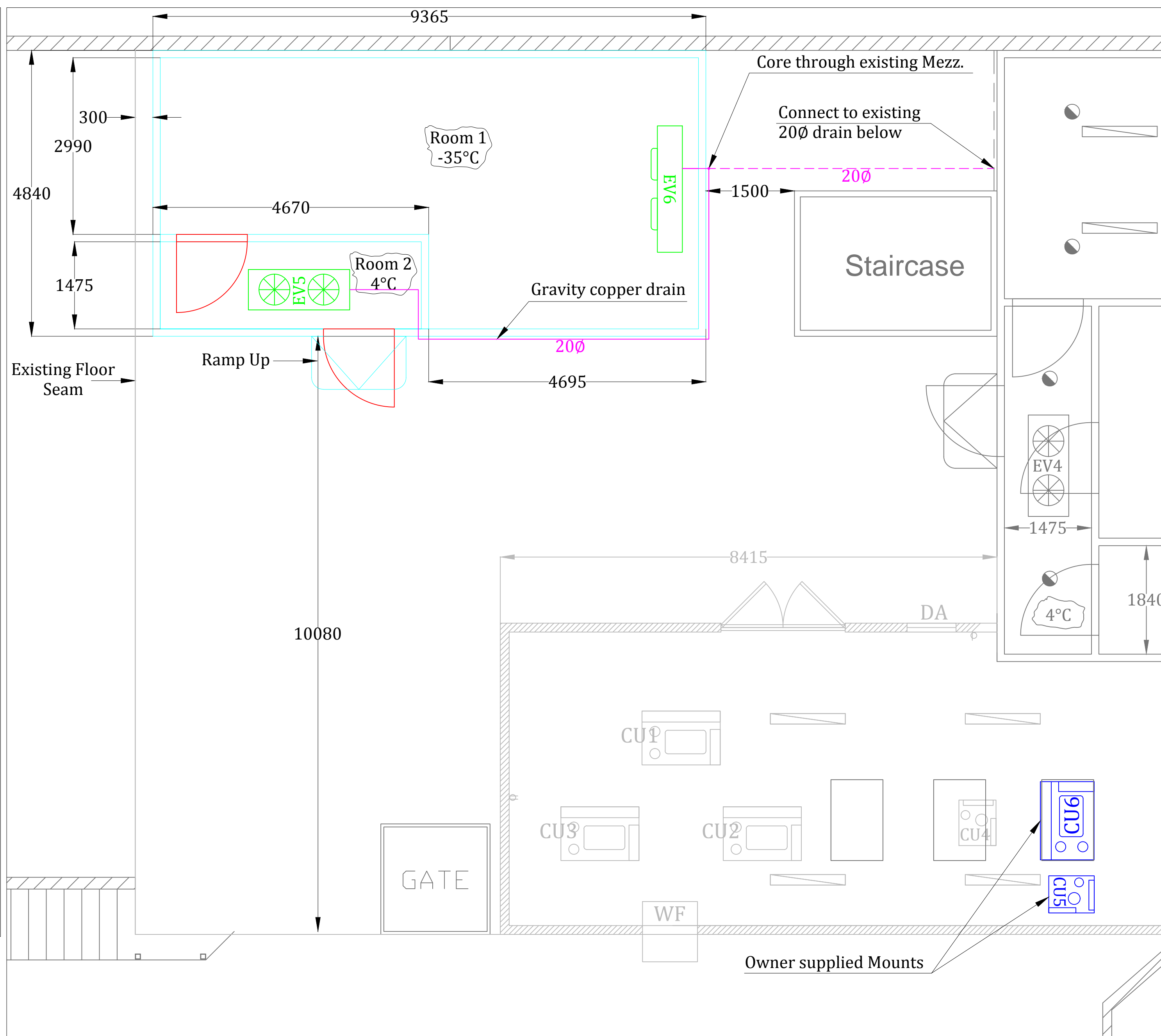
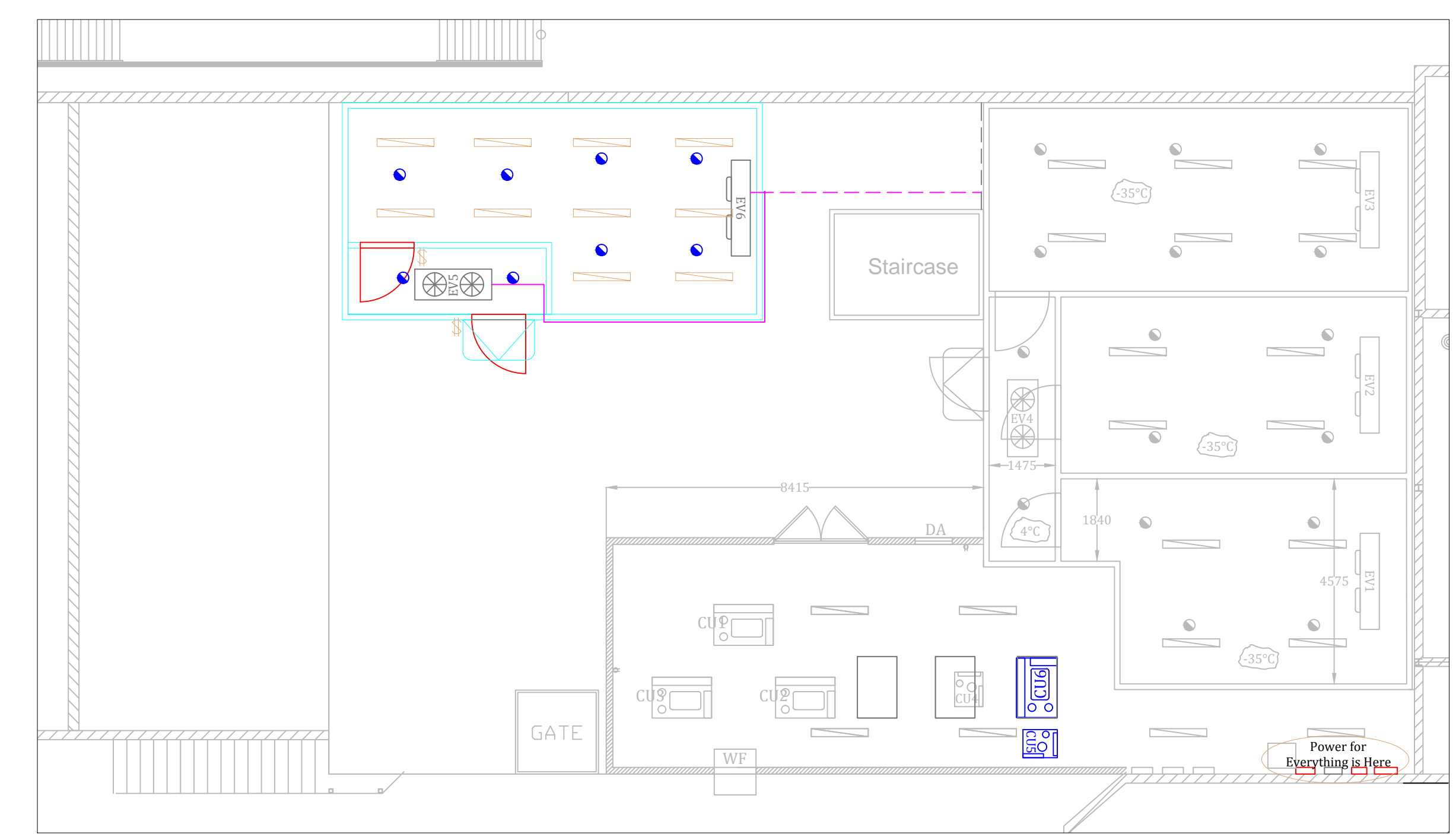


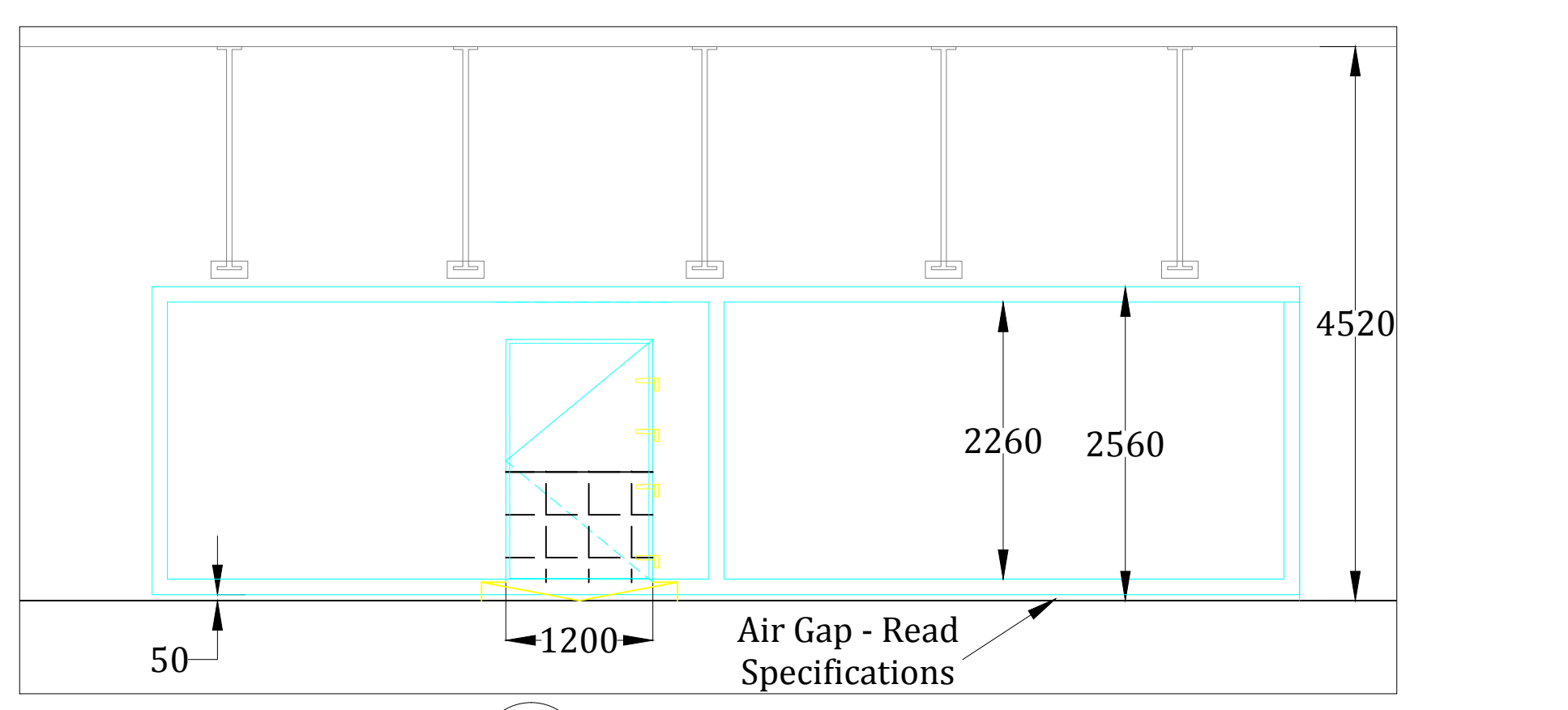
Equipment Schedule			
Tag	Description	Design Capacities/Notes/Options Required	Standard of Acceptance
CU6	Semi Hermetic Condensing Units Room 1 -35°C Space Temperature	<ul style="list-style-type: none"> <li>Electric Defrost Kit (Timeclock Included), up to 40A heaters, 30A fans 1 Evaporator</li> <li>Liquid Line Filter + Sight Glass, Sealed</li> <li>Suction Accumulator, without Heat Exchanger</li> <li>Non-Fused Disconnect Switch</li> <li>Adjustable Pressure Controls, Johns dual with flex hose</li> <li>Liquid Line Lock-out Relay</li> <li>Oil Separator, with oil filter and solenoid</li> <li>Over-sized receiver</li> <li>Phase/Voltage Monitor, 6-Lead</li> <li>Pump Down Toggle Switch</li> <li>Receiver Inlet Ball Valve</li> <li>Single point electrical compressor time delay relay</li> <li>Two valve adj flooded head pressure control</li> <li>Ball Valves - Qty 5 - Diverting Valves for Remote Condenser</li> <li>Insulate Accumulator Inlet/Outlet