordinate final location of the transformer with the utility, provide pad-mounted secondary connection cabinet, raceways, and secondary conductors between the utility transformer and secondary connection cabinet in accordance with utility requirements.
- c. Add secondary connection cabinet.
- d. Update generator physical size.

Item II.1.7 Sheet 7.11 – Lighting Plan – Administration Building

- a. Add (2) Exit signs to Operations Room 102.
- b. Revise (1) Exit sign to EX1 type in Break Room 103.

Item II.1.8 Sheet 7.12 – Power & Systems Plan – Administration Building

- a. Replace Sheet 7.12 Rev 0 09/29/2026 with attached Sheet 7.12 Rev 1 10/08/2026.
- b. Remove wire tag 'DATA-A'.
- c. Call data outlet out as SCADA Outlet.

Item II.1.9 Sheet 7.13 – Power & Systems Plan – Administration Building Garage

- a. Replace Sheet 7.13 Rev 0 09/29/2026 with attached Sheet 7.13 Rev 1 10/08/2026.
- b. Add wire tag 'EF-1-B'.
- c. Revise wire tag 'EF-1-A'.
- d. Relocate disconnect to garage wall.

Item II.1.10 Sheet 7.14 – Electrical Plan – Preliminary Treatment Building

- a. Replace Sheet 7.14 Rev 0 09/29/2026 with attached Sheet 7.14 Rev 1 10/08/2026.
- b. Revise disconnect for MSO-1 to be fused.
- c. Add exist sign type EX1 and remote head to main electrical room.

- Item II.1.11 Sheet 7.15 – Electrical Plan – Aeration Basin & Secondary Clarifier**
- a. Replace Sheet 7.15 Rev 0 09/29/2026 with attached Sheet 7.15 Rev 1 10/08/2026.
 - b. Add keynote #4.
 - c. Place keynote #4 on floor plan, at called out Unistrut locations.
- Item II.1.12 Sheet 7.17 – Electrical Plan – Disinfection Building**
- a. Replace Sheet 7.17 Rev 0 09/29/2026 with attached Sheet 7.17 Rev 1 10/08/2026.
 - b. Rename transducer tag and transmitter to XX-07.
 - c. Electrical Room 103 – Remove disconnect for the EUH-7, revise the wire tags.
 - d. Revise (2) Exit signs to EX1 type.
- Item II.1.13 Sheet 7.19 – Lighting Plan – Blower Building Upper Level**
- a. Replace Sheet 7.19 Rev 0 09/29/2026 with attached Sheet 7.19 Rev 1 10/08/2026.
 - b. Revise (2) Exit signs to EX1 type.
- Item II.1.14 Sheet 7.21 – Power & Systems Plan – Blower Building Upper Level**
- a. Replace Sheet 7.21 Rev 0 09/29/2026 with attached Sheet 7.21 Rev 1 10/08/2026.
 - b. Add keynote #4. Division 26 shall provide galvanized Unistrut support for equipment mounting. Coordinate exact mounting location in field.
 - c. Place keynote #4 on floor plan near Unistrut for each blower.
- Item II.1.15 Sheet 7.22 – Electrical Plans – New Electrical Building**
- a. Replace Sheet 7.22 Rev 0 09/29/2026 with attached Sheet 7.22 Rev 1 10/08/2026.
 - b. Rotate two light fixtures.
 - c. Revise (1) Exit sign to EX1 type.
- Item II.1.16 Sheet 7.23 – Electrical Plan - Clarifiers**
- a. Replace Sheet 7.23 Rev 0 09/29/2026 with attached Sheet 7.23 Rev 1 10/08/2026.
 - b. Revise keynote #1.
- Item II.1.17 Sheet 7.25 – Electrical Plan Main Lift Station Details**
- a. Replace Sheet 7.25 Rev 0 09/29/2026 with attached Sheet 7.25 Rev 1 10/08/2026.
 - b. Rename sheet name.
- Item II.1.18 Sheet 7.26 – Electrical Demolition One-Line Diagram**
- a. Replace Sheet 7.26 Rev 0 09/29/2026 with attached Sheet 7.26 Rev 1 10/08/2026.
 - b. Demo existing duct heater and circuit breaker.
 - c. Demo existing furnace and circuit breaker.
- Item II.1.19 Sheet 7.27 – Electrical Modified One-Line Diagram**
- a. Replace Sheet 7.27 Rev 0 09/29/2026 with attached Sheet 7.27 Rev 1 10/08/2026.
 - b. Revise transformer T-3-1 to 30KVA and circuit breaker to 45A.
- Item II.1.20 Sheet 7.28 – Electrical Modified One-Line Diagram**
- a. Replace Sheet 7.28 Rev 0 09/29/2026 with attached Sheet 7.28 Rev 1 10/08/2026.
 - b. Revise jet mix pump abbreviations.
 - c. Revise MAU-2 to 72KW.
 - d. Rename electrical unit heaters EUH-8, EUH-9.
- Item II.1.21 Sheet 7.31 – Electrical Details**
- a. Replace Sheet 7.31 Rev 0 09/29/2026 with attached Sheet 7.31 Rev 1 10/08/2026.
 - b. Add WP Duplex receptacle to detail #6.

Item II.1.22 Sheet 7.34 – Electrical Schedules

- a. Replace Sheet 7.34 Rev 0 09/29/2026 with attached Sheet 7.34 Rev 1 10/08/2026.
- b. Revise light fixture type Z1 in light fixture schedule.
- c. Revise light fixture type EX in light fixture schedule.
- d. Revise Equipment Connection Schedule
- e. Panelboard Schedule LP-1-1 – Revise Generator load center circuit breaker to 100A, 2Pole.

Item II.1.23 Sheet 7.35 – Electrical Schedules

- a. Replace Sheet 7.35 Rev 0 09/29/2026 with attached Sheet 7.35 Rev 1 10/08/2026.
- b. Revise Disinfection Building Panelboard Schedule C5 to L. SULFUR FEED ROOM, EF-6

Item II.1.24 Sheet 7.36 – Electrical Schedules

- a. Replace Sheet 7.36 Rev 0 09/29/2026 with attached Sheet 7.36 Rev 1 10/08/2026.
- b. Conduit and Wire Schedule - Revise the following wire tags: DP-2-1, EF-1-A, GEN-C, LP-1-1-A, LP-2-1-A, LP-3-1-A, LP-4-1-A, LP-5-1-A, MAIN-A, MAU-2-A, MCC-1-A, P-JM-D, P-JM-E.
- c. Added wire tag to schedule: EF-1-B

Item II.1.25 Sheet 7.37 – Electrical Schedules

- a. Replace Sheet 7.37 Rev 0 09/29/2026 with attached Sheet 7.37 Rev 1 10/08/2026.
- b. Conduit and Wire Schedule - Revise the following wire tags: PP-2-1-A, PWR-JB-A.

**** END OF ADDENDUM NO. 1 ****

Attachments:

- Section 23 82 16 – Electric Heating, dated 10/12/2026
- Sheet 1.02 Rev 1 10-09-26
- Sheet 1.05 Rev 1 10-09-26
- Sheet 1.08 Rev 1 10-09-26
- Sheet 6.23 Rev 1 10/08/2026
- Sheet 6.33 Rev 1 10/08/2026
- Sheet 7.10 Rev 1 10/08/2026
- Sheet 7.12 Rev 1 10/08/2026
- Sheet 7.13 Rev 1 10/08/2026
- Sheet 7.14 Rev 1 10/08/2026
- Sheet 7.15 Rev 1 10/08/2026
- Sheet 7.17 Rev 1 10/08/2026
- Sheet 7.19 Rev 1 10/08/2026
- Sheet 7.21 Rev 1 10/08/2026
- Sheet 7.22 Rev 1 10/08/2026
- Sheet 7.23 Rev 1 10/08/2026
- Sheet 7.25 Rev 1 10/08/2026
- Sheet 7.26 Rev 1 10/08/2026
- Sheet 7.27 Rev 1 10/08/2026
- Sheet 7.28 Rev 1 10/08/2026
- Sheet 7.31 Rev 1 10/08/2026
- Sheet 7.34 Rev 1 10/08/2026
- Sheet 7.35 Rev 1 10/08/2026
- Sheet 7.36 Rev 1 10/08/2026
- Sheet 7.37 Rev 1 10/08/2026

SECTION 23 82 16 – ELECTRIC HEATING

PART 1 -- GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Unit Heaters.
 - 2. Fan Forced Wall Heaters.
 - 3. Baseboard Heaters.

1.2 REFERENCES

- A. Air-Conditioning, Heating, & Refrigeration Institute:
 - 1. AHRI 840 – Standard for Unit Ventilators.
- B. Underwriter Laboratories Inc.:
 - 1. UL 1995 – Heating and Cooling Equipment.

1.3 SUBMITTALS

- A. Product Data: Submit coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions. Submit mechanical and electrical service locations, capacities and accessories or optional items.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and locations of access doors in radiation cabinets required for access to valves.
- B. Operation and Maintenance Data: Submit manufacturers descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.

1.5 QUALITY ASSURANCE

- A. Perform Work in compliance with all applicable codes and standards enforced by the Authority Having Jurisdiction, as well as all applicable laws, ordinances, and regulations.
- B. Fan Coil Units: Conform to AHRI 440 and UL 1995.
- C. Unit Ventilators: Conform to AHRI 440, AHRI 840, and UL 1995.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Accept units on site in factory packing. Inspect for damage. Store under roof.
- B. Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by storing indoors. Protect coils from entry of dirt and debris with pipe caps or plugs.

1.8 FIELD MEASUREMENTS

- A. Induction unit filler panels: Verify room dimensions prior to order and installation.
- B. Verify field measurements prior to fabrication.

PART 2 -- PRODUCTS

2.1 THERMOSTATS

- A. Thermostat for Non-Corrosive or Non-Hazardous Areas:
 - 1. Refer to Section 23 09 00.
- B. Thermostat for Corrosive, Hazardous, and/or Chemical Storage Areas:
 - 1. Line voltage rated.
 - 2. Heavy duty with SPDT switch rated 16.0 amp. at 120 VAC.
 - 3. 35 degrees F to 100 degrees F temperature range.
 - 4. NEMA 4X enclosure with clear front cover to view set point.
 - 5. Tin plated, externally mounted sensing element.
 - 6. Approved Manufacturer:
 - a. Honeywell T631F1068.
 - b. Approved equal.

2.2 UNIT HEATER – NON HAZARDOUS LOCATIONS

- A. Voltage, phase, and KW as indicated in the Contract Documents.
- B. Housing shall be heavy gauge, cold-rolled steel which is phosphatized and painted with a baked enamel finish. Adjustable louvers shall be provided to control the direction of air flow.
- C. Controls shall be in an isolated compartment with a hinged cover which provides full access for installation and servicing. All heater and control wiring shall terminate in the control compartment and a complete wiring diagram shall be attached to the inside of the access cover. Controls shall include the following:
 - 1. Heavy-duty, 3-pole contactor which provides quiet, efficient operation.
 - 2. Bimetallic, snap action fan delay relay which energizes the fan after the heating element reaches operating temperature and de-energizes the fan after the thermostat is satisfied and the heating element has cooled.
 - 3. Thermal cutout to de-energize the heating element if it overheats and resets when the temperature returns to normal.
 - 4. Remote thermostat.
- D. Heating element shall be finned, steel sheath, non-glowing, and shall be warranted for 5 years.
- E. Fan motor shall be totally enclosed with thermal protector and sealed bearings.
- F. UL listed.
- G. Nameplate shall provide data as required to comply with NFPA 70 – NEC.
- H. Approved Manufacturer:
 - 1. Berko.
 - 2. Markel/Raywall.
 - 3. Qmark.
 - 4. StelPro Heaters
 - 5. Indeeco UHP
 - 6. Pre-approved equal.

2.3 EXPLOSION PROOF UNIT HEATERS

- A. Voltage, phase, and KW as indicated in the Contract Documents.
- B. UL listed for Class I, Division 1, Group D hazardous locations.
- C. Corrosion resistant epoxy coated or baked enamel finish.
- D. Built-in, automatic over-temperature protection provided by thermal cut-outs or thermal sensors.

- E. Explosion-proof fan motor with long life ball bearings and aluminum, non-sparking fan.
- F. Heating elements with heavy wall and low surface temperature.
- G. NEMA 7 Control Panel Complete With:
 - 1. Disconnect switch.
 - 2. Heating element contactor.
 - 3. Fan motor starter with overload protection.
 - 4. Control transformer.
 - 5. Protective fusing.
 - 6. Time delay relay.
 - 7. Terminals for field connections including a remote thermostat.
- H. Adjustable louvered outlet grill for directing air flow.
- I. Nameplate shall provide data as required to comply with NFPA 70 – NEC.
- J. Approved Manufacturer:
 - 1. Ruffneck FX5 or CF1 Series
 - 2. Berko RUX or SCG Series
 - 3. Qmark GUX or ICG Series
 - 4. Markel HLA Series
 - 5. Stelpro
 - 6. Pre-approved equal

2.4 FAN FORCED WALL HEATER

- A. Voltage, phase, and KW as indicated in the Contract Documents.
- B. Surface mounted.
- C. Baked enamel finish; standard color chosen by Architect during submittal review.
- D. Completely concealed double-pole, single throw disconnect.
- E. Non-glowing design heating element with 5-year warranty.
- F. Impedance protected, single speed permanently lubricated fan motor with totally enclosed rotor.
- G. Bimetallic, snap action type fan control switch (2-KW heaters and larger) which activates the fan after the heating element reaches operating temperature and deactivates the fan after all heated air has been discharged.
- H. Bimetallic, snap action, tamperproof thermostat with enclosed contacts and positive off.
- I. Bimetallic, snap action thermal cutout which will automatically shut off the heating element to prevent over-heating and automatically reactivate the heater when temperatures return to normal.
- J. Integral tamper-resistant thermostat.
- K. UL listed.
- L. Nameplate shall provide data as required to comply with NFPA 70 – NEC
- M. Approved Manufacturer:
 - 1. Qmark CWH3000 Series.
 - 2. Berko.
 - 3. StelPro Heaters.
 - 4. Markel/Raywall.
 - 5. Or equal.

2.5 BASEBOARD HEATER

- A. Approved Manufacturer:
 - 1. Qmark.
 - 2. Berko.
 - 3. StelPro Heaters.
 - 4. Markel/Raywall.
 - 5. Substitutions: Pre-approved equal.
- B. Voltage, phase, and KW as indicated in the Contract Documents.
- C. Baked enamel finish; standard color chosen by Architect during submittal review.
- D. Completely concealed double-pole, single throw disconnect.
- E. Bimetallic, snap action, tamperproof thermostat with enclosed contacts and positive off.
- F. Bimetallic, snap action thermal cutout which will automatically shut off the heating element to prevent over-heating and automatically reactivate the heater when temperatures return to normal.
- G. UL listed.
- H. Nameplate shall provide data as required to comply with NFPA 70 – NEC.

PART 3 -- EXECUTION

3.1 EXAMINATION

- A. Verify wall construction is ready for installation.
- B. Verify ductwork is ready for installation.
- C. Verify concealed blocking and supports are in place and connections are correctly located.

3.2 INSTALLATION

- A. Protect coils to prevent damage to fins and flanges. Comb out bent fins.
- B. Install coils level.
- C. Make connections to coils with unions and flanges.
- D. Unit Heaters: Install with factory wall mount bracket, mount as high as possible to provide greatest headroom possible in space.
- E. Connect units to electric supply and connect controls remote from units.
- F. Install control components supplied with equipment and provide control wiring.

3.3 CLEANING

- A. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.
- B. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.
- C. Install new filters.

3.4 ELECTRIC HEATER INSTALLATION

- A. Heaters shall be installed where shown on Drawings.
- B. Thermostat shall be mounted 4 feet above the floor, where shown on the Drawings.
- C. Provide a 0.75"C-2#14,1#14 between a unit heater and its remote-mounted thermostat.

- D. Contractor is responsible for providing disconnects if not provided with the heater and as required per the NEC.
- E. Mount heaters per manufacturer's recommendations.

END OF SECTION

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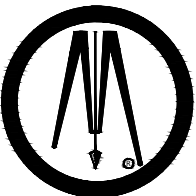
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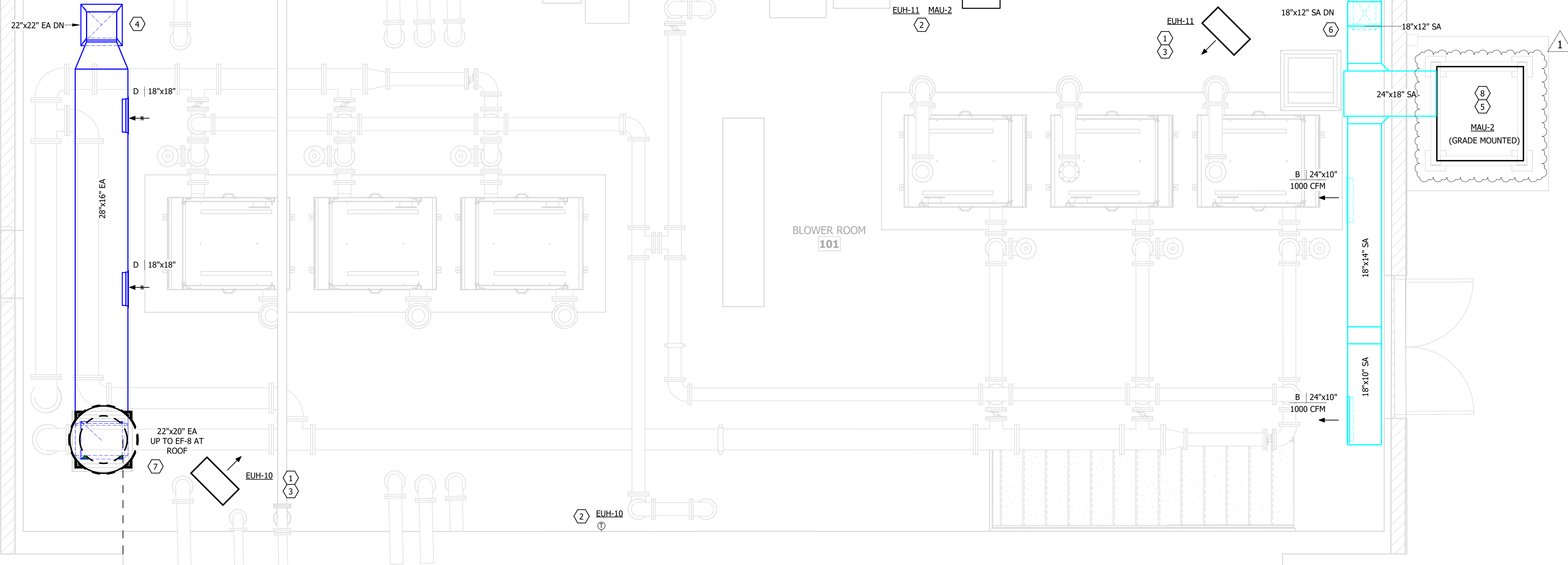
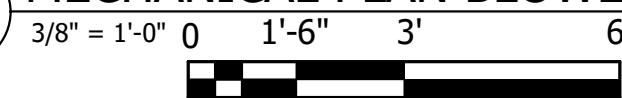
DESCRIPTION			VALUE	DESCRIPTION			VALUE	DESCRIPTION			VALUE	DESCRIPTION			VALUE										
WASTEWATER TREATMENT FACILITY IMPROVEMENTS				SCREENING AND SCREENINGS WASHER/COMPACTOR				ACTIVATED SLUDGE (CONT'D)				FINAL CLARIFICATION (CONT'D)				WASTE ACTIVATED SLUDGE (WAS) PRODUCTION									
DESIGN YEAR		2045		MECHANICAL FINE SCREEN (ME-FS-1)				AERATION BASIN JET MIX PUMPING (P-MX-5, P-MX-6)				SOLIDS LOADING RATE (SLR)				MASS		900 - 1,200 LB/DAY							
DESIGN POPULATION		2,670		TYPE		FINE SCREEN		TYPE		SUBMERSIBLE		MAX AT AWW		30 LB/DAY/SF		VOLUME AT 0.5-1.0 PERCENT		10,000-30,000 GPD							
1% (100-YR) FLOOD ELEVATION		1263.3-FT		NUMBER OF UNITS		1		NUMBER		2		MAX AT PHWW		50 LB/DAY/SF		VOLUME AT 3.0 PERCENT		4,000-5,000 GPD							
INFLUENT DESIGN CRITERIA				SCREEN SIZE		1/4-IN PERFORATIONS		CAPACITY (EACH)		2,520 GPM AT 17-FT TDH		AWW: 0.94 MG, 150% RAS, 4,500 MG/L		28 LBS/DAY/SF		EST PUMPING TIME/DAY AT 325 GPM		30 - 90 MIN/DAY							
DESIGN FLOWS AND LOADINGS				CAPACITY		2.0 MGD		MOTOR SIZE		20 HP		PHWW: 1.98 MG, 50% RAS, 4,500 MG/L		35 LBS/DAY/SF											
AVE DRY WEATHER FLOW (ADW)				0.55 MGD		380 GPM						WEIR LOADING RATE				AEROBIC SLUDGE TANKS									
AVE WET WEATHER FLOW (AWW)				0.94 MGD		650 GPM		MANUAL BAR SCREEN				MAX AT PHWW		15,000 GPD/FT		TYPE		CONCRETE, SLOPED BOTTOM							
MAX WET WEATHER FLOW (MWV)				1.66 MGD		1,150 GPM		CLEAR OPENING SIZE				AT AWW = 0.94 MGD		3840 GPD/FT				AERATED							
PEAK HOURLY FLOW (PHWW)				1.98 MGD		1,375 GPM		BAR SIZE				AT PHWW = 1.98 MGD		8080 GPD/FT		NUMBER		2							
PEAK INSTANTANEOUS FLOW (PIWW)				1.98 MGD		1,375 GPM		BAR SPACING								DIMENSIONS		48-FT X 48-FT X 17.5-FT DEEP							
																VOLUME (EACH)		0.30 MG							
																VOLUME (TOTAL)		0.60 MG							
																HRT AT 10,000 GPD		60 DAYS							
TOTAL FACILITY INFLUENT								GRIT REMOVAL								COARSE BUBBLE MIXING/AERATION									
CARBONACEOUS BIOCHEMICAL		176 MG/L		1,375 LB/DAY				GRIT SYSTEM (ME-GC-1)								20 SCFM/1000 CF		800 SCFM EACH							
OXYGEN DEMAND (CBOD5)								TYPE		CHAIN AND SCRAPTER															
TOTAL SUSPENDED SOLIDS (TSS)		150 MG/L		1,170 LB/DAY				CHANNEL WIDTH		1-FT 9-IN															
TOTAL KJELDAHL NITROGEN (TKN)		20 MG/L		156 LB/DAY				DESIGN VELOCITY		10.0 FT/MIN															
TOTAL PHOSPHORUS (P)		2.7 MG/L		21 LB/DAY				RATED CAPACITY		2.0 MGD															
								MOTOR SIZE		0.5 HP															
EFFLUENT DESIGN CRITERIA (NPDES/SDS PERMIT MN0051934)				ACTIVATED SLUDGE PROCESS DESIGN																					
RECEIVING STREAM		SPRING VALLEY CREEK		ANOXIC BASINS								CHLORINATION													
RECEIVING STREAM CLASSIFICATION		1B, 2Ag, 3, 4A, 5, 6		TYPE				CONCRETE; COMPLETE MIX		TOTAL NITRATE REMOVAL CAPACITY		33-80%		NUMBER		2		SLUDGE MIXING/LOADOUT PUMPS							
30-DAY AVERAGE				NUMBER				2						TYPE		GAS / VACUUM EJECTOR		SLUDGE MIXING/LOADOUT PUMPS (P-ST-1, P-ST-2)							
CARBONACEOUS BIOCHEMICAL		15 MG/L		53.1 KG/DAY		DIMENSIONS				29-FT X 37-FT; BAFFLED						CAPACITY (EA)		6.25 LB/HR							
OXYGEN DEMAND (CBOD5)						SIDE WATER DEPTH				15.17-FT		MIXED LIQUOR RETURN				MAX DOSE AT AWW = 0.94 MGD		12.2 MG/L							
TOTAL SUSPENDED SOLIDS (TSS)		30 MG/L		106.1 KG/DAY		VOLUME (EA)				0.12 MG		MIXED LIQUOR RETURN PUMPS (P-MLR-1, P-MLR-2)				MAX DOSE AT PHWW = 1.98 MGD		9.1 MG/L							
TOTAL NITROGEN (AS N)		10 MG/L		--		HYDRAULIC RETENTION TIME (HRT)						TYPE				SUBMERSIBLE									
AMMONIA NITROGEN (AS N)						AT ADW = 0.55 MGD				10.5 HR		NUMBER				2		NUMBER							
JANUARY-MARCH		8.0 MG/L		28.0 KG/DAY		AT AWW = 0.94 MGD				6.1 HR		CAPACITY (EACH)				2,000 GPM AT 10-FT TDH		CAPACITY (EACH)							
APRIL-MAY		4.0 MG/L		14.0 KG/DAY		AT MWV = 1.66 MGD				3.5 HR		MOTOR SIZE				15 HP		500 GPM AT 25-FT TDH							
JUNE-SEPTEMBER		1.0 MG/L		4.0 KG/DAY								DRIVE				VARIABLE SPEED		MOTOR SIZE							
OCTOBER-NOVEMBER		4.0 MG/L		14.0 KG/DAY														10 HP							
DECEMBER		8.0 MG/L		28.0 KG/DAY		ANOXIC BASIN JET MIX PUMPING (P-MX-1, P-MX-2, P-MX-3, P-MX-4)						RETURN AND WASTE ACTIVATED SLUDGE PUMPS (RAS/WAS)				DECHLORINATION		DRIVE							
30-DAY GEOMETRIC MEAN						TYPE				SUBMERSIBLE		RAS/WAS PUMPS (P-RAS-1, P-RAS-2, P-RAS-3, P-RAS-4)		NUMBER		2		INSTRUMENTATION							
FECAL COLIFORM (APR-OCT)		200 #/100 ML		NUMBER				4		TYPE				SUBMERSIBLE		CAPACITY (EA)		1.25 LB/HR		FLOW METERS					
DAILY MINIMUM, MAXIMUM				CAPACITY (EACH)				540 GPM AT 17-FT TDH		NUMBER				4		HRT AT AWW = 0.94 MGD		66 SEC		INFLUENT FLOW (FE-1)					
DISSOLVED OXYGEN		7.0 MG/L		MOTOR SIZE				10 HP		CAPACITY (EACH)				325 GPM AT 51-FT TDH		HRT AT PHWW = 1.98 MGD		31 SEC		EFFLUENT FLOW (FE-2)					
PH		6.5 - 9.0 SU		DRIVE				CONSTANT SPEED		MOTOR SIZE				975 GPM						MIXED LIQUOR RETURN (FE-3)					
												UTILITY WATER PUMPS (P-UW-1, P-UW-2)				NUMBER		2		RAS FROM CLARIFIER NO. 1 (FE-4)					
																TYPE		SUBMERSIBLE		RAS FROM CLARIFIER NO. 2 (FE-5)					
																CAPACITY (EA)		15 GPM AT 25-FT TDH		RAS TO SELECTOR BASINS (FE-6)					
																MOTOR SIZE		3		WAS TO DIGESTERS (FE-7)					
																DRIVE		VARIABLE SPEED		SLUDGE TANK NO. 1 DECANT (FE-8)					
BIOSOLIDS DESIGN CRITERIA				AERATION BASINS				SCUM PUMP				EFFLUENT REAERATION				LEVEL MEASUREMENT									
ANNUAL AVERAGE				TYPE				CONCRETE		SCUM PUMPS (P-SC-1)				TYPE		SUBMERSIBLE		MAIN LIFT STATION		SUB. PRESSURE W/ FLOAT BACKUP					
CBOD5 REMOVAL (WAS)		900 - 1,200 LB/DAY		NUMBER				2		TYPE				1		FINE BUBBLE DIFFUSED AERATION		PRELIMINARY TREATMENT WET WELL		FLOATS					
CHEMICAL P PRECIPITATE		NA		DIMENSIONS (OVERALL)				137-FT 6-IN x 74-FT 3-IN; BAFFLED		NUMBER				75 GPM AT 39-FT TDH		REAERATION BASIN		FINE SCREEN		-- BY SCREEN MANF --					
TOTAL AVERAGE DAILY		900 - 1,200 LB/DAY		AERATION AREA (EA)				7,262 SF		CAPACITY (EACH)				5 HP		LENGTH		12-FT		INFLUENT PARSHALL FLUME		RADAR			
TOTAL ANNUAL		160 - 220 DRY TON/YR		SIDE WATER DEPTH				17.0-FT		CAPACITY (FIRM)				CONSTANT SPEED		WIDTH		12-FT		MIXED LIQUOR RETURN		RADAR W/FLOAT BACKUP			
MAIN LIFT STATION (COLLECTION SYSTEM)				VOLUME (EA)				0.46 MG		MOTOR SIZE						DEPTH		15-FT		RAS/WAS WET WELL NO. 1		LOW LEVEL FLOAT			
MAIN LIFT PUMPS (P-VWV-1, P-VWV-2)				VOLUME (TOTAL)				0.92 MG		DRIVE						VOLUME		0.016 MG		RAW/WAS WET WELL NO. 2		LOW LEVEL FLOAT			
				HYDRAULIC RETENTION TIME (HRT)						FINAL CLARIFICATION				HYDRAULIC RETENTION TIME						SCUM SUMP		SUB. PRESSURE W/ FLOAT BACKUP			
				AT ADW = 0.55 MGD				40.3 HR		CLARIFIERS				2		AT AWW = 0.94 MGD		24 MIN		SLUDGE TANK NO. 1		SUB. PRESSURE W/ FLOAT BACKUP			
				AT AWW = 0.94 MGD				23.6 HR		TYPE				CIRCULAR, CENTER FEED		AT PHWW = 1.98 MGD		12 MIN		SLUDGE TANK NO. 2 DECANT (FE-9)		SUB. PRESSURE W/ FLOAT BACKUP			
				AT MWV = 1.66 MGD				13.4 HR		SLUDGE WITHDRAWL				SUCTION TUBE		REAERATION SYSTEM DESIGN				SUPPLEMENTAL CARBON		RADAR			
				AT MWV = 1.66 MGD				13.4 HR		DIAMETER				45-FT		MAX ACTUAL OXYGENATION RATE (AOR)				50-110 LB O2/DAY		INSTRUMENTATION			
				SOLIDS RETENTION TIME (SRT)				20 DAY		SIDE WATER DEPTH				14-FT		MAX WATER TEMPERATURE				25 DEG C		INFLUENT CHANNEL		PH/TEMP	
				ORGANIC LOADING RATE (OLR)				8-15 LB/1000 CF		SURFACE AREA (EACH)				1590 SF		ALPHA FACTOR				0.85		ANOXIC BASIN - CENTER		DO/ORP/PH	
				MIXED LIQUOR SUSPENDED						SURFACE AREA (TOTAL)				3181 SF		BETA FACTOR				0.95		ANOXIC BASIN - WEST		DO/ORP/PH	
				SOLIDS (MLSS)				2,500-4,500 MG/L		WEIR LENGTH (EACH)				125-FT		MINIMUM DISSOLVED OXYGEN				7.0 MG/L		ANOXIC BASIN - EAST		DO/ORP/PH	
PRELIMINARY TREATMENT BLDG LIFT PUMPS				HYDRAULIC LOADING RATE (HLR)						WEIR LENGTH (TOTAL)				250-FT		STD OXYGEN TRANSFER EFF (SOTE)				14.8%		AERATION BASIN NO. 1A (NW)		DO	
INFLUENT LIFT PUMPS (P-PP-1, P-PP-2, P-PP-3, P-PP-4, P-PP-5, P-PP-6)				MAX				1,000 GPD/SF		HYDRAULIC LOADING RATE (HLR)						AIR FLOW RATE (AWW)				90 SCFM		AERATION BASIN NO. 2A (NE)		DO	
TYPE				SUBMERSIBLE				AT AWW = 0.94 MGD		300 GPD/SF				AIR FLOW RATE (PHWW)		190 SCFM				AERATION BASIN NO. 1B (SW)		DO			
NUMBER				6				AT PHWW = 1.98 MGD		620 GPD/SF										AERATION BASIN NO. 2B (SE)		DO			
CAPACITY (EACH)				275 GPM AT 29-FT TDH																EFFLUENT CHANNEL		PH/TEMP			
CAPACITY (FIRM)				1,375 GPM (1.98 MGD)																*DISSOLVED OXYGEN (DO)					
MOTOR SIZE				5 HP																*OXYGEN REDUCTION POTENTIAL (ORP)					
DRIVE				CONSTANT SPEED																					

