GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

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May 18, 2026

ADDENDUM #3
BL063-26
Replacement of HVAC Systems at the F. Wayne Hill Water Resources Center Operations Building

I. Revisions

R1. **Please extend the bid deadline to 2:50 P.M. local time on June 12, 2026.**

R2. **A follow-up pre-bid conference has been scheduled for 10:00 A.M. on May 27, 2026, at the F. Wayne Hill Water Resources Center Conference Room located at 1500 One Water Way, Buford, GA 30519.**

R3. **Replace Page 3 of 61 of the Invitation to Bid with the attached page.**

New page lists Fans in the scope of replacement equipment.

R4. **Replace Pages 1 through 10 of 421 of BL063-26 Attachments with the attached ten pages.**

New pages include Fans in the scope of replacement equipment.

R5. **Replace Drawings from Pages 34 through 44 of 421 of BL063-26 Attachments with the attached eleven drawing pages.**

New set clarifies the Fans are to be replaced in kind. Fan Schedule provided on drawing H-008. New set also clarifies scale.

II. Questions

Q1. **Please provide any available information on the make and model of the existing HVAC/BAS control system? The scope reuses the existing chilled water control system and interface with the existing equipment and contractors need to confirm compatibility and communication protocol.**

A1. The existing BAS is Carrier i-Vue system. Any existing equipment connected to the existing BAS that is not part of the scope, including the chiller, will have to be assessed to determine compatibility with the new BAS system. The Carrier chiller's controller is typically compatible with any open protocol BAS.

Q2. **The original drawings for 61-AHU-3 indicate that it serves air control valves. Please provide any available additional information on these valves and their existing controls and sequence of operation in conjunction with 61-AHU-3 and 61-F-3. Are they controlled from the AHU controller or do they have their own controls?**

A2. Phoenix air control valves are intended to regulate the amount of air moving through the duct despite the changes in static pressure. This valve typically has its own onboard controller (field verify). The controller should be connected to the BAS. The controller will read the airflow sensor in the valve, compares actual airflow to the target setpoint and drives the valve actuator motor. Valves 61-ACV-2 & 3 will adjust to maintain the exhaust airflow setpoint regardless of the fume hood hatch position. 61-ACV-1 will adjust to maintain the supply make up airflow

setpoint. 61-AHU-3 DDC controller shall modulate the VFD to maintain the supply airflow accordingly. The BAS supervises the operation of all the systems.

Q3. The original drawings do not show VFDs on the pumps. It shows the water flow being controlled by a globe valve to a set flow rate through the flow meter. The new drawings show pumps with VFDs and adding a new differential pressure sensor to control the pump speed. This would require a lot of reprogramming the existing controls and the existing controls to have more available input and outputs to reuse them. Please consider providing new, but contractors will need the sequence of operation for the entire chilled water plant.

A3. This should not be difficult since we are replacing the entire BAS. Since the existing chillers remain in place and we are not changing the design GPM through the chiller, then the required chiller control changes should be minor, especially since this is a primary-secondary system where only the secondary pumps are being converted to VFDs. The BAS will receive the new pressure transmitter input and will send the output to modulate the secondary pump speed accordingly to maintain the desired GPM.

Q4. There appears to be missing scope related to the existing fans. The Jacobs project tasks does not list the EFs replacement as a task, however, Section 6 of the County's Bid Schedule says demo and replace. Contractors will need to know if replacement of line-volt t-stats or providing new equipment is required. Please clarify.

A4. The fans are to be replaced as part of this scope. See revised Scope and Drawings provided this Addendum. The replacement of the fans shall include any appurtenance that is required to fulfill the existing sequence of operation.

Q5. Please confirm if all work on the Gwinnett County bid documents and bid schedule must be included. It appears that there is scope listed in the bid schedule and Gwinnett County documents related to existing fans. This is not listed in the Jacobs project summary.

A5. The fans are to be replaced as part of this scope. See revised Scope and Drawings provided this Addendum.

Q6. Please confirm that the fans will be required to be added to the DDC system and that starters must be included.

A6. The fans should be connected to the BAS only if they are connected in the existing configuration. For simple thermostatic controlled fans, connection to the BAS is not necessary.

Q7. The drawing page HX-003, H-002, and H-003 do not have accurate scales. Please provide an accurate scale. All other pages have two conflicting scales. Please confirm the correct scale.

A7. See revised Drawings included in this Addendum.

Q8. Can another site-walk be scheduled?

A8. Please see Revision R2. A follow-up pre-bid conference has been scheduled to allow interested contractors to walk the site again.

Q9. Since this project requires a heavy mechanical scope of work, will a mechanical license suffice? If a General Contractor License is still required, which firms will be bidding as a General Contractor?

A9. Both a General Contractor License and a Mechanical License will suffice for this project. Information about which firms are bidding on this project is not available.

This addendum should be signed in the space provided below and returned with your quote. Failure to do so may result in your bid being deemed non-responsive.

Thank you,

Anna West
Purchasing Associate II

Company Name _____

Authorized Representative_____

R3. Replace Page 3 of 61 of the Invitation to Bid with attached page.

New page lists Fans in the scope of replacement equipment.

A critical component of this project is the Operations Building will be in use and occupied 24/7 during construction and work will need to be carried out with no interruptions to plant operations. The Contractor will be responsible for setting up temporary cooling units to maintain the building temperatures during the work.

Bids are requested for the following services:

1. Supply of all information requested on this bid.
2. Site visit to confirm any measurements prior to preparation of the shop drawings.
3. Assessment of the existing electrical connections to ensure they are rated for replacement equipment.
4. Submission of specified submittals for approval prior to ordering equipment and materials.
5. Procure, deliver and install the following replacement equipment:
    - o Chilled Water Pumps and Trim (pressure gauges and triple duty valves)
    - o Air Handling Units
    - o Automated Controls
    - o VAVs
    - o Ducts and piping
    - o Electrical equipment
    - o Dampers

INSERT "FANS" AFTER "DAMPERS" AS FINAL BULLET POINT

6. Modifications to existing ducts, pipework electrical systems and control systems and structures and installation of the replacement equipment and all ancillaries.
7. Provide a manufacturing and delivery schedule and provide monthly progress updates.
8. Coordination and delivery to FWHWRC, 1500 One Water Way, Buford, GA, 30519.
9. Provision of temporary cooling.
10. Start up assistance and Owner training.
11. Provision of Operating and Maintenance manuals.

The scope of work is detailed in Attachment 1. Project Drawings and Specifications are provided in Attachments 2 and 3 respectively. Record drawings are provided in Attachment 4.

The following information sheets should be submitted with the bid.

1. Make, model, and weight of each component.
2. Manufacturer's catalog information, descriptive literature, specifications, and materials of construction.
3. Complete description of equipment and other ancillary items.
4. Plan and section views of equipment and dimensional tolerances required for installation and maintenance.
5. A complete listing of materials.
6. Drawings of AHU and VAV.
7. Manufacturer Certificate of Compliance with materials specifications shall be submitted prior to shipment of the equipment. The certificate shall certify that materials, manufacturer, and final product conforms to or exceeds specified requirements and intent for which the product will be used. Submit supporting reference data, affidavits, and certificates as appropriate. The certificate may reflect recent or previous test results on material or product, acceptable to the Engineer.
8. Table 1 Preliminary Equipment Information Summary

BL0XX-26
MXXXX.XX

NEW PAGE 3 OF 61

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Proposals are requested for the following services:

1. Supply of all information requested on this bid proposal.
2. Site visit to confirm any measurements prior to preparation of the shop drawings.
3. Assessment of the existing electrical connections to ensure they are rated for replacement equipment.
4. Submission of specified submittals for approval prior to ordering equipment and materials.
5. Procure, deliver and install the following replacement equipment:
    - Chilled Water Pumps and Trim (pressure gauges and triple duty valves)
    - Air Handling Units
    - Automated Controls
    - VAV's
    - Ducts and piping
    - Electrical equipment
    - Dampers
    - Fans
6. Modifications to existing ducts, pipework electrical systems and control systems and structures and installation of the replacement equipment and all ancillaries.
7. Provide a manufacturing and delivery schedule and provide monthly progress updates.
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The scope of work is detailed in Attachment 1. Project Drawings and Specifications are provided in Attachments 2 and 3 respectively. Record drawings are provided in Attachment 4.

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5. A complete listing of materials.
6. Drawings of AHU and VAV.
7. Manufacturer Certificate of Compliance with materials specifications shall be submitted prior to shipment of the equipment. The certificate shall certify that materials, manufacturer, and final product conforms to or exceeds specified requirements and intent for which the product will be used. Submit supporting reference data, affidavits, and certificates as appropriate. The certificate may reflect recent or previous test results on material or product, acceptable to the Engineer.
8. Table 1 Preliminary Equipment Information Summary

R4. Replace Pages 1 through 10 of 421 of BL063-26 Attachments with the attached ten pages.

New pages include Fans in the scope of replacement equipment.

ATTACHMENT 1: SCOPE OF WORK
OPERATIONS BUILDING HVAC REPLACEMENT

1.0 General

1. The Contractor shall provide all the necessary equipment, labor, materials, supervision, tools, transportation, and disposal necessary to remove and replace HVAC equipment and ducts for the Operations Building at FWHWRC.
2. The Operations Control Building will be occupied and in operation during construction. Contractor shall consider the work sequence that will minimize the duration and disruption to operations in the different rooms and work closely with Plant staff on access to the different areas. A phased approach will be required.
3. GCDWR will be responsible for removing any equipment, furniture or other items necessary to enable work to be undertaken in a particular area or room. GCDWR will reinstall the items once work in the affected area is completed.
4. Contractor shall undertake an assessment of existing electrical breakers and conductors from the supply panels to the local disconnect at the replacement equipment and verify that they are rated for the required service of the replacement equipment.
5. Undertake an assessment to determine/confirm the operation and control of the existing HVAC equipment to be replaced under this project, including the number and locations of all thermostats and sensors. A proposed HVAC control architecture is provided in the drawings. Contractor shall prepare a proposed operation and control design of the replacement equipment utilizing the existing chilled water control system and replacement thermostat, sensors and control panels 61-HCP-1, 61-HCP-2 and 61-HCP-3. Any existing thermostat sensors or control panels that are not required are to be removed and demolished.
6. Prepare and submit a concept design for any electrical changes, new duct and electrical conduit routes and for review and approval by the Engineer. Agree with the Engineer on any changes to be implemented.
7. Prepare and submit a detailed construction sequence for demolition of existing equipment and placing replacement equipment in service for review and approval by the Engineer.
8. Provide temporary cooling/heating for the durations that the existing equipment will be out of service.
9. The Contractor shall survey the site and examine drawings to determine the extent of the work before beginning demolition.
10. The Contractor shall prevent the spread of dust and debris and avoid the creation of a nuisance or hazards in the surrounding area.
11. All existing equipment with the areas where work is to be undertaken and not relocated temporarily by GCDWR shall be protected from any ingress of dust or other materials during demolition and installation work.
12. The Contractor is to record the existing pumps, motors, HVAC equipment and any instrument serial numbers & model numbers and submit to the Engineer prior to removing the units.
13. Contractor to demolish and dispose of at an approved disposal facility existing HVAC equipment, ducts, Variable Air Volume (VAV) Terminal Units, pipework and electrical conduits/conductors to facilitate installation of replacement equipment. The Contractor is to account for possible relocation of certain electrical boxes, conduits, conductors, pipework and plumbing if it is

determined by the Contractor that it interferes with the new equipment installation and/or needs to be relocated to meet code requirements.

14. Procure and install the following replacement equipment:
    - Chilled Water Pumps
    - Air Handling Units
    - VAV's
    - Ducts and piping
    - Electrical equipment
    - Dampers

INSERT "FANS" AFTER "DAMPERS" AS FINAL BULLET POINT

15. Connect replacement equipment to existing chilled water pipes, drains, ducts, electrical and control systems.
16. Complete start up, balancing and place the equipment in service.
17. Contractors shall comply with GCDWR and OHSA standards provided in Appendix 1.
18. Contractors shall comply with the General Conditions and Site Logistics provided in Apprendix 2.
19. Photographs of the existing equipment are provided Appendix 3.

2.0 Task 1: Demolish Existing Equipment and Associated Electrical Equipment

1. The following are to be demolished and disposed:
    - Two chilled water pumps located outside the Operations Building and electrical connections up to and including the local pump disconnects.
    - Air handling Unit 61-AHU-1 and 61-AHU-3, ducting, and appurtenances and dehumidifier 61-HU-1 located in the mechanical equipment room.
    - Air handling Unit 61-AHU-4, ducting and chilled water pipework located in the mezzanine space above the Process Laboratory. Note that access is limited and the unit will need to be demolished into smaller pieces in place in order to remove it from the mezzanine through the 30"x30" floor opening.
    - VAV boxes and connecting ducting: 61-VAV-1 (maintenance supervisors office), 61-VAV-2 (engineers office), 61-VAV-3 (break room), 61-VAV-4 (training room), 61-VAV-5 (lobby), 61-VAV-6 (control room), 61-VAV-7 (control room), 61-VAV-8 (control room), 61-VAV-9 (corridor), 61-VAV-10 (instrument storage).
    - Coordinate and agree with the Engineer on the removal of unused chilled water pipes, condensate drains, redundant conduits, conductors, junction boxes, disconnects, supports and anchors.
    - All electrical circuits no longer in use shall be identified and locked out at the electrical supply panel.
    - See Attachment 2 for demolition plans.

3.0 Task 2: Chilled Water Pumps

1. Disconnect all electrical and pipe connections and remove existing chilled water pumps.
2. Pumps to be disposed of at approved off site facility.
3. Contractor is to design and select the replacement pumps based on the chilled water supply needed to operate the HVAC equipment to be replaced under this contract. Due consideration is to be given to pump type, long term performance, efficiency and availability of replacement parts. The motors size of the replacement pumps should not exceed the existing motor rating of 5.5 HP in order to utilize the existing electrical supply up to the disconnect at the pumps. The speed of the pumps shall be limited to 1,750 rpm.
4. Pumps shall be provided with mounting plates anchored to the existing housekeeping pads.
5. Procure and install two replacement pumps to operate in a duty/standby arrangement. It is intended to operate pumps using the existing control system. Install new pressure gauge assemblies and triple duty valves.
6. Undertake any pipe work modifications to connect the replacement pumps to the existing chilled water pipework.
7. Provide new electrical conduits and conductors from the existing disconnects to the pumps.

4.0 Task 3: Furnish and Install AHU's and Associated Electrical Equipment

1. The Contractor shall modify existing interior concrete pads as needed for replacement equipment unit. Modifications shall connect to existing pad and be doweled into the existing pad and reinforced as indicated in Attachment 2.
2. The Contractor shall provide new anchor bolts for the concrete pads to accommodate the new equipment. All equipment anchor bolts into concrete slabs shall be stainless steel grade 304 and sized as recommended by the manufacturer.
3. Purchase and install 61-AHU-1 and 61-AHU-3 in the Mechanical Room and 61-AHU-4 on the Mezzanine Level in the Machine Shop. Units shall be sized as shown on the drawings and meet the requirements of Specifications provided within Attachment 3.
4. Prior to installation of the units, coordinate locations and installation requirements with Engineer. Approximate locations are shown on the drawings. Contractor shall obtain approval from the Engineer prior to final placement of the units.
5. The Contractor shall provide and install new ductwork to connect the new AHU units to existing ducts, louvers, intakes and exhausts.
6. Approximate duct connection locations and potential duct routes are shown in the drawings in Attachment 2. The Contractor is to coordinate new duct installations with the existing ducts, vents. louvers, access doors, electrical conduits, pipework, lighting fixtures and any other obstructions that may be encountered to minimize the number of bends and direction changes. The Contractor shall provide adhesives, sealant, supports, fasteners, and installation accessories as recommended by duct manufacturer for installing, joining and mounting the ducts. Duct penetrations through fire rated walls shall be properly sealed with intumescent sealant or foam to maintain the fire rating.
7. The setpoints schedules for the AHUs shall be coordinated with plant staff.
8. Work items to be addressed (typical) when replacing 61-AHU-1:
    - Demolish and remove 61-AHU-1 and associated ductwork, piping, electrical conductors and conduits to suit installation of replacement unit.

- Modify concrete housekeeping pad to accommodate replacement unit.
- The air intake for 61-AHU-1 shall be provided with a motorized open/close damper connected to the existing 32"x32" louver in the exterior wall. Contractor to provide electrical supply for the damper and local disconnect if required.
- Install new 20"x20" exhaust ductwork and manual damper and connect duct on existing roof vent. Check seal around ducts and replace as needed to prevent moisture from roof once installation complete.
- Modify ductwork to connect to 61-AHU-1, include 61-DEH-1 and connect to existing 20"x16" ductwork before passing through wall. Replace sealant around wall opening.
- Modify ductwork to connect replacement unit to existing 14"x14" ductwork before passing through wall. Replace sealant.
- Insulate all new ducting to match existing.
- Existing smoke detector and devices mounted in ducts are not to be replaced and shall remain in operation with the replacement unit.
- Modify existing chilled water supply and return pipework to connect to new unit.
- Replace existing condensate drain pipework and connect to existing drain.
- Provide electrical disconnect and NEMA 4X stainless steel enclosure and connect to existing conduits and conductors from MCC panel. Relocate existing conduits and reinstall conductors if needed to suit replacement equipment.
- Provide new electrical conduits and conductors from the disconnect to the AHU.
- Install and connect new duct heater 61-DEH-1. Electrical power to the duct heater is to be connected to the existing supply to unit 61-HU-1 which is to be demolished. Heater control to be linked to 61-AHU-1. Include all conduits, conductors, junction boxes and disconnect associated with the heater.
- Install control panel 61-HCP-2 in agreed location.