Piping</li> <li>Extended 4-year compressor warranty</li> <li>Insulated Accumulator &amp; In/Out Piping</li> <li>(Qty: 5) H/G Diverting Valves to Remote Condensers</li> <li>Voltage 575/3/60</li> </ul>	Copeland CFDP-0550-TFE-001
RC	Remote Air Cooled Condenser Room 1 -35°C Space Temperature	<ul style="list-style-type: none"> <li>Ambient Individual Fan Cycling</li> <li>Individual Fan Motor Fusing</li> <li>Individual Motor Contactor Leg Kit</li> <li>40A Non-fused Disconnect</li> <li>Voltage 575/3/60</li> <li>Leg Kit, Vertical Discharge, Shipped Loose</li> <li>1 Circuit</li> </ul>	Keeprite KCS008-55A-AV
EV6	Medium Profile Evaporator Room 1 -35°C Space Temperature	<ul style="list-style-type: none"> <li>Expansion Valve, Sporlan TXV</li> <li>Evaporator Temperature: -40°C, Space Temperature: -34°C</li> <li>Voltage 5Liquid Line Solenoid Valve, Sporlan, Factory Installed</li> <li>Adjustable T-Stats, Johnson A419ABC-1C</li> <li>Voltage 575/3/60</li> </ul>	Keeprite KMP228VE-T5A-C