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MECHANICAL PLAN BLOWER BUILDING UPPER LEVEL



KEYED NOTES:

1. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
2. COORDINATE FINAL TSTAT LOCATIONS AND MOUNTING HEIGHTS WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
3. MOUNT HEATER 8'-0" MINIMUM AFF.
4. REUSE EXISTING OPENING FOR DUCTWORK DOWN TO LOWER LEVEL. PATCH AS NEEDED.
5. 36" STEEL SUPPORT STAND FOR MAU-2 BY STRUCTURAL. COORDINATE NEW WALL OPENING WITH STRUCTURAL. MAINTAIN ALL REQUIRED CLEARANCES FOR MAU-2.
6. MODIFY EXISTING FLOOR OPENING FOR SA DUCT DN TO LOWER LEVEL.
7. REUSE EXISTING ROOF OPENING FOR EF-8 EXHAUST DUCTWORK. MAINTAIN 5' MINIMUM FROM EF-8 AT ROOF TO ANY ACCESS OPENINGS AT ADJACENT DECANT TANK. COORDINATE WITH ARCH/PROCESS.
8. FIELD VERIFY EXACT PLACEMENT OF MAU-2, SUPPORT STAND AND PAD, ACCOUNTING FOR ANY DUCT TRANSITIONS NEEDED AT MAU-2 SA CONNECTION.

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MAKE-UP AIR UNIT SCHEDULE																														
UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	SUPPLY FAN DATA							HEATING CAPACITY	HEATING				ELECTRICAL DATA						DIMENSIONS			FILTRATION	WEIGHT (LBS)	NOTES		
					AIR				MOTOR				AIR		FUEL TYPE	STAGES	CONNECTION SIZE (IN)	VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY	LENGTH (IN)				WIDTH (IN)	HEIGHT (IN)
					FLOW (CFM)	ESP (IN WC)	RPM	BHP	DRIVE TYPE	HP	STARTER TYPE		EAT (°F)	LAT (°F)																
MAU-1	PRETREATMENT BLDG, EXTERIOR	TITAN	TA-115	HORIZONTAL MAU, TOP DISCHARGE, TWO-SPEED, DIRECT-FIRED GAS HEAT	7200	1.0	1030	5.6	DIRECT	7.5	VFD	633 (MBH)	-20	60	NG	MODULATING	3/4	480 V	3	12	-	20	MFR	MECH	130	58	50	2" CLEANABLE	1355	1,2,3,4,5,6,8,9
MAU-2	BLOWER BUILDING, ROOF	TITAN	TAH-112	VERTICAL MAU, LEFT-HAND SIDE DISCHARGE, TWO-SPEED, ELEC HEAT	3200	1.0	1005	1.4	DIRECT	2	VFD	72 (KW)	-20	50	ELEC	SCR	-	480 V	3	86.6	-	125	MFR	MECH	46	50	128	2" CLEANABLE	1850	2,3,4,5,7,8,9

- NOTES:
- PROVIDE LOW-FIRE START.
 - PROVIDE WIRING PACKAGE FOR COMMERCIAL FANS. UNIT SHALL INCLUDE MANUFACTURER PROVIDED SUPPLY FAN VFD. UNIT SHALL ALSO INCLUDE FACTORY MOUNTED EXHAUST FAN VFD TO CONTROL REMOTE EXHAUST FAN. SEE SEQUENCES FOR MORE INFORMATION.
 - PROVIDE FREEZE/STAT WITH 10' SENSOR AND LOW TEMP LIGHT ON REMOTE PANEL.
 - PROVIDE WITH 2" V-BANK FILTERS, DISCHARGE DAMPER.
 - PROVIDE FACTORY CONTROLS AND DISCONNECT. SEE SEQUENCES OF OPERATIONS AND UNIT SPECIFICATIONS FOR MORE INFORMATION. COORDINATE WITH ELECTRICAL.
 - PROVIDE WITH 36" STEEL FACTORY SUPPORT STAND.
 - PROVIDE WITH 24" MINIMUM ROOF CURB.
 - PROVIDE WITH INTAKE HOOD AND DISCHARGE DAMPER SECTIONS.
 - MAU-1 TO SCCR RATING TO BE 5 kA. MAU-2 SCCR RATING TO BE 35 kA.

FURNACE SCHEDULE																											
UNIT TAG	LOCATION	MANUFACTURER	MODEL	SUPPLY FAN					HEATING					COOLING CAPACITY (MBH)	ELECTRICAL DATA					DIMENSIONS			OUTDOOR AIR (CFM)	CONTROLS	WEIGHT (LBS)	NOTES	
				AIR				MOTOR	CAPACITY			FUEL TYPE	STAGES		VOLTAGE	PH	MCA	MOCP	DISC. BY	STARTER BY	LENGTH (IN)	WIDTH (IN)					HEIGHT (IN)
				FLOW (CFM)	ESP (IN WC)	RPM	DRIVE TYPE		INPUT (MBH)	OUTPUT (MBH)	AFUE (%)																
F-1	ADMIN BUILDING, MECH RM 108	DAIKIN	DM96VE0603BNA	1200	0.7	1075	ECM	1/2	60	57.6	96	NG	2	36	120 V	1	7.8	15	ELEC	MFR	29	18	35	300	TSTAT	117	1,2

- NOTES:
- PROVIDE HOUSEKEEPING PAD.
 - ROUTE CONDENSATE AND COOLING CONDENSATE PIPING TO FLOOR DRAIN AS PER FURNACE DETAIL AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

AIR-COOLED CONDENSING UNIT SCHEDULE																	
UNIT TAG	LOCATION	MANUFACTURER	MODEL	COOLING			COMPRESSOR		ELECTRICAL DATA							WEIGHT (LBS)	NOTES
				CAPACITY (MBH)	AMBIENT TEMP (°F)	SEER	QTY	TYPE	VOLTAGE	PH	FLA	MCA	MOCP	DISC. BY	STARTER BY		
CU-1	ADMIN BUILDING, GRADE	DAIKIN	DX13SA0364AA	36	95	13	1	SCROLL	480 V	3	0.6	7.9	15	ELEC	MFR	196	1

- NOTES:
- CONDENSING UNIT LOCATION SHALL BE BASED ON MANUFACTURERS CLEARANCE REQUIREMENTS.

BASEBOARD HEATER SCHEDULE - ELEC												
UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	ELECTRIC HEATING COIL		ELECTRICAL DATA			CONTROLS	WEIGHT (LBS)	NOTES
					HEATING CAPACITY (MBH)	ELEMENT POWER (KW)	VOLTAGE	PH	FLA			
BB-1	OFFICE 107A	QMARK	2500 SERIES	ELECTRIC BASEBOARD HEATER	8630	2.5	208 V	1	12	DIV 23	18.5	1,2,3,4
BB-2	OPERATIONS ROOM 102	QMARK	2500 SERIES	ELECTRIC BASEBOARD HEATER	8630	2.5	208 V	1	12	DIV 23	18.5	1,2,3,4

- NOTES:
- ELECTRIC BASEBOARD HEATER: UNIT IS FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE WITH ELECTRICAL FOR POWER AND CONNECTION REQUIREMENTS.
 - COORDINATE MOUNTING HEIGHTS AND LOCATIONS. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
 - UNIT COLOR SHALL BE WHITE.
 - PROVIDE TAMPER RESISTANT THERMOSTAT IN ENCLOSURE.

EXHAUST FAN SCHEDULE																				
UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	AIR				MOTOR	ELECTRICAL DATA						CONTROLS	WEIGHT (LBS)	NOTES		
					FLOW (CFM)	ESP (IN WC)	RPM	BHP		DRIVE TYPE	HP	VOLTAGE	PH	FLA	MCA				MOCP	DISC. BY
EF-1	ADMIN BUILDING, GARAGE	GREENHECK	SQ-160-VG	INLINE	1392	0.9	ECM	2	208 V	1	12.5	15.6	25	ELEC	MFR	SEE SPEC 23 09 93	135	1,2,3,6,7,8		
EF-2	PRETREATMENT BLDG, EXTERIOR	GREENHECK	CUBE-360-VG	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7200	0.35	359	0.77	ECM	1	480 V	3	2.1	2.6	15	ELEC	MFR	SEE SPEC 23 09 93	283	1,2,4,9,10,11
EF-3	DISINFECTION BLDG, STORAGE 106	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	20	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-4	DISINFECTION BLDG, CHLORINE 105	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	20	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-5	DISINFECTION BLDG, 104	GREENHECK	SQ-95-VG	INLINE	500	0.50	1602	0.11	ECM	1/5	120 V	1	2.8	3.5	20	MFR	MFR	SEE SPEC 23 09 93	34	1,2,3,6,7
EF-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	20	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-7	DISINFECTION BLDG, CARBON FEED 101	GREENHECK	SQ-120-VG	INLINE	1000	0.35	1137	0.13	ECM	1/2	120 V	1	6.6	8.2	20	MFR	MFR	SEE SPEC 23 09 93	61	1,2,3,6,7,9
EF-8	BLOWER BUILDING, ROOF	GREENHECK	CUE-160-VG	CENTRIFUGAL UPBLAST, ROOF MTD	3200	0.75	1356	0.95	ECM	2	480 V	3	3.2	4	15	ELEC	MFR	SEE SPEC 23 09 93	122	1,2,5,6,9,11
EF-9	CLARIFIER	GREENHECK	CUBE-300	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7250	0.35	527	1.05	BELT	1 1/2	480 V	3	3.8	15	ELEC	ELEC	SEE SPEC 23 09 93	228	1,9,10	
EF-10	CLARIFIER	GREENHECK	CUBE-300	CENTRIFUGAL UPBLAST, SIDEWALL MTD	7250	0.35	527	1.05	BELT	1 1/2	480 V	3	3	3.8	15	ELEC	ELEC	SEE SPEC 23 09 93	228	1,9,10
EF-11	OPERATIONS ROOM 102	GREENHECK	SQ-70-VG	INLINE	100	0.35	1572	0.03	ECM	FRAC.	120 V	1	1.3	1.6	20	ELEC	MFR	LIGHTS	27	1
EF-12	OPERATIONS ROOM 102	GREENHECK	SQ-70-VG	INLINE	100	0.50	1572	0.03	ECM	FRAC.	120 V	1	1.3	1.6	20	ELEC	MFR	LIGHTS	27	1

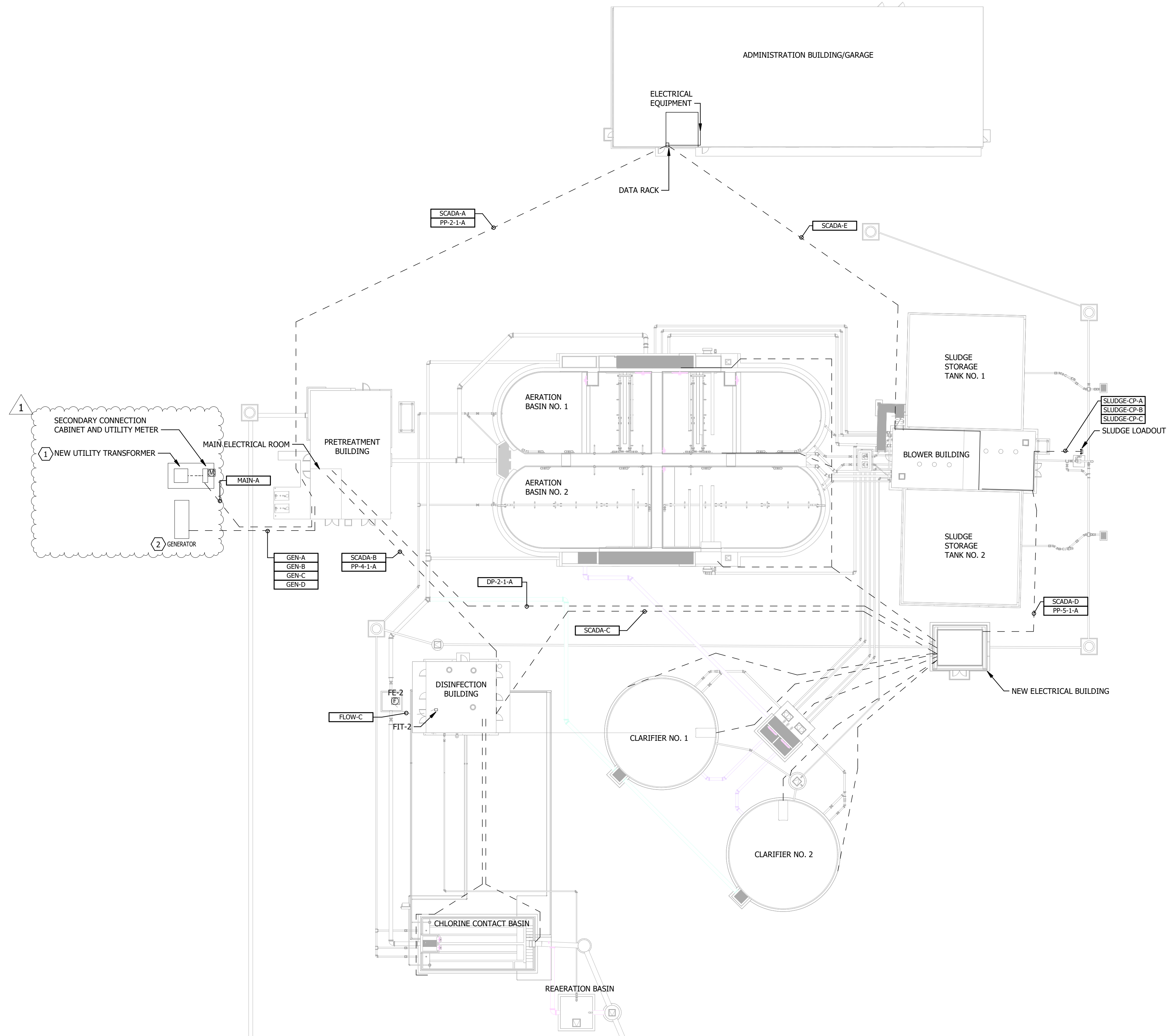
- NOTES:
- PROVIDE BIRDSCREEN (ON GOOSENECK WHERE APPLICABLE).
 - UNLESS OTHERWISE NOTED, PROVIDE WITH MOTORIZED DAMPER FOR UNITS EXCEEDING 300 CFM, BACKDRAFT DAMPER FOR UNITS 300 CFM OR LESS.
 - PROVIDE WITH VIBRATION ISOLATORS FOR FANS MOUNTED FROM STRUCTURE.
 - FAN SHALL BE INTERLOCKED WITH MAU-1. COORDINATE WITH ELECTRICAL FOR WIRED CONNECTIONS.
 - FAN SHALL BE INTERLOCKED WITH MAU-2. COORDINATE WITH ELECTRICAL FOR WIRED CONNECTIONS.
 - PROVIDE REVERSE-ACTING THERMOSTAT FOR EXHAUST FAN. REFER TO SPECIFICATIONS FOR CONTROLS SEQUENCES.
 - INTERLOCK WITH OUTSIDE AIR LOUVER DAMPER FOR MAKEUP VENTILATION. REFER TO SPECIFICATIONS FOR CONTROL SEQUENCES.
 - FAN SHALL BE CAPABLE OF MODULATING TO 50% OR LESS OF DESIGN CAPACITY, PROVIDED ACCEPTABLE CONTAMINANT LEVELS ARE MAINTAINED PER ASHRAE 90.1-2019, SECTION 6.4.3.4.5. SEE MECHANICAL AND ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.
 - FAN AND ACCESSORIES SHALL BE PROVIDED IN CAST ALUMINUM AND WITH HIGH-STRENGTH CORROSION-RESISTANT COATING.
 - FAN MOTOR CONSTRUCTION SHALL BE EXPLOSION PROOF AND SPARK B RATED, SUITABLE FOR HAZARDOUS LOCATION PER NFPA 820.
 - FAN SHALL BE CAPABLE OF MODULATING TO 50% OR LESS OF DESIGN CAPACITY, PROVIDED ACCEPTABLE CONTAMINANT LEVELS ARE MAINTAINED PER NFPA 820, SPACE IS UNOCCUPIED, AND AMBIENT TEMPERATURE IS BELOW 50 DEGF. SEE MECHANICAL AND ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.

LOUVER SCHEDULE											
UNIT TAG	LOCATION	MANUFACTURER	MODEL	DESCRIPTION	AIRFLOW (CFM)	SP (IN WC)	FACE VELOCITY (FPM)	DIMENSIONS			NOTES
								LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	
L-1	ADMIN BUILDING, GARAGE	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	3750	0.05	589	40	6	40	1,3
L-3	DISINFECTION BLDG, STORAGE 106	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	100	0.01	175	16	6	16	1,2
L-4	DISINFECTION BLDG, CHLORINE 105	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	1000	0.06	623	40	6	16	1,2
L-5	DISINFECTION BLDG, 104	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	500	0.05	546	24	6	16	1,2
L-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	1000	0.06	623	40	6	16	1,2
L-7	DISINFECTION BLDG, CARBON FEED 101	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	100	0.01	175	16	6	16	1,2
L-8	CLARIFIER	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	7250	0.09	770	48	6	48	1,3
L-9	CLARIFIER	GREENHECK	ESD-635	DRAINABLE STATIONARY INTAKE	7250	0.09	770	48	6	48	1,3

- NOTES:
- VERIFY LOUVER FINISH WITH ARCHITECT.
 - PROVIDE ACCESSIBLE SLIDE-OUT FILTER RACK SECTION.
 - PROVIDE WITH INSECT SCREEN.



DESIGNED	NRN	NO.	ISSUED FOR	DATE
DRAWN	NRN	A	MPCA	03/28/2025
CHECKED	RPC	0	BID	09/29/2026
CLIENT PROJ. NO.	0M.2131536	1	ADDENDUM #1	10/08/2026

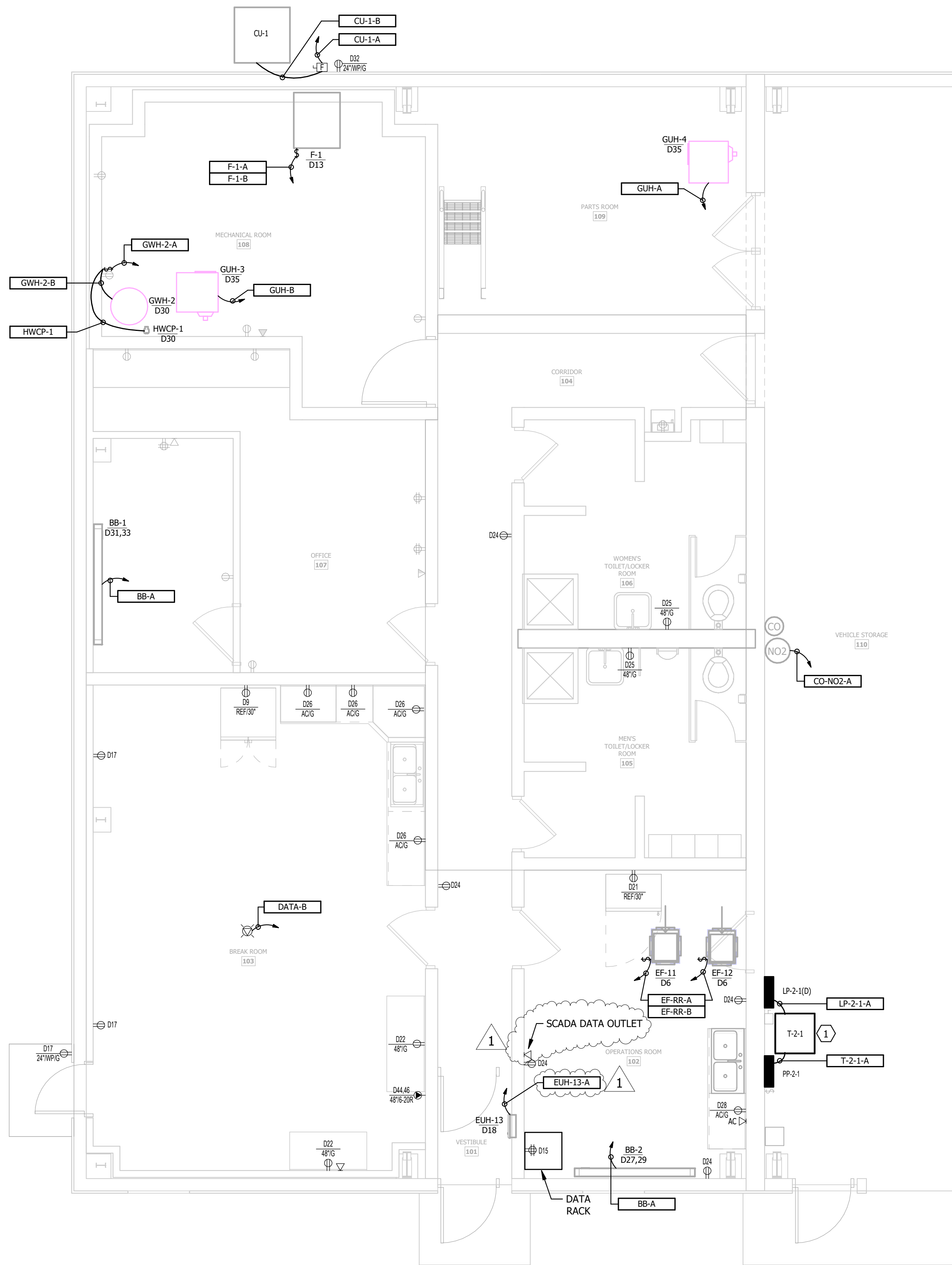


- GENERAL NOTES:**
1. YARD CONDUIT ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL CONFIRM LOCATION OF CONDUITS AND EQUIPMENT PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH OTHER DISCIPLINES.