9. Work items to be addressed (typical) when replacing 61-AHU-3:
   - Demolish and remove 61-AHU-3 and associated ductwork, piping, electrical conductors and conduits to suit installation of replacement unit.
   - Modify concrete housekeeping pad to accommodate replacement unit.
   - Install new air intake duct for the replacement unit duct and connect to 20"x10"/20"x20" duct from existing roof opening above the unit. Provide replacement motorized open/close damper. Check seal around ducts and replace as needed to prevent moisture from roof once installation complete.
   - The existing electrical conductors and conduits shall be used to provide power/control for the damper.
   - The existing gas heater in the ductwork is to remain and shall form part of the replacement installation.
   - Modify ductwork to connect replacement unit to existing 20"x10" ductwork.
   - Existing smoke detector and devices mounted in ducts are not to be replaced and shall remain in operation with the replacement unit.
   - Modify existing chilled water supply and return pipework to connect to new unit.

- Replace existing condensate drain pipework and connect to existing drain.
- Provide electrical disconnect and NEMA 4X stainless steel enclosure and connect to existing conduits and conductors from MCC panel. Relocate existing conduits and reinstall conductors if needed to suit replacement equipment.
- Provide new electrical conduits and conductors from the disconnect to the AHU.

10. Work items to be addressed (typical) when replacing 61-AHU-4:
    - Disconnect and demolish in place 61-AHU-4 in the mezzanine space above the Process laboratory. Note that access into the space in restricted by an approximate 30" by 30" opening in the mezzanine floor which is accessed from a vertical steel ladder in the Process Laboratory (see photographs in Appendix 3). Demolished equipment must be broken down into smaller pieces in place and removed from the site via the 30"x30" opening.
    - Remove existing ducting connected to unit to enable new ducts and connection from the replacement unit to be made as shown.
    - The existing openings to the roof plenum chambers are to be sealed after the ducts have been removed.
    - Cut into chilled water pipes (see below) and cap.
    - On mezzanine floor in the workshop, construct concrete housekeeping pad to accommodate replacement unit.
    - Install replacement unit in new location.
    - Provide new 24" x 24" and 32" x 28" ducts from replacement unit and route ducts to connect to existing ducts in the space of the relocated 61-AHU-4 in the mezzanine space.
    - A new air intake for the replacement unit shall be provided and installed with a modulating motorized control damper. Neatly cut opening for the air intake duct in the existing CMU wall. Cap the duct with a weatherproof hood and aluminum bird screen. Seal around duct and hood with weatherproof sealant to prevent moisture ingress. The color of the weatherproof hood shall be green to match the existing roof.
    - Provide electrical supply for the motorized damper and replacement AHU.
    - New conductors and conduits shall be provided to the AHU from the existing breaker in MCC-61B in the workshop electrical room. Contractor shall supply all conduits, conductors complete with all supports, anchors etc. New conduits shall, as far as possible, follow existing conduit routes and utilize any existing spare supports.
    - The new ducting shall be routed above the ceilings and through existing walls. Openings in the walls shall be neatly cut to suit installation of the ducts. Wall openings shall be sealed using fire rated sealant to match rating of walls through which it passes.
    - Fire rated dampers shall be installed within the ducts at each wall.
    - Note that space along the intended route of the ducts is limited and there are many existing services/pipes and other utilities located in the space. Care shall be taken not to damage any of the items or the ceiling material (see photographs in Appendix 3).

- Neatly cut and install new 24"x24" exhaust air duct through existing roof above the unit and connect with new gooseneck fitted with aluminum bird screen and gravity damper. Seal around duct with weatherproof sealant and flashing to prevent ingress of moisture.
- Provide new smoke detector and devices mounted in the ducts and connect into the operation and control of the replacement unit.
- Provide and connect chilled water supply and return pipework to existing chilled water recirculation pipework as shown on the drawings. The chilled water supply shall be fitted with a differential pressure transmitter and any control appurtenances to enable the chilled water system to be balanced to all units utilizing the existing control system.
- Chilled water piping shall comply with the specifications in Attachment 3.
- Install control panel 61-HCP-3 in agreed location.

5.0 Task 4. Variable Air Volume Terminal Units

1. Most of the VAV's are located above ceilings and will need to be accessed by removing the ceiling materials. Contractor shall carefully remove ceiling material and store for reinstallation after the VAV has been replaced. Contractor shall replace any damaged materials with materials that match existing.
2. Disconnect and remove the 10 existing VAV units as shown on the drawings.
3. Procure and install replacement VAV units as shown on the drawings and as specified as follows:
   - 61-VAV-1 in the Maintenance Supervisors office
   - 61-VAV-2 in the Engineers Office
   - 61-VAV-3 in the Break Room
   - 61-VAV-4 in the Training Room
   - 61-VAV-5 in the Lobby
   - 61-VAV-6 in the Control Room
   - 61-VAV-7- in the Control Room
   - 61-VAV-8 in the Control Room
   - 61-VAV-9 in the Corridor
   - 61-VAV-10 in the Instrument Storage Room
4. Modify ducts and any supports for replacement units as necessary.
5. Existing electrical and control systems shall be reused at each installation.

INSERT "TASK 5: FANS."
"DUCTS MOVED DOWNWARDS TO "TASK 6."

6.0 Task 5: Ducts

1. All ducts shall be insulated to match existing insulation.
2. All ductwork shall be galvanized mild steel.
3. Complete modification to existing ducts to suit replacement equipment and provide new ducts for 61-AHU-4 as shown on the drawings,
4. Ducts shall comply with the specifications in Attachment 3.

5. Contractor shall install sheet metal ductwork and flexible ductwork in accordance with SMACNA Manual, NFPA 90A, and NFPA 90B. All ductwork runs shall be installed as close to the supporting structure as possible and aligned vertically and horizontally.
6. Coordinate installation of ductwork with existing layout of suspended ceiling, light fixtures, sprinkler pipe, electrical raceways, and all other overhead items installed between the ceiling and the structure above.
7. Provide adhesives, cements, sealant, fittings, fasteners, and installation accessories as recommended by duct manufacturer for applications.
8. Provide all necessary hangers, supports, and additional bracing required to adequately support the ductwork in accordance with the SMACNA Manual. Reuse of existing ductwork hangers and supports shall only be allowed if they are in acceptable condition to the Engineer and rigidly support the ductwork true-to-shape without any buckling.
9. Contractor shall recommend air volume dampers to the Engineer that need to be added or replaced in order to obtain proper air control and balancing. All required air volume dampers shall be the Contractor's responsibility to furnish and install, including wire connections.
10. Insulate all ductwork, and VAV boxes as per the Specifications in Attachment 3.
11. Connect ductwork to the existing vents as shown on the drawings.
12. Seal around new ductwork penetrations with intumescent sealant or foam to maintain the fire resistance of the existing walls.
13. Seal existing unused duct openings in floors/slabs/roof sheeting with aluminum cover plates rated for light traffic. Duct openings in walls shall be sealed with CMU blockwork and recoated as necessary.

7.0 Task 6: Electrical

1. Except where existing conduits and conductors are able to be reused, and approved by the Engineer, provide all new electrical conduits, junction boxes, supports and conductors from existing electrical connection to the replacement equipment.
2. Contractor shall confirm all existing breaker capacities and wiring in MCC-61A, MCC-61B and panel 610 PPU and for all necessary replacement equipment.
3. For the chilled water pumps:
    - Remove the 4 existing composite Hand/Off/Auto control switch enclosures and replace with new stainless steel NEMA rated enclosures (see photographs in Appendix 3).
    - Provide new conduit and wiring from existing disconnects to new pump motors.
    - Pumps are to be controlled using existing chilled water control system.
4. Provide new conduit and conductors from existing disconnects at VAV units to replacement units.
5. For 61-AHU-1 and 61-AHU-3:
    - Remove and replace existing disconnect switches with stainless steel NEMA 4X rated enclosures and switches at each unit.
    - Provide new conduit and conductors from disconnects to replacement units.
    - Provide control wiring between new HVAC control panel contacts and field control devices, such as duct smoke detectors.
    - Provide controls necessary for units and connect control panel to main controller.

6. For 61-AHU-4:
    - Disconnect and terminate existing electrical supply and discard other electrical equipment connected to 61-AHU-4. Also remove any items that impact the installation of new ductwork in the area.
    - Contractor to confirm breaker suitability and capacity in existing MCC-61B to supply replacement unit to be installed on Mezzanine in warehouse.
    - Provide new conduits and conductors from electrical room to replacement unit. Connect to existing breakers in MCC-61B.
    - Provide new disconnect and stainless steel NEMA 4X rated enclosure at replacement unit.
    - Provide control wiring between new HVAC control panel contacts and field control devices, such as duct smoke detectors.
    - Provide controls necessary for unit and connect control panel to main controller.
7. The location of the electrical supply to the existing and replacement units are tabled below:

Table 7.1: Existing electrical breaker locations

Tag number	Item	Breaker Location	Requirement
61-P-1	Primary chiller pump	MCC 61B	Replacement
61-P-2	Primary chiller pump	MCC 61A	Replacement
61-AHU-1	Air Handling Unit	MCC 61A	Replacement
61-AHU-3	Air Handling Unit	MCC 61B	Replacement
61-AHU-4	Air Handling Unit	MCC 61B	Replacement unit on workshop mezzanine
61-HU-1	Duct Heater	Pannel Board 610 PPC	Replaced with 61-DEH-1
61-VAV-1	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-2	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-3	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-4	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-5	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-6	Variable Air Volume Terminal Unit	Panel Board 610 PPU	Replacement
61-VAV-7	Variable Air Volume Terminal Unit	Panel Board 610 PPU	Replacement
61-VAV-8	Variable Air Volume Terminal Unit	Panel Board 610PPU	Replacement

Tag number	Item	Breaker Location	Requirement
61-VAV-9	Variable Air Volume Terminal Unit	MCC 61B	Replacement
61-VAV-10	Variable Air Volume Terminal Unit	MCC 61B	Replacement

8. All new conduit routes shall be approved by Owner and agreed with the Engineer prior to commencing construction. Coordinate installation of electrical raceways with existing structural members, walls, structural surface contours, and existing concealed spaces. Route electrical raceways in concealed spaces to the furthest extent feasible.
9. All penetrations through walls or floors shall be made perpendicular to the plane of the surface penetrated. Openings shall be neatly cut or cored and sealed after installation to match wall fire ratings.
10. Provide support and framing channels, mounted on structural members to support raceway systems and electrical equipment.
11. Provide junction boxes or pull boxes where necessary to terminate, tap-off, or redirect conduit runs or as necessary to facilitate conductor installation. Install junction boxes and pull boxes in accessible locations.
12. All electrical equipment shall comply with the Specifications in Attachment 3.

8.0 Task 7: Piping and plumbing

1. New chilled water pipework to 61-AHU-4
    - Cut into existing 3" chilled water pipes in warehouse and install tee for connection of new pipework to 61-AHU-4 as shown on drawings.
    - Install 3" isolation globe valves on pipe branches to 61-AHU-1/61-AHU-3 and 61-AHU-4 to enable partial isolation of the chilled water supply system without loss of entire system.
    - Procure and install new 3" chilled water supply and return lines to 61-AHU.4. New pipe work is to be routed to minimize conflicts with existing utilities/items and supported from the existing roof trusses. Where possible, drilling or cutting of existing elements shall be avoided.
    - Pipe to be checked for leaks prior to installing insulation.
    - Contractor shall provide all supports and clamps necessary for the new pipes.
    - Pipes shall be insulated to match existing insulation or provide new insulation and jacketing as agreed with the Engineer.
    - Pipes and insulation shall comply with the specifications in Attachment 3.
2. Modifications to chilled water pipework as existing 61-AHU-4 Laboratory Mezzanine Space.
    - Disconnect existing 2.5" supply and return pipework from existing unit.
    - Cut existing 2.5" supply and return pipes close to the unit in allocation that will retain circulation flow in chilled water system.
    - Insulate and coat new pipework.
3. Modifications at 61-AHU-1 and 61-AHU-3:
    - Disconnect existing chilled water supply and return lines.
    - Modify existing pipework and provide new pipework to connect to replacement units.

- Insulate modifications and new pipework to match existing insulation.

4. Condensate Drains:
   - Furnish and install new PVC condensate drain piping from 61-AHU-1, 61-AHU-3, and 61-AHU-4. Discharge into existing drains. Use existing condensate drain routes and penetrations where feasible.
   - PVC condensate drainpipes and fittings shall comply with the specification in Table 8.1 below.

Table 8.1: PVC Specification

POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS		
Item	Size	Description
General	All	Materials in contact with potable water shall conform to NSF 61 acceptance.
Pipe	All	Schedule 80 PVC: Type I, Grade I or Class 12454-B conforming to ASTM D1784 and ASTM D1785. Pipe shall be manufactured with titanium dioxide for ultraviolet protection. Threaded Nipples: Schedule 80 PVC.
Fittings	All	Schedule to Match Pipe Above: ASTM D2466 and ASTM D2467 for socket weld type and Schedule 80 ASTM D2464 for threaded type. Fittings shall be manufactured with titanium dioxide for ultraviolet protection.
Joints	All	Solvent socket weld except where connection to threaded valves and equipment may require future disassembly.
Flanges	All	One-piece, molded hub type PVC flat face flange in accordance with Fittings above, ASME B16.1, Class 125 drilling
Bolting	All	Flat Face Mating Flange and In Corrosive Areas: ASTM A193/A193M, Type 316 stainless steel Grade B8M hex head bolts, ASTM A194/A194M Grade 8M hex head nuts and ASTM F436 Type 3 alloy washers at nuts and bolt heads. Achieve 40 percent to 60 percent of bolt minimum yield stress. With Raised Face Mating Flange: Carbon steel ASTM A307 Grade B square head bolts, ASTM A563 Grade A heavy hex head nuts and ASTM F436 hardened steel washers at nuts and bolt heads. Achieve 40 percent to 60 percent of bolt minimum yield stress.

ATTACHMENT 1: SCOPE OF WORK
OPERATIONS BUILDING HVAC REPLACEMENT

1.0 General

1. The Contractor shall provide all the necessary equipment, labor, materials, supervision, tools, transportation, and disposal necessary to remove and replace HVAC equipment and ducts for the Operations Building at FWHWRC.
2. The Operations Control Building will be occupied and in operation during construction. Contractor shall consider the work sequence that will minimize the duration and disruption to operations in the different rooms and work closely with Plant staff on access to the different areas. A phased approach will be required.
3. GCDWR will be responsible for removing any equipment, furniture or other items necessary to enable work to be undertaken in a particular area or room. GCDWR will reinstall the items once work in the affected area is completed.
4. Contractor shall undertake an assessment of existing electrical breakers and conductors from the supply panels to the local disconnect at the replacement equipment and verify that they are rated for the required service of the replacement equipment.
5. Undertake an assessment to determine/confirm the operation and control of the existing HVAC equipment to be replaced under this project, including the number and locations of all thermostats and sensors. A proposed HVAC control architecture is provided in the drawings. Contractor shall prepare a proposed operation and control design of the replacement equipment utilizing the existing chilled water control system and replacement thermostat, sensors and control panels 61-HCP-1, 61-HCP-2 and 61-HCP-3. Any existing thermostat sensors or control panels that are not required are to be removed and demolished.
6. Prepare and submit a concept design for any electrical changes, new duct and electrical conduit routes and for review and approval by the Engineer. Agree with the Engineer on any changes to be implemented.
7. Prepare and submit a detailed construction sequence for demolition of existing equipment and placing replacement equipment in service for review and approval by the Engineer.
8. Provide temporary cooling/heating for the durations that the existing equipment will be out of service.
9. The Contractor shall survey the site and examine drawings to determine the extent of the work before beginning demolition.
10. The Contractor shall prevent the spread of dust and debris and avoid the creation of a nuisance or hazards in the surrounding area.
11. All existing equipment with the areas where work is to be undertaken and not relocated temporarily by GCDWR shall be protected from any ingress of dust or other materials during demolition and installation work.
12. The Contractor is to record the existing pumps, motors, HVAC equipment and any instrument serial numbers & model numbers and submit to the Engineer prior to removing the units.
13. Contractor to demolish and dispose of at an approved disposal facility existing HVAC equipment, ducts, Variable Air Volume (VAV) Terminal Units, pipework and electrical conduits/conductors to facilitate installation of replacement equipment. The Contractor is to account for possible relocation of certain electrical boxes, conduits, conductors, pipework and plumbing if it is

determined by the Contractor that it interferes with the new equipment installation and/or needs to be relocated to meet code requirements.

14. Procure and install the following replacement equipment:
    - Chilled Water Pumps
    - Air Handling Units
    - VAV's
    - Ducts and piping
    - Electrical equipment
    - Dampers
    - Fans
15. Connect replacement equipment to existing chilled water pipes, drains, ducts, electrical and control systems.
16. Complete start up, balancing and place the equipment in service.
17. Contractors shall comply with GCDWR and OHSA standards provided in Appendix 1.
18. Contractors shall comply with the General Conditions and Site Logistics provided in Apprendix 2.
19. Photographs of the existing equipment are provided Appendix 3.

2.0 Task 1: Demolish Existing Equipment and Associated Electrical Equipment

1. The following are to be demolished and disposed:
    - Two chilled water pumps located outside the Operations Building and electrical connections up to and including the local pump disconnects.
    - Air handling Unit 61-AHU-1 and 61-AHU-3, ducting, and appurtenances and dehumidifier 61-HU-1 located in the mechanical equipment room.
    - Air handling Unit 61-AHU-4, ducting and chilled water pipework located in the mezzanine space above the Process Laboratory. Note that access is limited and the unit will need to be demolished into smaller pieces in place in order to remove it from the mezzanine through the 30"x30" floor opening.
    - VAV boxes and connecting ducting: 61-VAV-1 (maintenance supervisors office), 61-VAV-2 (engineers office), 61-VAV-3 (break room), 61-VAV-4 (training room), 61-VAV-5 (lobby), 61-VAV-6 (control room), 61-VAV-7 (control room), 61-VAV-8 (control room), 61-VAV-9 (corridor), 61-VAV-10 (instrument storage).
    - Coordinate and agree with the Engineer on the removal of unused chilled water pipes, condensate drains, redundant conduits, conductors, junction boxes, disconnects, supports and anchors.
    - All electrical circuits no longer in use shall be identified and locked out at the electrical supply panel.
    - See Attachment 2 for demolition plans.

