CONTRACT # N00485-11-B-0444
PROJECT # 11M061CN
MACC # 11-0444
MAXIMO# 4348585

TITLE: INSTALL A SPLIT HEAT PUMP SYSTEM AT AS119.
AS119 IS LOCATED AT NEW RIVER AIR STATION.

ATTACHMENTS:

1. Site Map 2. Maximo Equipment Update Form 3. M1 HVAC

SCOPE OF WORK: The contractor shall provide all material, labor, equipment and supervision required to accomplish the following: Provide and install a 3.5 ton split heat pump system with associated duct system in the office area of building AS119.

General description – The contractor shall:

The purpose of this project is to install a 3.5 ton split heat pump with 7.5 KW heat strips and related duct work. The removal of 7 each hot water radiators and all related piping; i.e. supply and return lines.

Detailed requirements and specifications –

The contractor shall field verify all quantities, measurements, dimensions and types of material for submission of his quote. Data provided in this scope is for reference only, however the specified material shall be used when it meets the applicable requirements. AS119 is a 2880 square foot single story building; 120'in length and 24'wide.

HVAC WORK:

Demolition:

Remove 7 radiators and all related piping approximately 270 Lf. from office area. Cap hot water supply and return line just past the unit heater in garage area nearest the office spaces. (See M1)

Construction:

Install 3.5 ton Split System Heat Pump to include:

1. 3.5 ton Heat Pump Condensing Unit; at least 16 SEER rating and matching 3.5 Ton AHU upflow with 7.5 KW heat strip. These units shall be 208/230 volt; single phase.
2. Pan for 3.5 ton AHU vertical mount and with trap overflow switch.

3. Fabricate metal stand to mount AHU for vertical up-flow installation.
4. 25 ft. line set
5. Sight glass and filter drier in liquid line at condensing unit.
6. Digital heat pump thermostat
7. ¾" PVC condensate drain for AHU.
8. Ductwork for installation of system: to be in accordance with sections 602,603,604 of NC Mechanical Code.
    a) Supply plenum (refer to drawing M-1)
    b) Supply trunk (refer to drawing M-1)
    c) (3) 8" takeoffs with dampers; (3) 24" x 24" ceiling register w/8" collar.
    d) (1) 7" takeoff with damper; (1) 24" x 24" ceiling register w/7" collar.
    e)
    f) (4) 6" takeoffs with dampers; (4) 24" x 24" ceiling register w/6" collar.
    g) (8) Metal duct run outs with R-6 insulation(refer to drawing M-1)
    h) Flex runs to ceiling registers are permissible if 5' or less in length.
    i) Apply duct sealant at all duct seams and take off connections; use UL 181 A-M & BM standards.
    j) Duct to be insulated with 2" fiberglass duct wrap rated at R6.
    k)

Balance system at completion of install.

Specification:

1. Contractor shall follow all NC mechanical codes and Base regulations during installation of heat pumps.
2. Contractor shall abide by EPA and OSHA safety regulations during this project.

STRUCTURAL:

Demo:

1. Remove ceiling tiles and entire metal grid system throughout the office area; to facilitate the installation of the duct system. Save fiberglass insulation to be reinstalled with new ceiling tiles.

New Work:

Install a 24"x 24" drop ceiling grid throughout the building office area where existing drop ceiling and grid was demoed. This shall include the bathroom. There is approximately 1400 S.F. of drop ceiling grid to be constructed.

ELECTRICAL:

1.) Demolition:

1. Remove circuit breakers from the SEP panel 225 amp 120/208 single phase panel board located in the bathroom storage room. Disconnect, remove breakers and cap wire leads to the following circuits 21, 23, 26, 29, 31, 35, 37, 39 and 41. Conduits and conductors are to remain
2. Circuit 21, 23, 31and 33 were previously 208 circuits and one ungrounded conductor from each circuit is connected to the neutral bar for a 120 volt system; remove from neutral bar and cap wire leads.
3. Remove one 208 volt range receptacle in room 105 on south east wall, cap wires and install a metal S.S blank cover.
4. Remove two 120 volt receptacles to existing window AC units in room 105 on south east wall, cap wires and install S.S blank covers.

2.) Construction:

1. Install EMT conduit, wiring and HACR circuit breakers from SEP panel to one air handler and condensing unit. Conduits shall be installed above drop ceiling except where feeding down to panel, AHU and outdoor circuits.
2. Contractor shall coordinate with the HVAC contractor to properly size unit disconnect, branch circuit and over current protection for one air handler and one condensing unit. Install 1ea single phase 240 volt NEMA 3R fused disconnect switch near condensing unit. Install one each single phase 240 volt NEMA 1 fused disconnect for AH unit. Arrange any circuit breakers in Panel SEP for new equipment to accept new single phase breakers. Provide and connect whips from disconnects to equipment complete. Over current protection shall be installed in accordance with the manufactures specifications, if the over current is specified as “MAX FUSE ONLY” the safety switches shall be fused according to manufactures specifications FPN.
3. Install one dedicated 120 volt 20 amp receptacle circuit and breaker from panel SEP to feed a GFCI receptacle near AHU and condensing unit. Install one WR GFCI receptacle close to AHU within 25 feet of outdoor unit to include the in use cover for outdoor use.