- KEYED NOTES:**
1. CONTRACTOR TO COORDINATE FINAL LOCATION OF THE TRANSFORMER WITH THE UTILITY. PROVIDE PAD-MOUNTED SECONDARY CONNECTION CABINET, RACEWAYS, AND SECONDARY CONDUCTORS BETWEEN THE UTILITY TRANSFORMER AND SECONDARY CONNECTION CABINET IN ACCORDANCE WITH UTILITY REQUIREMENTS.
 2. COORDINATE FINAL LOCATION OF THE BACKUP GENERATOR IN FIELD. PROVIDE GENERATOR PAD AS PER MANUFACTURER REQUIREMENTS.

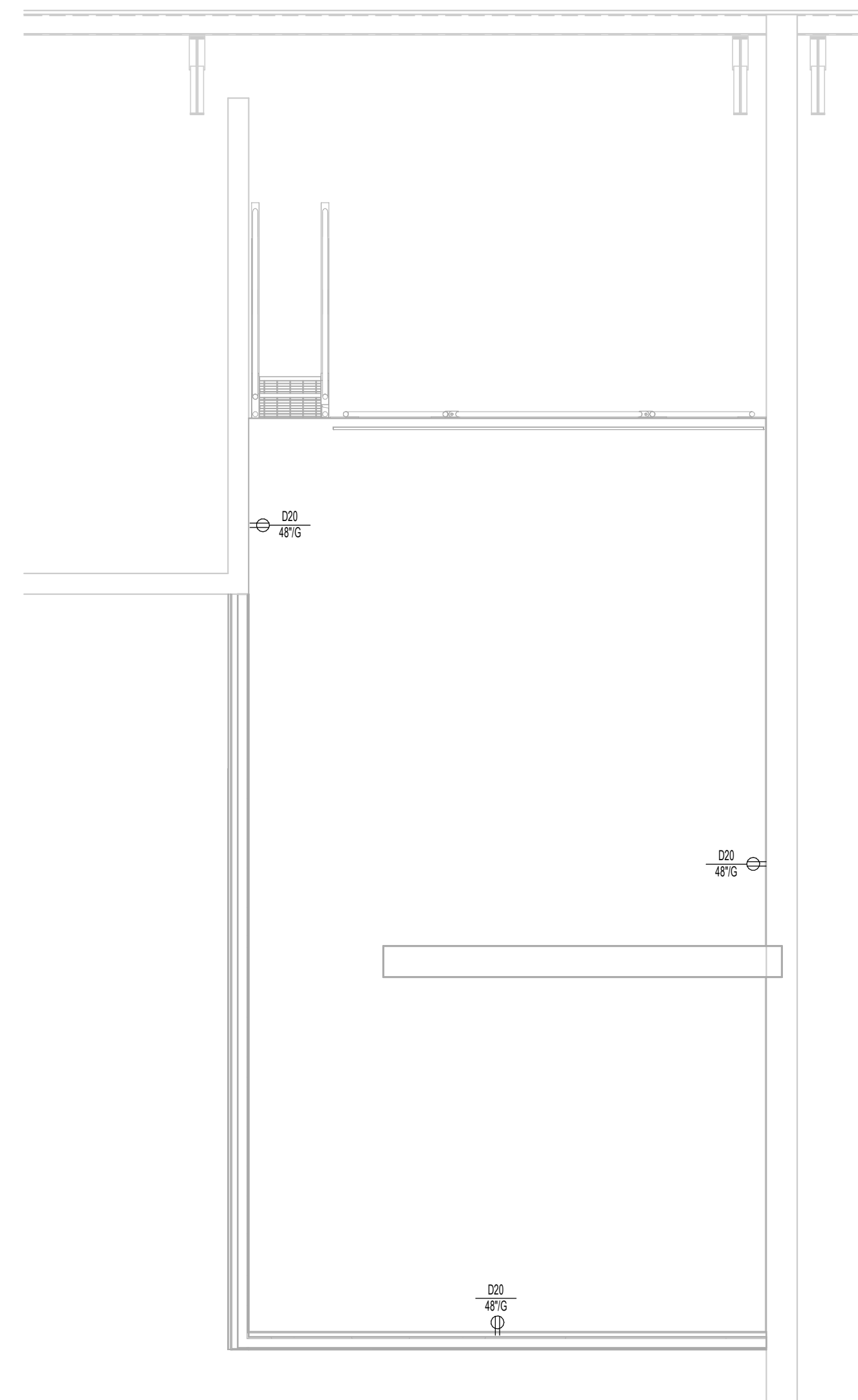
1 ELECTRICAL SITE PLAN

0 7.5' 25' 50'



- GENERAL NOTES:
- ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

- KEYED NOTES:
- TRANSFORMER SHALL BE WALL MOUNTED.



1 POWER & SYSTEMS PLAN ADMINISTRATION BUILDING LEVEL 1

2 POWER & SYSTEMS PLAN ADMINISTRATION BUILDING MEZZANINE

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SIGNATURE: *Aaron R. Mueller* TYPED OR PRINTED NAME: AARON R. MUELLER
DATE: 09/29/2026 LIC NO.: 46184



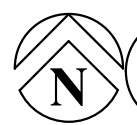
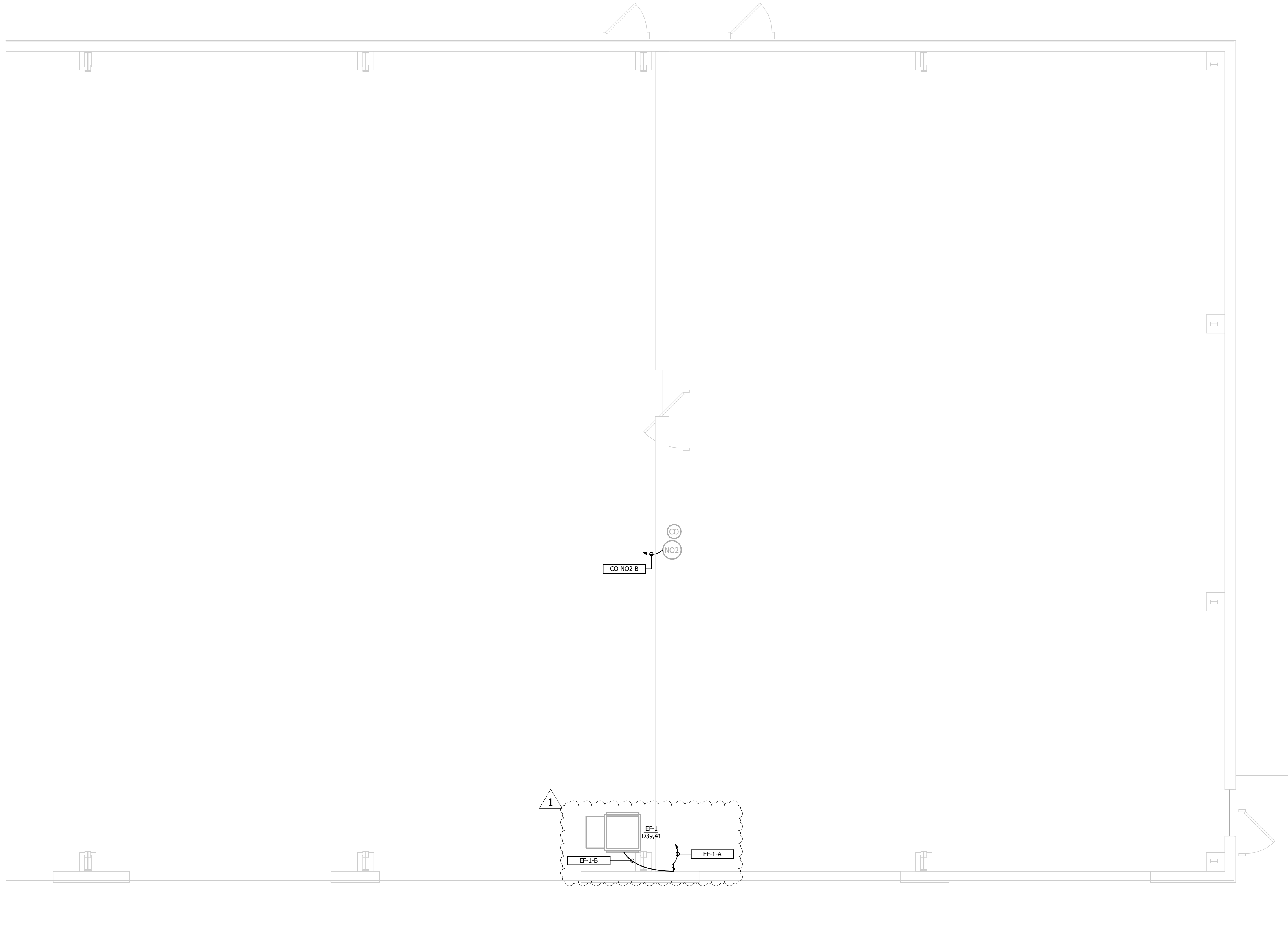
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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: burnsville@bolton-menk.com
www.bolton-menk.com

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CHECKED	ARM	0	BID	09/29/2026
CLIENT PROJ. NO.	0M.2131536	1	ADDENDUM #1	10/08/2026

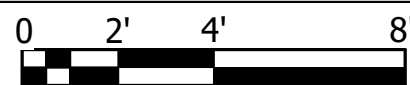
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING

SHEET
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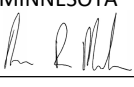


1 POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING GARAGE



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SIGNATURE:  TYPED OR PRINTED NAME: AARON R. MUELLER
DATE: 09/29/2026 LIC NO.: 46184

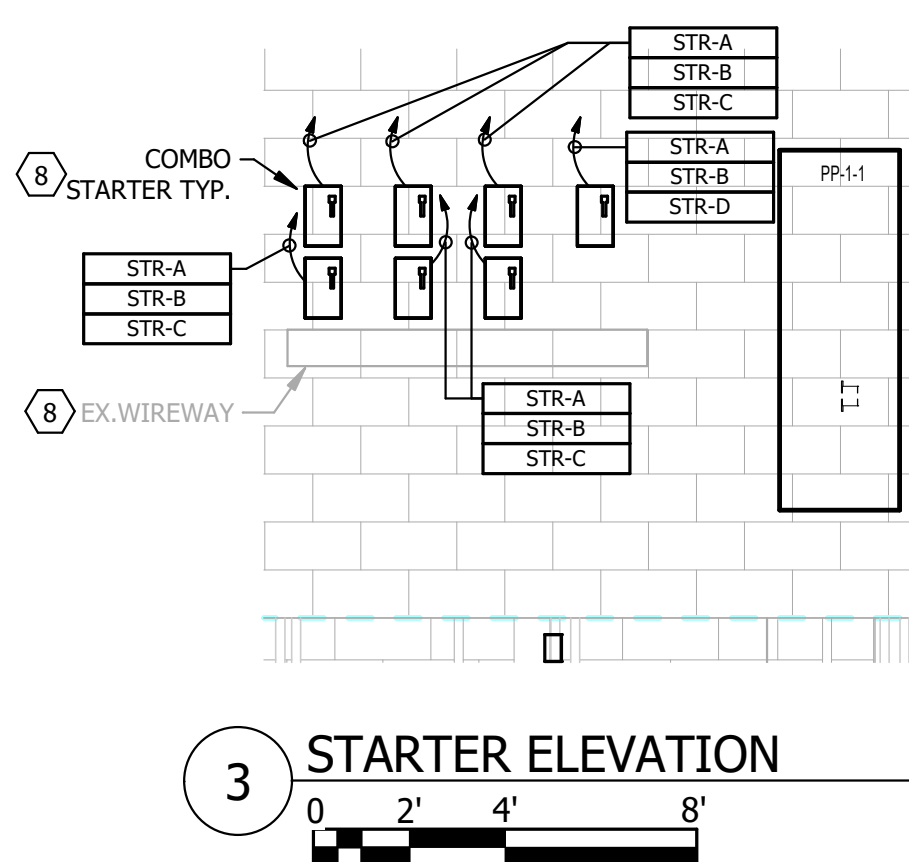


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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: burnsville@bolton-menk.com
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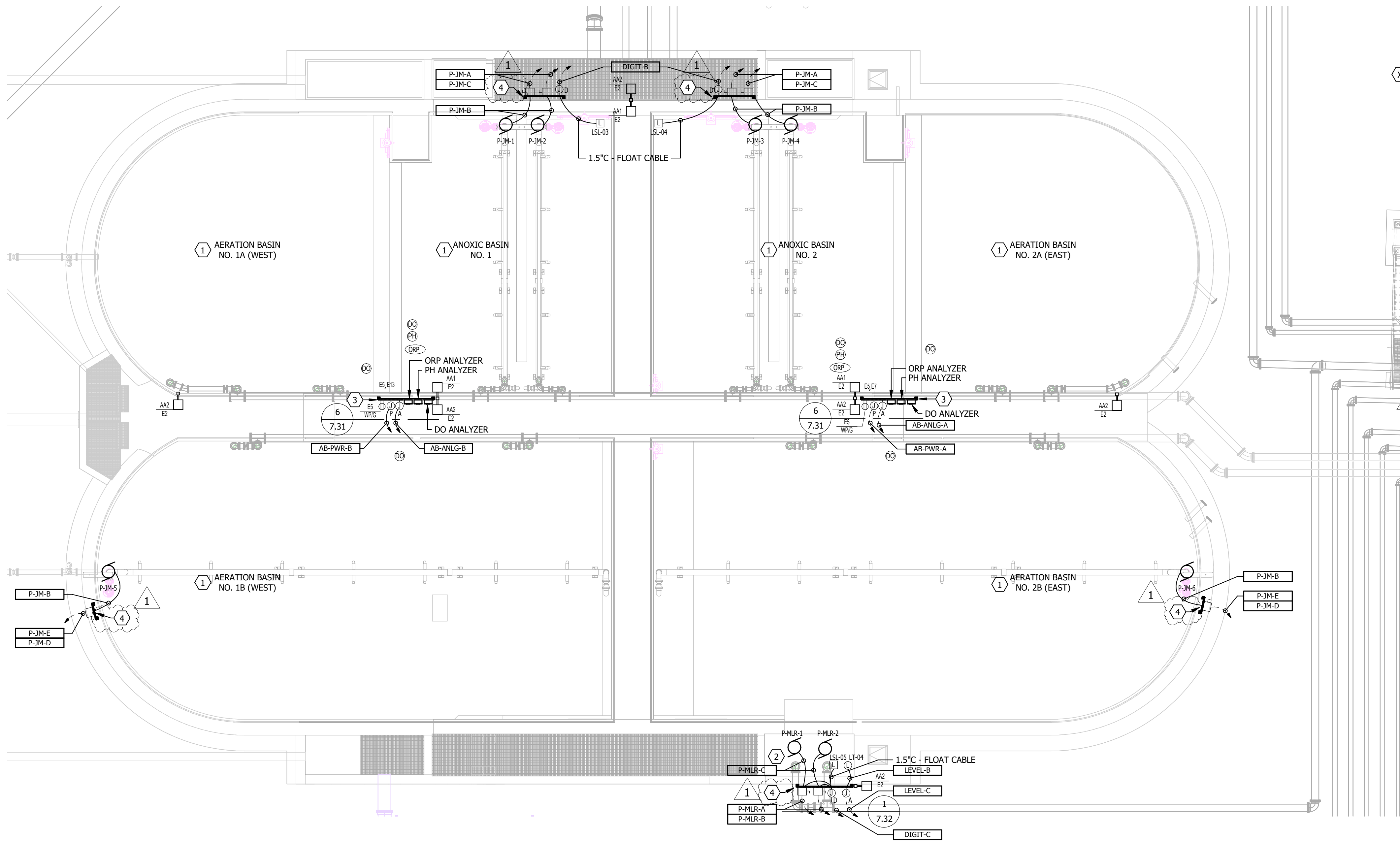
DESIGNED	NXP	NO.	ISSUED FOR	DATE
DRAWN	NJK	A	MPCA	03/28/2025
CHECKED	ARM	0	BID	09/29/2026
CLIENT PROJ. NO.	0M.2131536	1	ADDENDUM #1	10/08/2026

CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
POWER & SYSTEMS PLAN - ADMINISTRATION BUILDING GARAGE

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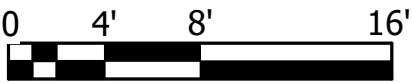
- KEYED NOTES:**
1. TRANSFORMER SHALL BE TRAPEZOID MOUNTED, REFER TO MOUNTING DETAIL ON SHEET 7.32.
 2. REUSE EXISTING GROUNDING BETWEEN SENSOR AND ANALYZER.
 3. PROVIDE NEW SEALING FITTING AND COMPOUND AS REQUIRED.
 4. PROVIDE 120VAC INTERLOCKING RELAY. EXISTING RELAY COIL FROM SWITCHED LIGHTING CIRCUIT. CONNECT NORMALLY OPEN DRY CONTACT TO MAU CONTROL PANEL TO PROVIDE "OCCUPANCY" SIGNAL.
 5. WITH SPECIFIED VENTILATION THE AREA IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 3' FROM VENT IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
 6. BAR SCREEN EQUIPMENT SUPPLIED BY PACKAGE SYSTEM SUPPLIER AND INSTALLED UNDER DIVISION 26. PRIOR TO INSTALLATION CONTRACTOR TO CONFIRM EXACT NUMBER OF EQUIPMENT WITH PACKAGE SYSTEM SUPPLIER. PROVIDE ADDITIONAL WIRES AND CONDUIT IF NECESSARY WITHOUT ADDITIONAL COST.
 7. GAS DETECTION GO, NO-GO INDICATION STATION.
 8. COORDINATE THE EXACT LOCATION OF INFLUENT RADAR LEVEL TRANSMITTER IN FIELD.
 9. RECONNECT EXISTING MOTOR FIELD WIRING TO NEW COMBINATION STARTERS. PROVIDE NEW CONDUIT AND WIRING BETWEEN EXISTING WIREWAY AND NEW COMBINATION STARTERS AS REQUIRED. THIS APPLIES TO THE FOLLOWING EQUIPMENT:
 - A. RAW WATER PUMP 1 (P-1-1-1)
 - B. RAW WATER PUMP 2 (P-1-1-2)
 - C. RAW WATER PUMP 3 (P-1-1-3)
 - D. RAW WATER PUMP 4 (P-1-1-4)
 - E. RAW WATER PUMP 5 (P-1-1-5)
 - F. RAW WATER PUMP 6 (P-1-1-6)
 - G. GRIT COLLECTOR MOTOR (M-1-3-1)
- REFER TO ONE-LINE FOR MORE INFORMATION.



- GENERAL NOTES:
- ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
 - EQUIPMENT CABLES AND HANGING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK EDGE/HATCH. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK EDGE/HATCH AND REACHABLE WITHOUT ENTERING THE TANK.
 - EQUIPMENT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FINAL LOCATIONS OF ANALYZER SENSORS AND TRANSMITTERS IN THE FIELD WITH THE PROCESS ENGINEER.
 - ROUTE CONDUITS ALONG AND SECURE TO THE BASIN WALL OR TO THE BASIN-SIDE EDGE OF THE CATWALK STRUCTURE. DO NOT SUPPORT CONDUITS FROM HANDRAILS OR ROUTE CONDUITS ACROSS WALKING SURFACES OR ACCESS PATHS. MAINTAIN UNOBSTRUCTED ACCESS AND ELIMINATE TRIPPING HAZARDS.

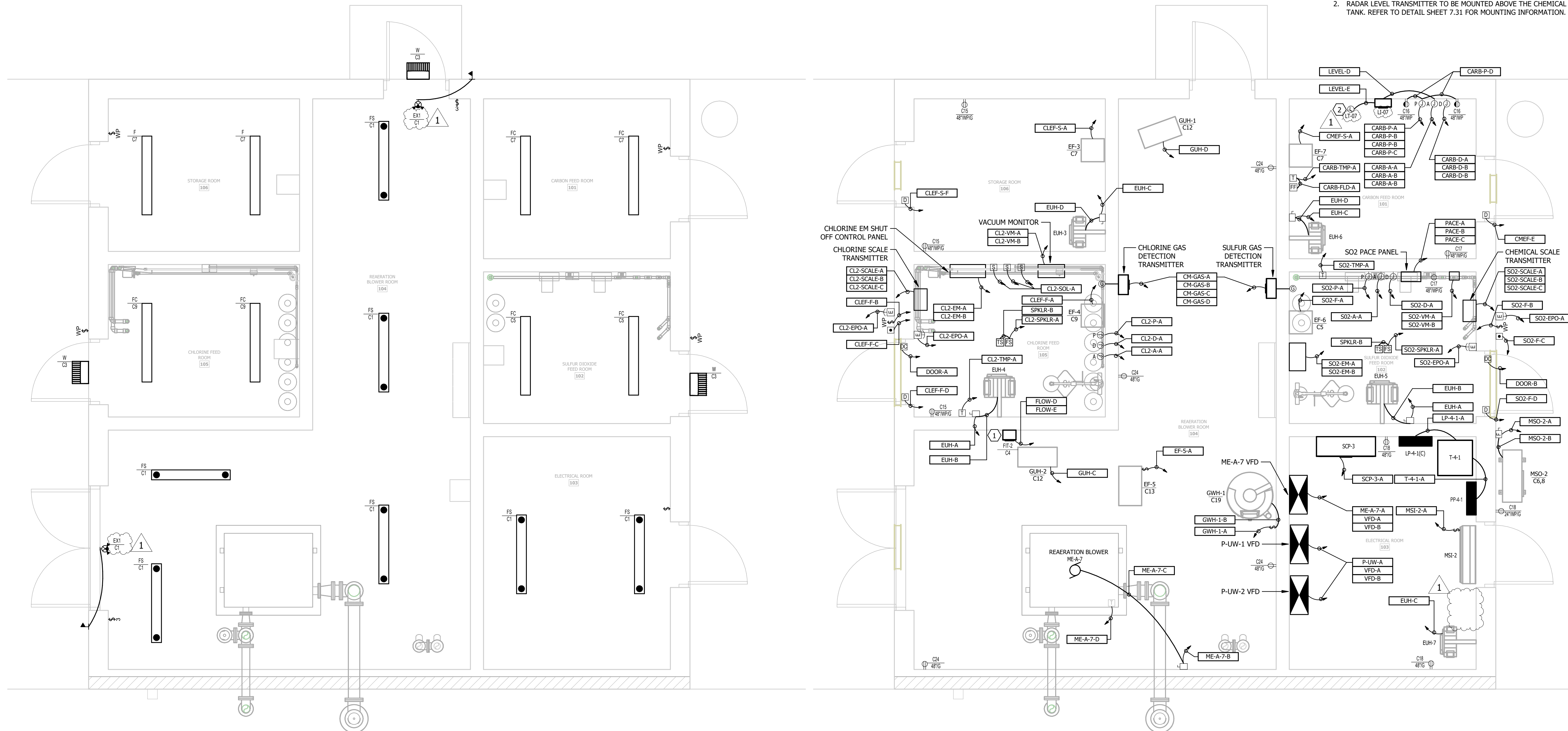
- KEYED NOTES:
- THE TANK INTERIOR IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 18" ABOVE TANK WALLS TO GRADE AND 18" FROM EDGES OF THE WALL IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. THE AREA 18" ABOVE TANK WALLS TO GRADE EXTENDING 18" TO 10' HORIZONTALLY FROM THE TANK WALLS IS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
 - MIXED LIQUOR PIT INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 18" ABOVE THE HATCH AND WITHIN 3' OF THE HATCH EDGE IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
 - DIVISION 26 SHALL PROVIDE 316SS UNISTRUT SUPPORT FOR MOUNTING PROCESS INSTRUMENTATION. MOUNT TRANSMITTERS AT A READILY VISIBLE AND ACCESSIBLE HEIGHT FROM ADJACENT WALKWAY. ANALYZER TRANSMITTERS SHALL BE PLACED INSIDE WEATHER PROTECTIVE ENCLOSURE, SEE DETAIL ON SHEET 7.31. FOR CLARITY NOT ALL EQUIPMENT WIRING IS SHOWN ON PLAN.
 - ORP ANALYZER TRANSMITTER:
 - A. 0.75°C-MANUFACTURER CABLE TO EACH SENSOR.
 - B. 0.75°C-2#12,1#12G TO POWER J-BOX.
 - C. 0.75°C-1-2/C#16 SHIELDED TO ANALOG J-BOX.PH ANALYZER TRANSMITTER:
 - A. 0.75°C-MANUFACTURER CABLE TO EACH SENSOR.
 - B. 0.75°C-2#12,1#12G TO POWER J-BOX.
 - C. 0.75°C-1-2/C#16 SHIELDED TO ANALOG J-BOX.DO ANALYZER TRANSMITTER:
 - A. 0.75°C-MANUFACTURER CABLE TO EACH SENSOR.
 - B. 0.75°C-2#12,1#12G TO POWER J-BOX.
 - C. 0.75°C-3-2/C#16 SHIELDED TO ANALOG J-BOX.

1 ELECTRICAL PLAN - AERATION BASIN



- GENERAL NOTES:
- COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.
 - ALL WALL MOUNTED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" FROM LEVEL GRADE, UNLESS NOTED OTHERWISE.
 - ALL SUSPENDED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" AFF, UNLESS NOTED OTHERWISE.

- KEYED NOTES:
- REUSE EXISTING CONDUIT TO METER VAULT FOR FLOW METER CABLE.
 - RADAR LEVEL TRANSMITTER TO BE MOUNTED ABOVE THE CHEMICAL TANK. REFER TO DETAIL SHEET 7.31 FOR MOUNTING INFORMATION.