3.0 Task 2: Chilled Water Pumps

1. Disconnect all electrical and pipe connections and remove existing chilled water pumps.
2. Pumps to be disposed of at approved off site facility.
3. Contractor is to design and select the replacement pumps based on the chilled water supply needed to operate the HVAC equipment to be replaced under this contract. Due consideration is to be given to pump type, long term performance, efficiency and availability of replacement parts. The motors size of the replacement pumps should not exceed the existing motor rating of 5.5 HP in order to utilize the existing electrical supply up to the disconnect at the pumps. The speed of the pumps shall be limited to 1,750 rpm.
4. Pumps shall be provided with mounting plates anchored to the existing housekeeping pads.
5. Procure and install two replacement pumps to operate in a duty/standby arrangement. It is intended to operate pumps using the existing control system. Install new pressure gauge assemblies and triple duty valves.
6. Undertake any pipe work modifications to connect the replacement pumps to the existing chilled water pipework.
7. Provide new electrical conduits and conductors from the existing disconnects to the pumps.

4.0 Task 3: Furnish and Install AHU's and Associated Electrical Equipment

1. The Contractor shall modify existing interior concrete pads as needed for replacement equipment unit. Modifications shall connect to existing pad and be doweled into the existing pad and reinforced as indicated in Attachment 2.
2. The Contractor shall provide new anchor bolts for the concrete pads to accommodate the new equipment. All equipment anchor bolts into concrete slabs shall be stainless steel grade 304 and sized as recommended by the manufacturer.
3. Purchase and install 61-AHU-1 and 61-AHU-3 in the Mechanical Room and 61-AHU-4 on the Mezzanine Level in the Machine Shop. Units shall be sized as shown on the drawings and meet the requirements of Specifications provided within Attachment 3.
4. Prior to installation of the units, coordinate locations and installation requirements with Engineer. Approximate locations are shown on the drawings. Contractor shall obtain approval from the Engineer prior to final placement of the units.
5. The Contractor shall provide and install new ductwork to connect the new AHU units to existing ducts, louvers, intakes and exhausts.
6. Approximate duct connection locations and potential duct routes are shown in the drawings in Attachment 2. The Contractor is to coordinate new duct installations with the existing ducts, vents. louvers, access doors, electrical conduits, pipework, lighting fixtures and any other obstructions that may be encountered to minimize the number of bends and direction changes. The Contractor shall provide adhesives, sealant, supports, fasteners, and installation accessories as recommended by duct manufacturer for installing, joining and mounting the ducts. Duct penetrations through fire rated walls shall be properly sealed with intumescent sealant or foam to maintain the fire rating.
7. The setpoints schedules for the AHUs shall be coordinated with plant staff.
8. Work items to be addressed (typical) when replacing 61-AHU-1:
    - Demolish and remove 61-AHU-1 and associated ductwork, piping, electrical conductors and conduits to suit installation of replacement unit.

- Modify concrete housekeeping pad to accommodate replacement unit.
- The air intake for 61-AHU-1 shall be provided with a motorized open/close damper connected to the existing 32"x32" louver in the exterior wall. Contractor to provide electrical supply for the damper and local disconnect if required.
- Install new 20"x20" exhaust ductwork and manual damper and connect duct on existing roof vent. Check seal around ducts and replace as needed to prevent moisture from roof once installation complete.
- Modify ductwork to connect to 61-AHU-1, include 61-DEH-1 and connect to existing 20"x16" ductwork before passing through wall. Replace sealant around wall opening.
- Modify ductwork to connect replacement unit to existing 14"x14" ductwork before passing through wall. Replace sealant.
- Insulate all new ducting to match existing.
- Existing smoke detector and devices mounted in ducts are not to be replaced and shall remain in operation with the replacement unit.
- Modify existing chilled water supply and return pipework to connect to new unit.
- Replace existing condensate drain pipework and connect to existing drain.
- Provide electrical disconnect and NEMA 4X stainless steel enclosure and connect to existing conduits and conductors from MCC panel. Relocate existing conduits and reinstall conductors if needed to suit replacement equipment.
- Provide new electrical conduits and conductors from the disconnect to the AHU.
- Install and connect new duct heater 61-DEH-1. Electrical power to the duct heater is to be connected to the existing supply to unit 61-HU-1 which is to be demolished. Heater control to be linked to 61-AHU-1. Include all conduits, conductors, junction boxes and disconnect associated with the heater.
- Install control panel 61-HCP-2 in agreed location.

9. Work items to be addressed (typical) when replacing 61-AHU-3:
   - Demolish and remove 61-AHU-3 and associated ductwork, piping, electrical conductors and conduits to suit installation of replacement unit.
   - Modify concrete housekeeping pad to accommodate replacement unit.
   - Install new air intake duct for the replacement unit duct and connect to 20"x10"/20"x20" duct from existing roof opening above the unit. Provide replacement motorized open/close damper. Check seal around ducts and replace as needed to prevent moisture from roof once installation complete.
   - The existing electrical conductors and conduits shall be used to provide power/control for the damper.
   - The existing gas heater in the ductwork is to remain and shall form part of the replacement installation.
   - Modify ductwork to connect replacement unit to existing 20"x10" ductwork.
   - Existing smoke detector and devices mounted in ducts are not to be replaced and shall remain in operation with the replacement unit.
   - Modify existing chilled water supply and return pipework to connect to new unit.

- Replace existing condensate drain pipework and connect to existing drain.
- Provide electrical disconnect and NEMA 4X stainless steel enclosure and connect to existing conduits and conductors from MCC panel. Relocate existing conduits and reinstall conductors if needed to suit replacement equipment.
- Provide new electrical conduits and conductors from the disconnect to the AHU.

10. Work items to be addressed (typical) when replacing 61-AHU-4:

- Disconnect and demolish in place 61-AHU-4 in the mezzanine space above the Process laboratory. Note that access into the space in restricted by an approximate 30" by 30" opening in the mezzanine floor which is accessed from a vertical steel ladder in the Process Laboratory (see photographs in Appendix 3). Demolished equipment must be broken down into smaller pieces in place and removed from the site via the 30"x30" opening.
- Remove existing ducting connected to unit to enable new ducts and connection from the replacement unit to be made as shown.
- The existing openings to the roof plenum chambers are to be sealed after the ducts have been removed.
- Cut into chilled water pipes (see below) and cap.
- On mezzanine floor in the workshop, construct concrete housekeeping pad to accommodate replacement unit.
- Install replacement unit in new location.
- Provide new 24" x 24" and 32" x 28" ducts from replacement unit and route ducts to connect to existing ducts in the space of the relocated 61-AHU-4 in the mezzanine space.
- A new air intake for the replacement unit shall be provided and installed with a modulating motorized control damper. Neatly cut opening for the air intake duct in the existing CMU wall. Cap the duct with a weatherproof hood and aluminum bird screen. Seal around duct and hood with weatherproof sealant to prevent moisture ingress. The color of the weatherproof hood shall be green to match the existing roof.
- Provide electrical supply for the motorized damper and replacement AHU.
- New conductors and conduits shall be provided to the AHU from the existing breaker in MCC-61B in the workshop electrical room. Contractor shall supply all conduits, conductors complete with all supports, anchors etc. New conduits shall, as far as possible, follow existing conduit routes and utilize any existing spare supports.
- The new ducting shall be routed above the ceilings and through existing walls. Openings in the walls shall be neatly cut to suit installation of the ducts. Wall openings shall be sealed using fire rated sealant to match rating of walls through which it passes.
- Fire rated dampers shall be installed within the ducts at each wall.
- Note that space along the intended route of the ducts is limited and there are many existing services/pipes and other utilities located in the space. Care shall be taken not to damage any of the items or the ceiling material (see photographs in Appendix 3).

- Neatly cut and install new 24"x24" exhaust air duct through existing roof above the unit and connect with new gooseneck fitted with aluminum bird screen and gravity damper. Seal around duct with weatherproof sealant and flashing to prevent ingress of moisture.
- Provide new smoke detector and devices mounted in the ducts and connect into the operation and control of the replacement unit.
- Provide and connect chilled water supply and return pipework to existing chilled water recirculation pipework as shown on the drawings. The chilled water supply shall be fitted with a differential pressure transmitter and any control appurtenances to enable the chilled water system to be balanced to all units utilizing the existing control system.
- Chilled water piping shall comply with the specifications in Attachment 3.
- Install control panel 61-HCP-3 in agreed location.

5.0 Task 4. Variable Air Volume Terminal Units

1. Most of the VAV's are located above ceilings and will need to be accessed by removing the ceiling materials. Contractor shall carefully remove ceiling material and store for reinstallation after the VAV has been replaced. Contractor shall replace any damaged materials with materials that match existing.
2. Disconnect and remove the 10 existing VAV units as shown on the drawings.
3. Procure and install replacement VAV units as shown on the drawings and as specified as follows:
   - 61-VAV-1 in the Maintenance Supervisors office
   - 61-VAV-2 in the Engineers Office
   - 61-VAV-3 in the Break Room
   - 61-VAV-4 in the Training Room
   - 61-VAV-5 in the Lobby
   - 61-VAV-6 in the Control Room
   - 61-VAV-7- in the Control Room
   - 61-VAV-8 in the Control Room
   - 61-VAV-9 in the Corridor
   - 61-VAV-10 in the Instrument Storage Room
4. Modify ducts and any supports for replacement units as necessary.
5. Existing electrical and control systems shall be reused at each installation.

6.0 Task 5. Fans

1. Disconnect and remove the 12 existing Fan units as shown on the drawings.
2. Procure and install replacement Fan units as shown on the drawings and as specified as follows:
   - 61-F-1 in Room 122
   - 61-F-2 in Room 145
   - 61-F-3 in Room 122

- 61-F-4 in Room 117
- 61-F-5 in Room 116
- 61-F-6 in Room 134
- 61-F-7 in Room 134
- 61-F-8 in Room 134
- 61-F-9 in Room 134
- 61-F-10 in Room 134
- 61-F-11 in Room 134
- 61-F-12 in Room 144

3. Modify ducts and any supports for replacement units as necessary.
4. Existing electrical and control systems shall be reused at each installation.

7.0 Task 6: Ducts

1. All ducts shall be insulated to match existing insulation.
2. All ductwork shall be galvanized mild steel.
3. Complete modification to existing ducts to suit replacement equipment and provide new ducts for 61-AHU-4 as shown on the drawings,
4. Ducts shall comply with the specifications in Attachment 3.
5. Contractor shall install sheet metal ductwork and flexible ductwork in accordance with SMACNA Manual, NFPA 90A, and NFPA 90B. All ductwork runs shall be installed as close to the supporting structure as possible and aligned vertically and horizontally.
6. Coordinate installation of ductwork with existing layout of suspended ceiling, light fixtures, sprinkler pipe, electrical raceways, and all other overhead items installed between the ceiling and the structure above.
7. Provide adhesives, cements, sealant, fittings, fasteners, and installation accessories as recommended by duct manufacturer for applications.
8. Provide all necessary hangers, supports, and additional bracing required to adequately support the ductwork in accordance with the SMACNA Manual. Reuse of existing ductwork hangers and supports shall only be allowed if they are in acceptable condition to the Engineer and rigidly support the ductwork true-to-shape without any buckling.
9. Contractor shall recommend air volume dampers to the Engineer that need to be added or replaced in order to obtain proper air control and balancing. All required air volume dampers shall be the Contractor's responsibility to furnish and install, including wire connections.
10. Insulate all ductwork, and VAV boxes as per the Specifications in Attachment 3.
11. Connect ductwork to the existing vents as shown on the drawings.
12. Seal around new ductwork penetrations with intumescent sealant or foam to maintain the fire resistance of the existing walls.
13. Seal existing unused duct openings in floors/slabs/roof sheeting with aluminum cover plates rated for light traffic. Duct openings in walls shall be sealed with CMU blockwork and recoated as necessary.

14. Any modification of existing ductwork shall not affect duct smoke detectors. Duct detectors shall be reinstalled after modification of ductwork.

8.0 Task 7: Electrical

1. Except where existing conduits and conductors are able to be reused, and approved by the Engineer, provide all new electrical conduits, junction boxes, supports and conductors from existing electrical connection to the replacement equipment.
2. Contractor shall confirm all existing breaker capacities and wiring in MCC-61A, MCC-61B and panel 610 PPU and for all necessary replacement equipment.
3. For the chilled water pumps:
    - Remove the 4 existing composite Hand/Off/Auto control switch enclosures and replace with new stainless steel NEMA rated enclosures (see photographs in Appendix 3).
    - Provide new conduit and wiring from existing disconnects to new pump motors.
    - Pumps are to be controlled using existing chilled water control system.
4. Provide new conduit and conductors from existing disconnects at VAV units to replacement units.
5. For 61-AHU-1 and 61-AHU-3:
    - Remove and replace existing disconnect switches with stainless steel NEMA 4X rated enclosures and switches at each unit.
    - Provide new conduit and conductors from disconnects to replacement units.
    - Provide control wiring between new HVAC control panel contacts and field control devices, such as duct smoke detectors.
    - Provide controls necessary for units and connect control panel to main controller.
6. For 61-AHU-4:
    - Disconnect and terminate existing electrical supply and discard other electrical equipment connected to 61-AHU-4. Also remove any items that impact the installation of new ductwork in the area.
    - Contractor to confirm breaker suitability and capacity in existing MCC-61B to supply replacement unit to be installed on Mezzanine in warehouse.
    - Provide new conduits and conductors from electrical room to replacement unit. Connect to existing breakers in MCC-61B.
    - Provide new disconnect and stainless steel NEMA 4X rated enclosure at replacement unit.
    - Provide control wiring between new HVAC control panel contacts and field control devices, such as duct smoke detectors.
    - Provide controls necessary for unit and connect control panel to main controller.
7. The location of the electrical supply to the existing and replacement units are tabled below:

Table 7.1: Existing electrical breaker locations

Tag number	Item	Breaker Location	Requirement
61-P-1	Primary chiller pump	MCC 61B	Replacement
61-P-2	Primary chiller pump	MCC 61A	Replacement
61-AHU-1	Air Handling Unit	MCC 61A	Replacement

Tag number	Item	Breaker Location	Requirement
61-AHU-3	Air Handling Unit	MCC 61B	Replacement
61-AHU-4	Air Handling Unit	MCC 61B	Replacement unit on workshop mezzanine
61-HU-1	Duct Heater	Pannel Board 610 PPC	Replaced with 61-DEH-1
61-VAV-1	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-2	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-3	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-4	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-5	Variable Air Volume Terminal Unit	MCC 61A	Replacement
61-VAV-6	Variable Air Volume Terminal Unit	Panel Board 610 PPU	Replacement
61-VAV-7	Variable Air Volume Terminal Unit	Panel Board 610 PPU	Replacement
61-VAV-8	Variable Air Volume Terminal Unit	Panel Board 610PPU	Replacement
61-VAV-9	Variable Air Volume Terminal Unit	MCC 61B	Replacement
61-VAV-10	Variable Air Volume Terminal Unit	MCC 61B	Replacement

8. All new conduit routes shall be approved by Owner and agreed with the Engineer prior to commencing construction. Coordinate installation of electrical raceways with existing structural members, walls, structural surface contours, and existing concealed spaces. Route electrical raceways in concealed spaces to the furthest extent feasible.
9. All penetrations through walls or floors shall be made perpendicular to the plane of the surface penetrated. Openings shall be neatly cut or cored and sealed after installation to match wall fire ratings.
10. Provide support and framing channels, mounted on structural members to support raceway systems and electrical equipment.
11. Provide junction boxes or pull boxes where necessary to terminate, tap-off, or redirect conduit runs or as necessary to facilitate conductor installation. Install junction boxes and pull boxes in accessible locations.
12. All electrical equipment shall comply with the Specifications in Attachment 3.

9.0 Task 8: Piping and plumbing

1. New chilled water pipework to 61-AHU-4

- Cut into existing 3" chilled water pipes in warehouse and install tee for connection of new pipework to 61-AHU-4 as shown on drawings.
- Install 3" isolation globe valves on pipe branches to 61-AHU-1/61-AHU-3 and 61-AHU-4 to enable partial isolation of the chilled water supply system without loss of entire system.
- Procure and install new 3" chilled water supply and return lines to 61-AHU.4. New pipe work is to be routed to minimize conflicts with existing utilities/items and supported from the existing roof trusses. Where possible, drilling or cutting of existing elements shall be avoided.
- Pipe to be checked for leaks prior to installing insulation.
- Contractor shall provide all supports and clamps necessary for the new pipes.
- Pipes shall be insulated to match existing insulation or provide new insulation and jacketing as agreed with the Engineer.
- Pipes and insulation shall comply with the specifications in Attachment 3.

2. Modifications to chilled water pipework as existing 61-AHU-4 Laboratory Mezzanine Space.
   - Disconnect existing 2.5" supply and return pipework from existing unit.
   - Cut existing 2.5" supply and return pipes close to the unit in allocation that will retain circulation flow in chilled water system.
   - Insulate and coat new pipework.
3. Modifications at 61-AHU-1 and 61-AHU-3:
   - Disconnect existing chilled water supply and return lines.
   - Modify existing pipework and provide new pipework to connect to replacement units.
   - Insulate modifications and new pipework to match existing insulation.
4. Condensate Drains:
   - Furnish and install new PVC condensate drain piping from 61-AHU-1, 61-AHU-3, and 61-AHU-4. Discharge into existing drains. Use existing condensate drain routes and penetrations where feasible.
   - PVC condensate drainpipes and fittings shall comply with the specification in Table 8.1 below.

Table 9.1: PVC Specification

POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS		
Item	Size	Description
General	All	Materials in contact with potable water shall conform to NSF 61 acceptance.
Pipe	All	Schedule 80 PVC: Type I, Grade I or Class 12454-B conforming to ASTM D1784 and ASTM D1785. Pipe shall be manufactured with titanium dioxide for ultraviolet protection. Threaded Nipples: Schedule 80 PVC.

