

## **Scope of Work**

**Replace Existing: (2) 385 Ton Trane Chillers. New chiller shall be minimum of AHRI 385 tons.**

**Model # RTAC 4004 UDON / Serial # U01J01683 & Serial # U01J01684**

**School Name: Philip O Berry (Main Building)**

**Location: 1430 Alleghany St. Charlotte, NC 28208**

Scope of Work: Contractor is responsible for ensuring the following requirements are met to install replacement of like sized new chiller. The contractor shall provide a quote for replacement of chillers and any alternates listed. Quotes should include separate line items for materials, labor and tax.

- Provide all permits, documents and fees required by CMS and the Authority Having Jurisdiction (AHJ) for the completion of this project.
- Contractors license number must be on bid.
- Must provide permit numbers to project manager before project begins.
- The contractor is responsible for meeting the attached insurance requirements.
- Permit numbers must be on invoices.
- Contractor is responsible for Miscellaneous trade permits and fees.
- Equipment submittals must be provided with bid documents.
- CMS reserves the right to remove any parts and refrigerant from the chiller to be replaced.
- Disconnect, remove, and dispose of existing chiller.
- Extend concrete pad as needed for replacement chiller.
- Factory recommended vibration pads must be installed.
- Contractor to provide vibration pads a (min. 2 1/2" in depth) if not supplied by manufacturer.
- Install new chiller to factory specifications.

- Provide and install any new piping needed to complete installation.
- Provide new isolation valves for supply and return piping connections at chiller.
- Provide full line size Y Strainer on inlet of new chiller with full line size manual blow down if not provided by manufacturer.
- Provide manual drains with ball valve and plug.
- Provide new pipe stands for supply and return piping.
- Install new tees, new isolation butterfly valves, and 2 new chiller taps for rental hook-up.
- Install new liquid filled gauges, hand valves, (ball valves) and thermometers as required to install new equipment.
- Install new heat tracing on chiller supply and return piping.
- Provide new insulation to match existing insulation with new aluminum jacket.
- Provide and install new fused electrical disconnect to meet new chiller requirements.
- Field verification of all existing electrical components is required. Provide any modifications necessary for a turnkey operating system.
- Factory start-up and check out required. (documentation must accompany invoice).
- Field Verify all existing control points and integrate new network connection for BAS controls to match. (Existing Control System is ALC).
- Factory provided 5-year warranty on parts, labor, and refrigerant.
- Replacement chiller to have a minimum capacity of 385 Tons.
- Chillers shall meet or exceed AHRI ratings as follows:  
Chillers shall meet or exceed AHRI ratings as follows:
  - o Full Load EER less than or equal to 10.283 with part load EER less

than or equal to 13.438 to meet the Duke Energy rebate requirements.

o Efficiency ratings are based upon AHRI design conditions (KW/Ton and IPLV values shall include all connected loads such as compressors, condenser fans and control KW.)

o List efficiency rating on quote for comparison.

o Note, if a Chiller is available with a higher efficiency than the minimum, please supply a quote for it as an alternate.

o If a chiller is not available that meets the minimum requirements, please indicate such and suggest the most efficient alternative.

o Micro-channel condenser coils are now acceptable for use by CMS.

o Provide chiller submittals with quotation.

· All chillers larger than 130 tons must be a "Screw" type machine

· Evaporator Freeze Protection

· Suction Line Insulation

· Wye-Delta Motor Starter

· Non-fused Disconnect (If required)

· Standard Ambient Operation to 32 F

· Service Option - Navigator Port & 115V GFI Receptacle

· Standard Minimum Unloading Capability (down to 15% capacity)

· Suction Service Valves

· Control Transformer

· Coil Trim Panels, Security Grilles & Upper Hail Guards

· Navigator Display

· **CMS will be responsible for integrating the new chillers to the existing control system. This cost may be added to the contract amount as an Allowance (CMS to provide this amount on Bid Form) amount to be provided in the contract for control integration.**

- **Note that the installing mechanical contractor is to provide all required control power wiring and power distribution (including breakers, disconnects, changes in wire sizes, etc.) and include these costs on their bid.**
- **Digital Communications to from new chillers to BAS system shall consist of a BACnet IP interface. BACnet MS/TP is not acceptable.**
- REFER TO CHILLER SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.