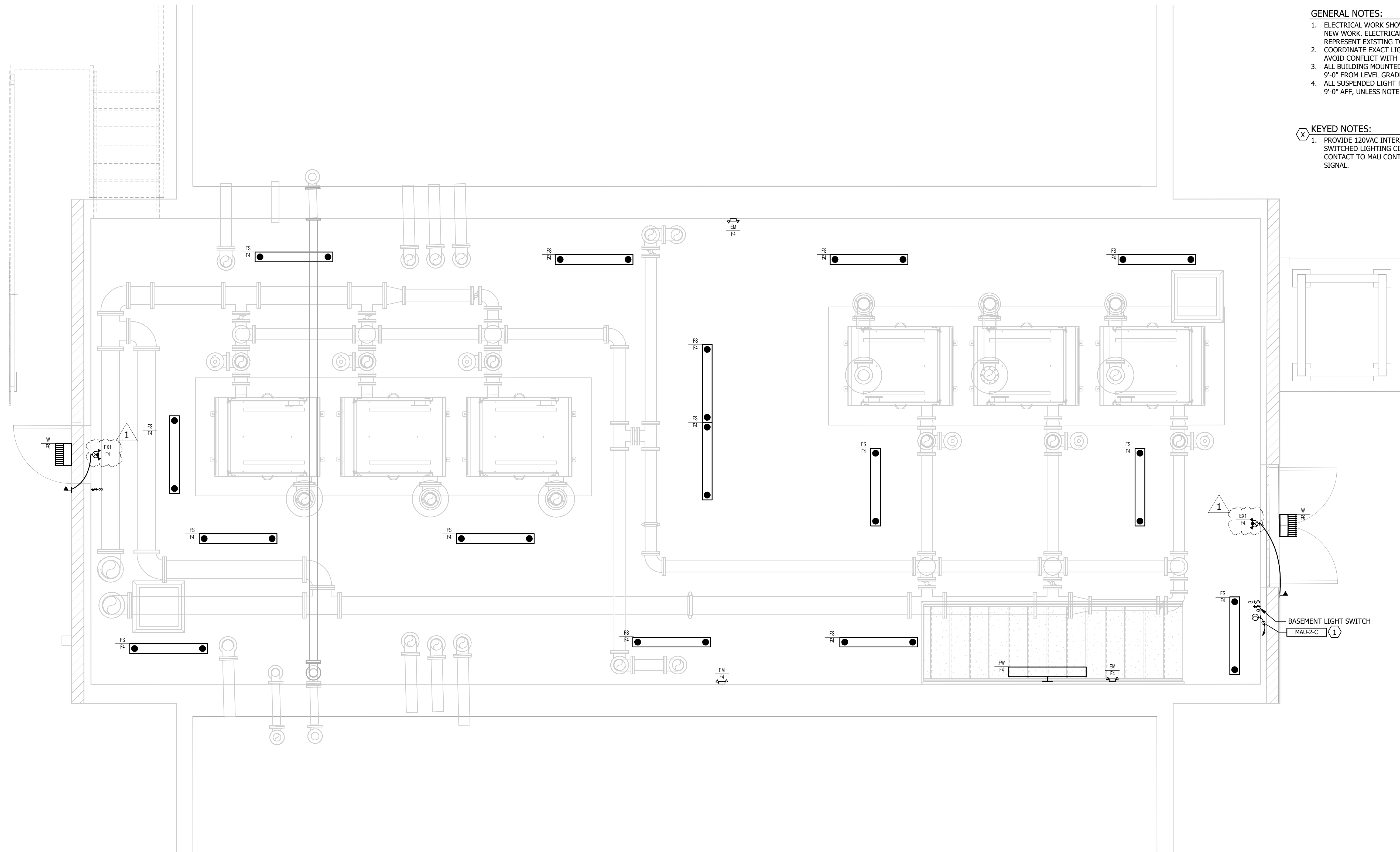


1 LIGHTING PLAN DISINFECTION BUILDING

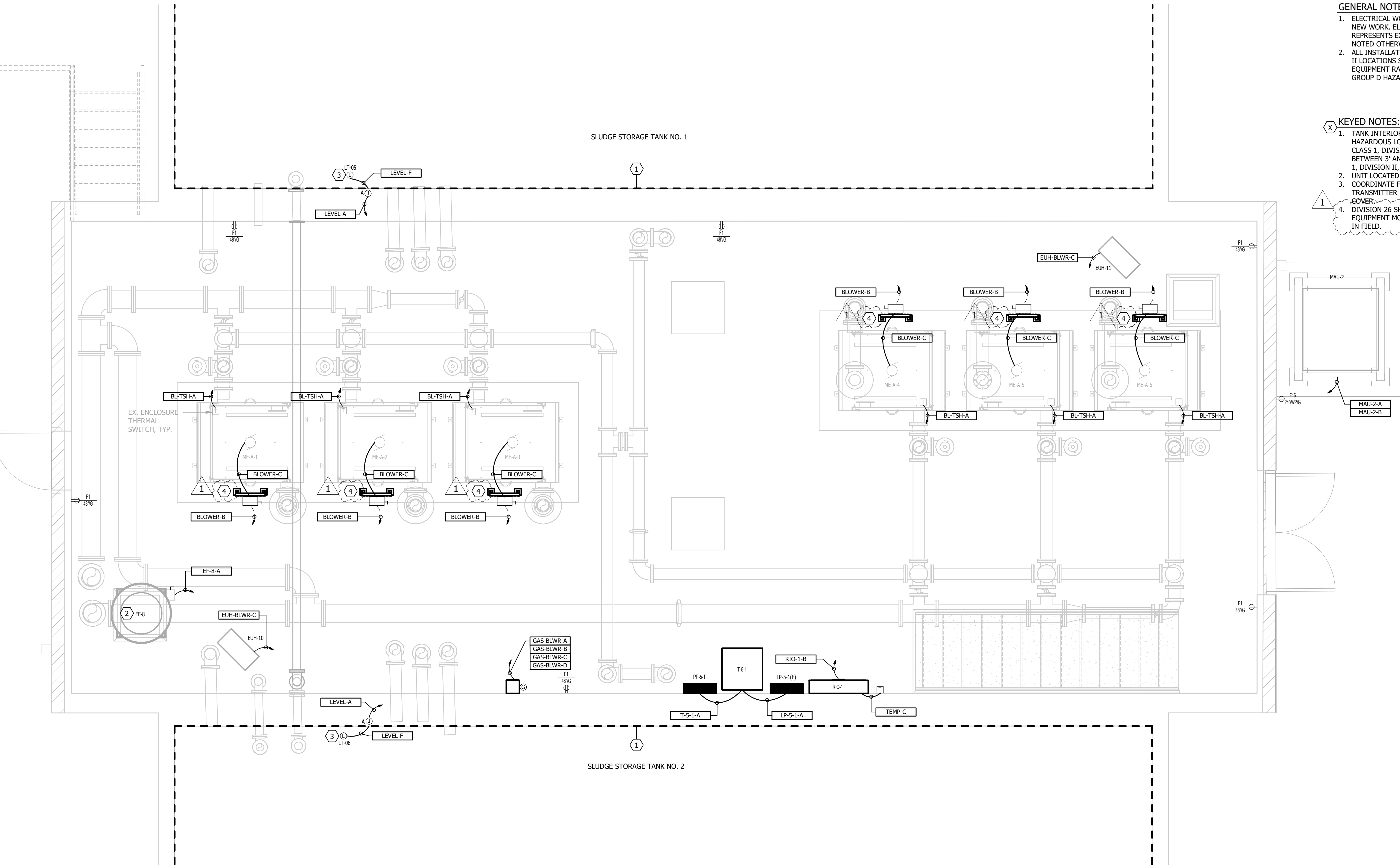
2 POWER & SYSTEMS PLAN DISINFECTION BUILDING

- GENERAL NOTES:
- ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.
 - COORDINATE EXACT LIGHT FIXTURE LOCATION IN THE FIELD TO AVOID CONFLICT WITH OTHER DISCIPLINES.
 - ALL BUILDING MOUNTED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" FROM LEVEL GRADE, UNLESS NOTED OTHERWISE.
 - ALL SUSPENDED LIGHT FIXTURES SHALL BE MOUNTED AT 9'-0" AFF, UNLESS NOTED OTHERWISE.

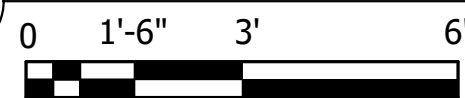
- KEYED NOTES:
- PROVIDE 120VAC INTERPOSING RELAY. ENERGIZE RELAY COIL FROM SWITCHED LIGHTING CIRCUIT. CONNECT NORMALLY OPEN DRY CONTACT TO MAU CONTROL PANEL TO PROVIDE "OCCUPANCY" SIGNAL.



1 LIGHTING PLAN BLOWER BUILDING UPPER LEVEL



1 POWER & SYSTEMS PLAN BLOWER BUILDING UPPER LEVEL

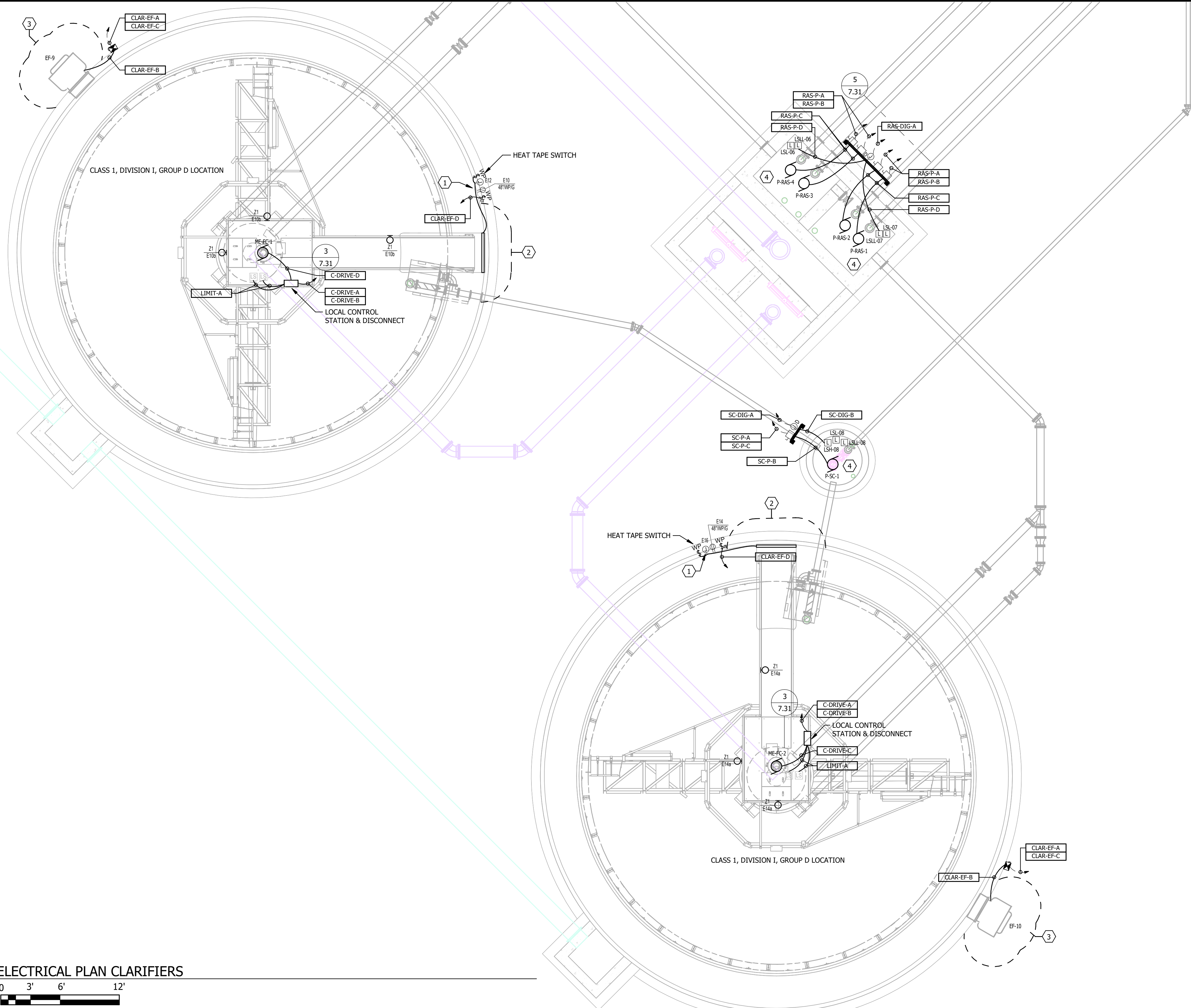


GENERAL NOTES:

- ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL WORK SHOWN WITH LIGHT (GRAY) LINES REPRESENTS EXISTING EQUIPMENT TO REMAIN AS IS, UNLESS NOTED OTHERWISE.
- ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.

KEYED NOTES:

- TANK INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT/OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
- UNIT LOCATED ON ROOF.
- COORDINATE FINAL LOCATION AND MOUNTING OF THE RADAR LEVEL TRANSMITTER WITH THE OPENING PROVIDED IN THE NEW TANK COVER.
- DIVISION 26 SHALL PROVIDE GALVANIZED UNISTRUT SUPPORT FOR EQUIPMENT MOUNTING. COORDINATE EXACT MOUNTING LOCATION IN FIELD.



- GENERAL NOTES:**
- ALL INSTALLATIONS IN CLASS 1, DIVISION I AND CLASS 1, DIVISION II LOCATIONS SHALL MEET THE NEC INSTALLATION AND EQUIPMENT RATING REQUIREMENTS FOR A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
 - EQUIPMENT CABLES AND HANGING HARDWARE LOCATED WITHIN TANK ARE TO BE MOUNTED ACCESSIBLE FROM TANK HATCH. CONDUITS ENTERING THE TANK SHALL BE MOUNTED IN SUCH A MANNER THE CONDUIT OPENING/END IS EASILY ACCESSIBLE FROM THE TANK HATCH AND REACHABLE WITHOUT ENTERING THE TANK.

- KEYED NOTES:**
- PROVIDE SELF REGULATING HEAT TAPE CABLE ON ENTIRE LENGTH OF DOOR FRAME. RATED FOR INSTALLATION IN CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION.
 - THE AREA WITHIN 3' FROM DOOR OPENINGS IS CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
 - THE AREA 3' FROM EXHAUST IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM EXHAUST IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.
 - WETWELL INTERIOR IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA 18" ABOVE THE HATCH AND WITHIN 3' OF THE HATCH EDGE IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION. AREA 3' FROM VENT IS CLASSIFIED AS A CLASS 1, DIVISION I, GROUP D HAZARDOUS LOCATION. AREA BETWEEN 3' AND 5' FROM VENT OPENING IS CLASSIFIED AS A CLASS 1, DIVISION II, GROUP D HAZARDOUS LOCATION.

1 ELECTRICAL PLAN CLARIFIERS

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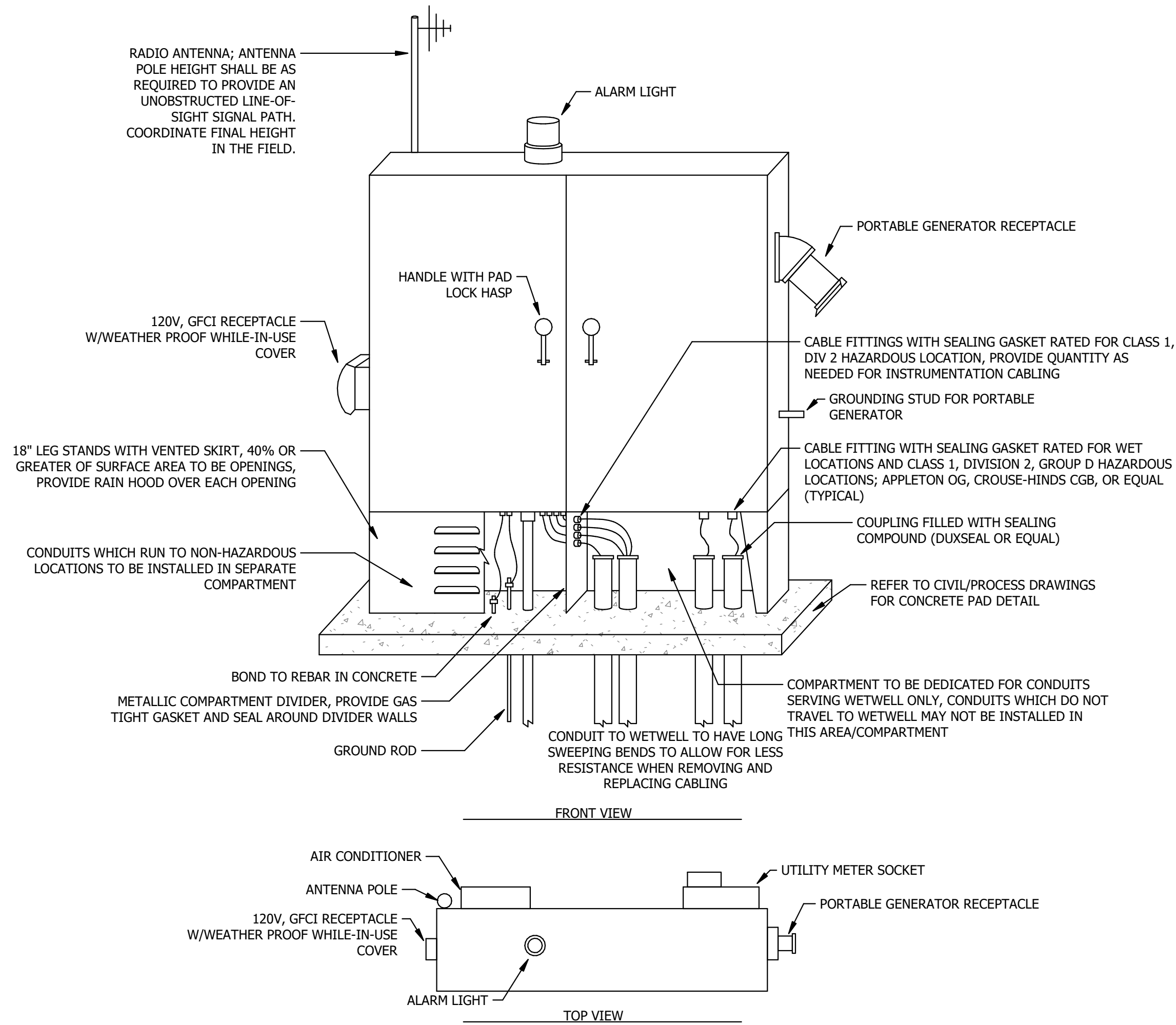
SIGNATURE: *A. R. Mueller* TYPED OR PRINTED NAME: AARON R. MUELLER
DATE: 09/29/2026 LIC NO.: 46184



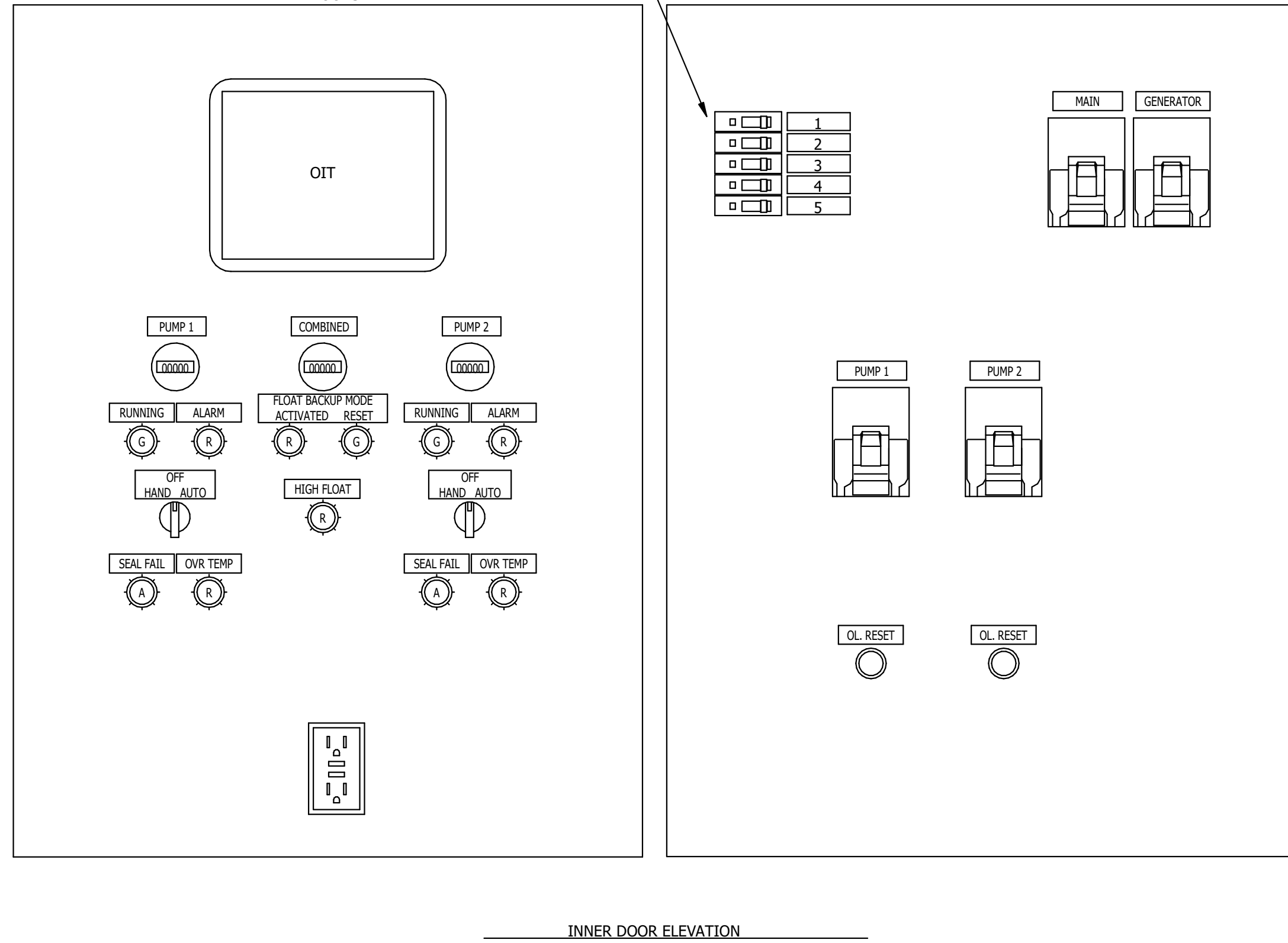
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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: burnsville@bolton-menk.com
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DESIGNED	NXP	NO.	ISSUED FOR	DATE
DRAWN	NIJ	A	MPCA	03/28/2025
		0	BID	09/29/2026
CHECKED	ARM	1	ADDENDUM #1	10/08/2026
CLIENT PROJ. NO.	0M.2131536			

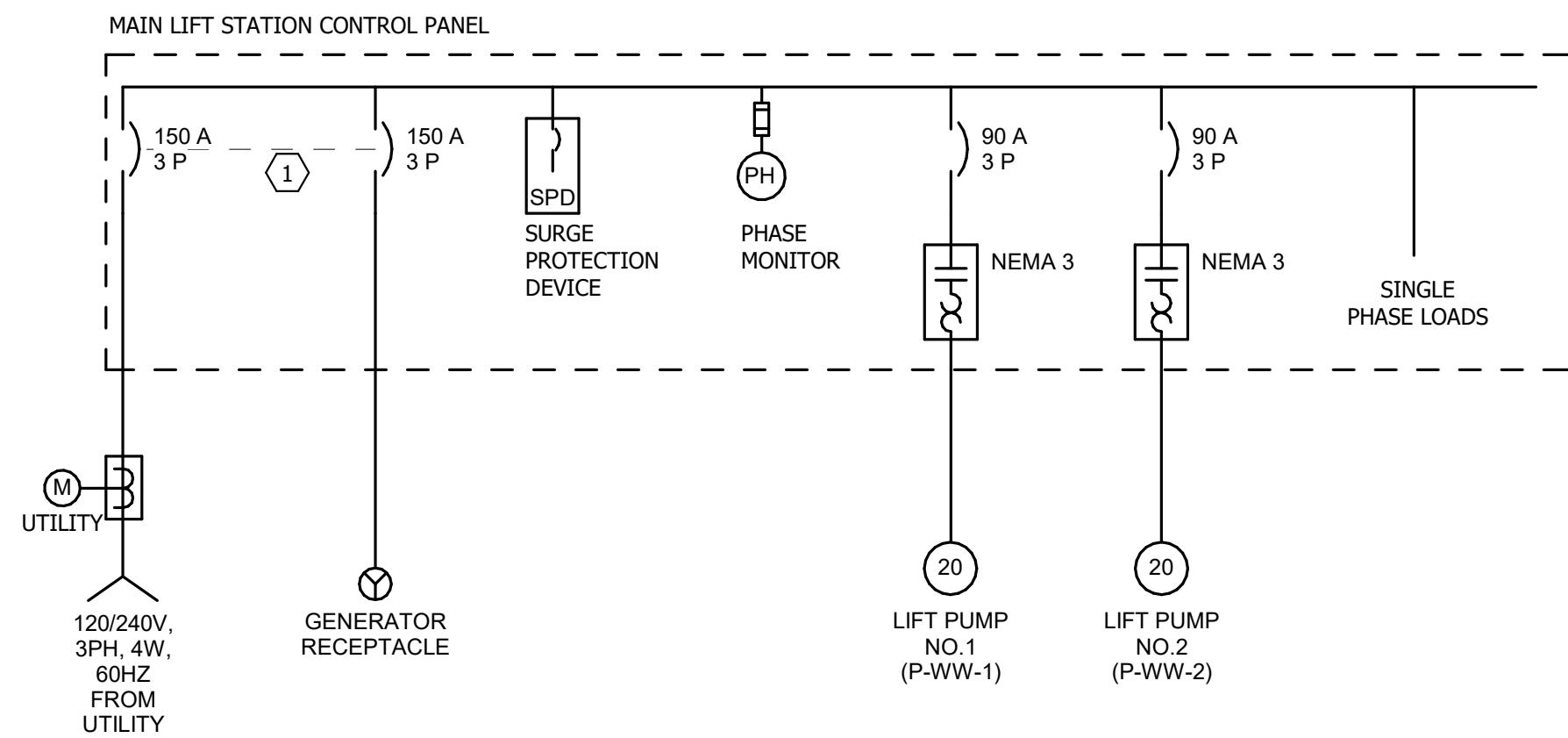
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL PLAN - CLARIFIERS