R5. Replace Drawings from Pages 34 through 44 of 421 of BL063-26 Attachments with the attached eleven drawing pages.

New set clarifies the Fans are to be replaced in kind. Fan Schedule provided on drawing H-008. New set also clarifies scale.

SHEET KEYNOTES

1. DEMOLISH EXISTING PUMPS AND ALL ASSOCIATED APPURTENANCES

Jacobs
10 10th STREET NE, SUITE 1400
ATLANTA, GA 30309
GA LIC# PEF000350
(EXP 6/30/2026)

CONSULTANT PROJ. NO. GCDWR051

SEAL:

Gwinnett Water Resources

LAWRENCEVILLE, GA

GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES

WATER RECLAMATION FACILITY

F. WAYNE HILL WATER RESOURCES CENTER
1500 ONE WATER WAY
BUFORD, GA 30519

GCDWR PROJ. NO. XX

NO.	DATE	ISSUED FOR	BY

DATE NOVEMBER 2025
DESIGNED BY A VALIENTE
DRAWN BY E GRIGGS
CHECKED BY
APPROVED BY

SITE FACILITIES

OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 1 DEMOLITION

SCALE: 1" = 20'

BAR IS ONE INCH ON ORIGINAL DRAWING

HX-001

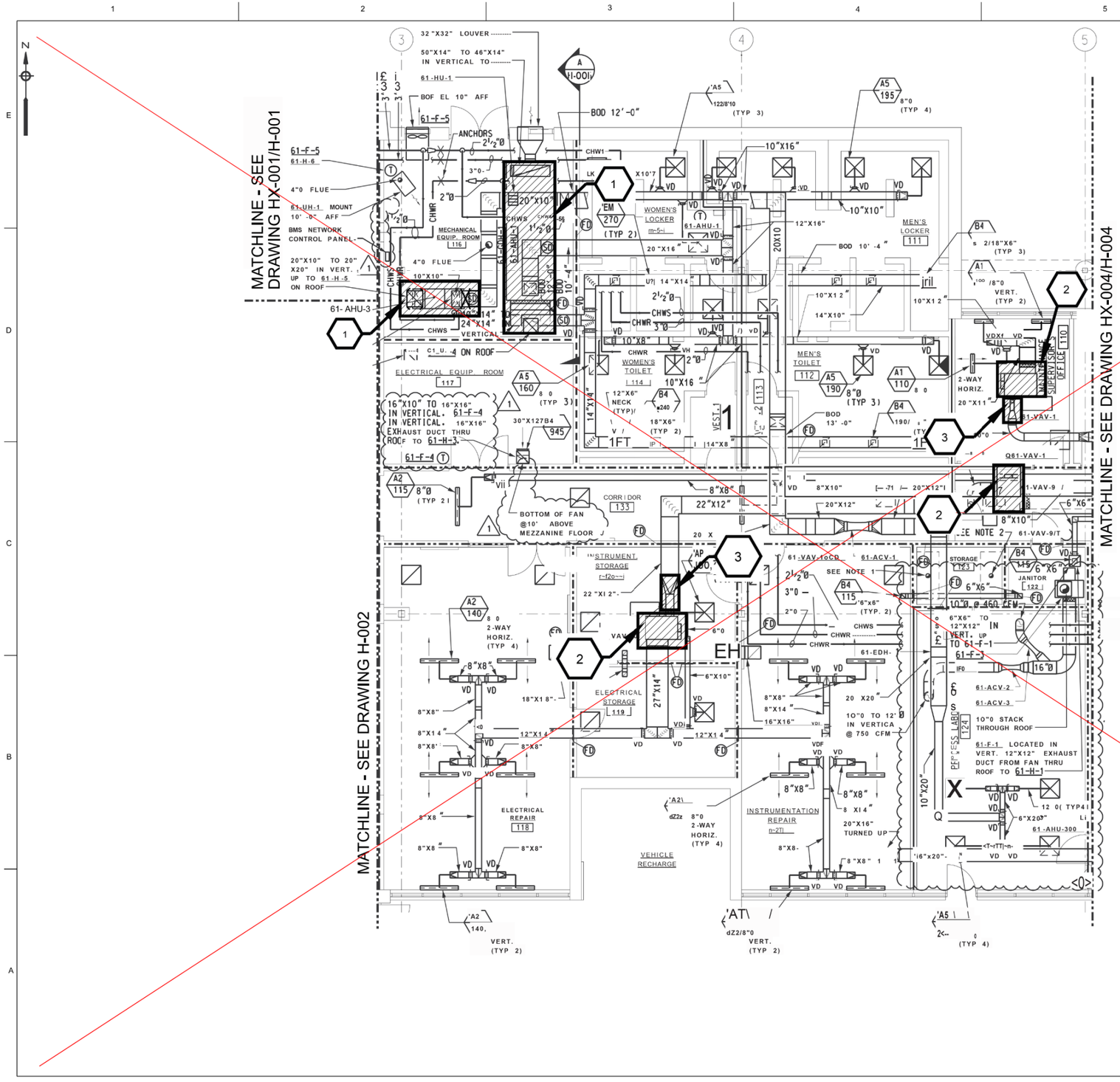
SHEET: ____ OF ____

SERVICE CLEARANCE
GLYCOL MAKE-UP TK & PUMP
CONCRETE PAD
3" CHWR
61-CHIL-1
DISCHARGE
INLET
4"FD-"C" (TYP.4)
IE(-)2'-4". REFERENCE FIN. FL. OPS CENTER
3 "CHWS
SERVICE CLEARANCE
NOTE:
REFER TO P I DI DWG. 61 H-008 FOR COMPLETE! PIPE SIZING.
UNDERGROUND TO CHILLER 3'-0" MIN. BELOW GRADE
PORTABLE DUST/FUME EXTRACTOR 61-FE-1
4"SAN. SEE PLUMBING DRAWING 61 P-001 FOR CONTINUATION
BOTTOM OF FAN EL. @ 21'-8" AFF (TYP.6)
SEE ARCHITECTURAL DRAWINGS FOR FAN LOCATION (TYP.)
61-F-12 LOCATED IN ROOM 144 BELOW 61-F-10" BOTTOM OF FAN EL. @ 9'-4" AFF.
61-F-11
61-F-10
61-F-9
61-F-8
61-F-7
61-F-6
SEE ARCHITECTURAL DRAWINGS FOR LOUVER SIZE & LOCATION (TYP.)
ELECTRICAL 144
BOTTOM OF LOUVER EL. @ 7'-4" AFF
SEE NOTE 1
(T)61-F-12
10 0 EXHAUST DUCT THRU ROOF
BOD EL. 15'-0" AFF DUCTWORK F.O.B.
SEE NOTE 3
10"Ø
8"Ø
61-GME-1
WELDING SHOP 134
ROUTE PIPING DIRECTLY BELOW BOTTOM FLANGE OF STEEL
HOSE REELS (TYP 5) BOTTOM OF HOSE REELS MOUNTED 13' 0" AFF
6"0
BOD EL. 9'-10" AFF
SEE NOTE 1
3" CHWS
3" CHWR
61-F-6 THRU 61-F-11
61-MAU-1
MATCHLINE - SEE DRAWING HX-003/H-003
MATCHLINE - SEE DRAWING 61 H-002

LEGEND:
TO BE DEMOLISHED

SCALE IN FEET
SCALE: 3/16"=1'-0"

PLOT DATE/TIME: 6/25/2025 10:50:34 AM
Y:\GCDWR051\00_FWH Annual Contract Work\FWH 24-02 Operations Building HVAC Rehab\Design\Reference Data
HX-001_GCDWR051.dgn



SHEET KEYNOTES

1. DEMOLISH EXISTING AIR HANDLERS AND ALL ASSOCIATED APPURTENANCES.
2. DEMOLISH EXISTIN VAV BOXES AND ALL ASSOCIATED APPURTENANCES.
3. DEMOLISH DUCT SECTIONS.

Jacobs
10 10th STREET NE, SUITE 1400
ATLANTA, GA 30309
GA LIC# PEF000350
(EXP 6/30/2026)

CONSULTANT PROJ. NO. GCDWR051

SEAL:

Gwinnett Water Resources

LAWRENCEVILLE, GA

GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES

WATER RECLAMATION FACILITY

F. WAYNE HILL WATER RESOURCES CENTER
1500 ONE WATER WAY
BUFORD, GA 30519

GCDWR PROJ. NO. XX

NO.	DATE	ISSUED FOR	BY

DATE NOVEMBER 2025
DESIGNED BY A VALIENTE
DRAWN BY E GRIGGS
CHECKED BY
APPROVED BY

SITE FACILITIES

OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 3 DEMOLITION

SCALE: 1" = 20'

BAR IS ONE INCH ON ORIGINAL DRAWING

HX-003

SHEET: ____ OF ____

PLOT DATE/TIME: 6/25/2025 10:50:34 AM

Y:\GCDWR051\00_FWH Annual Contract Work\FY24\02 Operations Building HVAC Rehab\Design\Reference Data

HX-003_GCDWR051.dgn

SHEET KEYNOTES

1. DEMOLISH EXISTING AIR HANDLERS AND ALL ASSOCIATED APPURTENANCES.
2. DEMOLISH EXISTING VAV BOXES AND ALL ASSOCIATED APPURTENANCES.
3. DEMOLISH DUCT SECTION.
4. DISCONNECT CHILLED WATER PIPING AND CAP OFF ACCORDINGLY.

MATCHLINE - SEE DRAWING HX-003/H-003

MEZZANINE PLAN

LEGEND:

TO BE DEMOLISHED

SCALE: 1" = 20'

HX-004

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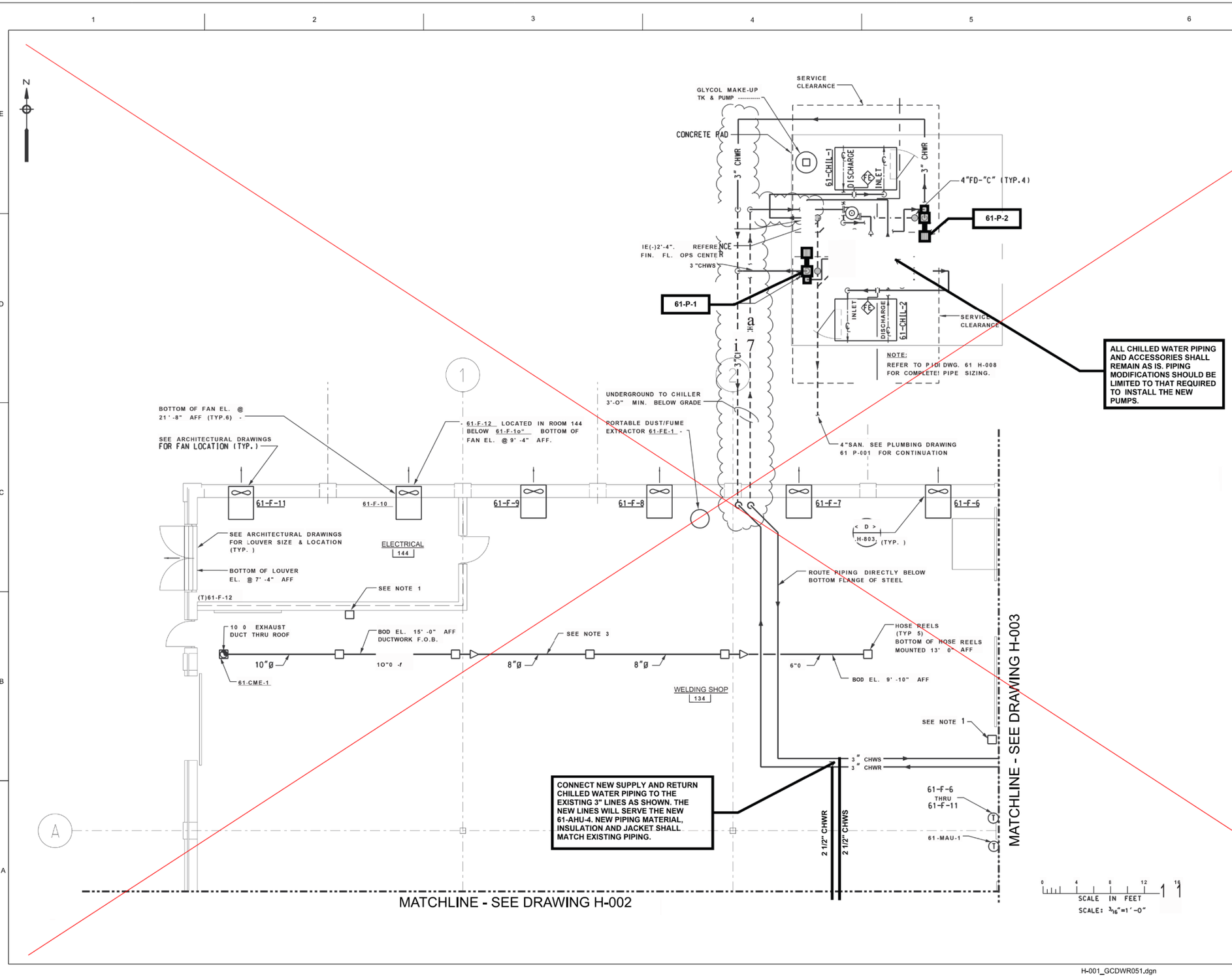
OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 4 DEMOLITION

SHEET: ____ OF ____



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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 1 HVAC MEZZANINE FLOOR

SCALE: 1" = 20'

BAR IS ONE INCH ON ORIGINAL DRAWING

H-001

SHEET: _____ OF _____

PLOT DATE/TIME: 6/25/2025 10:50:34 AM

Y:\GCDWR051\00_FWH Annual Contract Work\FW 24-02 Operations Building HVAC Rehab\Design\Reference Data

H-001_GCDWR051.dgn

MATCHLINE - SEE DRAWING H-001

MATCHLINE - SEE DRAWING H-003

61-MAU-1

34"X24"

MECHANICAL SHOP
135

MACHINE SHOP
nn

SD

34"X24"

BOD 10-0 AFF

Ap
865.
(TYP 9)
20"XI 6"

SERV. DESK
138

28"X24"

24"X24"

20"X24"

12"X24"

61-ACU-5

61-ACU-6

MEZZANINE

2 1/2" CHWR

2 1/2" CHWS

CHWS & R DIFFERENTIAL PRESSURE TRANSMITTER, INITIALLY SET @ 15 PSI. VERIFY FINAL PRESSURE WITH THE BALANCE CONTRACTOR.

ALL ACCESS DOORS IN THIS SIDE

ECONOMIZER 24" X 24" EXHAUT AIR THROUGH ROOF TO GOOSENECK FITTED WITH A GRAVITY DAMPER

24 X 24

32 X 28

61-AHU-4

MODULATING CONTROL DAMPER

61-HCP-3

HVAC CONTRACTOR SHOULD DEFINE FINAL CONTROL PANEL LOCATION.

OUTSIDE AIR THROUGH WALL WITH WEATHER HOOD FITTED WITH ALUMINUM BIRDSCREEN

1

2

B.5

PLOT DATE/TIME: 6/25/2025 10:50:34 AM

Y:\GCDWR051\00_FW1\Annual Contract Work\FW2\of2 Operations Building HVAC Rehab\Design\Reference Data

H-002_GCDWR051.dgn

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SITE FACILITIES

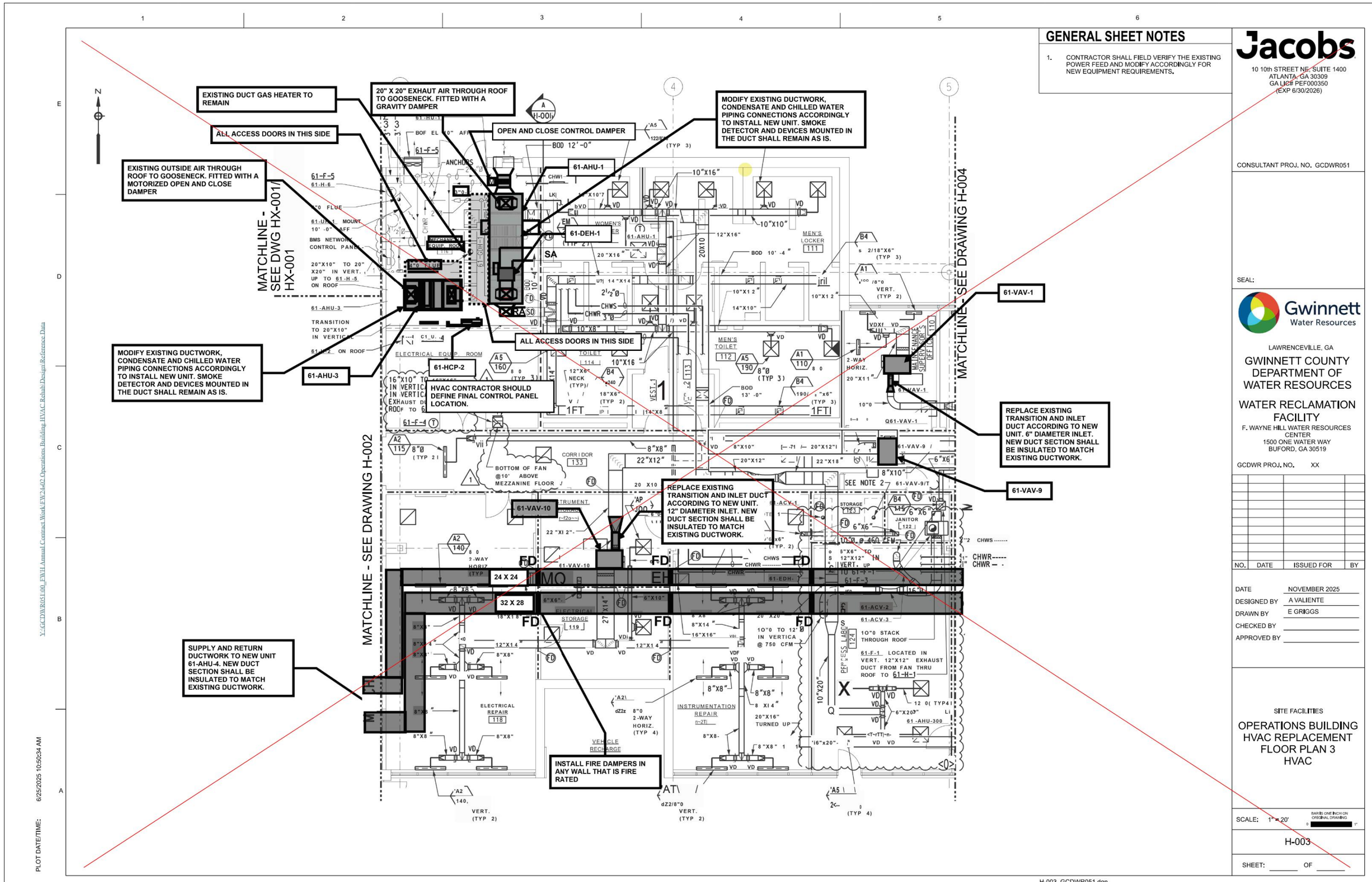
OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 2 HVAC MEZZANNE FLOOR

SCALE: 1" = 20'

BAR IS ONE INCH ON ORIGINAL DRAWING

H-002

SHEET: _____ OF _____



GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE EXISTING POWER FEED AND MODIFY ACCORDINGLY FOR NEW EQUIPMENT REQUIREMENTS.

