Project# 19M250CN
MACC# 19-0453
MAXIMO#4960884

TITLE:

BASE WIDE CHILLER REPLACEMENT

General description- Base wide replacement of vintage chillers.

SCOPE OF WORK: replace chillers at the following facilities.

Bldg. 309: Current chiller 85 tons, @208v. Replace with 87 ton Scroll.

Bldg. AS4030: Current chiller 55 tons, @230v Replace with 57 ton Scroll.

Bldg. HP127: Current chiller 120tons, @460v Replace with 131 ton Scroll.

Bldg. HP305: Current chillers Units 2 x- 110tons, @460v Replace with 2, 118 ton Scroll.

Bldg. HP550: Current chiller 80tons, @208v Replace with 87 ton Scroll.

Bldg. WC140: Current chiller Needs 100tons, @208v Replace with 108ton Scroll.

Bldg. FC530: Current chiller 65 tons, @208v Replace with 67 ton Scroll.

Bldg. FC555: Current chiller 65 tons, @208v Replace with 67 ton Scroll.

Bldg. FC560: Current chiller 65 tons, @208v Replace with 67 ton Scroll.

Bldg. FC565: Current chiller 65 tons, @208v Replace with 67 ton Scroll.

Bldg. HP170: Current chiller Units x 2- 120tons, @460v Replace with single 131 ton Scroll.

Bldg. HP210: Current chiller Units X 3- 110tons, @460v Replace with 2 100 ton Scroll.

Bldg. HP267: Current chiller Units x 3- 100tons, @460v Replace with 2 100 Scrolls

Bldg. HP140: Current chiller 250tons, @460v Replace with 2 100 ton scrolls

Bldg. HP56: Current chiller 120tons, @460v Replace with 118 ton Scroll.

Detailed Requirements and Specifications: The contractor shall make site visits coordinated with PWD, Mark Jay Maddox. Mark.Maddox@usmc.mil cell 910-340-7891.

CHILLER SPECIFCATIONS and BASIS OF DESIGN

- All chiller evaporators shall be **SHELL AND TUBE.** No plate and frame heat exchangers due to high failure rates.
- Power source shall be on 2 separate circuits. One for main chiller disconnect, and one for crankcase heaters and heat trace for freeze protection. Heat trace shall protect evaporator, and all piping that is subject to freezing. A 20 amp convenience outlet (GFCI) shall be installed at the chiller for maintenance needs
    - Condenser coils, shall meet ASTM B-117 5000 standard to pass 3000 hour salt spray resistance test. Coils shall be dipped and baked in phenolic coatings. "Heresite" is a name brand meeting this requirement. **Coil construction shall not include "Micro Channels"**
    - Noise levels shall not exceed 85 decibels 32 feet from chiller. All compressors shall have sound attenuating blankets.
    - Condenser coils shall be protected by louvered coil guards and compressor housing shall have equivalent protection.
    - Chiller shall sit on Seismic feet, and rubber pads installed on bottom rails to elevate side rails to allow wash down of debris from under chiller.
    - All piping shall be a minimum schedule 40 mild steel, welded to pipe fitting standards.
    - Emergency Chiller connections: A set of emergency Tees shall be installed before entering the chiller on supply and return lines. The Tees shall match the diameter of the pipe. A butterfly valve and a bolted cover plate shall be installed.
    - Control panel shall have access to microprocessor (controller) for viewing or setup, without interrupting machine operation. Hinged control panel are desired and must be water proof, and not mounted on the outside of the chiller.
    - Multiple scroll compressor shall be utilized so as to prevent large capacity lost due to compressor failures. Compressor modules must have isolation valves and controls to lock out individual compressor stages.
    - Each condenser circuit shall have isolation valves, service valves and replaceable core filter driers.
    - Factory supplied strainer and circuit setters shall be install on return.
    - Sight glasses shall be install.
    - Controls shall be "BacNet", the controller shall be in English, and must monitor phase loss, over and under voltage, load and line monitoring. Manual latch on critical faults and delayed restart on non-latched errors. Chiller shall enable at 60 F and above.

Piping: **Piping diagrams shall be developed by the contractor based on chiller selection**. All piping shall be approved by PWD/OPS prior to installation. All piping shall be minimum of schedule 40 welded steel pipe. All welds shall be primed and paint with minimum two coats of alkyd enamel. All external piping shall have heat trace to prevent freezing. All pipe shall be insulated with minimum of 2 inches of polyisocyanurate insulation. All insulation shall be covered with aluminum UV cover. All piping shall be supported with pipe stands and or welded frame supports.

Electrical feed

All electrical feeds and controls shall conform to the "NEC". Contractor shall evaluate wire and disconnects for reuse after chiller selection is defined. Site visits **SHALL** be required by all bidding contractors.

Sketches, measurements, and quantities are provided for reference only. Contractor shall take his own measurements and count total quantity of hardware to be installed.

SPECIAL CONDITIONS, CONSTRUCTION STANDARDS

- All welding operations must be shielded from public viewing by a welding curtain
- All welding operations will require a fire watch
- No weld shall take place on the chiller past the strainer assembly.
- Connections at the chiller to the chiller water piping shall be done with "Victaulic" compression fitting, or similar.

Point of Contact:

PWD Mark.Maddox@USMC.MIL CELL 910-340-7891

SPECIAL SCHEDULING AND ACCESS:

1. Contractor shall ensure all employees and subcontractors have access and fully vetted.

Submittals:

All equipment shall /must be approved. Summit all proposals to the ROICC and PWD for consideration. The contractor shall be required to submit work schedules to POC for approval.

1. The contractor shall submit to the Contracting Officer, the manufacturer's product specifications, complete with technical product data. The product specifications shall, as a minimum, provide technical details on the following items:
    a. Manufacturer's name and product line.
    b. Manufacturer's Warranty