CONTROL SIDE OUTER DOOR SHALL BE CONFIGURED TO OPEN WITHOUT THE NEED TO OPEN OTHER EXTERIOR DOORS



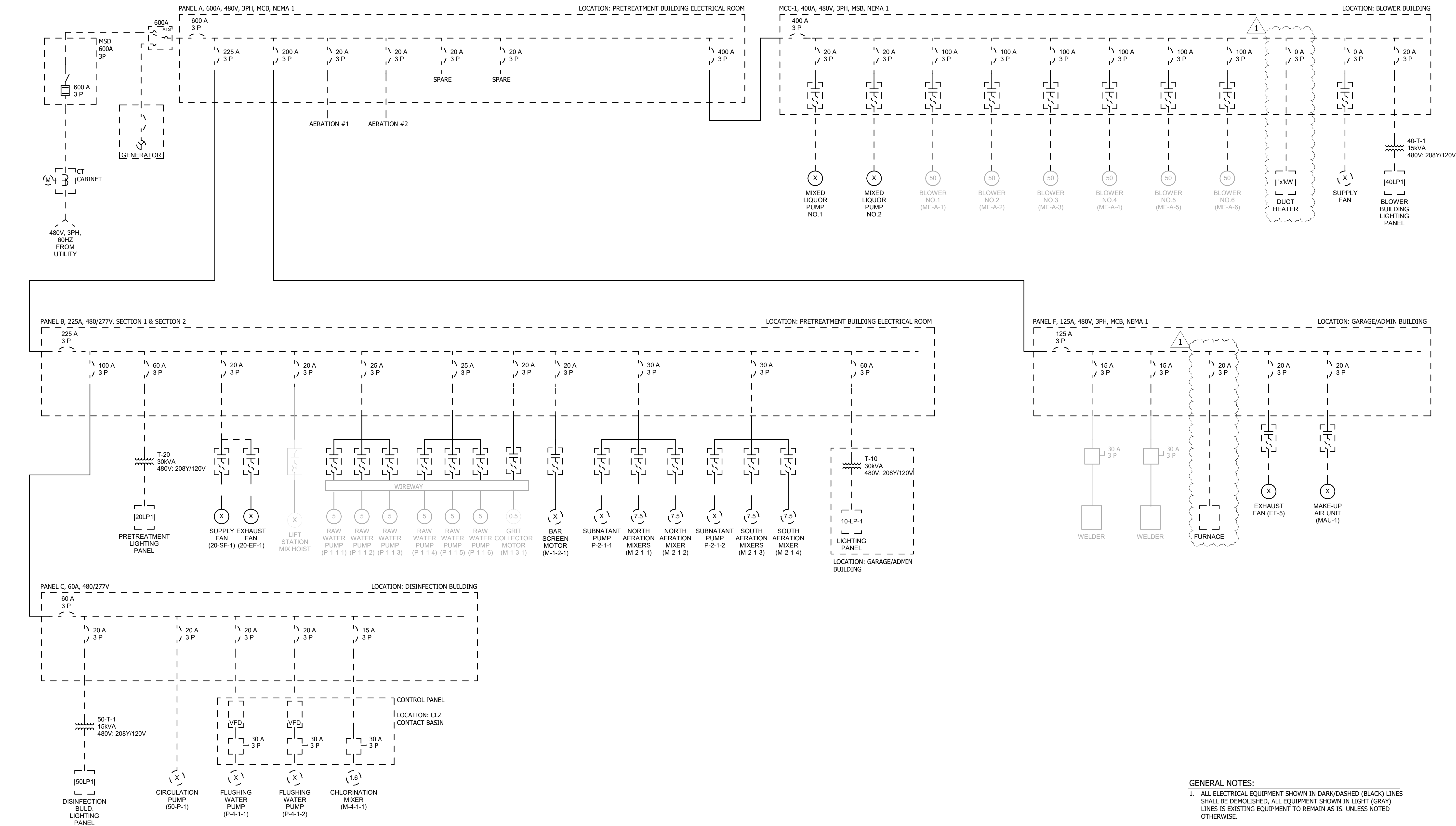
1 LIFT STATION OUTDOOR CONTROL PANEL DETAIL
NO SCALE

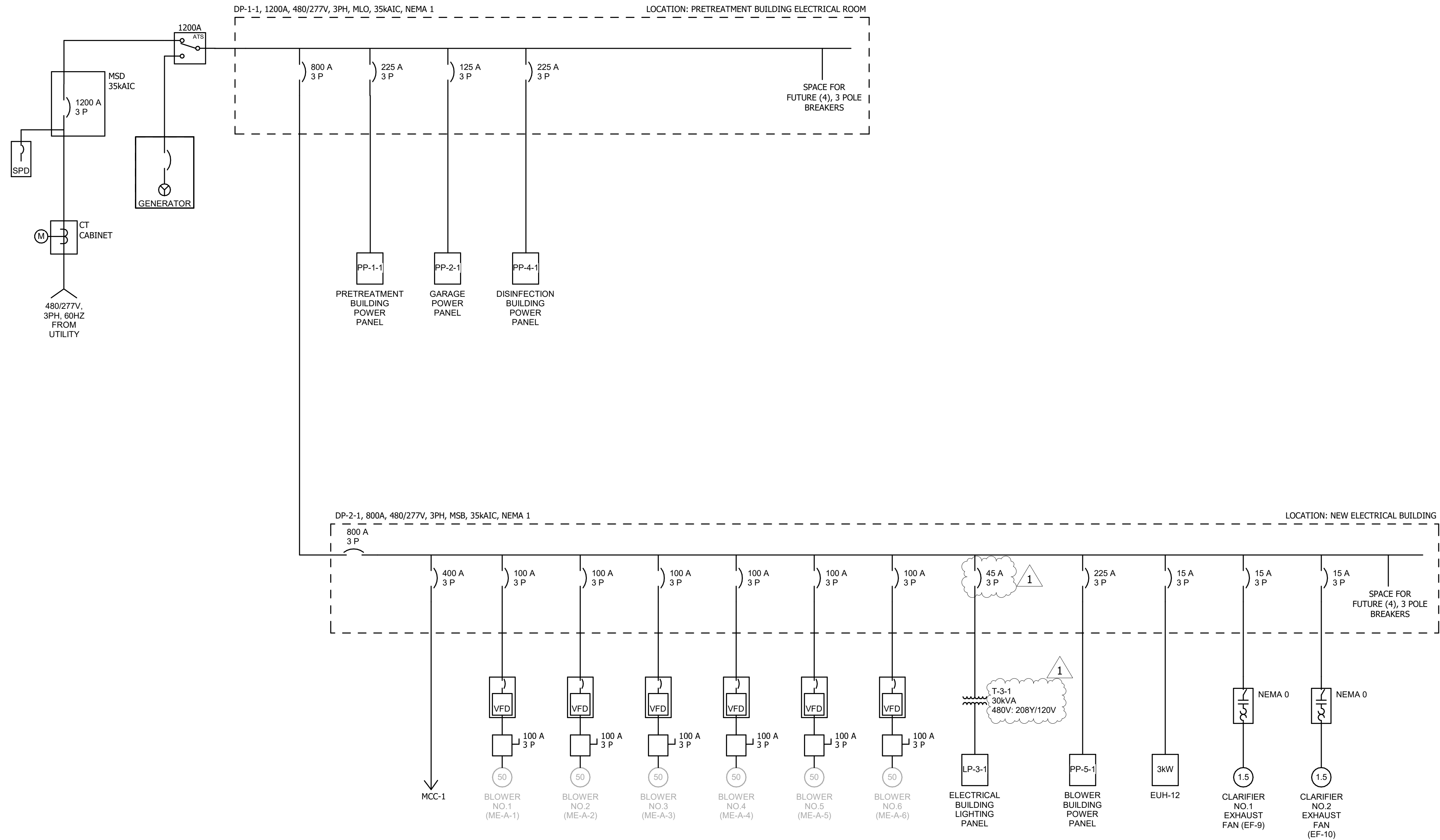


- KEYED NOTES:
- PROVIDE MECHANICAL INTERLOCK BETWEEN THE UTILITY-SOURCE CIRCUIT BREAKER AND GENERATOR-SOURCE CIRCUIT BREAKER.

2 ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

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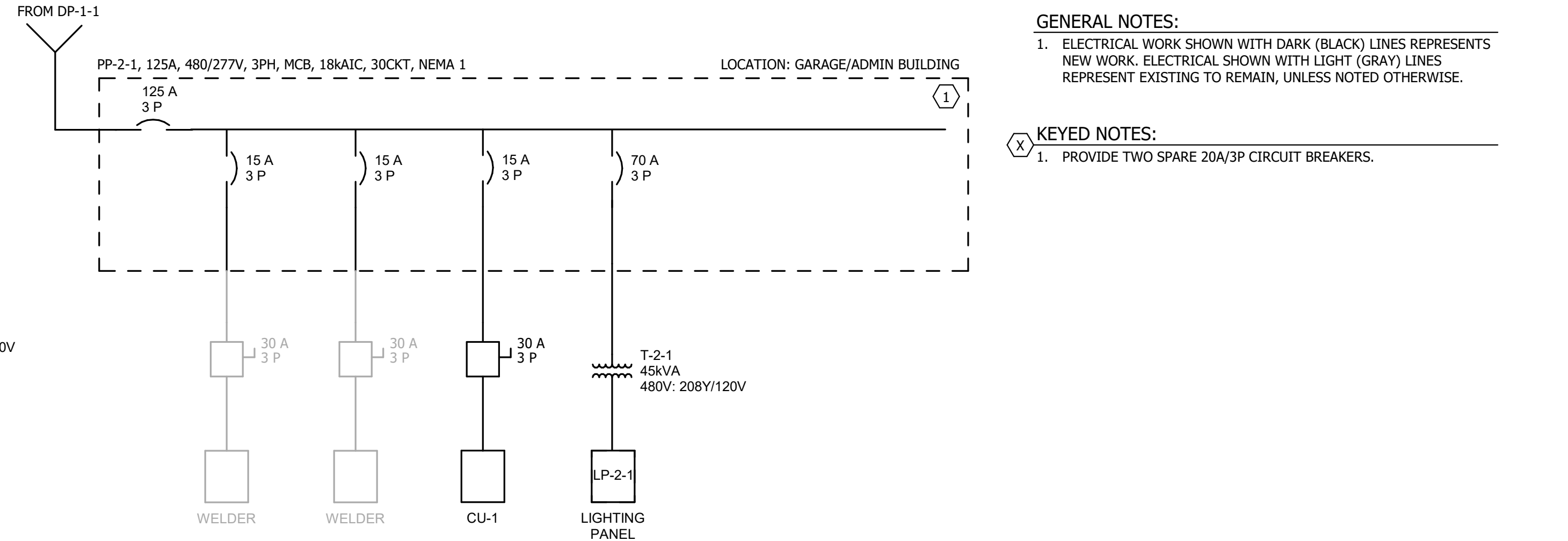
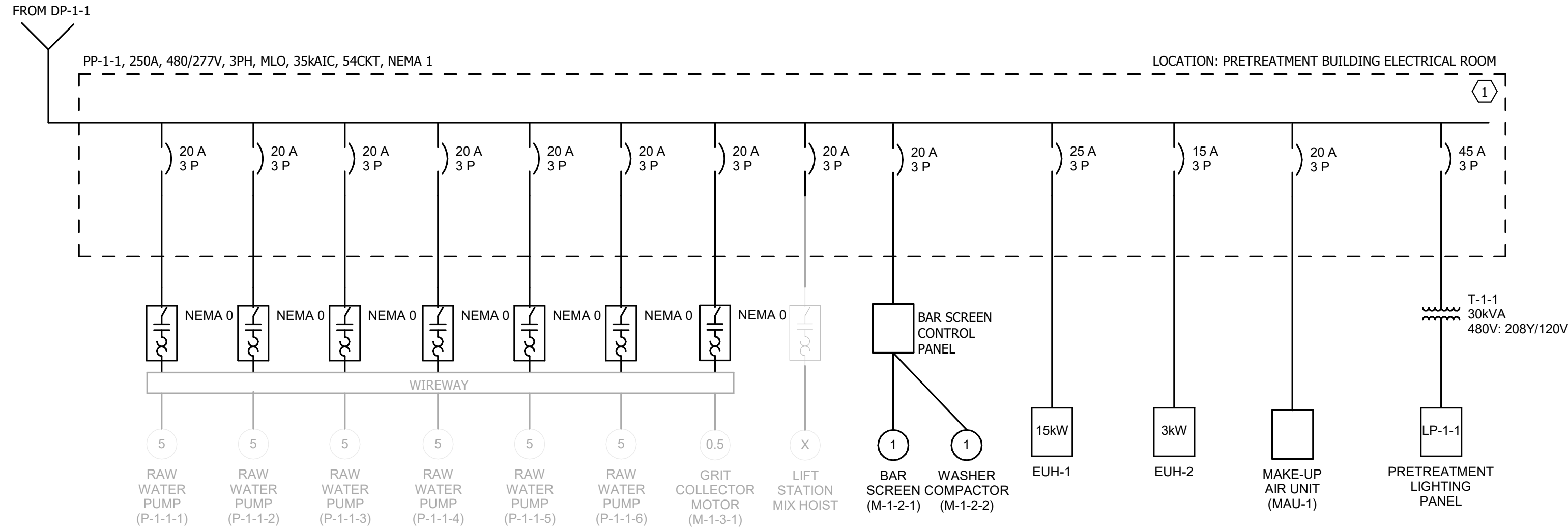


- GENERAL NOTES:
- ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

1 MODIFIED ONE-LINE DIAGRAM
NO SCALE

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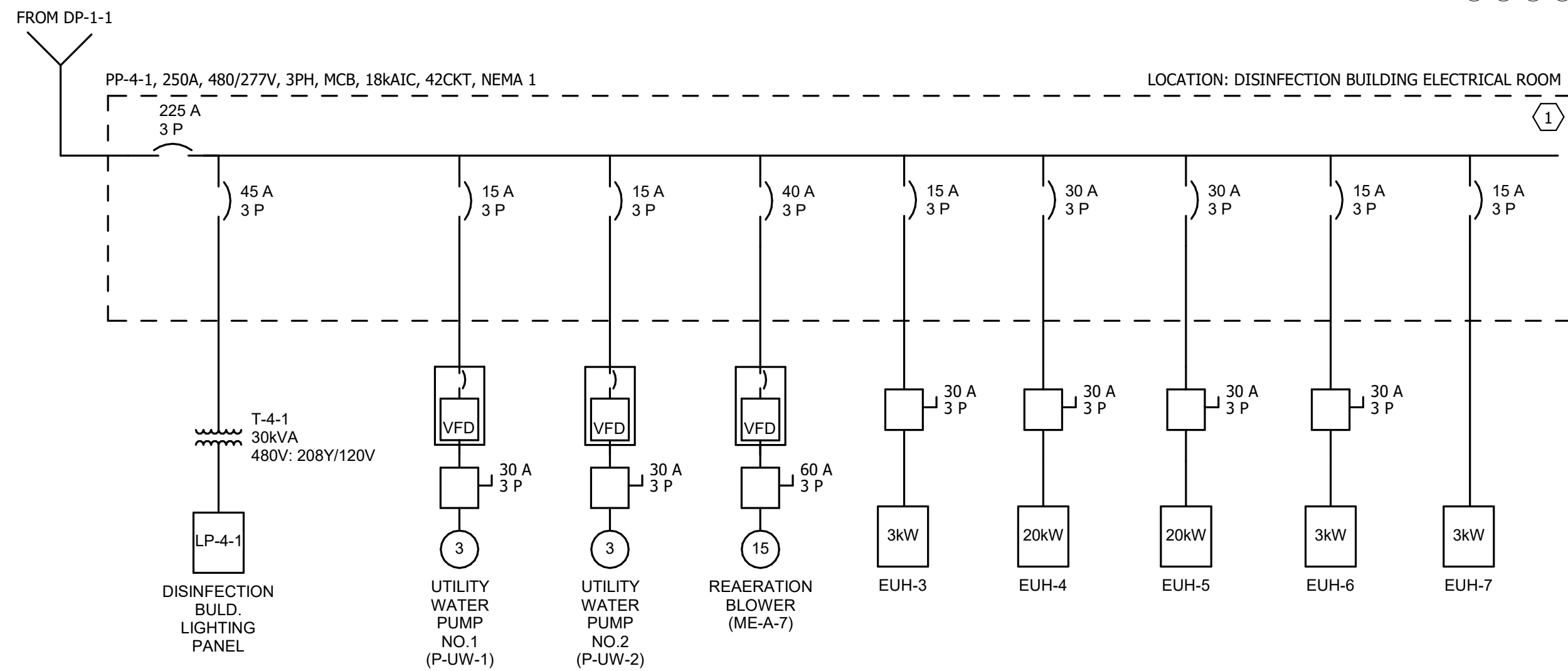
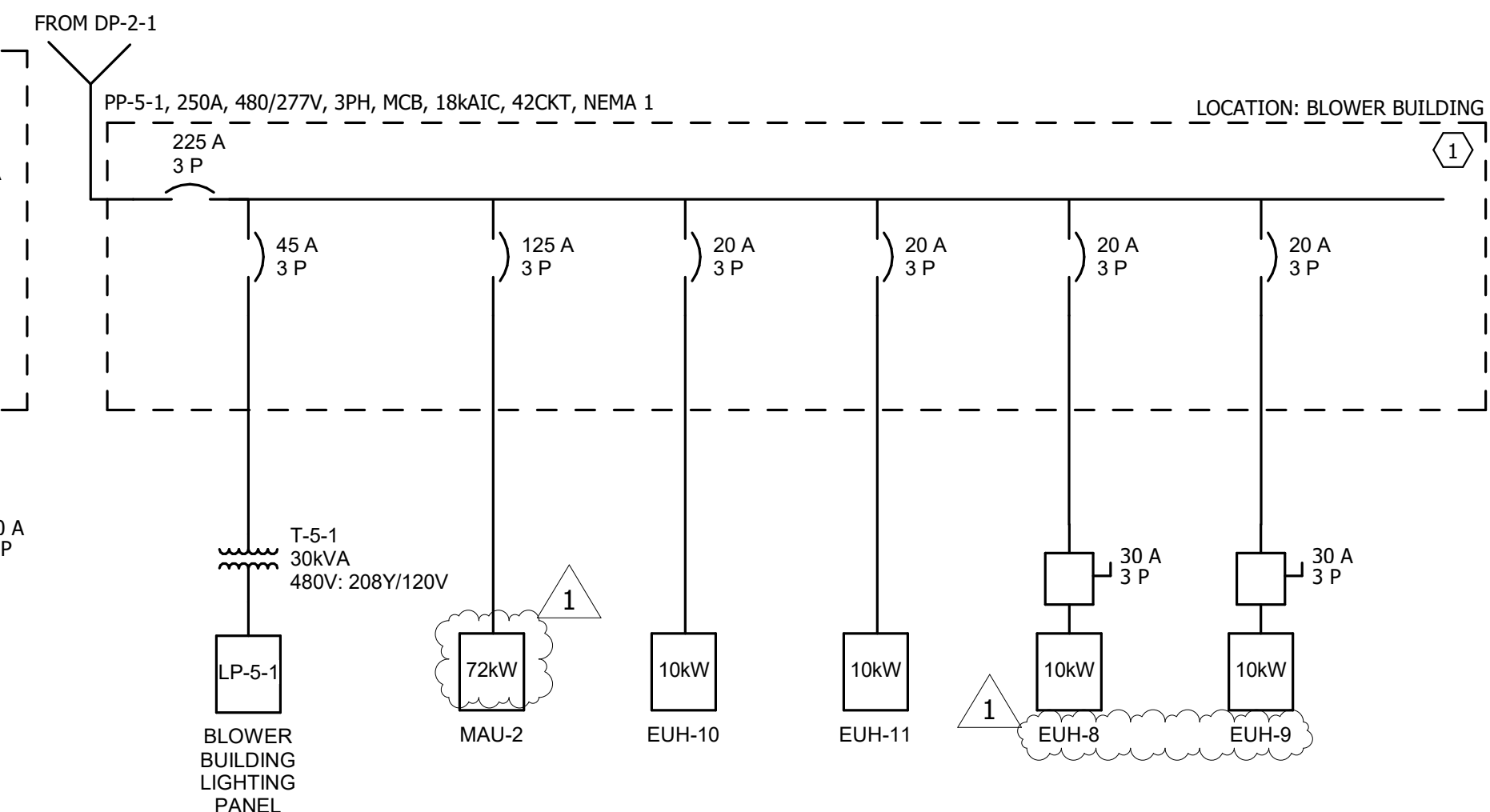
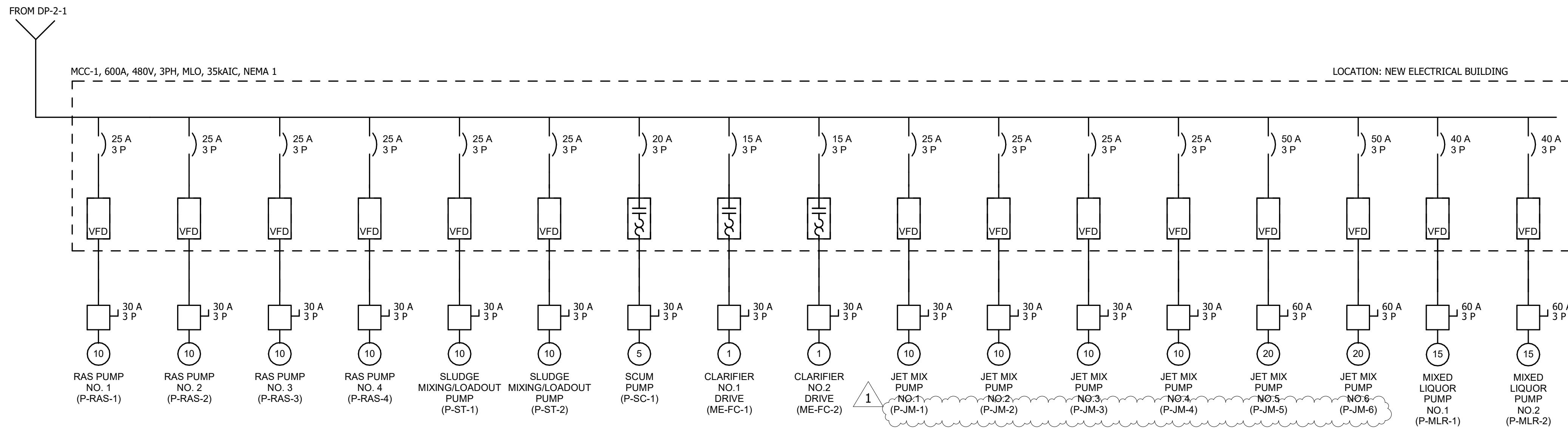


GENERAL NOTES:

1. ELECTRICAL WORK SHOWN WITH DARK (BLACK) LINES REPRESENTS NEW WORK. ELECTRICAL SHOWN WITH LIGHT (GRAY) LINES REPRESENT EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

KEYED NOTES:

1. PROVIDE TWO SPARE 20A/3P CIRCUIT BREAKERS.



1 MODIFIED ONE-LINE DIAGRAM CONTINUED

NO SCALE

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SIGNATURE: *Aaron R. Mueller* TYPE OR PRINTED NAME: AARON R. MUELLER

DATE: 09/29/2026 LIC NO.: 46184



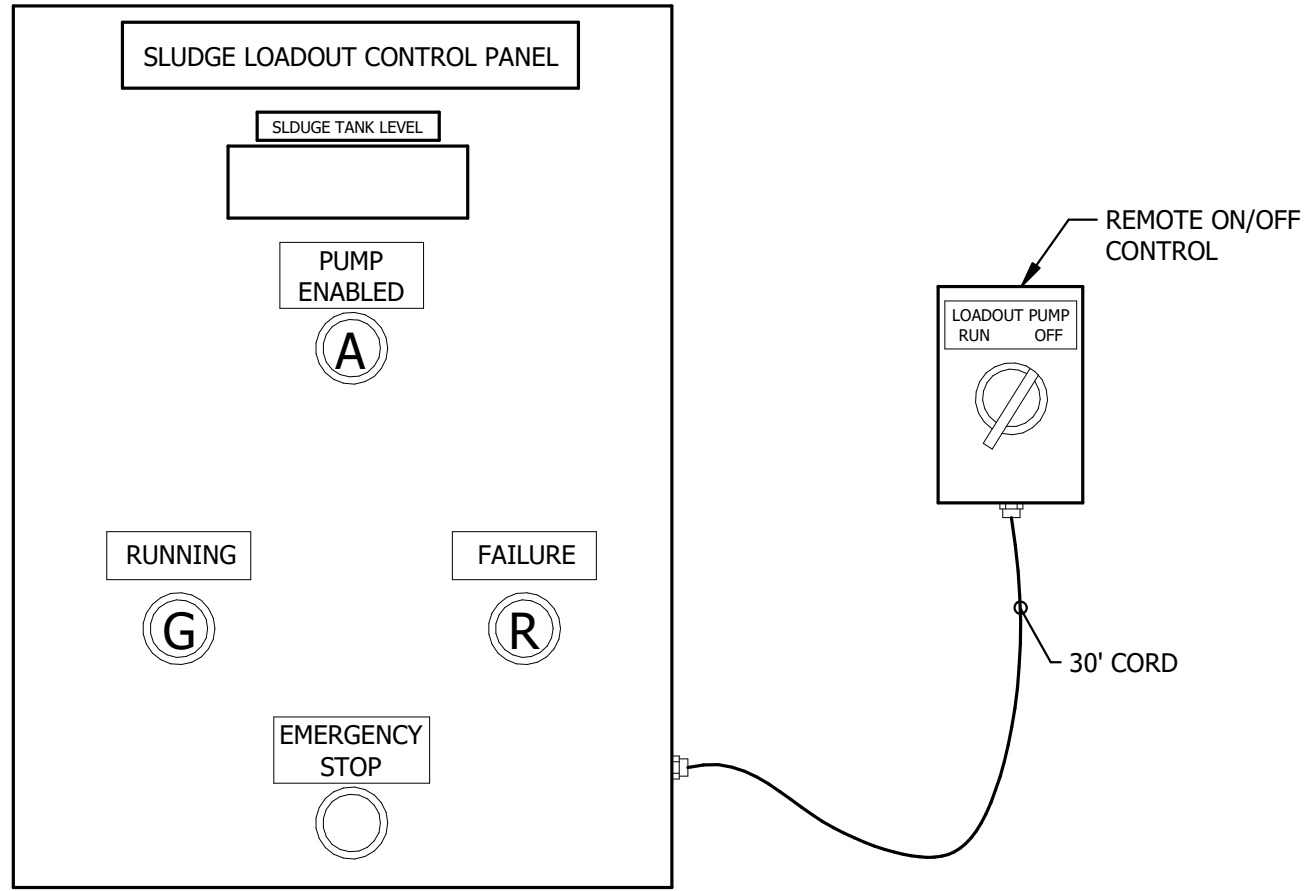
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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: burnsville@bolton-menk.com
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DESIGNED	NXP	NO.	ISSUED FOR	DATE
DRAWN	NJK	A	MPCA	03/28/2025
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CLIENT PROJ. NO.	0M.2131536	1	ADDENDUM #1	10/08/2026

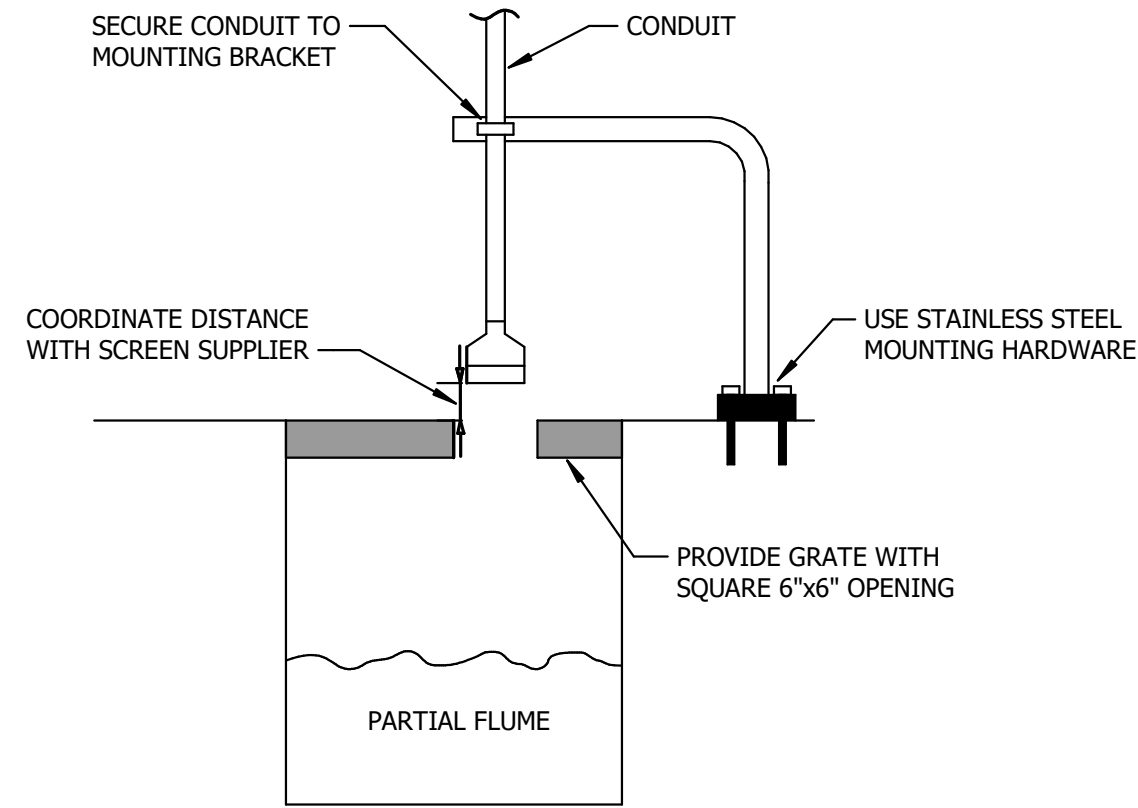
CITY OF SPRING VALLEY, MINNESOTA
WASTEWATER TREATMENT FACILITY IMPROVEMENTS
ELECTRICAL MODIFIED ONE-LINE DIAGRAM