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 3 HVAC

SCALE: 1" = 20'

BARS ONE INCH ON ORIGINAL DRAWING

H-003

SHEET: ____ OF ____

PLOT DATE/TIME: 6/25/2025 10:50:34 AM

Y:\GCDWR051100_FWH Annual Contract Work\FEN24-02 Operations Building HVAC Rehab\Design\Reference Data

H-003_GCDWR051.dgn

GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE EXISTING POWER FEED AND MODIFY ACCORDINGLY FOR NEW EQUIPMENT REQUIREMENTS.

MATCHLINE - SEE DWG H-003

MATCHLINE - SEE DRAWING H-003

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 6" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 8" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 8" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

DISCONNECT EXISTING DUCTWORK AND MODIFY ACCORDINGLY TO CONNECT TO NEW ROUTING

DISCONNECT AND CAP OFF EXISTING CHILLED WATER PIPING COOLING WATER SYSTEM TO MAIN CIRCULATION

THE AIR HANDLER IN THE LAB MEZZANINE SPACE SHALL BE DISCONNECTED AND DEMOLISHED INTO SMALLER PIECES IN PLACE FOR REMOVAL.

DISCONNECT EXISTING DUCTWORK AND MODIFY ACCORDINGLY TO CONNECT TO NEW ROUTING

MEZZANINE PLAN

SCALE: 1" = 20'

Jacobs
10 10th STREET NE, SUITE 1400
ATLANTA, GA 30309
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(EXP 6/30/2026)

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WATER RECLAMATION FACILITY

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1500 ONE WATER WAY
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SITE FACILITIES

OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 4 HVAC

BAR IS ONE INCH ON ORIGINAL DRAWING

H-004

SHEET: ____ OF ____

PLOT DATE/TIME: 6/25/2025 10:50:34 AM

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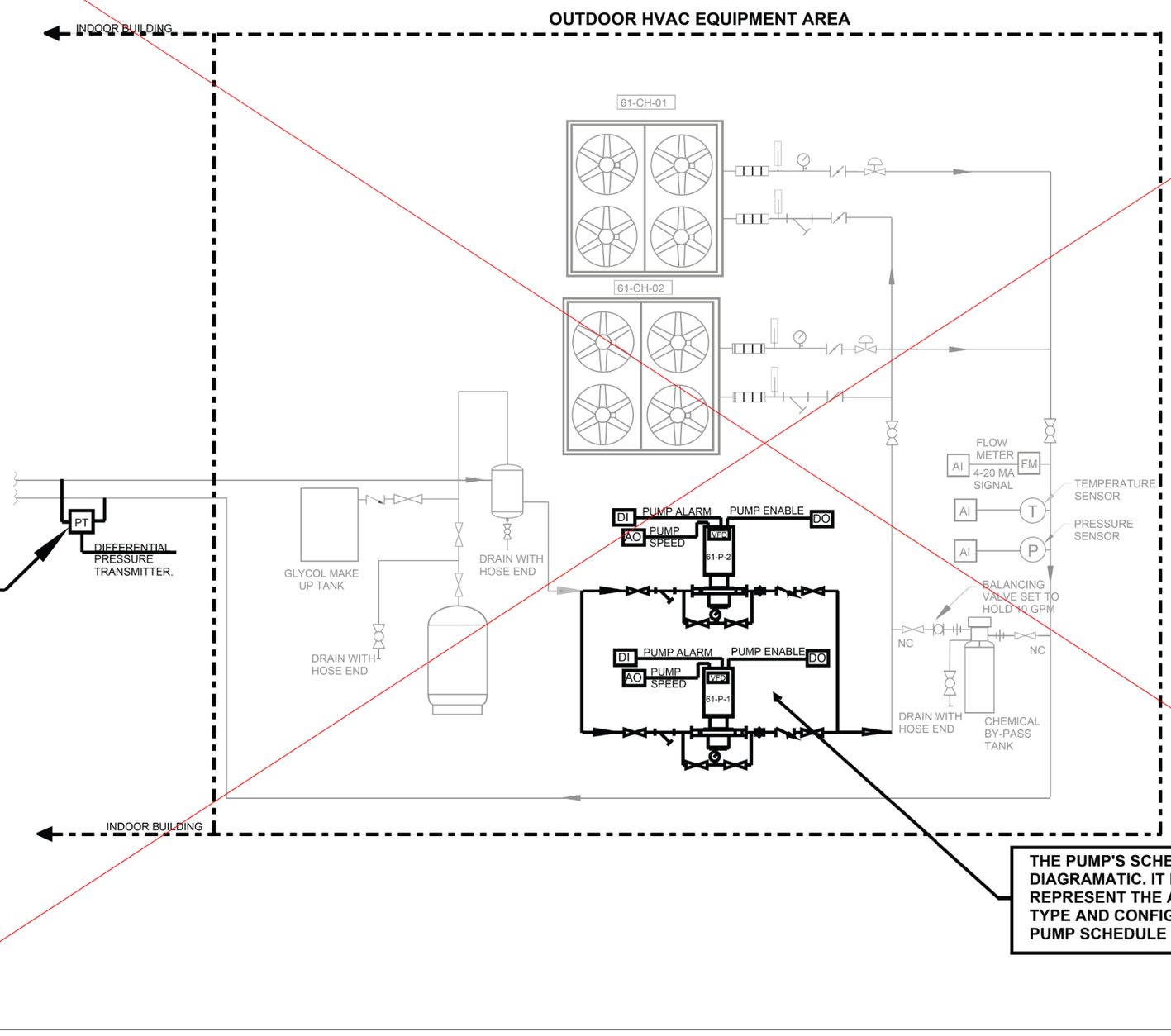
H-004_GCDWR051.dgn

THE NEW PUMPS FITTED WITH VFD WILL MODULATE SPEED TO MAINTAIN THE SYSTEM PRESSURE.

GENERAL SHEET NOTES

1. MECHANICAL CONTRACTOR SHALL CORDINATE THE CONNECTIONS TO THE DOC SYSTEM TO ENSURE CORRECT VOLTAGE REQUIREMENTS.
2. COORDINAT THE POWER REQUIREMENTS FOR THE FLOW METER.
3. INSULATE CHWS/R PIPING WITH 1" FIBERGLASS & VAPOR BARRIER. OUTDOOR PIPING TO INCLUDE ALUMINUM JACKET.



THE PUMP'S SCHEMATIC IS DIAGRAMATIC. IT DOES NOT REPRESENT THE ACTUAL PUMP TYPE AND CONFIGURATION. SEE PUMP SCHEDULE FOR DETAILS.

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SITE FACILITIES

OPERATIONS BUILDING HVAC REPLACEMENT CHILLED WATER P&ID

SCALE: 1" = 20' BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"

H-005

SHEET: ____ OF ____

PLOT DATE/TIME: 6/25/2025 10:50:34 AM
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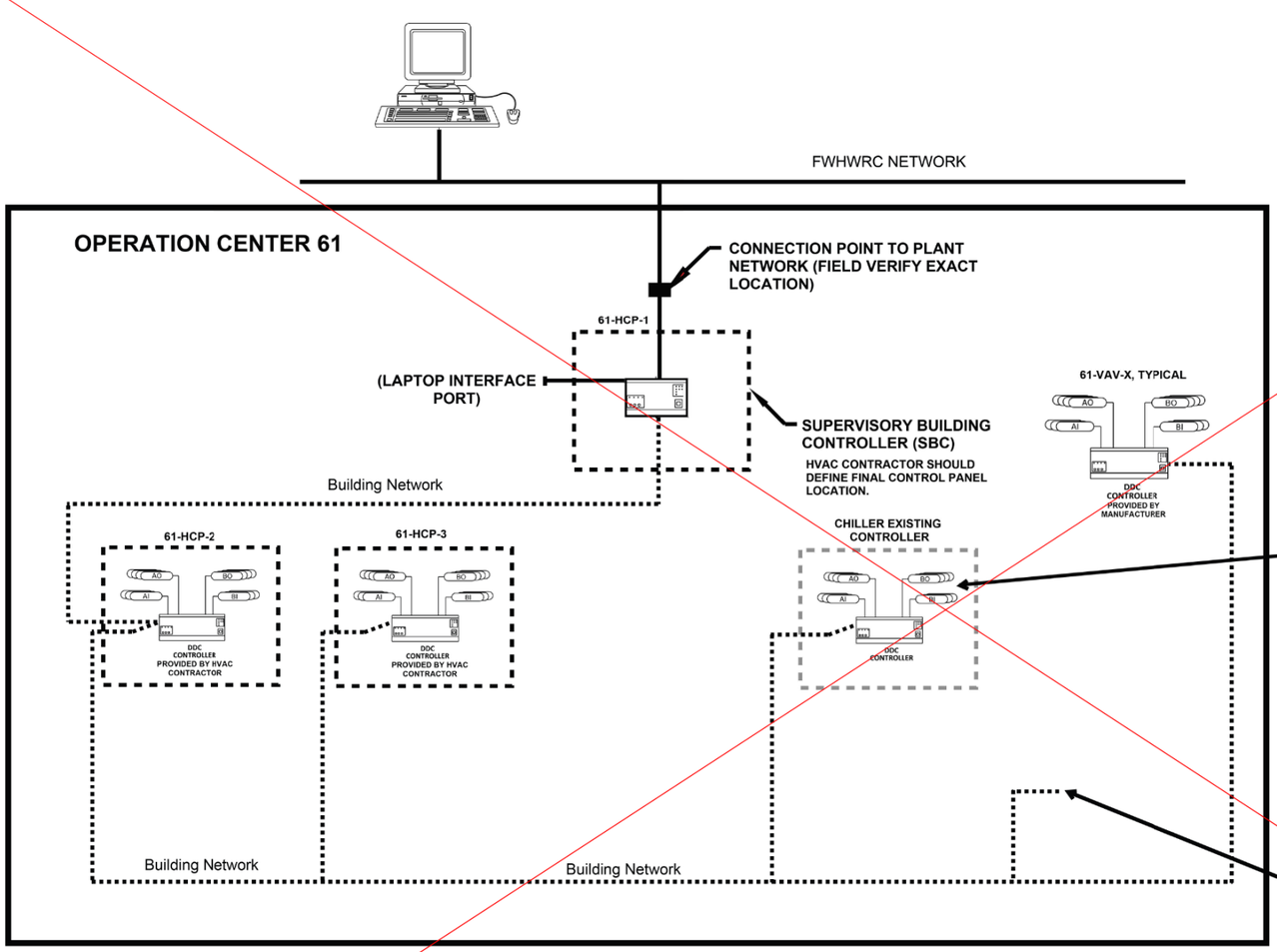
H-005_GCDWR051.dgn



THE NEW PUMPS SHALL BE CONTROLLED FROM THE CHILLER CONTROL PANEL OR AS THE EXISTING CONFIGURATION.

ALL EXISTING EQUIPMENT AND SYSTEMS SERVING THE BUILDING THAT ARE NOT PART OF THE SCOPE OF WORK OF THIS PROJECT SHOULD BE CONNECTED TO THE NEW NETWORK AND SHALL OPERATE AS INTENDED IN THE CURRENT DESIGN.

HVAC CONTROL ARCHITECTURE

THE SEQUENCE OF OPERATION OF THE NEW SYSTEMS SHALL MATCH THE CURRENT DESIGN.
ALL EXISTING THERMOSTATS AND SENSORS SERVING THE EQUIPMENT REPLACED IN THIS PROJECT SHALL BE DEMOLISHED AND REPLACED IN PLACE WITH NEW EQUAL THERMOSTATS AND SENSORS AS RECOMMENDED PER EQUIPMENT MANUFACTURER.

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LAWRENCEVILLE, GA
GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES
WATER RECLAMATION FACILITY
F. WAYNE HILL WATER RESOURCES CENTER
1500 ONE WATER WAY
BUFORD, GA 30519

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SITE FACILITIES
OPERATIONS BUILDING HVAC REPLACEMENT CONTROL ARCHITECTURE HVAC

SCALE: 1" = 20'
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

H-006

SHEET: OF

PLOT DATE/TIME: 6/25/2025 10:50:34 AM
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H-006_GCDWR051.dgn

THE NEW SYSTEMS SHALL BE RE-COMMISIONED AFTER INSTALLATION AND START-UP IS COMPLETED.

VARIABLE AIR VOLUME TERMINAL UNITS

TAG	LOCATION	VAV UNIT TYPE	PRIMARY AIR DATA					ELECTRIC HEATING COIL DATA			UNIT ELECTRICAL DATA					SOUND DATA	MANUFACTURER	MODEL NO.	APPLICABLE REMARKS
			COOLING		INLET	EXTERNAL	MOTOR DATA	AIR SIDE			NO.	VOLT	PH	MCA	MOP	MAXIMUM			
			MAXIMUM CFM	MINIMUM CFM	SIZE IN. DIA	STATIC PRESSURE IN. W.C.	HP	HEATING CAPACITY kW	HEATING CAPACITY MBH	CONTROL TYPE	OF CONN.					NC			
61-VAV-1	ROOM 110	FAN POWERED	310	95	6	0.3	0.33	3.5	11.5	PROPORTIONAL	1	460	3	8.5	15	22	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-2	ROOM 109	FAN POWERED	310	95	6	0.3	0.33	3.5	11.5	PROPORTIONAL	1	460	3	8.5	15	22	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-3	ROOM 108	FAN POWERED	875	265	8	0.3	0.5	9	29.5	PROPORTIONAL	1	460	3	18.7	20	31	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-4	ROOMS 105, 103	FAN POWERED	1385	415	10	0.35	0.75	15	50.7	PROPORTIONAL	1	460	3	29.4	30	37	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-5	ROOM 102	FAN POWERED	630	190	8	0.3	0.5	10	31.8	PROPORTIONAL	1	460	3	17.9	20	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-6	ROOM 129	FAN POWERED	460	140	6	0.3	0.33	5.5	18.4	PROPORTIONAL	1	460	3	11.5	15	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-7	ROOM 129	FAN POWERED	550	170	8	0.3	0.33	6.5	21	PROPORTIONAL	1	460	3	13	15	30	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-8	ROOM 129	FAN POWERED	480	150	6	0.3	0.33	6	19.7	PROPORTIONAL	1	460	3	12.3	15	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-9	CORRIDOR 132	FAN POWERED	850	270	8	0.33	0.33	8	27.6	PROPORTIONAL	1	460	3	15.3	20	37	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-10	ROOM 120	FAN POWERED	1760	535	12	0.4	1	18	62.2	PROPORTIONAL	1	460	3	35.7	40	38	KRUEGER	KFSS	A,B,C,D,E,F,G,H

REMARKS:

A: PROVIDE DIRECT DIGITAL CONTROL (DDC)
B: SINGLE POINT POWER CONNECTION
C: FACTORY PROVIDED MAGNETIC CONTACTORS
D: FACTORY PROVIDED DISCONNECT
E: HANGER BRACKETS
F: PLENUM INLET SOUND ATTENUATOR
G: PRESSURE INDEPENDENT
H: INTERNAL INSULATION 1" MATTE FACED INSULATION.