CU5	Indoor Air Cooled Hermetic Condensing Unit Room 2 4°C Space Temperature	<ul style="list-style-type: none"> <li>Suction Temperature -1°C, Ambient Temperature 35°C</li> <li>Voltage - 208/3/60</li> <li>Liquid Line Filter + Sight Glass, Sealed</li> <li>Non-Fused Disconnect Switch</li> <li>Compressor Time Delay Relay</li> <li>Liquid Line Lock-out Relay</li> <li>Over-sized receiver</li> <li>Pump Down Toggle Switch</li> <li>Suction Accumulator, without Heat Exchanger</li> </ul>	Keeprite KEHA010E6-IT3B
EV5	Two Way Medium Profile Evaporator Room 2 4°C Space Temperature	<ul style="list-style-type: none"> <li>Suction Temperature -1°C, Box Temperature 4°C</li> <li>Expansion Valve, Sporlan TXV</li> <li>Liquid Line Solenoid Valve, Sporlan, Factory Installed</li> <li>Adjustable T-Stats, Johnson A419ABC-1C</li> <li>Insulated Accumulator and Inlet/Outlet Pipework</li> <li>Voltage 115/1/60</li> </ul>	Keeprite KTM115MA-S1A-C
Tag	Acceptable Alternate		
CU5	COPELAND FJAF-0126 - AIR-COOLED CONDENSING UNIT		



1 Mechanical & Freezer Room Plan  
001 1:50



3 Fire Protection & Electrical  
001 1:100



2 North Elevation  
001 1:50

- 1.0 General Conditions**
- 1. Scope of Work** - Construct a new walk in freezer room (Room 1) with a normal operating space temperature of -35°C, as well as a 4°C cold room (Room 2) which serves as a corridor on the Hydraulics Mezzanine at CCIW. The new air-cooled condensing units will be installed adjacent to new cooler walls beside stairwell. Indoor Air-Cooled Condensing units will be connected to a remote condenser which will be installed on the roof. This will give the ability to either reject the heat outside during warmer months, and/or reject the heat inside during cooler months. Provide electrical connections for all new items using two 600V/100A and one 208-120V 200A distribution panels
- 2. Services to be Performed**
- The general contractor shall appoint someone from their company as the site foreperson for this project, who will be identified before the pre-construction start-up meeting. The site foreperson must be on site whenever any work is being performed under this contract. This is important; all prospective general contractors are advised that this will be enforced by the owner.