SHEET

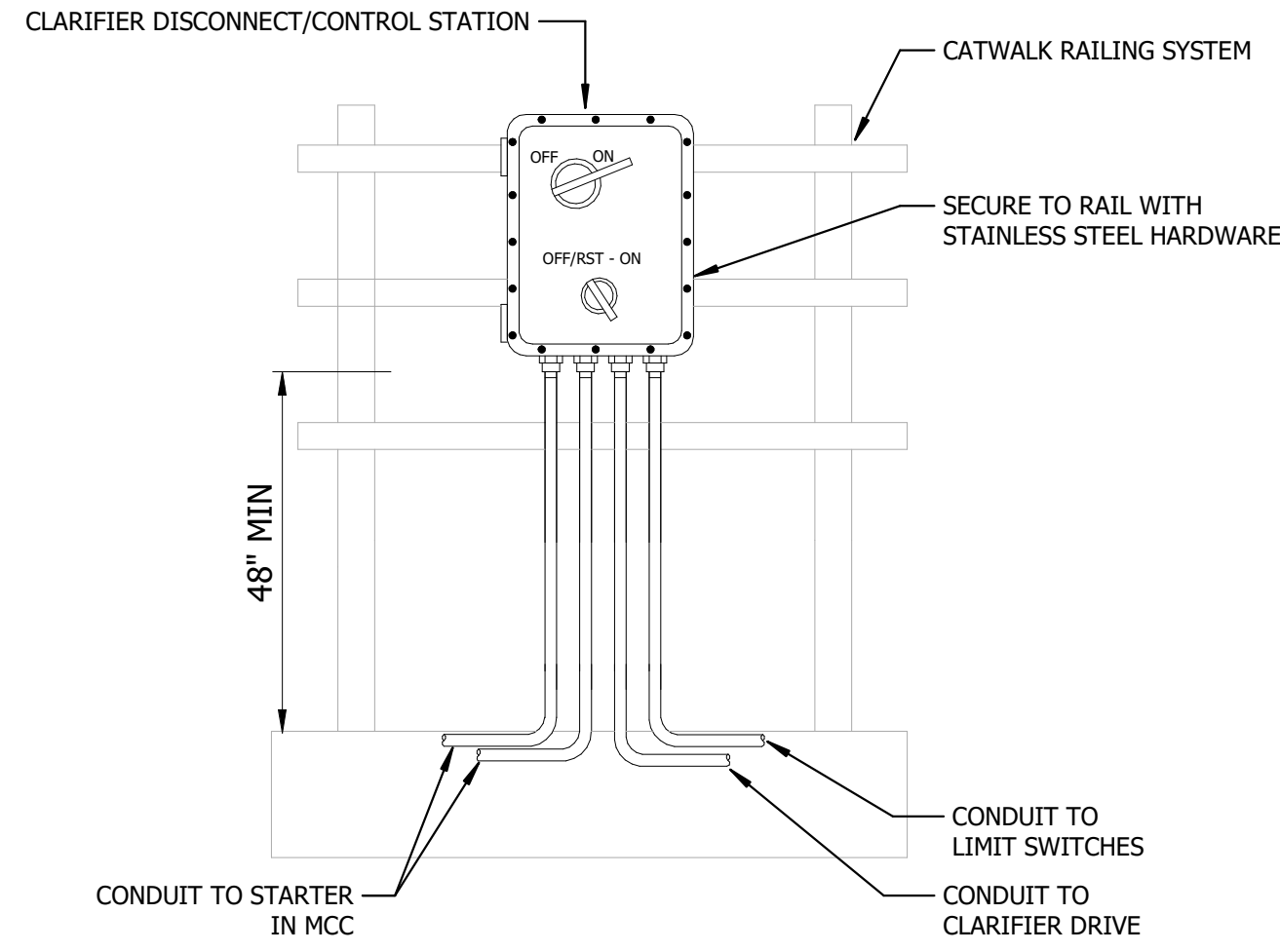
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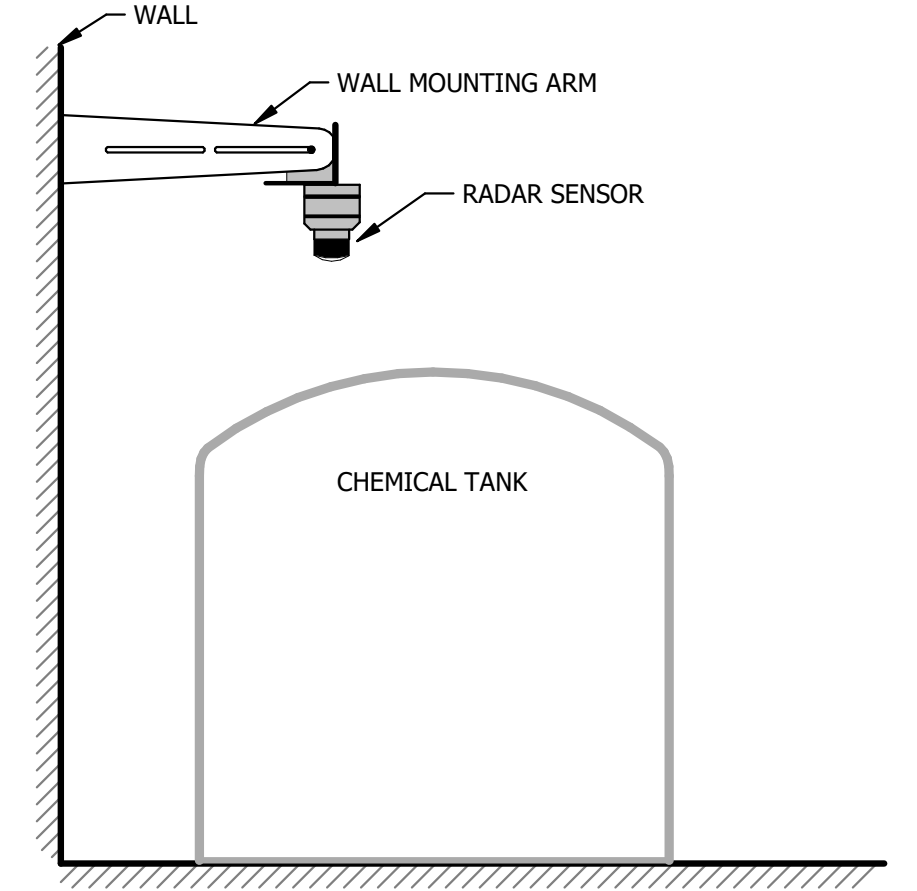
1 SLUDGE LOADOUT CONTROL PANEL ELEVATION
NO SCALE



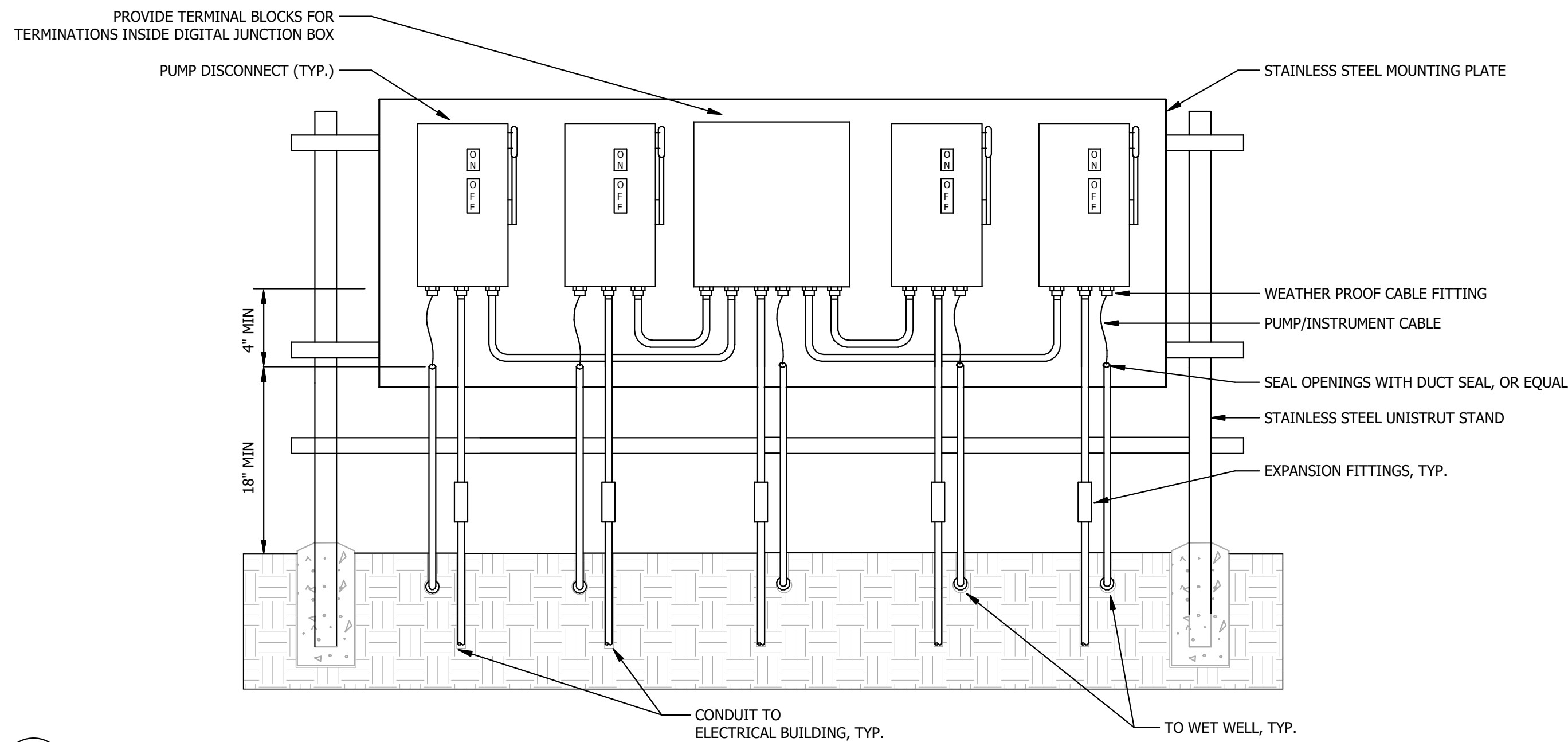
2 PARTAIL FLUME MOUNTING
NO SCALE



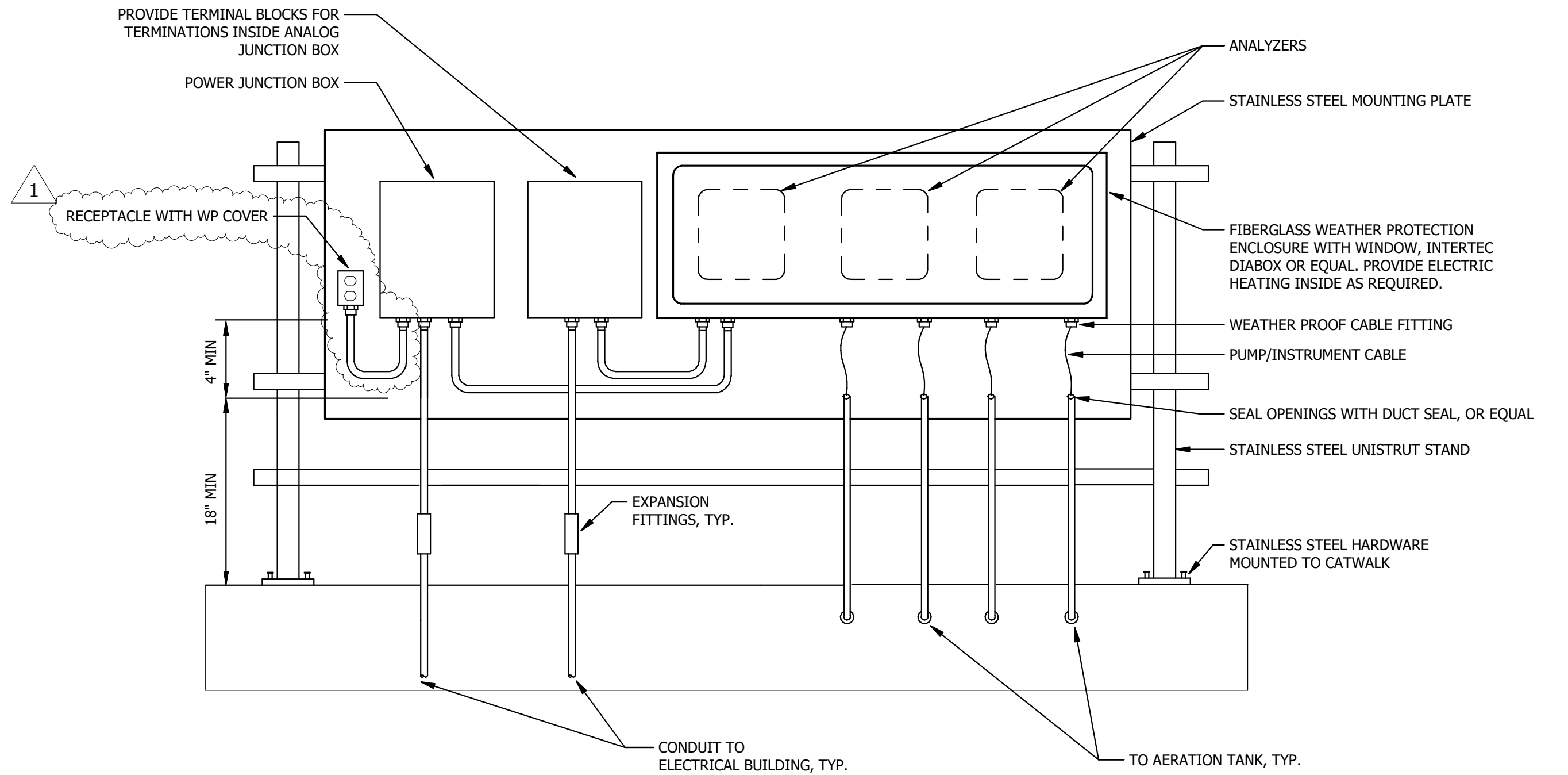
3 CLARIFIER LOCAL DISCONNECT/CONTROL STATION DETAIL
NO SCALE



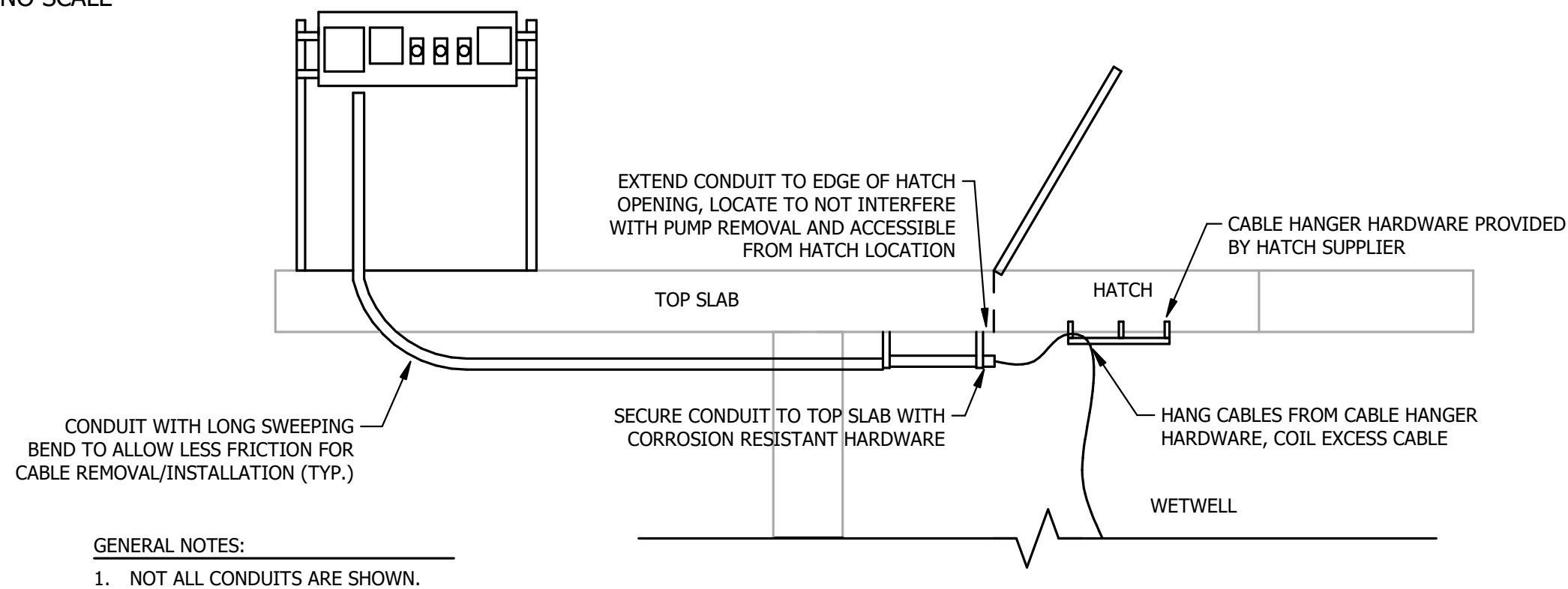
4 RADAR LEVEL TRANSMITTER MOUNTING DETAIL
NO SCALE



5 CLARIFIER RAS PUMP MOUNTING DETAIL
NO SCALE

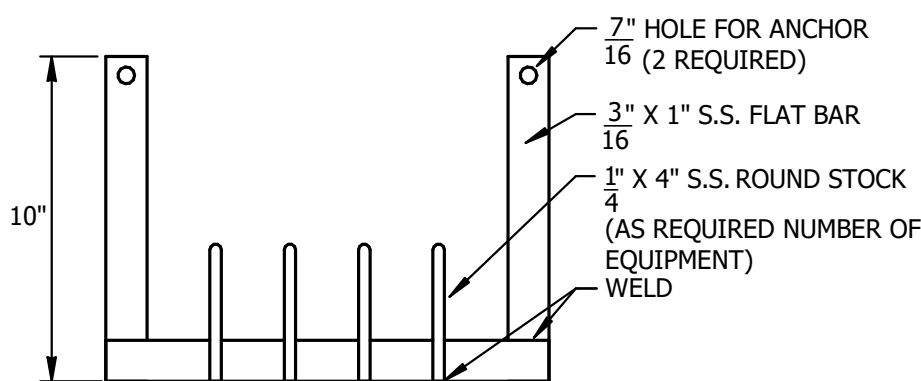


6 AERATION BASIN INSTRUMENT MOUNTING DETAIL
NO SCALE



GENERAL NOTES:
1. NOT ALL CONDUITS ARE SHOWN.

7 WETWELL ELECTRICAL INSTALLATION DETAIL
NO SCALE



8 CABLES HANGING BRACKET DETAIL
NO SCALE

LIGHT FIXTURE SCHEDULE

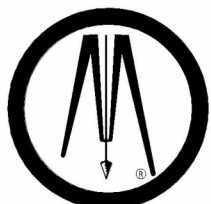
FIXTURE ID	FIXTURE TYPE	MOUNTING STYLE	RATED LUMEN OUTPUT	COLOR TEMPERATURE (°K)	VOLTAGE	INPUT WATTS	FIXTURE DESCRIPTION	FINISH COLOR	APPROVED MANUFACTURER	NOTES
A	2X2 FLAT PANEL LED	RECESSED	3,500-4,000 LUMENS, 80CRI MIN	4000K	120 V	26 W	UV RESISTANT ACRYLIC LENS, HOUSING DEPTH LESS THAN 1", OVERALL DEPTH WITH DRIVER LESS THAN 2", EDGE LIT LED, IC RATED	WHITE	ELITE 22FPL-BL SERIES, OR EQUAL	
AA1	EXTERIOR POLE MOUNTED LED	15" SQUARE ALUMINUM POLE 4" DIAMETER WITH ANCHOR BASE	LED 9,000 LUMENS, 80CRI MIN	4000K	120 V	54 W	TYPE 4 DISTRIBUTION LED DECORATIVE POLE MOUNTED FIXTURE HEADS AS SHOWN. WITH INTEGRAL PHOTOCELL AND BI-LEVEL MOTION/AMBIANT SENSOR.	BLACK	GARDCO OPT SERIES, OR EQUAL	
AA2	EXTERIOR POLE MOUNTED LED	15" SQUARE ALUMINUM POLE 4" DIAMETER WITH ANCHOR BASE	LED 9,000 LUMENS, 80CRI MIN	4000K	120 V	54 W	TYPE 2 DISTRIBUTION LED DECORATIVE POLE MOUNTED FIXTURE HEADS AS SHOWN. WITH INTEGRAL PHOTOCELL AND BI-LEVEL MOTION/AMBIANT SENSOR.	BLACK	GARDCO OPT SERIES, OR EQUAL	
1 EM	EMERGENCY WALL PACK	UNIVERSAL	LED		120 V	10 W	WHITE THERMOPLASTIC HOUSING, SEALED, MAINTENANCE-FREE NICKEL-CADMIUM BATTERIES, SELF DIAGNOSTICS.	WHITE	ELITE ELM SERIES, OR EQUAL	
EX	EXIT SIGN	UNIVERSAL	LED		120 V	4 W	THERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - ELXN400 SERIES, OR EQUAL	
EX1	EXIT SIGN WITH EMERGENCY HEADS	UNIVERSAL	LED		120 V	4 W	THERMOPLASTIC IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, WITH (1) REMOTE HEAD, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - ELXN400 SERIES, OR EQUAL	
EXZ	EXIT SIGN CLASSIFIED WITH EMERGENCY HEADS	UNIVERSAL	LED		120 V	4 W	IMPACT RESISTANT, SCRATCH RESISTANT, NICKEL-CADMIUM BATTERY. DUAL-HEAD EXIT SIGN, WITH (1) REMOTE HEAD, SELF DIAGNOSTICS.	WHITE HOUSING, RED LETTERS	ABB EMERGILITE - GGSVXH12NRD2LG SERIES, OR EQUAL	
F	4' LENSED LED STRIP LIGHT	SURFACE/CEILING	LED 7,000 LUMENS, 80CRI MIN	4000K	120 V	56 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
FC	4' LENSED CORROSION RESISTANT LED STRIP LIGHT	SURFACE/CEILING	LED 6,000 LUMENS, 80CRI MIN	4000K	120 V	49 W	VAPOR TIGHT POLYCARBONATE CORROSION RESISTANT HOUSING, WET LOCATION LISTED, TOOL-LESS NON-METALLIC LATCHES.	WHITE	ELITE LIGHTING 4-OW1P-LED SERIES, OR EQUAL	
FS	4' LENSED LED STRIP LIGHT	SUSPENDED	LED 8,000 LUMENS, 80CRI MIN	4000K	120 V	63 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
FW	4' LENSED LED STRIP LIGHT	WALL	LED 7,000 LUMENS, 80CRI MIN	4000K	120 V	56 W	COMPACT LINEAR METAL CHANNEL, FROSTED WRAPPED ROUND DIFFUSE LENS.	WHITE	ELITE LIGHTING 4-OEC-LED SERIES, OR EQUAL	
G	VANITY LED	WALL	3,000 LUMENS, 80CRI MIN	4000K	120 V	29 W	36" LINEAR VANITY LED, DAMP LOCATION LISTED,	WHITE	ELITE LIGHTING OVL-LED SERIES, OR EQUAL	
W	EXTERIOR WALL PACK	WALL	LED 4,500-6,000 LUMENS, 80CRI MIN	4000K	120 V	40 W	TYPE 4 FORWARD DISTRIBUTION, DIE CAST ALUMINUM HOUSING, ONE-PIECE HINGED DOOR, CLEAR INJECTION MOLDED ACRYLIC LENS, WITH INTEGRAL PHOTOCELL & MOTION/AMBIENT SENSOR W/DIMMING CONTROL.	BLACK	KIM LIGHTING WDS SERIES, OR EQUAL	
Z	CLASSIFIED LED	1 SURFACE/CEILING	LED 7,700 LUMENS, 80CRI MIN	4000K	120 V	60 W	EXPLOSION PROOF CLASS 1, DIVISION 1, GROUP D LED FIXTURE. TYPE 5 DISTRIBUTION. CEILING MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	
Z1	CLASSIFIED LED	STANCHION MOUNT	LED 6,000 LUMENS, 80CRI MIN	4000K	120 V	70 W	EXPLOSION PROOF CLASS 1 DIVISION 1, GROUP D LED FIXTURE. STANCHION MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	
ZW	CLASSIFIED LED	WALL	LED 7,700 LUMENS, 80CRI MIN	4000K	120 V	60 W	EXPLOSION PROOF CLASS 1 DIVISION 1, GROUP D LED FIXTURE. TYPE 5 DISTRIBUTION. WALL MOUNT KIT.	WHITE	RIG-A-LITE/AVAIL - SXPJ06 SERIES, OR EQUAL	

EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT CONNECTION SCHEDULE																
NOTES:										LEGEND: FRAC = FRACTIONAL HORSEPOWER MS = MANUAL MOTOR STARTER VFD = VARIABLE FREQUENCY DRIVE SSRV = SOLID STATE REDUCED VOLTAGE STARTER FVNR = FULL VOLTAGE NON-REVERSING STARTER M = MOTOR RATED SWITCH MFR = PROVIDE PER MANUFACTURER RECOMMENDATIONS MECH = PROVIDED BY EQUIPMENT SUPPLIER OR WITH EQUIPMENT ELEC = PROVIDED UNDER DIVISION 26						
MOTOR/ EQUIPMENT ID	LOCATION	HP	ELECTRIC HC KW	FLA	MCA	MOCP	VOLTAGE	PHASE	DISCONNECT INFORMATION			STARTER INFORMATION				NOTES
									PROVIDED BY	AMPERAGE	FUSES	LOCATION	PROVIDED BY	TYPE/SIZE	LOCATION	
BB-1	OFFICE 107A		2.5	12		20	208 V	1	MFR				MFR			
BB-2	OPERATIONS ROOM 102		2.5	12		20	208 V	1	MFR				MFR			
CU-1	ADMIN BUILDING, GRADE			0.6	7.9	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	MFR			
EF-1	ADMIN BUILDING, GARAGE	1		12.5	15.6	25	208 V	1	ELEC	30/2P NEMA 12		NEAR UNIT	MFR			
EF-2	PRETREATMENT BLDG, EXTERIOR	1		2.1	2.6	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	MFR			
EF-3	DISINFECTION BLDG, STORAGE 106	1/2		6.6	8.2	20	120 V	1	MFR				MFR			
EF-4	DISINFECTION BLDG, CHLORINE 105	1/2		6.6	8.2	20	120 V	1	MFR				MFR			
EF-5	DISINFECTION BLDG, 104	1/5		2.8	3.5	20	120 V	1	MFR				MFR			
EF-6	DISINFECTION BLDG, SULFUR DIOXIDE 102	1/2		6.6	8.2	20	120 V	1	MFR				MFR			
EF-7	DISINFECTION BLDG, CARBON FEED 101	1/2		6.6	8.2	20	120 V	1	MFR				MFR			
EF-8	BLOWER BUILDING, ROOF	2		3.2	4	15	480 V	3	ELEC	30/3P NEMA 3R		ON UNIT	MFR			
EF-9	CLARIFIER	1 1/2		3	3.8	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	ELEC			
EF-10	CLARIFIER	1 1/2		3	3.8	15	480 V	3	ELEC	30/3P NEMA 3R		NEAR UNIT	ELEC			
EF-11	OPERATIONS ROOM 102			1.3	1.6	20	120 V	1	ELEC	2-POLE TOGGLE		ON UNIT	MFR			
EF-12	OPERATIONS ROOM 102			1.3	1.6	20	120 V	1	ELEC	2-POLE TOGGLE		ON UNIT	MFR			
EUH-1	PRETREATMENT BLDG, SCREENING ROOM 101		15	19		25	480 V	3	MFR							
EUH-2	PRETREATMENT BLDG, ELEC 102		3	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		PP-1-1				
EUH-3	DISINFECTION BLDG, STORAGE ROOM 106		3	3.6		15	480 V	3	ELEC	30/3P NEMA 1		NEAR UNIT				
EUH-4	DISINFECTION BLDG, CHLORINE 105		20	24		30	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-5	DISINFECTION BLDG, SULFUR DIOXIDE 102		20	24		30	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-6	DISINFECTION BLDG, CARBON FEED 101		3	3.6		15	480 V	3	ELEC	30/3P NEMA 4X		NEAR UNIT				
EUH-7	DISINFECTION BLDG, ELECTRICAL RM 103		2.2	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		PP-4-1				
EUH-8	BLOWER BUILDING, LOWER LEVEL		10	12		20	480 V	3	ELEC	30/3P NEMA 1		NEAR UNIT				
EUH-9	BLOWER BUILDING, LOWER LEVEL		10	12		20	480 V	3	ELEC	30/3P NEMA 1		NEAR UNIT				
EUH-10	BLOWER BUILDING, UPPER LEVEL		10	12		20	480 V	3	ELEC	CIRCUIT BREAKER		PP-5-1				
EUH-11	BLOWER BUILDING, UPPER LEVEL		10	12		20	480 V	3	ELEC	CIRCUIT BREAKER		PP-5-1				
EUH-12	NEW ELECTRICAL BUILDING		3	3.6		15	480 V	3	ELEC	CIRCUIT BREAKER		DP-2-1				
EUH-13	ADMIN BUILDING, VESTIBULE 101		1.5	12.5		20	120 V	1	MFR							
F-1	ADMIN BUILDING, MECH RM 108				7.8	15	120 V	1	ELEC	2-POLE TOGGLE		NEAR UNIT	MFR			
GUH-1	DISINFECTION BLDG, BLOWER ROOM 104			1.3		20	120 V	1	MFR							
GUH-2	DISINFECTION BLDG, BLOWER ROOM 104			1.3		20	120 V	1	MFR							
GUH-3	ADMIN BUILDING, MECH RM 108			1.3		20	120 V	1	MFR							
GUH-4	ADMIN BUILDING, PARTS ROOM			1.3		20	120 V	1	MFR							
GWH-1	DISINFECTION BLDG, 104			3	-	20	120 V	1	ELEC	2-POLE TOGGLE		NEAR UNIT	MECH			
GWH-2	MECHANICAL ROOM 108			3	-	20	120 V	1	ELEC	2-POLE TOGGLE		NEAR UNIT	MECH			
HWCP-1	MECHANICAL ROOM 108			-	-	20	120 V	1	ELEC	2-POLE TOGGLE		NEAR UNIT	MECH			
MAU-1	PRETREATMENT BLDG, EXTERIOR			12	-	20	480 V	3	MFR				MECH			
MAU-2	BLOWER BUILDING, ROOF			86.6	-	125	480 V	3	MFR				MECH			
MSI-1	PRETREATMENT BLDG, ELEC 102			-	-	-	120 V	1	ELEC	2-POLE TOGGLE						
MSI-2	DISINFECTION BLDG, BOILER RM 103					-	120 V	1	ELEC	2-POLE TOGGLE						
MSI-3	NEW ELEC BUILDING					-	208 V	1	ELEC	2-POLE TOGGLE						
MSO-1	PRETREATMENT BLDG, EXTERIOR				12	15	208 V	1	ELEC	30/2P NEMA 3R	FUSES PER MFR	NEAR UNIT	MFR			
MSO-2	DISINFECTION BLDG, EXTERIOR				12	15	208 V	1	ELEC	30/2P NEMA 3R	FUSES PER MFR	NEAR UNIT	MFR			
MSO-3	NEW ELEC BUILDING, EXTERIOR				25	35	208 V	1	ELEC	60/2P NEMA 3R	FUSES PER MFR	NEAR UNIT	MFR			

PANELBOARD SCHEDULE

PANELBOARD SCHEDULE			NAME: LP-1-1		PANEL ID		B	MAIN CIRCUIT BREAKER: 125				KAIC RATING: 10			
			LOCATION: PRETREATMENT ELECTRICAL ROOM				MAIN LUGS ONLY:				VOLTAGE: 208Y/120				
			MOUNTING: SURFACE					WIRES: 4				PHASE: 3			
CKT	CIRCUIT DESCRIPTION		TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION		CKT
B1	L. ELECTRICAL ROOM		20 A	1	508	1200					1	20 A	PRETREATMENT BUILDING CONTROL PANEL, SCP-2		B2
B3	L. PRETREATMENT ROOM		20 A	1			732	250			1	20 A	EXISTING GRIT COLLECTOR CONTROL PANEL		B4
B5	L. EXTERIOR BUILDING		20 A	1					120	200	1	20 A	PH-AIT-2, ELECTRICAL ROOM		B6
B7	L. LIFT STATION WETWELL		20 A	1	500	250					1	20 A	GAS DETECTION TRANSMITTER		B8
B9	R. MAU-01		20 A	1			180	0			1	20 A	SPARE		B10
B11	R. ELECTRICAL ROOM, EXTERIOR		20 A	1					720	0	1	20 A	SPARE		B12
B13	SPARE		20 A	1	0	0					1	20 A	SPARE		B14
B15	SPARE		20 A	1			0	0			1	20 A	SPARE		B16
B17	SPARE		20 A	1					0	0	1	20 A	SPARE		B18
B19	SPARE		20 A	1	0	0					1	20 A	SPARE		B20
B21	SPARE		20 A	1			0	0			1	20 A	SPARE		B22
B23	SPARE		20 A	1					0	0	1	20 A	SPARE		B24
B25	SPACE		--	1	--	0					1	20 A	SPARE		B26
B27	SPACE		--	1			--	0			1	20 A	SPARE		B28
B29	SPACE		--	1					--	0	1	20 A	SPARE		B30
B31	SPACE		--	1	--	1248					2	15 A	MSI-1/MSO-1		B32
B33	SPACE		--	1			--	1248							B34
B35	SPACE		--	1					--	0	2	30 A	PANEL C (FUEL FILL STATION), ELEC ROOM		B36
B37	SPACE		--	1	--	0									B38
B39	SPACE		--	1			--	5000		1	2	100 A	GENERATOR LOAD CENTER		B40
B41	SPACE		--	1					--	5000					B42
TOTAL CONNECTED LOAD			17156 VA			TOTAL CALCULATED DEMAND			13725 VA			TOTAL CALCULATED AMPS			38 A
GENERAL NOTES:								KEY NOTES:							
1.								* GFCI RATED BREAKER							
2.															
3.															
4.								L. = LIGHTING							
								R. = RECEPTACLE							



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PANELBOARD SCHEDULE		NAME: LP-2-1		PANEL ID	D	MAIN CIRCUIT BREAKER: 150				KAIC RATING: 10				
		LOCATION: GARAGE		MAIN LUGS ONLY:				VOLTAGE: 208Y/120						
		MOUNTING:	SURFACE			WIRES: 4				PHASE: 3				
CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	CKT	
D1	L. LAB, OFFICES', CONFERENCE RM.	20 A	1	484	148					1	20 A	L. HALL, RESTROOMS	D2	
D3	GARAGE DOOR	20 A	1			1176	756			1	20 A	L. MECH ROOM, STORAGE ROOM, MEZZ	D4	
D5	GARAGE DOOR	20 A	1					1176	546	1	20 A	L. RESTROOMS EF-11, EF-12	D6	
D7	R. OFFICE	20 A	1	720	1300					1	20 A	L. GARAGE SOUTH	D8	
D9	*R. REFRIGERATOR, BREAKROOM	20 A	1			600	1400			1	20 A	L. GARAGE EAST	D10	
D11	R. GARAGE NORTH & WEST	20 A	1					520	1200	1	20 A	L. GARAGE NORTH	D12	
D13	FURNACE F-1, MECH ROOM	20 A	1	936	800					1	20 A	L. EXTERIOR BUILDING	D14	
D15	R. DATA RACK, OPERATIONS ROOM	20 A	1			180	0			1	20 A	SPARE	D16	
D17	R. LAB, EXTERIOR	20 A	1					540	1500	1	20 A	EUH-15, VESTUBULE	D18	
D19	R. RMS 104, 108, 109	20 A	1	520	540					1	20 A	R. MEZZ LEVEL	D20	
D21	*R. REFRIGERATOR, OPERATIONS ROOM	20 A	1			600	360			1	20 A	R. COMPUTER, LAB	D22	
D23	GARAGE CEILING FANS	20 A	1					600	900	1	20 A	R. OPERATIONS ROOM, HALLWAY	D24	
D25	R. RESTROOMS	20 A	1	360	720					1	20 A	R. ABOVE COUNTER, LAB	D26	
D27	BASEBOARD HEATER BB-A, OPERATIONS ROOM	20 A	2			1250	180			1	20 A	R. ABOVE COUNTER, OPERATIONS ROOM	D28	
D29								1250	460	1	20 A	GWH-2 & HWCP-1, MECH ROOM	D30	
D31	BASEBOARD HEATER BB-A, OFFICE	20 A	2	1250	180					1	20 A	R. NORTH EXTERIOR	D32	
D33						1250	200			1	20 A	EXISTING LOAD GARAGE	D34	
D35	GAS UNIT HEATERS GUH-3/GUH-4, MECH, STORAGE	20 A	1					312	200	1	20 A	EXISTING LOAD GARAGE	D36	
D37	SPARE	20 A	1	0	0					1	20 A	EXISTING LOAD	D38	
D39	EF-1, GARAGE	25 A	2			1373	2000			2	50 A	R. WELDER	D40	
D41								1373	2000				D42	
D43	NORTH GATE PUMPS	20 A	1	600	1664					2	20 A	PORTABLE ACTUATOR CHARGING STATION, LAB	D44	
D45						4992	1664						D46	
D47	AIR COMPRESSOR	60 A	2					4992	0	1	20 A	SPARE	D48	
D49				2600	0					1	20 A	SPARE	D50	
D51	GRINDER	30 A	3			2600	1000			2	20 A	HOIST	D52	
D53								2600	1000				D54	
TOTAL CONNECTED LOAD		55571 VA		TOTAL CALCULATED DEMAND						44457 VA		TOTAL CALCULATED AMPS		123 A
GENERAL NOTES:						KEY NOTES:								
1.						* GFCI RATED BREAKER								
2.														
3.														
4.														
						L. = LIGHTING								
						R. = RECEPTACLE								

PANELBOARD SCHEDULE		NAME:		LP-4-1	PANEL ID		C	MAIN CIRCUIT BREAKER:				125	KAIC RATING:		10			
		LOCATION:		DISINFECTION BUILDING			MAIN LUGS ONLY:				VOLTAGE:				208Y/120			
		MOUNTING:		SURFACE			WIRES:				4	PHASE:				3		
CKT	CIRCUIT DESCRIPTION			TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION			CKT	
C1	L. FLUSHING WATER ROOM			20 A	1	449	500					1	20 A	DISINFECTION BUILDING CONTROL PANEL, SCP-3			C2	
C3	L. EXTERIOR BUILDING**			20 A	1			120	250			1	20 A	FE-2/FIT-2			C4	
C5	L. SULFUR FEED ROOM, EF-6			20 A	1					890	1248	2	15 A	MSI-2/MSO-2			C6	
C7	L. ROOMS 106, 101 - EF-3, EF-7			20 A	1	1794	1248										C8	
C9	L. CHLORINE FEED ROOM, EF-4			20 A	1			890	500			1	20 A	GAS DETECTION TRANSMITTERS / CL2 & SULFUR			C10	
C11	R. CL2 CONTACT BASIN			20 A	1					180	312	1	20 A	GAS UNIT HEATERS GUH-1/GUH-2, ROOM 104			C12	
C13	EXHAUST FAN EF-5, ROOM 104			20 A	1	336	250					1	20 A	EFFLUENT SAMPLER, CL2 CONTACT BASIN			C14	
C15	R. ROOMS 105, 106			20 A	1			540	360			1	20 A	CARBON FEED ROOM CHEMICAL PUMPS			C16	
C17	R. ROOMS 101, 102			20 A	1					360	540	1	20 A	R. ELECTRICAL ROOM, EXTERIOR			C18	
C19	GWH-1, ROOM 104			20 A	1	1920	500					1	20 A	CHLORINE EM SHUT OFF PNL & VACUUM MONITOR			C20	
C21	SULFUR SCALE TRANSMITTER & PACE PANEL			20 A	1			500	250			1	20 A	CHLORINE SCALE TRANSMITTER			C22	
C23	SPARE			20 A	1					0	720	1	20 A	R. ROOM 104			C24	
C25	SPARE			20 A	1	0	0					1	20 A	SPARE			C26	
C27	SPARE			20 A	1			0	0			1	20 A	SPARE			C28	
C29	SPARE			20 A	1					0	0	1	20 A	SPARE			C30	
C31	SPACE			--	1	--	--					1	--	SPACE			C32	
C33	SPACE			--	1			--	--			1	--	SPACE			C34	
C35	SPACE			--	1					--	--	1	--	SPACE			C36	
C37	SPACE			--	1	--	--					1	--	SPACE			C38	
C39	SPACE			--	1			--	--			1	--	SPACE			C40	
C41	SPACE			--	1					--	--	1	--	SPACE			C42	
TOTAL CONNECTED LOAD				14657 VA			TOTAL CALCULATED DEMAND				11726 VA			TOTAL CALCULATED AMPS				33 A
GENERAL NOTES:									KEY NOTES:									
1.									* GFCI RATED BREAKER									
2.																		
3.																		
4.																		
									L. = LIGHTING									
									R. = RECEPTACLE									

PANELBOARD SCHEDULE		NAME:		LP-3-1	PANEL ID		E	MAIN CIRCUIT BREAKER:				125	KAIC RATING:				10	
		LOCATION:		ELECTRICAL BUILDING				MAIN LUGS ONLY:				VOLTAGE:				208Y/120		
		MOUNTING:		SURFACE				WIRES:				4	PHASE:				3	
CKT	CIRCUIT DESCRIPTION			TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION			CKT	
E1	SCADA CONTROL PANEL (SCP-1)			20 A	1	1200	486					1	20 A	L. AERATION BASIN			E2	
E3	R. ELECTRICAL BUILDING, EXTERIOR			20 A	1			900	422			1	20 A	L. ELECTRICAL BUILDING, EXTERIOR			E4	
E5	R. AERATION BASIN			20 A	1					360	0	1	20 A	SPARE			E6	
E7	AERATION BASIN EAST ANALYZERS			20 A	1	500	0					1	20 A	SPARE			E8	
E9	MSI-3/MSO-3			25 A	2			2080	390			1	20 A	L. R. - CLARIFIER NO. 1			E10	
E11								2080	500	1	20 A	**HEAT TAPE - CLARIFIER NO. 1			E12			
E13	AERATION BASIN WEST ANALYZERS			20 A	1	500	390					1	20 A	L. R. - CLARIFIER NO. 2			E14	
E15	AERATION BASIN ANALYZERS ENCLOSURE HEATING			20 A	1			500	500			1	20 A	**HEAT TAPE - CLARIFIER NO. 2			E16	
E17	SPARE			20 A	1					0	0	1	20 A	SPARE			E18	
E19	SPARE			20 A	1	0	0					1	20 A	SPARE			E20	
E21	SPARE			20 A	1			0	0			1	20 A	SPARE			E22	
E23	SPARE			20 A	1					0	0	1	20 A	SPARE			E24	
E25	SPACE			--	1	--	0					1	20 A	SPARE			E26	
E27	SPACE			--	1			--	0			1	20 A	SPARE			E28	
E29	SPACE			--	1					--	0	1	20 A	SPARE			E30	
E31	SPACE			--	1	--	--					1	--	SPACE			E32	
E33	SPACE			--	1			--	--			1	--	SPACE			E34	
E35	SPACE			--	1					--	--	1	--	SPACE			E36	
E37	SPACE			--	1	--	--					1	--	SPACE			E38	
E39	SPACE			--	1			--	--			1	--	SPACE			E40	
E41	SPACE			--	1					--	--	1	--	SPACE			E42	
TOTAL CONNECTED LOAD				10808 VA			TOTAL CALCULATED DEMAND				8646 VA			TOTAL CALCULATED AMPS				24 A
GENERAL NOTES:									KEY NOTES:									
1.									* GFCI RATED BREAKER									
2.									** PROVIDE GFPE CIRCUIT BREAKER									
3.									L. = LIGHTING									
4.									R. = RECEPTACLE									

PANELBOARD SCHEDULE		NAME: LP-5-1		PANEL ID		F		MAIN CIRCUIT BREAKER: 125				KAIC RATING: 10						
		LOCATION: BLOWER BUILDING		MAIN LUGS ONLY:				VOLTAGE: 208Y/120										
		MOUNTING: SURFACE						WIRES: 4				PHASE: 3						
CKT	CIRCUIT DESCRIPTION			TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION			CKT	
F1	R. BLOWER ROOM			20 A	1	1080		720				1		20 A	R. BLOWER BUILDING BASEMENT			F2
F3	L. BLOWER BUILDING BASEMENT			20 A	1					691 1038		1		20 A	L. BLOWER ROOM			F4
F5	CONTROL PANEL, RIO-1			20 A	1					500 80		1		20 A	L. EXTERIOR BLOWER BUILDING			F6
F7	FE/FIT-8, BASEMENT			20 A	1	250		250				1		20 A	FE/FIT-7, BASEMENT			F8
F9	FE/FIT-5, BASEMENT			20 A	1					250 250		1		20 A	FE/FIT-6, BASEMENT			F10
F11	FE/FIT-3, BASEMENT			20 A	1					250 250		1		20 A	FE/FIT-4, BASEMENT			F12
F13	GAS DETECTION TRANSMITTER			20 A	1	250		400				1		20 A	VALVES V-RAS-13, V-WAS-2			F14
F15	SPARE			20 A	1					0 180		1		20 A	R. MAU-2			F16
F17	SPARE			20 A	1					0 0		1		20 A	SPARE			F18
F19	SPARE			20 A	1	0		0				1		20 A	SPARE			F20
F21	SPARE			20 A	1					0 0		1		20 A	SPARE			F22
F23	SPARE			20 A	1					0 0		1		20 A	SPARE			F24
F25	SPARE			20 A	1	0		0				1		20 A	SPARE			F26
F27	SPARE			20 A	1					0 0		1		20 A	SPARE			F28
F29	SPARE			20 A	1					0 0		1		20 A	SPARE			F30
TOTAL CONNECTED LOAD				6439 VA		TOTAL CALCULATED DEMAND				5151 VA		TOTAL CALCULATED AMPS				14 A		
GENERAL NOTES:										KEY NOTES:								
1.										* GFCI RATED BREAKER								
2.																		
3.																		
4.																		
L. = LIGHTING																		
R. = RECEPTACLE																		

CONDUIT AND WIRE SCHEDULE

WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
AB-ANLG-A	1	2.5	12-2/C#16 SHIELDED	AERATION BASIN EAST ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
AB-ANLG-B	1	1.25	6-2/C#16 SHIELDED	AERATION BASIN WEST ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
AB-PWR-A	1	1.25	8#12, 1#12G	EAST AERATION BASIN POWER JUNCTION BOX	PANELBOARD LP-3-1	
AB-PWR-B	1	0.75	6#12, 1#12G	EAST AERATION BASIN POWER JUNCTION BOX	WEST AERATION BASIN POWER JUNCTION BOX	
ANLOG-A	1	2	12-2/C#16 SHIELDED	BLOWER BUILDING BASEMENT ANALOG JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
ANT-A	1	0.75	COAX CABLE	SCADA ANTENNA	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
ATS-A	4	3.5	4#350KCMIL, 1#3/0G	MAIN SERVICE DISCONNECT (MSD)	AUTOMATIC TRANSFER SWITCH (ATS)	
ATS-B	1	0.75	10#14, 1#14G	AUTOMATIC TRANSFER SWITCH (ATS)	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
BB-A	1	0.75	2#12, 1#12G	ELECTRIC BASEBOARD HEATER	PANELBOARD LP-2-1	
BL-TSH-A	1	0.75	2#14, 1#14G	BLOWER ENCLOSURE THERMAL SWITCH	BLOWER BUILDING REMOTE I/O, RIO-1	
BLOWER-A	1	1.5	3#4, 1#8G	BLOWER VFD	DISTRIBUTION PANEL DP-2-1	
BLOWER-B	1	1.5	3#4, 1#8G	BLOWER VFD	BLOWER DISCONNECT	
BLOWER-C	1	1.5	3#4, 1#8G	BLOWER	BLOWER DISCONNECT	
C-DRIVE-A	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	STARTER IN MCC-1	
C-DRIVE-B	1	1.25	8#14, 1#14G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	STARTER IN MCC-1	
C-DRIVE-C	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	CLARIFIER DRIVE, ME-FC-2	
C-DRIVE-D	1	1.25	3#12, 1#12G	CLARIFIER DRIVE LOCAL CONTROL STATION & DISCONNECT	CLARIFIER DRIVE, ME-FC-1	
CARB-A-A	1	1.25	5-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-A-B	1	0.75	2-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-D-A	1	0.75	13#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-D-B	1	0.75	5#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-FLD-A	1	0.75	2#14, 1#14G	TEMPERATURE SWITCH	FLOOR FLOOD SWITCH	
CARB-P-A	1	0.75	4#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
CARB-P-B	1	0.75	2#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	CHEMICAL FEED PUMP	
CARB-P-C	1	0.75	4#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CARB-P-D	1	0.75	3#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	CHEMICAL FEED RECEPTACLE	
CARB-TMP-A	1	0.75	3#14, 1#14G	CARBON FEED ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
CL2-A-A	1	1.25	5-2/C#16 SHIELDED	CHLORINE ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CL2-D-A	1	0.75	16#14, 1#14G	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CL2-EM-A	1	0.75	2#12, 1#12G	EMERGENCY SHUT OFF CONTROL PANEL	CHLORINE ROOM POWER JUNCTION BOX	
CL2-EM-B	1	0.75	4#14, 1#14G	EMERGENCY SHUT OFF CONTROL PANEL	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CL2-EPO-A	1	0.75	2#14, 1#14G	GAS EMERGENCY PUSH BUTTON	CHLORINE SHUT OFF PANEL	
CL2-P-A	1	0.75	4#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
CL2-SCALE-A	1	0.75	2#12, 1#12G	CHLORINE SCALE TRANSMITTER	CHLORINE ROOM POWER JUNCTION BOX	
CL2-SCALE-B	1	0.75	2-2/C#16 SHIELDED	CHLORINE SCALE TRANSMITTER	CHLORINE ROOM ANALOG SIGNALS JUNCTION BOX	
CL2-SCALE-C	1	0.75	MANUFACTURER RECOMMENDED CABLE	CHLORINE SCALE TRANSMITTER	CHLORINE SCALE	
CL2-SOL-A	1	0.75	2#14, 1#14G	CHLORINE SOLENOID	CHLORINE ROOM DIGITAL JUNCTION BOX	
CL2-SPKUR-A	1	0.75	3#14, 1#14G	TAMPER & FLOW SWITCH	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CL2-TMP-A	1	0.75	2#14, 1#14G	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
CL2-VM-A	1	0.75	2#12, 1#12G	VACUUM MONITOR	CHLORINE ROOM POWER JUNCTION BOX	
CL2-VM-B	1	0.75	2#14, 1#14G	VACUUM MONITOR	CHLORINE ROOM DIGITAL SIGNALS JUNCTION BOX	
CLAR-EF-A	1	1.25	3#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	DISTRIBUTION PANEL DP-2-1	
CLAR-EF-B	1	0.75	3#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	CLARIFIER EXHAUST FAN	
CLAR-EF-C	1	1.25	4#14, 1#14G	CLARIFIER EXHAUST FAN COMBO STARTER	SCADA CONTROL PANEL (SCP-1)	
CLAR-EF-D	1	0.75	2#12, 1#12G	CLARIFIER EXHAUST FAN COMBO STARTER	INTERIOR CLARIFIER SWITCHED LIGHTING CIRCUIT	
CLEF-F-A	1	0.75	2#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	CHLORINE ROOM EXHAUST FAN SWITCH	
CLEF-F-B	1	0.75	2#12, 1#12G	EXHAUST FAN	CHLORINE FEED ROOM EXHAUST FAN SWITCH	
CLEF-F-C	1	0.75	4#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	CHLORINE ROOM INDOOR STATUS INDICATOR STATION	
CLEF-F-D	1	0.75	2#12, 1#12G	CHLORINE ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CLEF-S-A	1	0.75	2#12, 1#12G	LOCAL SWITCHED LIGHTING CIRCUIT	CHLORINE STORAGE ROOM EXHAUST FAN	
CLEF-S-F	1	0.75	2#12, 1#12G	CHLORINE STORAGE ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CM-GAS-A	1	0.75	2#12, 1#12G	GAS DETECTION TRANSMITTER	PANELBOARD LP-4-1	
CM-GAS-B	1	0.75	2-2/C#16 SHIELDED	GAS DETECTION TRANSMITTER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
CM-GAS-C	1	0.75	4#14, 1#14G	GAS DETECTION TRANSMITTER	CHEMICAL ROOM DIGITAL JUNCTION BOX	
CM-GAS-D	1	0.75	2#12, 1#12G	GAS DETECTION TRANSMITTER	CHEMICAL ROOM POWER JUNCTION BOX	
CMEF-E	1	0.75	2#12, 1#12G	CARBON FEED ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
CMEF-S-A	1	0.75	2#12, 1#12G	LOCAL SWITCHED LIGHTING CIRCUIT	CARBON FEED ROOM EXHAUST FAN	
CO-NO2-A	1	0.75	2#12, 1#12G	GARAGE GAS DETECTION TRANSMITTER	PANELBOARD LP-2-1	
CO-NO2-B	1	0.75	2#12, 1#12G	GARAGE GAS DETECTION TRANSMITTER WEST	GARAGE GAS DETECTION TRANSMITTER EAST	
CU-1-A	1	0.75	3#12, 1#12G	CONDENSING UNIT, CU-1 DISCONNECT	PANELBOARD PP-2-1	
CU-1-B	1	0.75	3#12, 1#12G	CONDENSING UNIT, CU-1 DISCONNECT	CONDENSING UNIT, CU-1	
DATA-B	1	0.75	CAT6	WIRELESS ACCESS POINT, WAP	DATA RACK, ADMIN BUILDING	
DIGIT-A	1	0.75	16#14, 1#14G	BLOWER BUILDING BASEMENT DIGITAL JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
DIGIT-B	1	1.25	10#14, 1#14G	JET MIX PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
DIGIT-C	1	1.25	8#14, 1#14G	MIXED LIQUOR PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
DOOR-A	1	0.75	2#14, 1#14G	DOOR CONTACT	CHLORINE ROOM DIGITAL JUNCTION BOX	
DOOR-B	1	0.75	2#14, 1#14G	DOOR CONTACT	SULFUR ROOM DIGITAL JUNCTION BOX	
DP-1-1-A	4	3.5	4#350KCMIL, 1#3/0G	DISTRIBUTION PANEL DP-1-1	AUTOMATIC TRANSFER SWITCH (ATS)	
DP-2-1-A	3	3.5	4#300KCMIL, 1#1/0G	DISTRIBUTION PANEL DP-1-1	DISTRIBUTION PANEL DP-2-1	
EF-1-A	1	0.75	2#12, 1#12G	EXHAUST FAN, EF-1 DISCONNECT	PANELBOARD LP-2-1	
EF-1-B	1	0.75	2#12, 1#12G	EXHAUST FAN, EF-1 DISCONNECT	EXHAUST FAN, EF-1	
EF-2-A	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-2 DISCONNECT	MAKE-UP AIR UNIT, MAU-1	
EF-2-B	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-2 DISCONNECT	EXHAUST FAN, EF-2	
EF-5-A	1	0.75	2#12, 1#12G	EXHAUST FAN, EF-5 DISCONNECT	PANELBOARD LP-4-1	
EF-8-A	1	0.75	3#12, 1#12G	EXHAUST FAN, EF-8 DISCONNECT	MAKE-UP AIR UNIT, MAU-2	
EF-RR-A	1	0.75	2#12, 1#12G	EXHAUST FAN DISCONNECT	PANELBOARD LP-2-1	
EF-RR-B	1	0.75	2#12, 1#12G	EXHAUST FAN DISCONNECT	RESTROOM SWITCHED LIGHTING CIRCUIT	
EFF-SMPL-A	1	1.25	2#12, 1#12G	EFFLUENT SAMPLER	PANELBOARD LP-4-1	
EFF-SMPL-B	1	1.25	4#14, 1#14G	EFFLUENT SAMPLER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
EFF-SMPL-C	1	1.25	1-2/C#16 SHIELDED	EFFLUENT SAMPLER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
EUH-1-A	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER, EUH-1 DISCONNECT	PANELBOARD PP-1-1	
EUH-2-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER, EUH-2 DISCONNECT	PANELBOARD PP-1-1	
EUH-12-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER, EUH-12	DISTRIBUTION PANEL DP-2-1	
EUH-13-A	1	0.75	2#12, 1#12G	ELECTRIC UNIT HEATER	PANELBOARD LP-2-1	
EUH-A	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER DISCONNECT	PANELBOARD PP-4-1	
EUH-B	1	0.75	3#10, 1#10G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
EUH-BLWR-A	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	PANELBOARD PP-5-1	
EUH-BLWR-B	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
EUH-BLWR-C	1	1.5	3#12, 1#12G	ELECTRIC UNIT HEATER	PANELBOARD PP-5-1	
EUH-C	1	0.75	3#12, 1#12G	<varies>	PANELBOARD PP-4-1	
EUH-D	1	0.75	3#12, 1#12G	ELECTRIC UNIT HEATER DISCONNECT	ELECTRIC UNIT HEATER	
F-1-A	1	0.75	2#12, 1#12G	FURNACE, F-1 DISCONNECT	PANELBOARD LP-2-1	
F-1-B	1	0.75	4#12, 1#12G	FURNACE, F-1 DISCONNECT	CONDENSING UNIT, CU-1	
FLOAT-A	1	0.75	3#14, 1#14G	FLOAT DIGITAL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	