DUCT HEATERS

SYMBOL	LOCATION	TYPE	AIR SIDE DATA			ELEC. HEAT DATA				UNIT ELECTRIC DATA				DIMENSIONS					MANUFACTURER	MODEL	APPLICABLE REMARKS
			SUPPLY AIRFLOW CFM	EAT DEG. F	LAT DEG. F	CAPACITY kW	CONTROL	VOLT	PH	MCA	MOCP	VOLT	PH	DUCT SIZE INCHES W	DUCT SIZE INCHES H	MAXIMUM UNIT SIZE INCHES L	MAXIMUM UNIT SIZE INCHES W	MAXIMUM UNIT SIZE INCHES H			
61-DEH-1	MECHANICAL ROOM	ELECTRIC, OPEN COIL	2,370	60.4	78	15	SCR	460	3	22.58	30	460	3	20	16	4 3/4	19	15	TPI CORPORATION	HF SERIES	A THRU J

REMARKS:

A: FACTORY INSTALLED HEATER CONTACTOR
B: DISCONNECT: FACTORY INSTALLED
C: FACTORY MOUNTED THERMOSTAT
D: PROVIDE DUCTWORK TRANSITIONS AS REQUIRED FOR INSTALLATION OF HEATING COIL
E: 24 V CONTROL TRANSFORMER
F: DOOR INTERLOCK DISCONNECT
G: DIFFERENTIAL PRESSURE AIR FLOW SWITCH
H: PRIMARY AND SECONDARY OVER TEMPERATURE PROTECTION
I: CAPABLE OF CONNECTING TO BUILDING BAS FOR CONTROL
J: GALVANIZED STEEL CONTROL BOX WITH 1/2 INSULATION AND HINGED COVER

Jacobs
10 10th STREET NE, SUITE 1400
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Gwinnett Water Resources

LAWRENCEVILLE, GA

GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES

WATER RECLAMATION FACILITY

F. WAYNE HILL WATER RESOURCES CENTER
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GCDWR PROJ. NO. XX

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OPERATIONS BUILDING HVAC REPLACEMENT HVAC EQUIPMENT SCHEDULE SHEET 1 OF 2

SCALE: 1" = 20'

BAR IS ONE INCH ON ORIGINAL DRAWING

H-007

SHEET: _____ OF _____

AIR HANDLING UNITS

SYMBOL	TYPE	LOCATION	SUPPLY FAN MODULE										SUPPLY FAN SOUND DATA								ELECTRIC HEATING COIL MODULE							ELECTRIC DATA			REMARKS
			AIRFLOW			MAX. POWER BHP	FAN SPEED RPM	DRIVE	FAN MOTOR DATA												CAPAC	FLOW	EAT	LAT	VOLT	PH	HEATER CONTROL			
			MAX. CFM	0SA CFM	TSP IN WG				H.P.	SPEED RPM	VOLT	PH	MOTOR ENCL	MAX. FAN DISCHARGE SOUND POWER LEVEL dB (RE 10^{-12} W) @ MID OCTAVE BAND FREQUENCY (Hz)										DEG. F	DEG. F				MCA	MOCP	VOLT / PH	
														63	125	250	500	1K	2K	4K	8K	kW	CFM						A	A		
61-AHU-1	SEMI-CUSTOM	MECHANICAL ROOM	2,370	2,370	3.75	2.7	2457	DIRECT	3	1760	460	3.0	TEFC	49.2	60.4	65	65	62.1	59.1	38.3	25.4	—	—	—	—	—	—	—	5.3	15	460 / 3	A,B,C,D,E,F,G,H,J
61-AHU-3	SEMI-CUSTOM	MECHANICAL ROOM	1,100	1,100	3.61	0.62	1820	DIRECT	1.5	1750	460	3.0	TEFC	41.6	52.8	57.4	57.4	54.5	51.5	30.7	17.8	—	—	—	—	—	—	—	2.8	15	460 / 3	A,B,C,D,E,F,G,H
61-AHU-4	SEMI-CUSTOM	MEZZANINE 142	6,530	855	4	4.46	1743	DIRECT	5	1750	460	3.0	TEFC	49.7	60.9	65.5	65.5	62.6	59.6	38.8	25.9	—	—	—	—	—	—	—	8.4	15	460 / 3	A,B,C,D,E,F,G,H,I

ABREV:
EG: ETHYLENE GLYCOL

EXHAUST FAN MODULE											CHILLED WATER COOLING COIL MODULE											MAXIMUM DIMENSIONS				MANUFACTURER	MODEL
AIRFLOW			MAX. POWER BHP	FAN SPEED RPM	DRIVE	FAN MOTOR DATA					CAPACITY		AIRSIDE				WATER SIDE					INCHES			WEIGHT		
MAX. CFM	TSP IN WG	ESP IN WG				H.P.	SPEED RPM	VOLT	PH	MOTOR ENCL	TOTAL BTU/H	SENS. BTU/H	EAT DEG. F DB	EAT DEG. F WB	LAT DEG. F DB	LAT DEG. F WB	FLOW GPM	FLUID TYPE	FLUID %	EWT DEG. F	LWT DEG. F	DELTA P FT. H2O	L	W	H	LBS		
2,385	3	1	2.17	2290	DIRECT	3	1760	460	3.0	TEFC	105,800	51,000	77.5	69	54.9	54.8	24.5	EG	40	55	45	3.8	174	53 1/2	66	2062	VTS	AVS030
—	—	—	—	—	—	—	—	—	—	—	81,700	51,000	92.3	73.3	50	49.7	18.9	EG	40	55	45	18.5	87 5/9	46 7/9	23 5/8	610	VTS	AVS020
5,875	0.58	0.5	1.67	1,353	DIRECT	5	1,750	460	3	TEFC	211,200	181,000	79.5	63.2	54	51.8	48.8	EG	40	55	45	4.4	202 5/6	75 1/4	39	2207	VTS	AVS065

REMARKS:
- A: MOTOR CONTROL: ADJUSTABLE FREQUENCY DRIVE, INSTALLED BY MANUFACTURER
- B: DISCONNECT: PROVIDED BY DIVISION 26 ELECTRICAL
- C: FACTORY SUPPLIED VIBRATION ISOLATORS
- D: SINGLE CONNECTION POINT
- E: HORIZONTAL CONFIGURATION WITH ALL COMPONENT ACCESS ON ONE SIDE AS SHOWN ON DRAWINGS
- F: CONTROL VALVES BY OTHERS, CHARACTERIZED CONTROL VALVES WITH NICKEL PLATED BRASS BODY & STAINLESS TRIM
- G: FILTER DIFFERENTIAL PRESSURE SWITCH
- H: DDC CONTROLLER BY OTHERS
- I: ECONOMIZER WITH EXHAUST FAN

J: ENERGY RECOVERY CROSS FLOW PLATE:

HEATING OPERATION				RECOVERY	
EAT DEG. F		LAT DEG. F		TOTAL	SENS.
DB	WB	DB	WB	BTU/H	BTU/H
16	15.5	60.4	42.3	114,000	114,000
COOLING OPERATION				RECOVERY	
EAT DEG. F		LAT DEG. F		TOTAL	SENS.
DB	WB	DB	WB	BTU/H	BTU/H
92.3	73.3	77.5	69	38,900	38,900

PUMP SCHEDULE

DESIGNATION	61-P-01 & 02
GPM	100
PUMP TYPE	BASE MOUNTED END SUCTION
FT HEAD	85
FLUID	40% ETHYLENE GLYCOL
RPM	1,852
IMPELLER DIA APPROX (INCHES)	8.5
SUCTION SIZE (INCHES)	3
DISCHARGE SIZE (INCHES)	2.5
HP	5.5
VOLTS/PHASE	460/3
LOCATION	OUTDOORS
SERVICE	COOLING
MANUFACTURER	BELL & GOSSETT
MODEL	e-1510X 2BD
NOTES:	A,B,C,D,E

NOTES:
A. PROVIDE PUMPS WITH TAPPED CASE DRAIN.
B. MOTORS SHALL BE PREMIUM EFFICIENT INVERTER DUTY MOTORS (VFD).
C.FURNISH WITH EPR/SIC/SIC SEALS RATED FOR 40% ETHYLENE GLYCOL SERVICE.
D. FLANGED
E. RATED FOR OUTDOORS

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Gwinnett Water Resources

LAWRENCEVILLE, GA

GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES

WATER RECLAMATION FACILITY

F. WAYNE HILL WATER RESOURCES CENTER
1500 ONE WATER WAY
BUFORD, GA 30519

GCDWR PROJ. NO. XX

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SITE FACILITIES

OPERATIONS BUILDING
HVAC REPLACEMENT
HVAC EQUIPMENT SCHEDULE
SHEET 2 OF 2

SCALE: 1" = 20'
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

H-008

SHEET: _____ OF _____

H-008_GCDWR051.dgn

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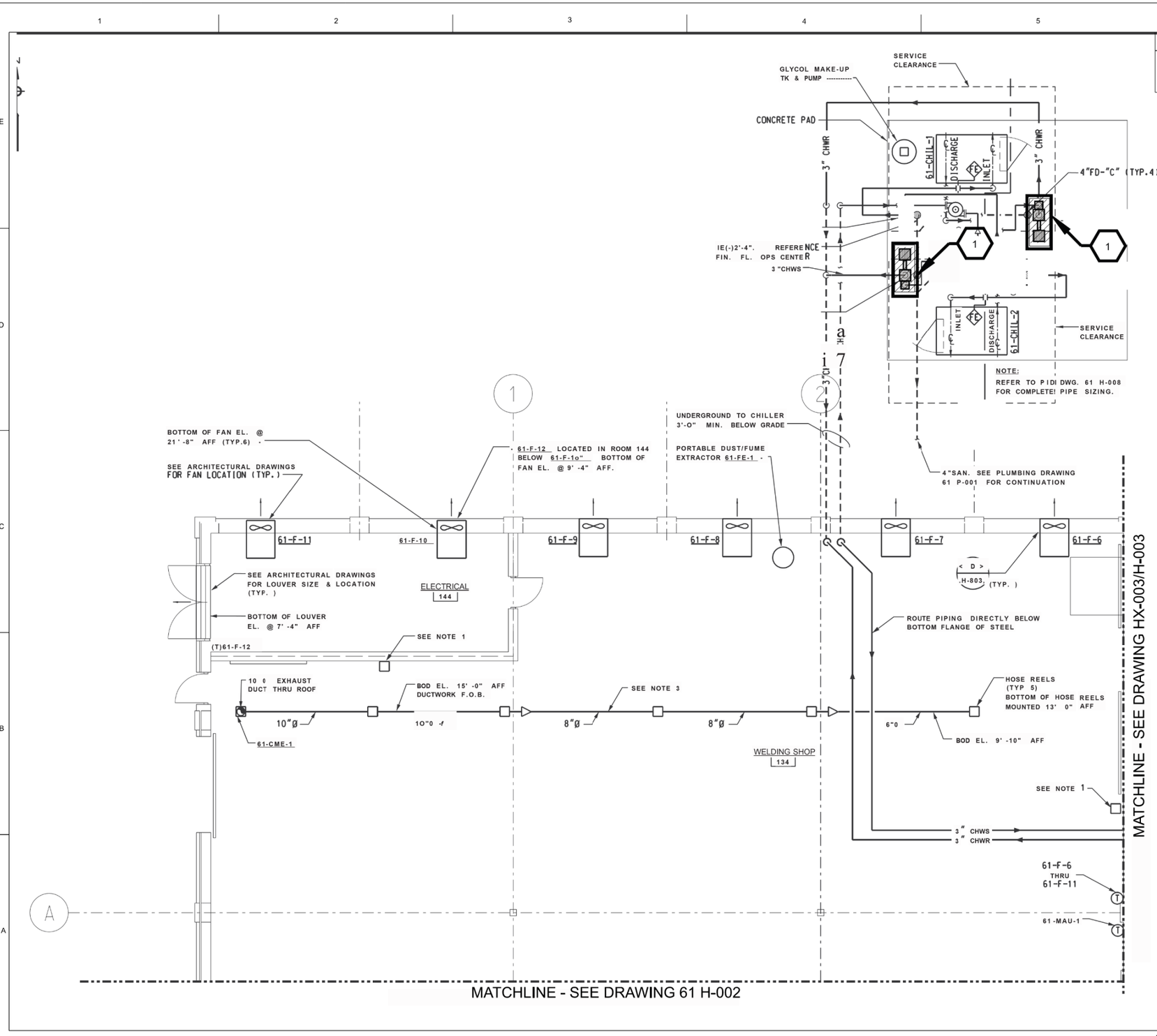

SHEET KEYNOTES

1. DEMOLISH EXISTING PUMPS AND ALL ASSOCIATED APPURTENANCES

LEGEND:

TO BE DEMOLISHED

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 1 DEMOLITION

NEW DRAWING SET

SCALE: 1" = 5'

BARS ONE INCH ON ORIGINAL DRAWING

HX-001

SHEET: _____ OF _____

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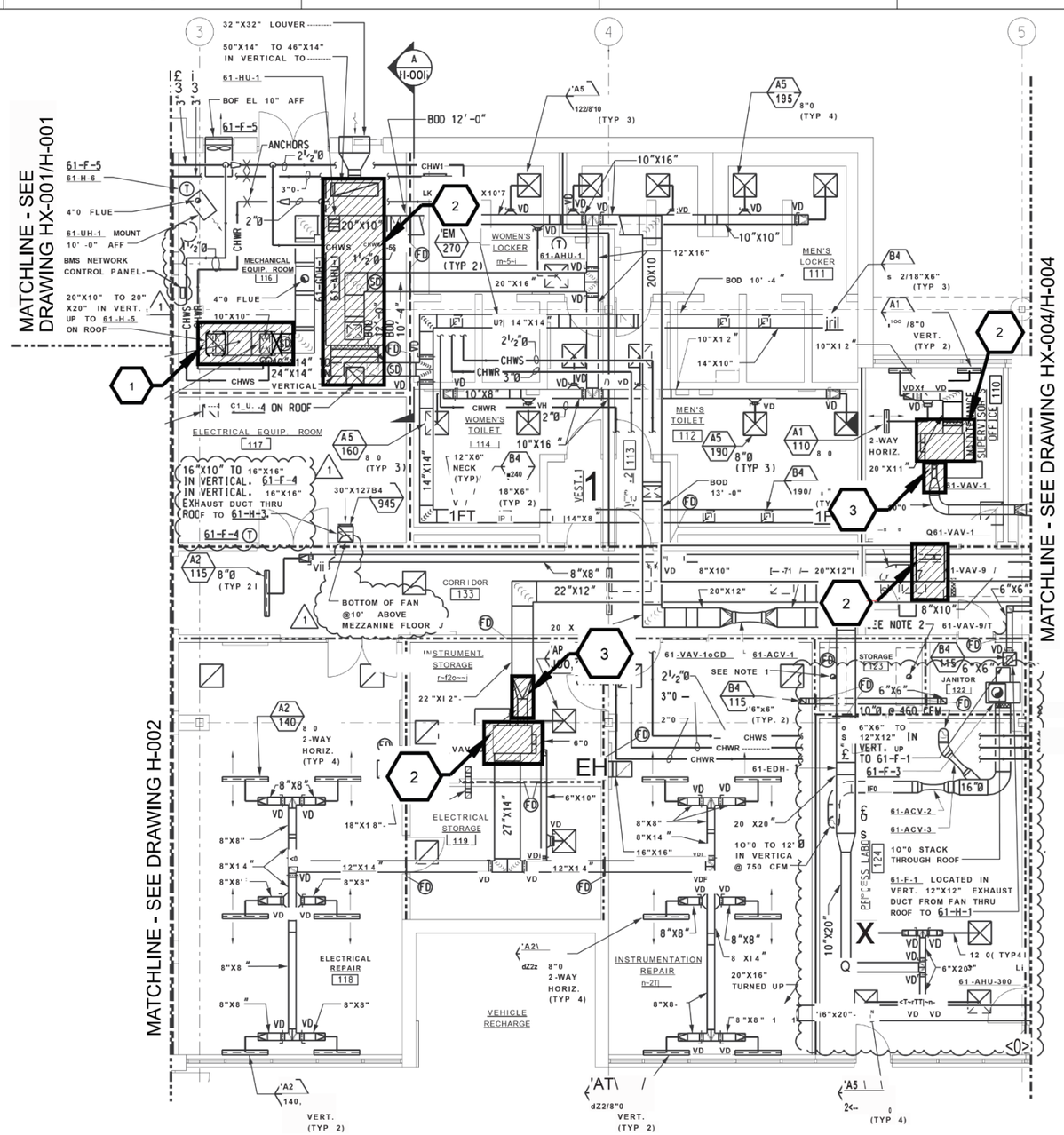

SHEET KEYNOTES

1. DEMOLISH EXISTING AIR HANDLERS AND ALL ASSOCIATED APPURTENANCES.
2. DEMOLISH EXISTIN VAV BOXES AND ALL ASSOCIATED APPURTENANCES.
3. DEMOLISH DUCT SECTIONS.

LEGEND:

TO BE DEMOLISHED

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 3 DEMOLITION

NEW DRAWING SET

SCALE: 1" = 5'

BAR IS ONE INCH ON ORIGINAL DRAWING

HX-003

SHEET: _____ OF _____

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SHEET KEYNOTES

1. ABANDON EXISTIN AIR HANDLER IN PLACE AND DEMOLISH ALL ASSOCIATED APPUTENANCES.
2. DEMOLISH EXISTING VAV BOXES AND ALL ASSOCIATED APPURTENANCES.
3. DEMOLISH DUCT SECTION.
4. DISCONNECT CHILLED WATER PIPING AND CAP OFF ACCORDINGLY.