  - The foreperson will review with Site Authority on a daily basis regarding all work taking place.
  - The foreperson will be responsible to ensure that the work is conducted in a safe manner, all equipment lock-outs are followed and that cleanup and waste removed at the end of each shift. Material specifications, method of application and proposed schedule for installation must be submitted to Site Authority within a week of contract award.
  - Extra / Additional Work - Any extra work must be authorized by the owner.
- 3) Invoicing / Payment to Contractor**
- All invoices shall be sent electronically directly to the owner for review. Do not mail any invoices. All invoices must provide a detailed cost breakdown, i.e. labour category and materials used for each service performed.
  - Progress draw invoices are accepted at the discretion of the owner.
  - Any additional work must be approved by the owner prior to being undertaken.
- 4) Hours of Work**
- The work must be scheduled with the owner prior to work being undertaken. The standard hours of work during regular hours (from 07:00 to 18:00) Monday through Friday. Scheduling of any heavy noise or dust generating work must be coordinated with the owner beforehand.
  - After hours/weekend scheduling may be available at the discretion of the owner.
- 5) Occupational Health & Safety**
- The Contractor knows and understands that, although the contractual work is conducted on Crown property, the work of the private contractor, their employees and any sub-contractors are subject to the Legislation, Regulations, Policies, Standards and Practices as established by the Province of Ontario with respect to Occupational Safety and Health. Notwithstanding this general provision the Contractor shall also comply with all applicable Occupational Safety and Health provisions as stipulated herein.
  - Contractor to abide by Environment Canada's Occupational Safety and Health policy, contained on this drawing to the right of these specifications.
  - Neither the Contractor nor any of their employees are considered to be employees of the Crown and will not fall within the provisions of the Government Employees Compensation Act and are not eligible for any benefits provided by this Act in case of accident during the performance of any service under this contract. Such benefits as may be payable are a subject between the Contractor and their staff.
  - All incidence of accidents, breakage, fire or damage whatsoever are to be reported to the Site Authority immediately after they occur. The Contractor is responsible to transport any of their staff to a hospital, if required, as a result of an onsite accident.
- 6) Security**
- A list of all personnel to work on this project must be submitted to the Owner within 3 weeks of award
  - All personnel performing work on this project are must sign in and out daily at the main security desk
- 7) Emergency Evacuation**
- It is the Contractor's responsibility to ensure that their employees and subcontractor's employees are aware of evacuation routes and in the event of an evacuation, Contractor's staff shall obey instructions received from Security or others having the authority to issue such instructions.
- 8) Allowances** - The contractor is responsible for carrying the following cash allowances list below:
- Building Permit Allowance - \$4,000** - This covers all permit related costs and is allocated at the discretion of the Departmental Representative
  - Controls Allowance - \$3,600** - This covers the labour required for all controls connections with the CCIW Building Automation System. The controls allowance shall be allocated at the discretion of the departmental representative.
- 9) Site Visit** - A mandatory site visit is required for all prospective bidders. Refer to Buy and Sell website for site visit scheduling.
- 2.0 Tender Submittals**
- In the case where a bidding contractor would like a manufacturer alternate to the ones that are listed as a 'Standard of Acceptance', send all relevant shop drawings electronically to the contracting office in Gatineau Qc, listed on the Buy and Sell website. The last day a tender submittal can be reviewed is 5 days before the closing tender date. Environment and Climate Change Canada to review submittals within five working days after tender submittal has been received.
- 3.0 Submittals**
- Submit to Owner submittals listed for review within 3 weeks of award. All submittals to be sent together in one package. Any work affected by submittal shall not proceed until review is complete.
  - It is the contractor's responsibility to review submittals prior to submission to Owner. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the work and contract documents.
  - Shop drawings shall be prepared specifically for projects and shall be fully dimensioned.