3.) Specifications:

1. Equipment, material, installation and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70.
2. All conductors shall be copper and insulation shall be 600 volt, type THHN/THWN conductors smaller than #10 shall be solid unless noted elsewhere.
3. Disconnects and panels shall be legibly marked to indicate its purpose with panel name, voltage and circuit numbers. The markings shall be of sufficient durability to withstand the environment involved with type written indexes for panels following new circuit installation. Label outside covers of new panels and disconnects as specified with laminate stamped type name plates attached with tamper resistant screws and or approved methods.

Every circuit and modification shall be legibly identified as to its clear, evident and specific purpose. This shall include sufficient detail to allow each circuit to be distinguished from all others. Spare positions that contain unused over current devices or switches shall also be described accordingly. No circuit shall be described in a manner that depends on transient conditions of occupancy. Install blank inserts to panel as needed.

4. Contractor shall verify all quantity, measurements, dimensions and types of material.

GENERAL REQUIREMENTS:

Provide installation, start up, and maintenance manuals for new equipment.
Provide all label information (model and serial numbers) for removed and new equipment to FSC upon work completion; on the Maximo update form.
Contractor shall follow all NC Mechanical codes and Base Regulations for install.
Remove all debris from work site and clean site at completion of job.
Demo'ed hot water radiator units and related piping shall become property of the contractor and shall be removed from the site by the contractor.
Contractor shall refer to the written scope of work and drawings to ensure the entire scope of the project is accomplished.

SUBMITTALS:

1. Provide equipment manufacturer's specs after contract award. Provide installation, start up and maintenance manuals for new equipment.

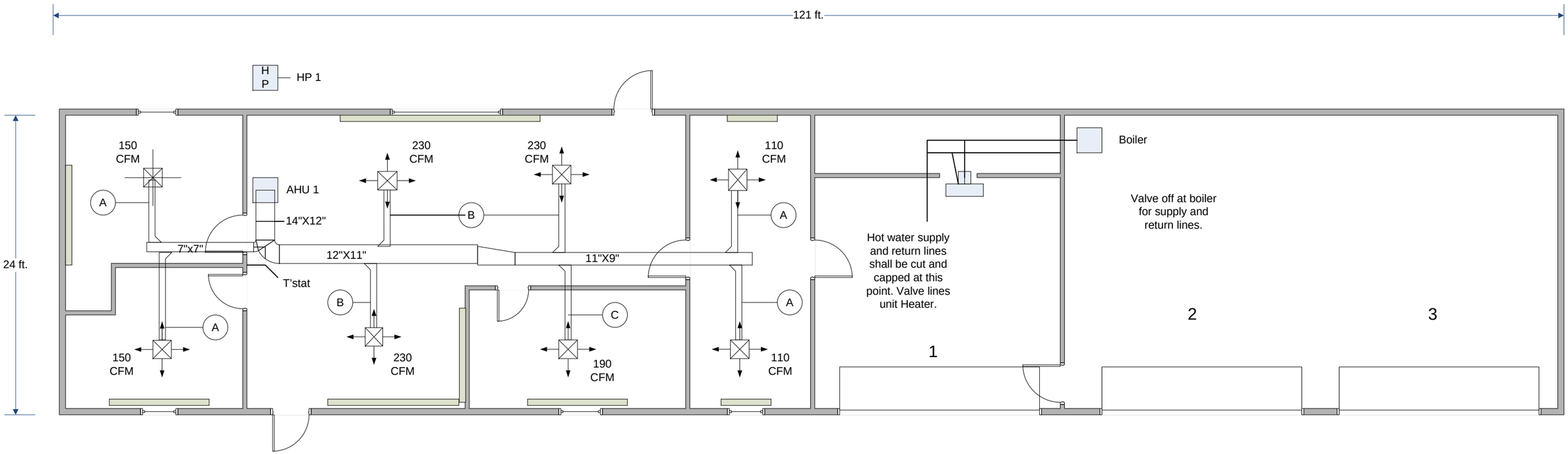
SPECIAL SCHEDULING AND ACCESS:

Poc: Bruce Fergason Ph: 449-6943; Ssgt. Puetz Ph: 449-6943

SPECIAL CONDITIONS: Note – the existing boiler will remain as the source of heat for the work bays.