CONDUIT AND WIRE SCHEDULE

WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
FLOW-A	1	0.75	2#12, 1#12G	FLOW METER TRANSMITTER	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	
FLOW-B	1	0.75	2-2/C#16 SHIELDED	FLOW METER TRANSMITTER	BLOWER BUILDING BASEMENT ANALOG JUNCTION BOX	
FLOW-C	1	1.25	MANUFACTURER CABLE	FLOW METER	FLOW METER TRANSMITTER	
FLOW-D	1	0.75	2#12, 1#12G	FLOW METER TRANSMITTER	PANELBOARD LP-4-1	
FLOW-E	1	0.75	2-2/C#16 SHIELDED	FLOW METER TRANSMITTER	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
FLOW-F	1	0.75	MANUFACTURER CABLE	FLOW METER	FLOW METER TRANSMITTER	
FT-01-A	1	0.75	1-2/C#16 SHIELDED	RADAR TRANSMITTER ANALOG JUNCTION BOX	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
FT-01-B	1	0.75	1-2/C#16 SHIELDED	RADAR TRANSMITTER ANALOG JUNCTION BOX	RADAR TRANSMITTER	
GAS-A	1	0.75	2#12, 1#12G	GAS TRANSMITTER	PANELBOARD LP-1-1	
GAS-B	1	0.75	2-2/C#16 SHIELDED	GAS TRANSMITTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GAS-BLWR-A	1	0.75	2#12, 1#12G	GAS TRANSMITTER	PANELBOARD LP-5-1	
GAS-BLWR-B	1	0.75	2-2/C#16 SHIELDED	GAS TRANSMITTER	BLOWER BUILDING REMOTE I/O, RIO-1	
GAS-BLWR-C	1	0.75	2#14, 1#14G	GAS TRANSMITTER	BLOWER BUILDING REMOTE I/O, RIO-1	
GAS-BLWR-D	1	0.75	2#14, 1#14G	GAS TRANSMITTER	MAKE-UP AIR UNIT, MAU-2	
GAS-C	1	0.75	4#14, 1#14G	GAS TRANSMITTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GAS-D	1	0.75	4#14, 1#14G	GAS TRANSMITTER	MAKE-UP AIR UNIT, MAU-1	
GAS-E	1	0.75	3#14, 1#14G	GO/NO-GO STATION	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
GEN-A	3	3.5	4#350KCMIL, 1#2/0G	AUTOMATIC TRANSFER SWITCH (ATS)	GENERATOR	
GEN-B	1	1.25	10#14, 1#14G	AUTOMATIC TRANSFER SWITCH (ATS)	GENERATOR	
GEN-C	1	1.5	3#1, 1#8G	PANELBOARD LP-1-1	GENERATOR LOAD CENTER	
GEN-D	1	1.25	16#14, 1#14G	SCADA CONTROL PANEL (SCP-1)	GENERATOR	
GUH-A	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-4	PANELBOARD LP-2-1	
GUH-B	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-3	GAS UNIT HEATER, GUH-4	
GUH-C	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-2	PANELBOARD LP-4-1	
GUH-D	1	0.75	2#12, 1#12G	GAS UNIT HEATER, GUH-2	GAS UNIT HEATER, GUH-1	
GWH-1-A	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-1 DISCONNECT	PANELBOARD LP-4-1	
GWH-1-B	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-1 DISCONNECT	GAS WATER HEATER, GWH-1	
GWH-2-A	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	PANELBOARD LP-2-1	
GWH-2-B	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	GAS WATER HEATER, GWH-2	
HWCP-1	1	0.75	2#12, 1#12G	GAS WATER HEATER, GWH-2 DISCONNECT	HOT WATER RECIRCULATION PUMP	
INF-SMPL-A	1	0.75	2#12, 1#12G	INFLENT SAMPLER	PANELBOARD LP-1-1	
INF-SMPL-B	1	0.75	4#14, 1#14G	INFLENT SAMPLER	SCADA CONTROL PANEL (SCP-1)	
INF-SMPL-C	1	0.75	1-2/C#16 SHIELDED	INFLENT SAMPLER	SCADA CONTROL PANEL (SCP-1)	
LEVEL-A	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL TRANSMITTER JUNCTION BOX	BLOWER BUILDING REMOTE I/O, RIO-1	
LEVEL-B	1	0.75	1-2/C#16 SHIELDED	MIXED LIQUOR PUMP ANALOG JUNCTION BOX	LEVEL TRANSDUCER	
LEVEL-C	1	1.25	1-2/C#16 SHIELDED	MIXED LIQUOR PUMP ANALOG JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
LEVEL-D	1	0.75	1-2/C#16 SHIELDED	CARBON FEED ROOM ANALOG SIGNALS JUNCTION BOX	RADAR LEVEL READOUT PANEL	
LEVEL-E	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL READOUT PANEL	RADAR LEVEL TRANSMITTER	
LEVEL-F	1	0.75	1-2/C#16 SHIELDED	RADAR LEVEL TRANSMITTER	RADAR LEVEL TRANSMITTER JUNCTION BOX	
LIMIT-A	1	0.75	2#14, 1#14G	LIMIT SWITCH	DRIVE LOCAL CONTROL STATION & DISCONNECT	
LP-1-1-A	1	1.5	4#1, 1#6G	TRANSFORMER T-1-1	PANELBOARD LP-1-1	
LP-2-1-A	1	2.5	4#1/0, 1#6G	TRANSFORMER T-2-1	PANELBOARD LP-2-1	
LP-3-1-A	1	1.5	4#1, 1#6G	TRANSFORMER T-3-1	PANELBOARD LP-3-1	
LP-4-1-A	1	1.5	4#1, 1#6G	TRANSFORMER T-4-1	PANELBOARD LP-4-1	
LP-5-1-A	1	1.5	4#1, 1#6G	TRANSFORMER T-5-1	PANELBOARD LP-5-1	
LS-MAIN-A	1	2	4#1/0	LIFT STATION CONTROL PANEL	POLE MOUNTED TRANSFORMER	
LT-03-A	1	0.75	1-2/C#16 SHIELDED	INFLENT CANAL RADAR LEVEL TRANSMITTER	JUNCTION BOX	
LT-03-B	1	0.75	1-2/C#16 SHIELDED	JUNCTION BOX	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
M-121-A	1	0.75	3#12, 1#12G	BAR SCREEN MOTOR	POWER JUNCTION BOX	
M-121-B	1	0.75	6#12, 1#12G	BAR SCREEN CONTROL PANEL	POWER JUNCTION BOX	
M-121-C	1	0.75	12#14, 1#14G	BAR SCREEN CONTROL PANEL	DIGITAL JUNCTION BOX	
M-121-D	1	0.75	3#12, 1#12G	BAR SCREEN CONTROL PANEL	PANELBOARD PP-1-1	
M-121-E	1	0.75	6#14, 1#14G	BAR SCREEN CONTROL PANEL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
M-121-F	1	0.75	2#14, 1#14G	BAR SCREEN LOCAL CONTROL STATION	DIGITAL JUNCTION BOX	
M-121-G	1	0.75	2#14, 1#14G	E-STOP	DIGITAL JUNCTION BOX	
M-121-H	1	0.75	2#14, 1#14G	LIMIT SWITCH	DIGITAL JUNCTION BOX	
M-121-I	1	0.75	2#14, 1#14G	SOLENOID	DIGITAL JUNCTION BOX	
M-122-A	1	0.75	3#12, 1#12G	WASHER COMPACTOR MOTOR	POWER JUNCTION BOX	
M-122-D	1	0.75	2#12, 1#12G	EXISTING GRIT COLLECTOR CONTROL PANEL	PANELBOARD LP-1-1	
M-122-E	1	0.75	6#14, 1#14G	EXISTING GRIT COLLECTOR CONTROL PANEL	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
MAIN-A	4	3.5	4#350KCMIL, 1#3/0G	MAIN SERVICE DISCONNECT (MSD)	SECONDARY CONNECTION CABINET	
MAU-1-A	1	0.75	3#10, 1#10G	MAKE-UP AIR UNIT, MAU-01	PANELBOARD PP-1-1	
MAU-1-B	1	0.75	6#14, 1#14G	MAKE-UP AIR UNIT, MAU-01	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
MAU-1-C	1	0.75	2#14, 1#14G	LIGHTING JUNCTION BOX	MAKE-UP AIR UNIT, MAU-1	
MAU-2-A	1	1.5	3#1, 1#6G	MAKE-UP AIR UNIT, MAU-2	PANELBOARD PP-5-1	
MAU-2-B	1	0.75	4#14, 1#14G	MAKE-UP AIR UNIT, MAU-2	RIO-1 CONTROL PANEL	
MAU-2-C	1	0.75	2#14, 1#14G	LIGHTING JUNCTION BOX	MAKE-UP AIR UNIT, MAU-2	
MCC-1-A	2	2	3#3/0, 1#3G	DISTRIBUTION PANEL DP-2-1	MCC-1	
MCC-1-B	2	2	65#14, 1#14G	MCC-1	SCADA CONTROL PANEL (SCP-1)	
MCC-1-C	2	2	13-2/C#16 SHIELDED	MCC-1	SCADA CONTROL PANEL (SCP-1)	
ME-A-7-A	1	0.75	3#10, 1#10G	BLOWER VFD	PANELBOARD PP-4-1	
ME-A-7-B	1	0.75	3#10, 1#10G	BLOWER DISCONNECT	BLOWER VFD	
ME-A-7-C	1	0.75	3#10, 1#10G	BLOWER DISCONNECT	BLOWER	
ME-A-7-D	1	0.75	2#14, 1#14G	BLOWER ENCLOSURE THERMAL SWITCH	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
MSI-1-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-1 DISCONNECT	OUTDOOR UNIT MSO-1	
MSI-2-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-2 DISCONNECT	OUTDOOR UNIT MSO-2	
MSI-3-A	1	0.75	4#12, 1#12G	INDOOR UNIT MSI-3 DISCONNECT	OUTDOOR UNIT MSO-3	
MSO-1-A	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-1 DISCONNECT	PANELBOARD LP-1-1	
MSO-1-B	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-1 DISCONNECT	OUTDOOR UNIT MSO-1	
MSO-2-A	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-2 DISCONNECT	PANELBOARD LP-4-1	
MSO-2-B	1	0.75	3#12, 1#12G	OUTDOOR UNIT MSO-2 DISCONNECT	OUTDOOR UNIT MSO-2	
MSO-3-A	1	0.75	3#10, 1#10G	OUTDOOR UNIT MSO-3 DISCONNECT	PANELBOARD LP-3-1	
MSO-3-B	1	0.75	3#10, 1#10G	OUTDOOR UNIT MSO-3 DISCONNECT	OUTDOOR UNIT MSO-3	
P-JM-A	1	1.25	3#12, 1#12G	JET MIX PUMP DISCONNECT	VFD IN MCC-1	
P-JM-B	1	1.5	PUMP CABLE	JET MIX PUMP DISCONNECT	JET MIX PUMP	
P-JM-C	1	0.75	3#14, 1#14G	JET MIX PUMP DIGITAL JUNCTION BOX	JET MIX PUMP DISCONNECT	
P-JM-D	1	0.75	3#14, 1#14G	JET MIX PUMP DISCONNECT	SCADA CONTROL PANEL (SCP-1)	
P-JM-E	1	1.25	3#8, 1#10G	JET MIX PUMP DISCONNECT	VFD IN MCC-1	
P-MLR-A	1	1.25	3#10, 1#10G	MIXED LIQUOR PUMP DISCONNECT	VFD IN MCC-1	
P-MLR-B	1	0.75	3#14, 1#14G	MIXED LIQUOR PUMP DIGITAL JUNCTION BOX	MIXED LIQUOR PUMP DISCONNECT	
P-MLR-C	1	1.5	PUMP CABLE	MIXED LIQUOR PUMP DISCONNECT	MIXED LIQUOR PUMP	
P-ST-A	1	0.75	3#10, 1#10G	SLUDGE MIXING/LOADOUT PUMP DISCONNECT	VFD IN MCC-1	
P-ST-B	1	0.75	3#10, 1#10G	SLUDGE MIXING/LOADOUT PUMP DISCONNECT	SLUDGE MIXING/LOADOUT PUMP	
P-UW-A	1	0.75	3#12, 1#12G	UTILITY WATER PUMP VFD	PANELBOARD PP-4-1	
P-UW-B	1	1.25	3#12, 1#12G	UTILITY WATER PUMP DISCONNECT	UTILITY WATER PUMP VFD	

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CONDUIT AND WIRE SCHEDULE

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WIRE ID	NUMBER OF CONDUITS	CONDUIT SIZE (IN)	CONDUCTORS QUANTITY & SIZE PER CONDUIT (AWG)	FROM	TO	NOTES
P-UW-C	1	1.25	PUMP CABLE	UTILITY WATER PUMP DISCONNECT	UTILITY WATER PUMP	
P-UW-D	1	1.25	6#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	PUMP PROTECTION SIGNALS
P-UW-E	1	1.25	3#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	UTILITY WATER PUMP DISCONNECT	PUMP PROTECTION SIGNALS
P-UW-F	1	1.25	3#14, 1#14G	CHLORINE CONTACT BASIN DIGITAL JUNCTION BOX	UTILITY WATER PUMP DISCONNECT	PUMP PROTECTION SIGNALS
PACE-A	1	0.75	2#12, 1#12G	SO2 PACE PANEL	SO2 ROOM POWER JUNCTION BOX	
PACE-B	1	0.75	2-2/C#16 SHIELDED	SO2 PACE PANEL	SO2 ROOM ANALOG SIGNALS JUNCTION BOX	
PACE-C	1	0.75	4#14, 1#14G	SO2 PACE PANEL	SO2 ROOM DIGITAL SIGNALS JUNCTION BOX	
PH-AIT-A	1	0.75	2#12, 1#12G	PH ANALYZER TRANSMITTER, PH-AIT-1	PANELBOARD LP-1-1	
PH-AIT-B	1	0.75	2-2/C#16 SHIELDED	PH ANALYZER TRANSMITTER, PH-AIT-1	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
PH-AIT-C	1	0.75	SENSOR CABLE	PH ANALYZER TRANSMITTER, PH-AIT-2	PH SENSOR	
PP-1-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-1-1	
PP-2-1-A	1	1.5	4#1, 1#6G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-2-1	
PP-4-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-1-1	PANELBOARD PP-4-1	
PP-5-1-A	1	2.5	4#4/0, 1#4G	DISTRIBUTION PANEL DP-2-1	PANELBOARD PP-5-1	
PWR-JB-A	1	1.25	14#12, 1#12G	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	PANELBOARD LP-5-1	
RAS-DIG-A	1	1.25	12#14, 1#14G	RAS PUMPS DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
RAS-P-A	1	1.25	3#12, 1#12G	RAS PUMP DISCONNECT	VFD IN MCC-1	
RAS-P-B	1	0.75	3#14, 1#14G	RAS PUMPS DIGITAL JUNCTION BOX	RAS PUMP DISCONNECT	PUMP PROTECTION SIGNALS
RAS-P-C	1	1.25	PUMP CABLE	RAS PUMP DISCONNECT	RAS PUMP	
RAS-P-D	1	1.25	FLOAT CABLES	RAS PUMPS DIGITAL JUNCTION BOX	LEVEL FLOATS	
RIO-1-B	1	0.75	2#12, 1#12G	BLOWER BUILDING REMOTE I/O, RIO-1	PANELBOARD LP-5-1	
SO2-A	1	1.25	5-2/C#16 SHIELDED	SULFUR ROOM ANALOG SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SC-DIG-A	1	1.25	8#14, 1#14G	SCUM PUMP DIGITAL JUNCTION BOX	SCADA CONTROL PANEL (SCP-1)	
SC-DIG-B	1	1.25	FLOAT CABLES	SCUM PUMP DIGITAL JUNCTION BOX	LEVEL FLOATS	
SC-P-A	1	1.25	3#12, 1#12G	SCUM PUMP P-SC-1 DISCONNECT	STARTER IN MCC-1	
SC-P-B	1	1.25	PUMP CABLE	SCUM PUMP P-SC-1 DISCONNECT	SCUM PUMP P-SC-1	
SC-P-C	1	0.75	3#14, 1#14G	SCUM PUMP DIGITAL JUNCTION BOX	SCUM PUMP DISCONNECT	PUMP PROTECTION SIGNALS
SCADA-A	1	1.25	6 STRAND FIBER OPTIC CABLE	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	DATA RACK, ADMIN BUILDING	
SCADA-B	1	1.25	6 STRAND FIBER OPTIC CABLE	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SCADA-C	1	1.25	6 STRAND FIBER OPTIC CABLE	DISINFECTION BUILDING CONTROL PANEL, SCP-3	SCADA CONTROL PANEL (SCP-1)	
SCADA-D	1	1.25	6 STRAND FIBER OPTIC CABLE	BLOWER BUILDING REMOTE I/O, RIO-1	SCADA CONTROL PANEL (SCP-1)	
SCADA-E	1	1.25	6 STRAND FIBER OPTIC CABLE	BLOWER BUILDING REMOTE I/O, RIO-1	DATA RACK, ADMIN BUILDING	
SCP-1-A	1	1.5	2#12, 1#12G	PANELBOARD LP-3-1	SCADA CONTROL PANEL (SCP-1)	
SCP-2-A	1	0.75	2#12, 1#12G	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	PANELBOARD LP-1-1	
SCP-3-A	1	0.75	2#12, 1#12G	DISINFECTION BUILDING CONTROL PANEL, SCP-3	PANELBOARD LP-4-1	
SLUDGE-CP-A	1	0.75	2#12, 1#12G	SLUDGE LOADOUT CONTROL PANEL	PANELBOARD LP-5-1	
SLUDGE-CP-B	1	0.75	12#14, 1#14G	SLUDGE LOADOUT CONTROL PANEL	BLOWER BUILDING REMOTE I/O, RIO-1	
SLUDGE-CP-C	1	0.75	1-2/C#16 SHIELDED	SLUDGE LOADOUT CONTROL PANEL	BLOWER BUILDING REMOTE I/O, RIO-1	
SO2-D-A	1	0.75	12#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
SO2-EM-A	1	0.75	2#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	EMERGENCY SHUT OFF CONTROL PANEL	
SO2-EM-B	1	0.75	4#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	EMERGENCY SHUT OFF CONTROL PANEL	
SO2-EPO-A	1	0.75	2#14, 1#14G	GAS EMERGENCY PUSH BUTTON	SULFUR SHUT OFF PANEL	
SO2-F-A	1	0.75	2#12, 1#12G	SULFER DIOXIDE FEED ROOM POWER JUNCTION BOX	SULFER DIOXIDE FEED ROOM EXHAUST FAN SWITCH	
SO2-F-B	1	0.75	2#12, 1#12G	EXHAUST FAN	SULFUR ROOM EXHAUST FAN SWITCH	
SO2-F-C	1	0.75	4#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	SULFUR ROOM INDOOR STATUS INDICATOR STATION	
SO2-F-D	1	0.75	2#12, 1#12G	SULFER DIOXIDE FEED ROOM POWER JUNCTION BOX	EXHAUST FAN MOTORIZED DAMPER	
SO2-P-A	1	0.75	4#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	PANELBOARD LP-4-1	
SO2-SCALE-A	1	0.75	2#12, 1#12G	SCALE TRANSMITTER	SULFUR ROOM POWER JUNCTION BOX	
SO2-SCALE-B	1	0.75	1-2/C#16 SHIELDED	SCALE TRANSMITTER	SULFUR ROOM ANALOG SIGNALS JUNCTION BOX	
SO2-SCALE-C	1	0.75	MANUFACTURER RECOMMENDED CABLE	SCALE TRANSMITTER	CHEMICAL SCALE	
SO2-SPKLR-A	1	0.75	3#14, 1#14G	TAMPER & FLOW SWITCH	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	
SO2-TMP-A	1	0.75	2#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	TEMPERATURE SWITCH	
SO2-VM-A	1	0.75	2#14, 1#14G	SULFUR ROOM DIGITAL SIGNALS JUNCTION BOX	SULFUR VACUUM MONITOR	
SO2-VM-B	1	0.75	2#12, 1#12G	SULFUR ROOM POWER JUNCTION BOX	SULFUR VACUUM MONITOR	
SPD-A	1	0.75	MANUFACTURER RECOMMENDED CABLE	SPD	MAIN SERVICE DISCONNECT (MSD)	
SPD-B	1	0.75	4#14, 1#14G	SPD	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
SPKLR-B	1	0.75	2#14, 1#14G	TAMPER SWITCH	FLOW SWITCH	
STR-A	1	0.75	3#12, 1#12G	COMBINATION STARTER	PANELBOARD PP-1-1	
STR-B	1	0.75	3#12, 1#12G	COMBINATION STARTER	EXISTING WIREWAY	
STR-C	1	0.75	6#14, 1#14G	COMBINATION STARTER	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
STR-D	1	0.75	6#14, 1#14G	COMBINATION STARTER	EXISTING GRIT COLLECTOR (M-1-3-1) CONTROL PANEL	
T-1-1-A	1	1	3#6, 1#8G	TRANSFORMER T-1-1	PANELBOARD PP-1-1	
T-2-1-A	1	1.25	3#4, 1#8G	TRANSFORMER T-2-1	PANELBOARD PP-2-1	
T-3-1-A	1	1	3#6, 1#8G	TRANSFORMER T-3-1	DISTRIBUTION PANEL DP-2-1	
T-4-1-A	1	1	3#6, 1#8G	TRANSFORMER T-4-1	PANELBOARD PP-4-1	
T-5-1-A	1	0.75	3#6, 1#8G	TRANSFORMER T-5-1	PANELBOARD PP-5-1	
TEMP-A	1	0.75	3#14, 1#14G	HIGH TEMP SWITCH	PRETREATMENT BUILDING CONTROL PANEL, SCP-2	
TEMP-B	1	0.75	2#14, 1#14G	HIGH TEMP SWITCH	LOW TEMP SWITCH	
TEMP-C	1	0.75	2#14, 1#14G	HIGH TEMP SWITCH	BLOWER BUILDING REMOTE I/O, RIO-1	
VALVE-A	1	0.75	2#12, 1#12G	VALVE	BLOWER BUILDING BASEMENT POWER JUNCTION BOX	
VALVE-B	1	0.75	8#14, 1#14G	VALVE	BLOWER BUILDING BASEMENT DIGITAL JUNCTION BOX	
VFD-A	1	0.75	8#14, 1#14G	VFD	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
VFD-B	1	0.75	2-2/C#16 SHIELDED	VFD	DISINFECTION BUILDING CONTROL PANEL, SCP-3	
VFD-C	1	0.75	8#14, 1#14G	VFD	SCADA CONTROL PANEL (SCP-1)	
VFD-D	1	0.75	2-2/C#16 SHIELDED	VFD	SCADA CONTROL PANEL (SCP-1)	