  - Submit 1 full set of the shop drawings for each requirement requested listed below. Submit in one package: the sequence listed below:
    - Insulated Panels
    - Indoor Condensing Units
    - Outdoor Condenser
    - Evaporators
    - Pipe Insulation
    - Solenoid Valves
    - Digital Thermostat & Temperature Controller
    - Lights
- Close-out Submittals - At construction completion, submit 2 copies of operation and maintenance manuals containing:
- 1 copy of each approved Shop drawing
  - 1 copy of each test report and operation report
  - 1 copy of each installation, operation and maintenance instruction supplied by manufactures
- 4.0 Fire Protection**
- Contractor shall provide temporary fire protection throughout the period of construction. Particular attention shall be paid to the elimination of fire hazards.
  - Contractor to provide fire extinguishers as per National Building Code.
  - Dry Sprinkler Heads** - Dry sprinkler heads will be installed by the owner after floor, walls, and ceiling have been installed. Allow for two working days for sprinkler head installation.
  - Hot Work Permits** - A Hot Work Permit must be obtained from the Owner for all work involving an open flame, cutting, grinding or welding in existing, occupied facilities. Owner's issuance of hot work permit is a means to support property protection at request of Owner's insurer and shall in no way be interpreted to affect the Contractor's role as "contractor" under applicable Occupational Health and Safety legislation.
- 5.0 Prefabricated Walk-in Freezer/Cold Rooms**
- Equipment shall be manufactured and installed, by a company having personnel skilled in manufacturing and installing of prefab walk-in freezers and coolers, and having continuous proven experience within last five years. Installation to conform with CAN/CSG-52.25, *Refrigerators and Freezers, Prefabricated, Mechanical, Commercial, Walk-in*, as well as owners' requirements. Standard of Acceptance - *Coldmatic Refrigeration*.
- Walls**
- The modular construction of these panels shall be sandwich-type panels and be comprised of galvanized steel facings with pebbles exterior and interior white enamel, 26 ga., enclosing 5" polyurethane foam core with closed cell structure. The insulation shall be injected at high pressure in one operation. The edges all around the perimeter of the core shall be moulded to form a tongue and groove joint where cam-lock fasteners shall be integrated.
  - The polyurethane shall contain fire retardant to ensure a maximum flame spread of 25 for the panel and 500 for the insulation as required by standard ULC-S102. The panel assembly shall meet ULC-ORD-C376 and be CSA rated. No wood framing shall be used in the construction of these panels
  - The cam lock fasteners shall be spaced a maximum of 54". Fastener access holes that can be reached inside the cold room shall be covered with polyethylene snap on caps coloured to match the panels
  - Seal around all conduits and inside conduits to prevent penetration into room.
  - Provide corner guard from floor to top of wall panel for all exposed corners. Guard comprised of 18 gauge stainless steel with #4 brushed finish
- Floors**
- All sections are to have an insulated floor: the floor will be 5" thick of insulation, reinforced with 1/2" plywood backing, 18 ga. galvanized steel and covered with 1/8" aluminum tread plate
  - Floor - Freezer rooms shall be installed on 25mm high top hats spaced 400mm apart for the entire span of the structure. This is create an air gap between the bottom of the freezer room floor and the mezzanine concrete
- Doors**
- Both doors will be 48" x 78" overlap type door. The freezer room door will have heated door and door frame for -35°C operation. The cooler door will have a heated door frame. Each door will have four (4) hinges, Kason K-1225, Kason latch # K-56, self-closing closures assembly (2) 10P5 and two heated pressure relief vents, 1825
  - Infitting flush type mounted door to door opening, insulated and same finish as panels, hinges spring loaded, self closing. One latch to match hinges, one trigger action positive door closer.
  - Each door will come with 36" high aluminum tread plates (kick plates) on the interior and exterior
  - Each door will come with a 2" dial thermometer.
- Ceiling**
- Ceiling Panels to be reinforced externally to support evaporator.
  - Seal around all conduits and inside conduits to prevent penetration into room.
- Floors**
- Provide 25mm high air gap between bottom of freezer/cold room floors and top of mezzanine concrete. Use top hats spaced minimum 400mm apart.
- Ramp** - Construct concrete ramp to entry door.
- 6.0 Mechanical General**
- Install in accordance with CSA B52-05 Mechanical Refrigeration Code.