MATCHLINE - SEE DRAWING HX-003/H-003

MEZZANINE PLAN

LEGEND:

TO BE DEMOLISHED

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 4 DEMOLITION

NEW DRAWING SET

SCALE: 1" = 5'

BARIS ONE INCH ON ORIGINAL DRAWING

HX-004

SHEET: _____ OF _____

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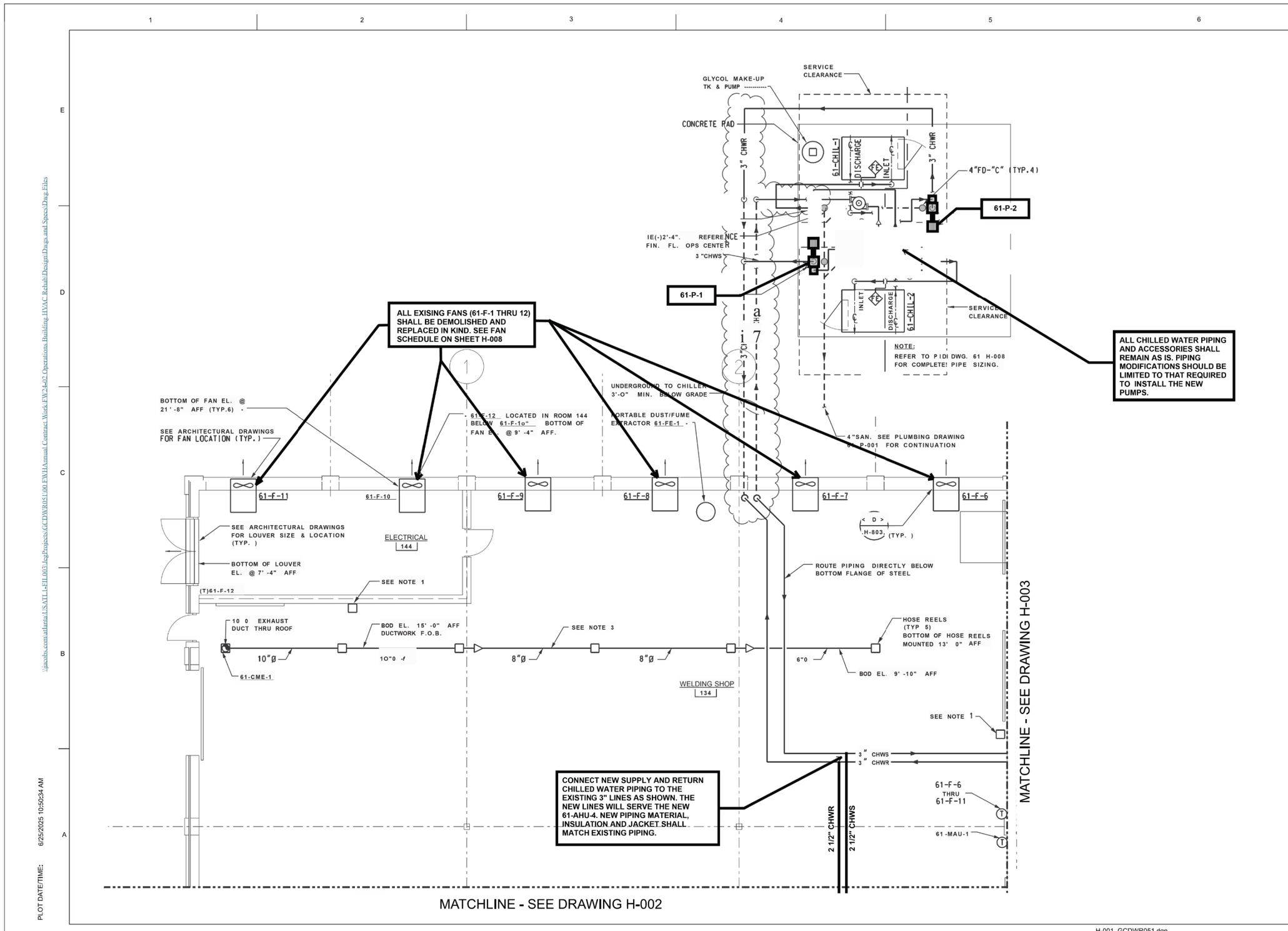

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 1 HVAC MEZZANNE FLOOR

NEW DRAWING SET

SCALE: 1" = 5'

BAR IS ONE INCH ON ORIGINAL DRAWING

H-001

SHEET: _____ OF _____

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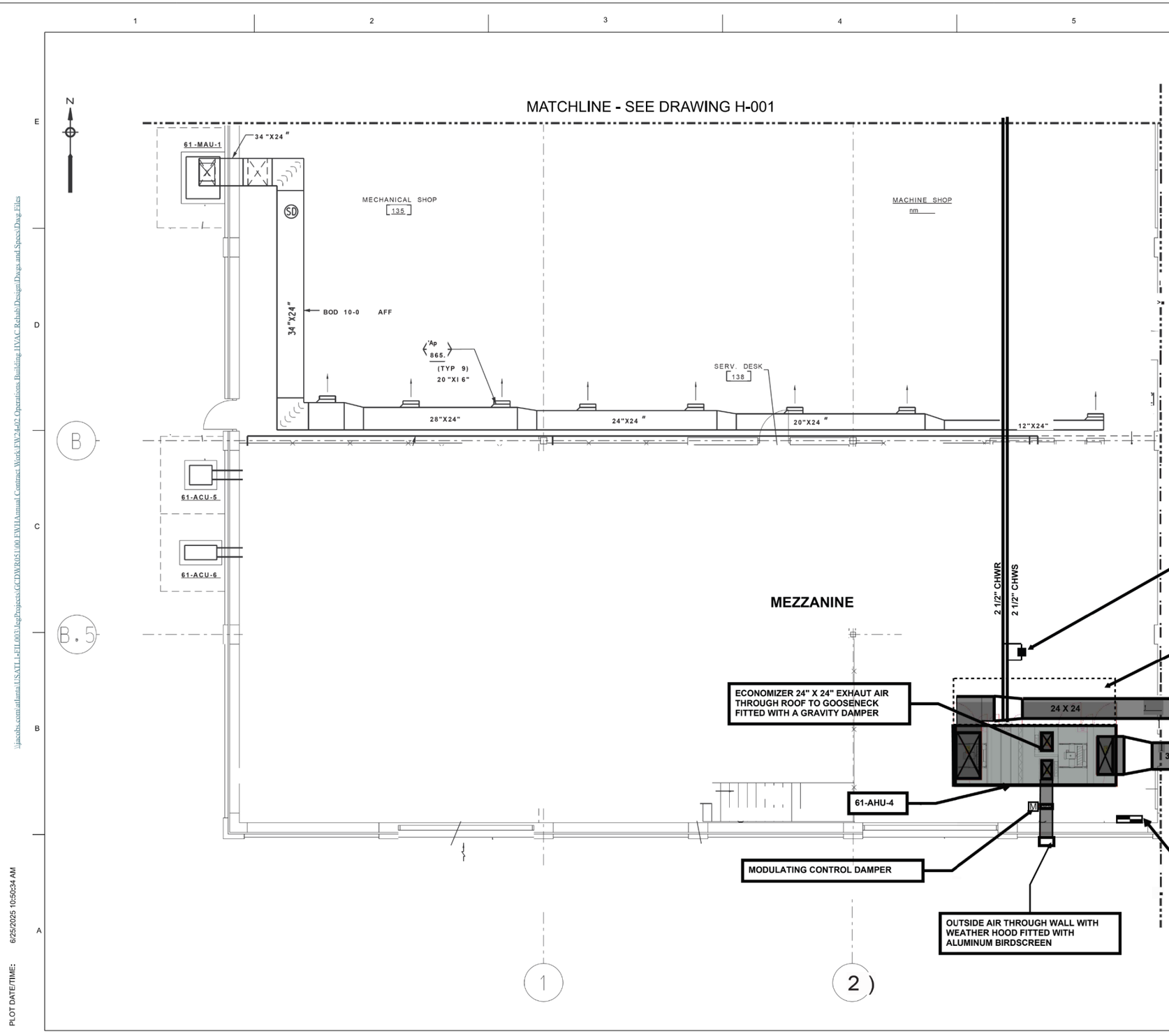

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OPERATIONS BUILDING
HVAC REPLACEMENT
FLOOR PLAN 2
HVAC
MEZZANNE FLOOR
NEW DRAWING SET

SCALE: 1" = 5"

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

H-002

SHEET: _____ OF _____

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EXISTING DUCT GAS HEATER TO REMAIN

20" X 20" EXHAUT AIR THROUGH ROOF TO GOOSENECK. FITTED WITH A GRAVITY DAMPER

ALL ACCESS DOORS IN THIS SIDE

OPEN AND CLOSE CONTROL DAMPER

MODIFY EXISTING DUCTWORK, CONDENSATE AND CHILLED WATER PIPING CONNECTIONS ACCORDINGLY TO INSTALL NEW UNIT. SMOKE DETECTOR AND DEVICES MOUNTED IN THE DUCT SHALL REMAIN AS IS.

EXISTING OUTSIDE AIR THROUGH ROOF TO GOOSENECK. FITTED WITH A MOTORIZED OPEN AND CLOSE DAMPER

MATCHLINE - SEE DWG HX-001/ HX-001

61-AHU-1

61-DEH-1

61-VAV-1

MODIFY EXISTING DUCTWORK, CONDENSATE AND CHILLED WATER PIPING CONNECTIONS ACCORDINGLY TO INSTALL NEW UNIT. SMOKE DETECTOR AND DEVICES MOUNTED IN THE DUCT SHALL REMAIN AS IS.

61-AHU-3

ALL ACCESS DOORS IN THIS SIDE

61-HCP-2

HVAC CONTRACTOR SHOULD DEFINE FINAL CONTROL PANEL LOCATION.

MATCHLINE SEE DRAWING H-004

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 6" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

61-VAV-9

ALL EXISTING FANS (61-F-1 THRU 12) SHALL BE DEMOLISHED AND REPLACED IN KIND. SEE FAN SCHEDULE ON SHEET H-008

MATCHLINE - SEE DRAWING H-002

61-VAV-10

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 12" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

24 X 24

32 X 28

SUPPLY AND RETURN DUCTWORK TO NEW UNIT 61-AHU-4. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

INSTALL FIRE DAMPERS IN ANY WALL THAT IS FIRE RATED

GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE EXISTING POWER FEED AND MODIFY ACCORDINGLY FOR NEW EQUIPMENT REQUIREMENTS.

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WATER RECLAMATION FACILITY

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 3 HVAC

NEW DRAWING SET

SCALE: 1" = 5'

BARS ONE INCH ON ORIGINAL DRAWING

H-003

SHEET: _____ OF _____

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GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE EXISTING POWER FEED AND MODIFY ACCORDINGLY FOR NEW EQUIPMENT REQUIREMENTS.

MATCHLINE - SEE DWG H-003

MATCHLINE - SEE DRAWING H-003

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 6" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 8" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

REPLACE EXISTING TRANSITION AND INLET DUCT ACCORDING TO NEW UNIT. 8" DIAMETER INLET. NEW DUCT SECTION SHALL BE INSULATED TO MATCH EXISTING DUCTWORK.

DISCONNECT EXISTING DUCTWORK AND MODIFY ACCORDINGLY TO CONNECT TO NEW ROUTING

DISCONNECT AND CAP OFF EXISTING CHILLED WATER PIPING COOLING WATER SYSTEM TO MAIN CIRCULATION

THE AIR HANDLER IN THE LAB MEZZANINE SPACE SHALL BE DESCONNECTED AND DEMOLISHED INTO SMALLER PIECES IN PLACE FOR REMOVAL.

DISCONNECT EXISTING DUCTWORK AND MODIFY ACCORDINGLY TO CONNECT TO NEW ROUTING

MEZZANINE PLAN

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OPERATIONS BUILDING HVAC REPLACEMENT FLOOR PLAN 4 HVAC

NEW DRAWING SET

SCALE: 1" = 5'

BARS ONE INCH ON ORIGINAL DRAWING

H-004

SHEET: _____ OF _____

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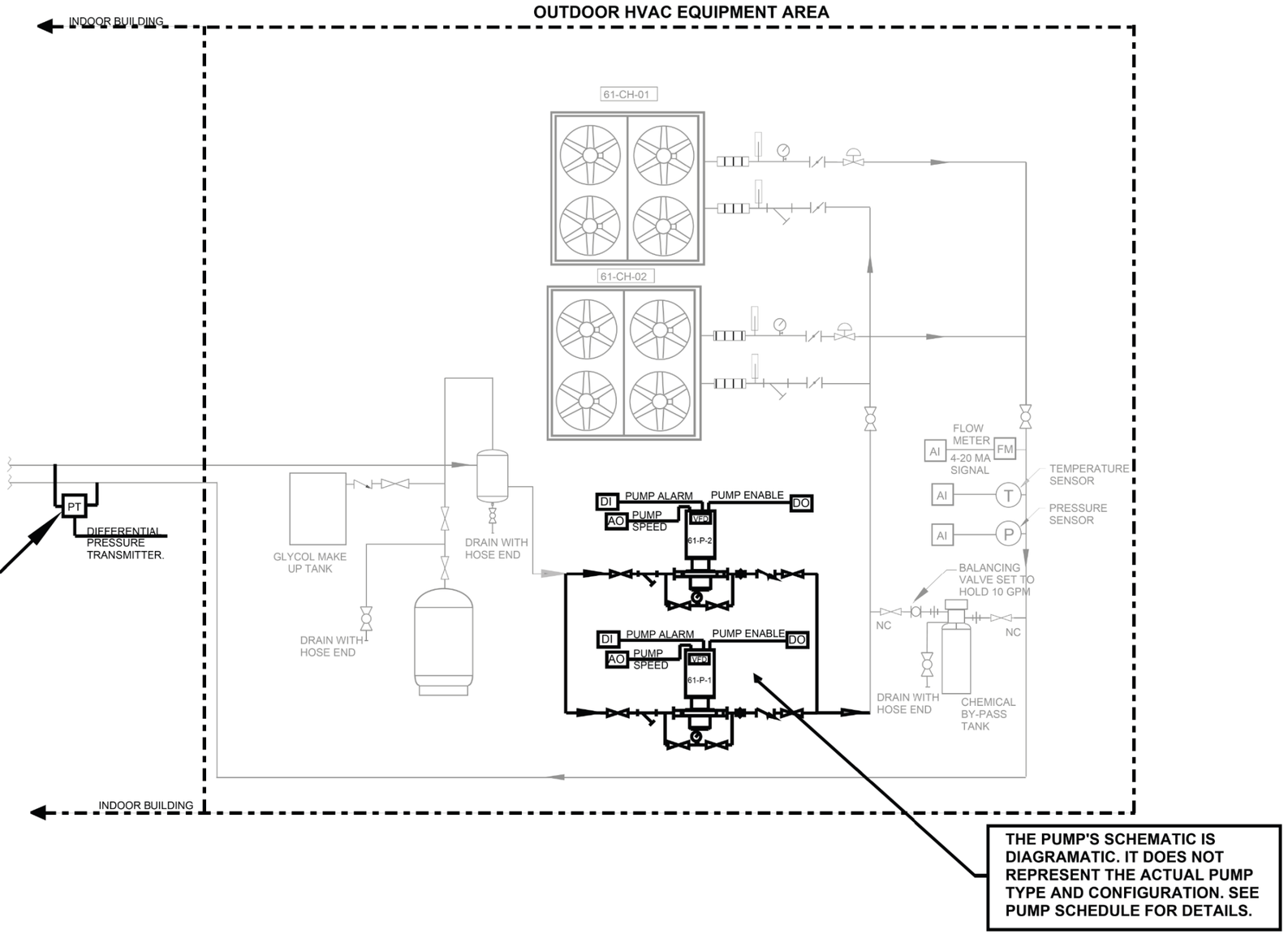
THE NEW PUMPS FITTED WITH VFD WILL MODULATE SPEED TO MAINTAIN THE SYSTEM PRESSURE.



THE PUMP'S SCHEMATIC IS DIAGRAMATIC. IT DOES NOT REPRESENT THE ACTUAL PUMP TYPE AND CONFIGURATION. SEE PUMP SCHEDULE FOR DETAILS.

GENERAL SHEET NOTES

1. MECHANICAL CONTRACTOR SHALL CORDINATE THE CONNECTIONS TO THE DOC SYSTEM TO ENSURE CORRECT VOLTAGE REQUIREMENTS.
2. COORDINAT THE POWER REQUIREMENTS FOR THE FLOW METER.
3. INSULATE CHWS/R PIPING WITH 1" FIBERGLASS & VAPOR BARRIER. OUTDOOR PIPING TO INCLUDE ALUMINUM JACKET.

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OPERATIONS BUILDING HVAC REPLACEMENT CHILLED WATER P&ID

NEW DRAWING SET

SCALE: NTS

BAR IS ONE INCH ON ORIGINAL DRAWING

H-005

SHEET: _____ OF _____

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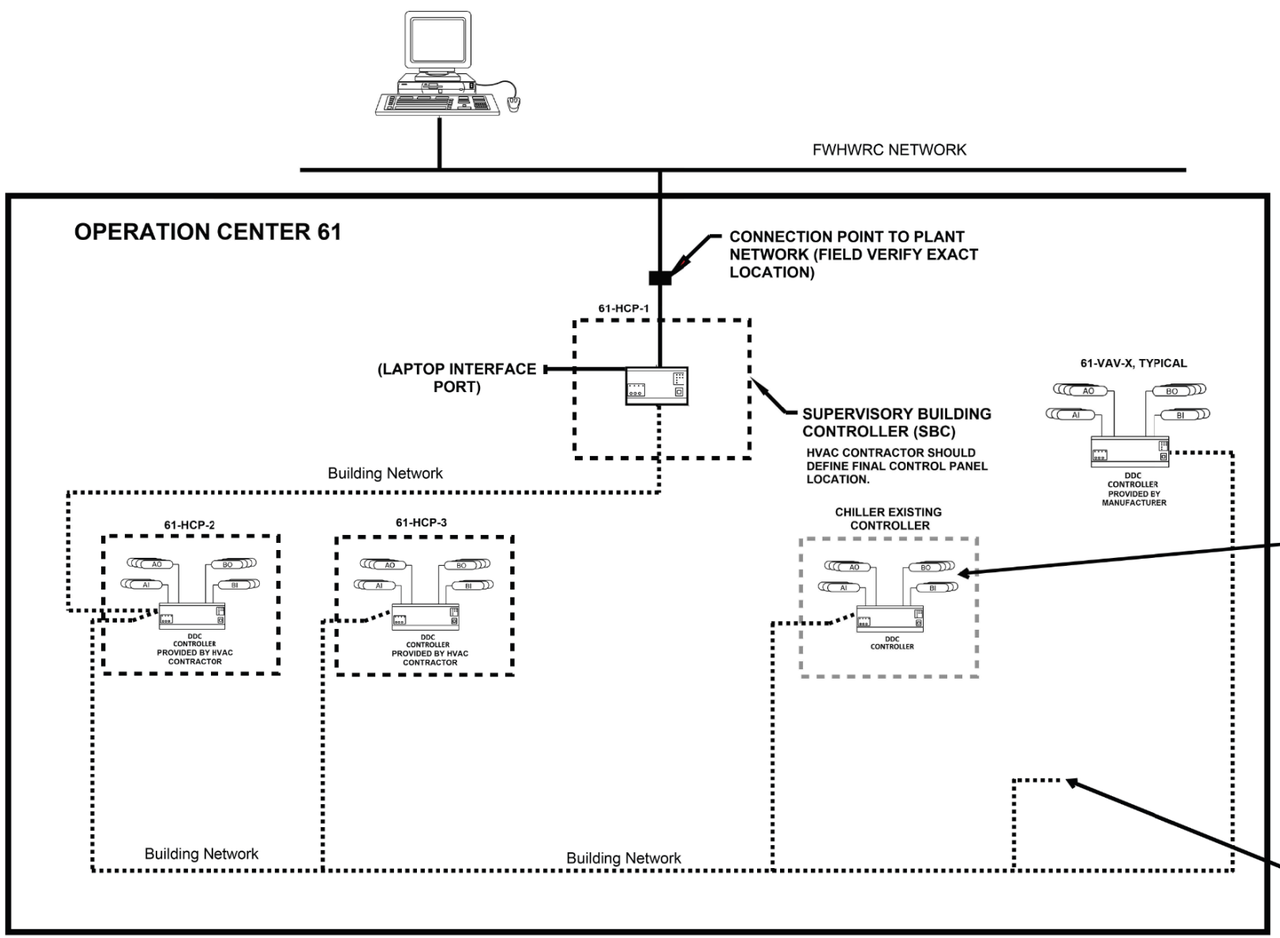

THE NEW PUMPS SHALL BE CONTROLLED FROM THE CHILLER CONTROL PANEL OR AS THE EXISTING CONFIGURATION.