  - All equipment shall meet B51-09 Boiler vessel and pressure piping code
  - Piping installation - Install heat and insulation over all drain lines within -35°C spaces. Provide a P-Trap and clean out to each evaporator exterior to the new prefabricated walls. Install and test in accordance with CSA B52, ANSI B31.1, and the National Building Code.
  - For freezer rooms, ensure a Saturated Suction Temperature of -40°C and a Condensing temperature of 43°C
  - Remote Condenser** - Install a remote condenser on the roof above. Contractor is responsible for roofing. Do not do any roof work until the Owner has given approval.
  - Sleeves & Escutcheons - Caulk between sleeve and pipe foundation walls and below grade floors with waterproof fire retardant non-hardening mastic. Where sleeves pass through walls or floors, provide space for firestopping. Where pipes pass through fire-rated walls, ceilings, floors, and partitions, maintain fire rating integrity
  - Fire stopping and smoke seal systems in accordance with CAN4-S115
  - Fire Protection** - Owner to provide fire protection (dry sprinkler heads) for new freezer/cooler rooms outside of this contract. Mains and rough ins will occur before contractor is on site. Installation of dry heads (once ceiling is finished) Owner to notify contractor minimum one week in advance Dry Sprinkler Heads -
    - Pipe Insulation - All insulation in accordance with NFPA 90A. Insulation shall be a flexible, closed-cell elastomeric pipe insulation and must conform to ASTM C534 Grade 1, Type I.
    - Follow manufacturer's installation instructions when connecting condensing unit & evaporators.
    - All refrigeration installation by ANSI/ASHRAE Standard 15 - Safety Code for Mechanical Refrigeration
  - Temperature** - The Freezer rooms shown on this drawing are sized to maintain a -35°C temperature within each freezer room. The adjacent cold room is designed to maintain a temperature of 4°C
  - Condensate Drain lines - All condensate drain lines shall be wrapped in self regulating heat tracing covered with 130" thick insulation for all pipe within the new freezer/cooler space.
- 7.0 Electrical General**
- Provide electrical connections to everything that requires power
  - All work, materials, equipment, and installations shall conform to the latest editions of the Canadian Electrical Safety Code, NBC, ULC, applicable CSA standards, and all Provincial and Federal laws and regulations.
  - Submit certificate(s) of unconditional acceptance from Electrical Safety Authority (ESA) to owner as part of final document submission.
  - All receptacles and light switches to match colour of new cold room panels. Ensure receptacles are labelled as per c/w building standard
  - Run three - 1"Ø conduits. Two are for feeds from 600V panels and the other is for all of the 208V loads.
  - Follow manufacturer's installation instructions when connecting evaporators and condensing units.
  - Provide sleeves through walls and floors. Install fire stop and seal all sleeves.
  - Room Controllers** - Provide two Johnson A419 Controllers and mount adjacent to cold room entry door.
  - Defrost Timers** - Provide one defrost timer for the freezer room. Standard of Acceptance - Paragon Mechanical Defrost Timer.
  - Lights - Provide Vapour Proof 48" T8 LED Lights for the quantities shown in drawing for all lights within the new cooler/freezer. Standard of Acceptance - Visioneering. Place junction boxes for lights above cooler ceiling.
  - Install the drain heat tracing and lights for each room on one 120V circuit.
- 8.0 Controls**
- Contractor to provide the controllers indicated on drawing (*Johnson Controls A419*) for each of the three freezer rooms and the cold room (4). Contractor to supply and install all wiring from temperature sensor to controller.
  - Integration of new temperature sensors to CCIW Building Automation System, including wiring, supply of temperature sensors, and controls labour, shall be covered under the controls allowance.

# Specifications

11/01/2016	ADDENDUM #1	Drawn/Designe	Date/Date	Environment Canada Property Management District 2 CANADA CENTRE FOR INLAND WATERS LE CENTRE CANADIEN DES EAUX INTÉRIEURES	Environment Canada Gestion de l'immobilier District 2 867 LAKESHORE RD BURLINGTON, ON L7R 4A6	DWG # / DESSIN # <b>001</b>
		M Wager	July 2016			
DATE	REVISION	DWG. Titre/Titre Dessin	Scale/Echelle			
		WQMS Freezer Rooms	As Noted			