ALL EXISTING EQUIPMENT AND SYSTEMS SERVING THE BUILDING THAT ARE NOT PART OF THE SCOPE OF WORK OF THIS PROJECT SHOULD BE CONNECTED TO THE NEW NETWORK AND SHALL OPERATE AS INTENDED IN THE CURRENT DESIGN.

HVAC CONTROL ARCHITECTURE

THE SEQUENCE OF OPERATION OF THE NEW SYSTEMS SHALL MATCH THE CURRENT DESIGN.
ALL EXISTING THERMOSTATS AND SENSORS SERVING THE EQUIPMENT REPLACED IN THIS PROJECT SHALL BE DEMOLISHED AND REPLACED IN PLACE WITH NEW EQUAL THERMOSTATS AND SENSORS AS RECOMMENDED PER EQUIPMENT MANUFACTURER.

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OPERATIONS BUILDING HVAC REPLACEMENT CONTROL ARCHITECTURE HVAC

NEW DRAWING SET

SCALE: NTS

BAR IS ONE INCH ON ORIGINAL DRAWING

H-006

SHEET: _____ OF _____

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THE NEW SYSTEMS SHALL BE RE-COMMISIONED AFTER INSTALLATION AND START-UP IS COMPLETED.

VARIABLE AIR VOLUME TERMINAL UNITS

TAG	LOCATION	VAV UNIT TYPE	PRIMARY AIR DATA					ELECTRIC HEATING COIL DATA			UNIT ELECTRICAL DATA					SOUND DATA	MANUFACTURER	MODEL NO.	APPLICABLE REMARKS
			COOLING		INLET	EXTERNAL	MOTOR DATA	AIR SIDE			NO.	VOLT	PH	MCA	MOP	MAXIMUM			
			MAXIMUM	MINIMUM	SIZE	STATIC PRESSURE	HP	HEATING CAPACITY	HEATING CAPACITY	CONTROL TYPE	OF CONN.					NC			
			CFM	CFM	IN. DIA.	IN. W.C.		kW	MBH										
61-VAV-1	ROOM 110	FAN POWERED	310	95	6	0.3	0.33	3.5	11.5	PROPORTIONAL	1	460	3	8.5	15	22	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-2	ROOM 109	FAN POWERED	310	95	6	0.3	0.33	3.5	11.5	PROPORTIONAL	1	460	3	8.5	15	22	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-3	ROOM 108	FAN POWERED	875	265	8	0.3	0.5	9	29.5	PROPORTIONAL	1	460	3	18.7	20	31	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-4	ROOMS 105, 103	FAN POWERED	1385	415	10	0.35	0.75	15	50.7	PROPORTIONAL	1	460	3	29.4	30	37	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-5	ROOM 102	FAN POWERED	630	190	8	0.3	0.5	10	31.8	PROPORTIONAL	1	460	3	17.9	20	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-6	ROOM 129	FAN POWERED	460	140	6	0.3	0.33	5.5	18.4	PROPORTIONAL	1	460	3	11.5	15	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-7	ROOM 129	FAN POWERED	550	170	8	0.3	0.33	6.5	21	PROPORTIONAL	1	460	3	13	15	30	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-8	ROOM 129	FAN POWERED	480	150	6	0.3	0.33	6	19.7	PROPORTIONAL	1	460	3	12.3	15	27	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-9	CORRIDOR 132	FAN POWERED	850	270	8	0.33	0.33	8	27.6	PROPORTIONAL	1	460	3	15.3	20	37	KRUEGER	KFSS	A,B,C,D,E,F,G,H
61-VAV-10	ROOM 120	FAN POWERED	1760	535	12	0.4	1	18	62.2	PROPORTIONAL	1	460	3	35.7	40	38	KRUEGER	KFSS	A,B,C,D,E,F,G,H

REMARKS:

A: PROVIDE DIRECT DIGITAL CONTROL (DDC)
B: SINGLE POINT POWER CONNECTION
C: FACTORY PROVIDED MAGNETIC CONTACTORS
D: FACTORY PROVIDED DISCONNECT
E: HANGER BRACKETS
F: PLENUM INLET SOUND ATTENUATOR
G: PRESSURE INDEPENDENT
H: INTERNAL INSULATION 1" MATTE FACED INSULATION.

DUCT HEATERS

SYMBOL	LOCATION	TYPE	AIR SIDE DATA			ELEC. HEAT DATA				UNIT ELECTRIC DATA				DIMENSIONS					MANUFACTURER	MODEL	APPLICABLE REMARKS
			SUPPLY AIRFLOW	EAT	LAT	CAPACITY	CONTROL	VOLT	PH	MCA	MOCP	VOLT	PH	DUCT SIZE INCHES		MAXIMUM UNIT SIZE INCHES					
			CFM	DEG. F	DEG. F	kW								W	H	L	W	H			
61-DEH-1	MECHANICAL ROOM	ELECTRIC, OPEN COIL	2,370	60.4	78	15	SCR	460	3	22.58	30	460	3	20	16	4 3/4	19	15	TPI CORPORATION	HF SERIES	A THRU J

REMARKS:

A: FACTORY INSTALLED HEATER CONTACTOR
B: DISCONNECT: FACTORY INSTALLED
C: FACTORY MOUNTED THERMOSTAT
D: PROVIDE DUCTWORK TRANSITIONS AS REQUIRED FOR INSTALLATION OF HEATING COIL
E: 24 V CONTROL TRANSFORMER
F: DOOR INTERLOCK DISCONNECT
G: DIFFERENTIAL PRESSURE AIR FLOW SWITCH
H: PRIMARY AND SECONDARY OVER TEMPERATURE PROTECTION
I: CAPABLE OF CONNECTING TO BUILDING BAS FOR CONTROL
J: GALVANIZED STEEL CONTROL BOX WITH 1/2 INSULATION AND HINGED COVER

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OPERATIONS BUILDING HVAC REPLACEMENT
HVAC EQUIPMENT SCHEDULE
SHEET 1 OF 2
NEW DRAWING SET

SCALE: NTS

BARS ONE INCH ON ORIGINAL DRAWING

H-007

SHEET: _____ OF _____

AIR HANDLING UNITS

SYMBOL	TYPE	LOCATION	SUPPLY FAN MODULE										SUPPLY FAN SOUND DATA								ELECTRIC HEATING COIL MODULE							ELECTRIC DATA			REMARKS
			AIRFLOW			MAX. POWER BHP	FAN SPEED RPM	DRIVE	FAN MOTOR DATA												CAPAC	FLOW	EAT	LAT	VOLT	PH	HEATER CONTROL			
			MAX. CFM	OSA CFM	TSP IN WG				H.P.	SPEED RPM	VOLT	PH	MOTOR ENCL	MAX. FAN DISCHARGE SOUND POWER LEVEL dB (RE 10^{-12} W) @ MID OCTAVE BAND FREQUENCY (Hz)										DEG. F	DEG. F				MCA	MOCP	VOLT / PH	
														63	125	250	500	1K	2K	4K	8K	kW	CFM						A	A		
61-AHU-1	SEMI-CUSTOM	MECHANICAL ROOM	2,370	2,370	3.75	2.7	2457	DIRECT	3	1760	460	3.0	TEFC	49.2	60.4	65	65	62.1	59.1	38.3	25.4	—	—	—	—	—	—	—	5.3	15	460 / 3	A,B,C,D,E,F,G,H,J
61-AHU-3	SEMI-CUSTOM	MECHANICAL ROOM	1,100	1,100	3.61	0.62	1820	DIRECT	1.5	1750	460	3.0	TEFC	41.6	52.8	57.4	57.4	54.5	51.5	30.7	17.8	—	—	—	—	—	—	—	2.8	15	460 / 3	A,B,C,D,E,F,G,H
61-AHU-4	SEMI-CUSTOM	MEZZANINE 142	6,530	655	4	4.46	1743	DIRECT	5	1750	460	3.0	TEFC	49.7	60.9	65.5	65.5	62.6	59.6	38.8	25.9	—	—	—	—	—	—	—	8.4	15	460 / 3	A,B,C,D,E,F,G,H,I

ABREV:
EG: ETHYLENE GLYCOL

EXHAUST FAN MODULE											CHILLED WATER COOLING COIL MODULE											MAXIMUM DIMENSIONS					
AIRFLOW			MAX. POWER BHP	FAN SPEED RPM	DRIVE	FAN MOTOR DATA					CAPACITY		AIRSIDE				WATER SIDE					INCHES			WEIGHT	MANUFACTURER	MODEL
MAX. CFM	TSP IN WG	ESP IN WG				H.P.	SPEED RPM	VOLT	PH	MOTOR ENCL	TOTAL BTU/H	SENS. BTU/H	EAT DEG. F DB	EAT DEG. F WB	LAT DEG. F DB	LAT DEG. F WB	FLOW GPM	FLUID TYPE	FLUID %	EWT DEG. F	LWT DEG. F	DELTA P FT. H2O	L	W	H	LBS		
2,385	3	1	2.17	2290	DIRECT	3	1760	460	3.0	TEFC	105,800	51,000	77.5	69	54.9	54.8	24.5	EG	40	55	45	3.8	174	53 1/2	66	2062	VTS	AVS030
—	—	—	—	—	—	—	—	—	—	—	81,700	51,000	92.3	73.3	50	49.7	18.9	EG	40	55	45	18.5	87 5/9	46 7/9	23 5/8	610	VTS	AVS020
5,875	0.58	0.5	1.67	1,353	DIRECT	5	1,750	460	3	TEFC	211,200	181,000	79.5	63.2	54	51.8	48.8	EG	40	55	45	4.4	202 5/6	75 1/4	39	2207	VTS	AVS065

REMARKS:
- A: MOTOR CONTROL: ADJUSTABLE FREQUENCY DRIVE, INSTALLED BY MANUFACTURER
- B: DISCONNECT: PROVIDED BY DIVISION 26 ELECTRICAL
- C: FACTORY SUPPLIED VIBRATION ISOLATORS
- D: SINGLE CONNECTION POINT
- E: HORIZONTAL CONFIGURATION WITH ALL COMPONENT ACCESS ON ONE SIDE AS SHOWN ON DRAWINGS
- F: CONTROL VALVES BY OTHERS, CHARACTERIZED CONTROL VALVES WITH NICKEL PLATED BRASS BODY & STAINLESS TRIM
- G: FILTER DIFFERENTIAL PRESSURE SWITCH
- H: DDC CONTROLLER BY OTHERS
- I: ECONOMIZER WITH EXHAUST FAN

J: ENERGY RECOVERY CROSS FLOW PLATE:

HEATING OPERATION				RECOVERY	
EAT DEG. F		LAT DEG. F		TOTAL	SENS.
DB	WB	DB	WB	BTU/H	BTU/H
16	15.5	60.4	42.3	114,000	114,000
COOLING OPERATION				RECOVERY	
EAT DEG. F		LAT DEG. F		TOTAL	SENS.
DB	WB	DB	WB	BTU/H	BTU/H
92.3	73.3	77.5	69	38,900	38,900

PUMP SCHEDULE

DESIGNATION	61-P-01 & 02
GPM	100
PUMP TYPE	BASE MOUNTED END SUCTION
FT HEAD	85
FLUID	40% ETHYLENE GLYCOL
RPM	1,852
IMPELLER DIA APPROX (INCHES)	8.5
SUCTION SIZE (INCHES)	3
DISCHARGE SIZE (INCHES)	2.5
HP	5.5
VOLTS/PHASE	460/3
LOCATION	OUTDOORS
SERVICE	COOLING
MANUFACTURER	BELL & GOSSETT
MODEL	e-1510X 2BD
NOTES:	A,B,C,D,E

NOTES:
A. PROVIDE PUMPS WITH TAPPED CASE DRAIN.
B. MOTORS SHALL BE PREMIUM EFFICIENT INVERTER DUTY MOTORS (VFD).
C.FURNISH WITH EPR/SIC/SIC SEALS RATED FOR 40% ETHYLENE GLYCOL SERVICE.
D. FLANGED
E. RATED FOR OUTDOORS

FAN SCHEDULE

EQUIP. NO.	TYPE SERVICE	AREA SERVED	MANUFACTURER	MODEL NO.	FAN TYPE	CFM	E.S.P. IN. WG.	RPM	HP	TYPE DRIVE	ELECT. DATA VOLTS	PHASE	HZ	REQ'D OPN'G SIZE	INTERLOCKED WITH	REMARKS
61-F-1	EXHAUST	ROOM 122 OPERATIONS CTR	CARNES	VIBKO6	INLINE	200	0.25	1100	1/6	BELT	120	1	60	-----	61-AHU-4	②③
61-F-2	EXHAUST	ROOM 145 OPERATIONS CTR	CARNES	VIBK12	INLINE	855	0.25	1000	1/4	BELT	120	1	60	-----	-----	②③
61-F-3	EXHAUST	ROOM 122 OPERATIONS CTR	N.Y. BLOWER	153-6P	CENTRIFUGAL	1210	1.00	1242	1/2	BELT	460	3	60	-----	61-AHU-3	③⑦
61-F-4	EXHAUST	ROOM 117 OPERATIONS CTR	CARNES	VIBK12	INLINE	945	0.25	1050	1/4	BELT	120	1	60	-----	-----	②③
61-F-5	EXHAUST	ROOM 116 OPERATIONS CTR	HARTZELL	09-24-LO3	PROPELLER	1190	0.25	930	1/4	BELT	120	1	60	28X28	-----	①③④⑤
61-F-6	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	6645	0.25	850	3/4	BELT	460	3	60	36X36	SEE DWG. 61 H-001	①③④⑤
61-F-7	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	6645	0.25	850	3/4	BELT	460	3	60	36X36		①③④⑤
61-F-8	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	6645	0.25	850	3/4	BELT	460	3	60	36X36		①③④⑤
61-F-9	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	7810	0.25	900	3/4	BELT	460	3	60	36X36		①③④⑤
61-F-10	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	6645	0.25	850	3/4	BELT	460	3	60	36X36		①③④⑤
61-F-11	EXHAUST	ROOM 134 OPERATIONS CTR	HARTZELL	09-32-LG3	PROPELLER	6645	0.25	850	3/4	BELT	460	3	60	36X36		①③④⑤
61-F-12	EXHAUST	ROOM 144 OPERATIONS CTR	HARTZELL	09-24-LF3	PROPELLER	4520	0.25	1980	1/2	BELT	460	3	60	28X28	-----	①③④⑤

REMARKS:
① PROVIDE WITH SHUTTER MOUNTING BOOT. AUTOMATIC END PIVOTED SHUTTER. AND PANEL FAN REAR GUARD.
② PROVIDE COUNTER WEIGHTED GRAVITY BACKDRAFT DAMPER. CABINET INSULATION. MOUNTING BRACKETS. VIBRATION ISOLATORS. HINGED ACCESS DOORS. ALUMINUM HOUSINGS. EXTENDED LUBE LINES & BELT GUARD.
③ PROVIDE TEFC PREMIUM EFFICIENCY MOTOR.
④ PROPELLER WALL FAN SHUTTER FINISH TO MATCH LOUVER FINISH.
⑤ PROPELLER WALL FAN SHUTTER TO BE RECESSED INTO WALL.
⑥ PROVIDE COUNTER WEIGHTED GRAVITY BACKDRAFT DAMPER. BIROSCREEN. 18" FACTORY FURNISHED INSULATED SLOPED ROOF CURB – COORDINATE WITH ARCHITECTURAL DRAWINGS.
⑦ FLANGED INLET. FLANGED OUTLET. DRAIN. INSPECTION DOOR. SPRING VIBRATION ISOLATORS. TEFC MILL AND CHEMICAL MOTOR. BELT GUARD AND ADJUSTABLE V-BELT DRIVES.

Jacobs
10 10th STREET NE, SUITE 1400
ATLANTA, GA 30309
GA LIC# PEF000350
(EXP 6/30/2026)

CONSULTANT PROJ. NO. GCDWR051

SEAL:

Gwinnett Water Resources
LAWRENCEVILLE, GA
GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES
WATER RECLAMATION FACILITY
F. WAYNE HILL WATER RESOURCES CENTER
1500 ONE WATER WAY
BUFORD, GA 30519

GCDWR PROJ. NO. XX

NO.	DATE	ISSUED FOR	BY

DATE NOVEMBER 2025
DESIGNED BY A VALIENTE
DRAWN BY E GRIGGS
CHECKED BY
APPROVED BY

SITE FACILITIES
OPERATIONS BUILDING HVAC REPLACEMENT
HVAC EQUIPMENT SCHEDULE
SHEET 2 OF 2
NEW DRAWING SET

SCALE: 1" = 20' (BARS ONE INCH ON ORIGINAL DRAWING)

H-008

SHEET: _____ OF _____

H-008_GCDWR051.dgn

Y:\GCDWR051\00_FW1\Annual Contract Work\FW24-02 Operations Building HVAC Rehab\Design\Reference Data

PLOT DATE/TIME: 6/25/2025 10:50:34 AM