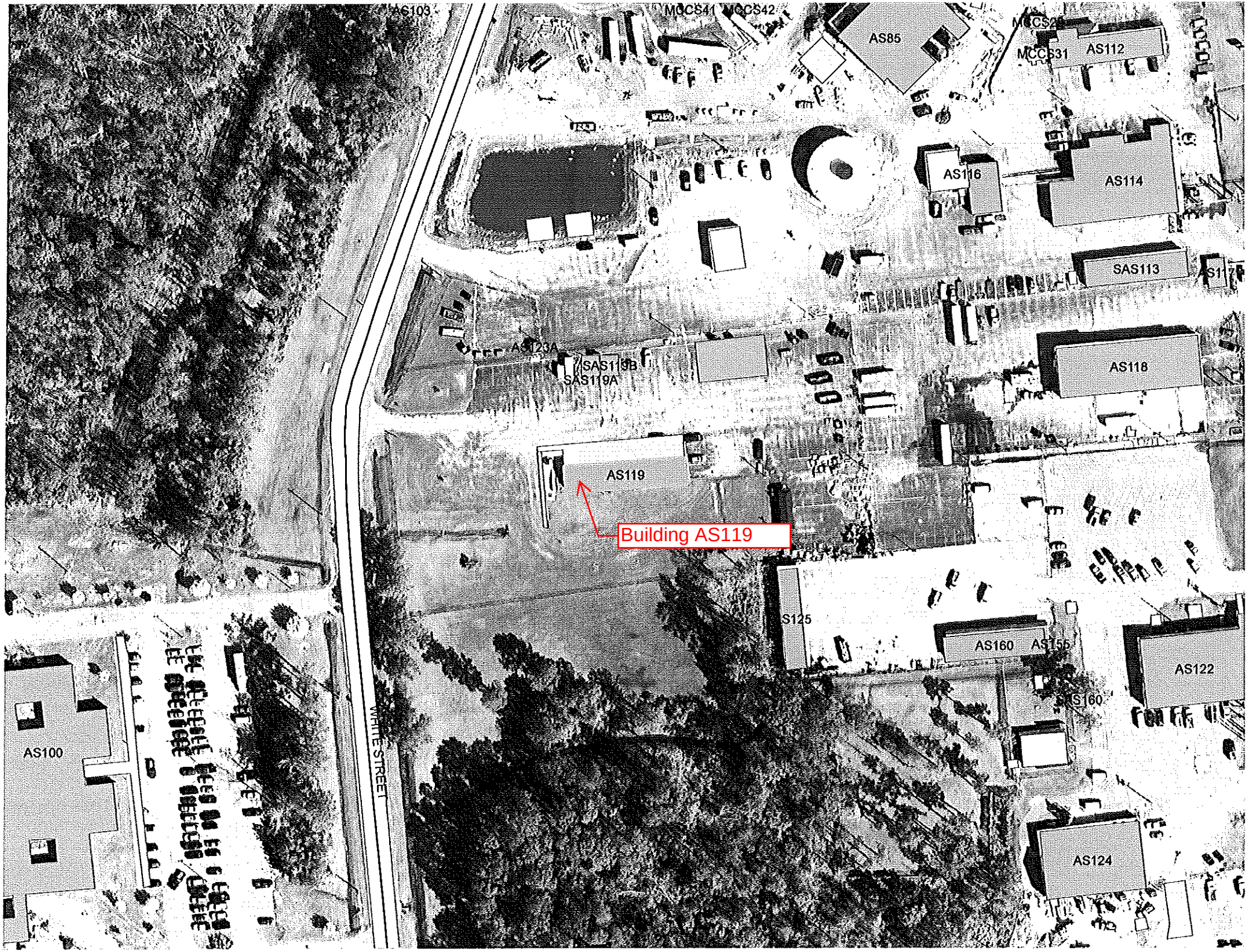
HAZARDOUS MATERIALS: None

ENVIRONMENTAL: None



Duct run out sizes:	
A	6" round metal
B	8" round metal
C	7" round metal
Duct design: 1400 CFM@ .2 SP. This drawing is	
for reference only and can vary depending on	
equipment. Contractor shall follow unit	
specifications for duct design.	
Radiators	

Building AS119 New River Air Station	Mechanical Plan				
	HVAC				
John D. Grant, Mech. Engr. Tech	SIZE	FSCM NO	DWG NO M1		REV
Drawing not to scale	SCALE	1/8" = 1'-0"		SHEET	1 OF 1


AS103
MCCS41
MCCS42
AS85
MCCS28
MCCS31
AS112
AS116
AS114
SAS113
AS123A
SAS119B
SAS119A
AS118
AS119
Building AS119
S125
AS160
AS155
AS122
SAS160
AS100
WHITE STREET
AS124

MAXIMO Equipment Update Form

Data Collector: _____ Phone: _____ Date: ____/____/____

Bldg: _____ Specific Location: _____

* __ AC, Computer Room
* __ AC, Package
* __ AC, Package Terminal
__ Assembly, Trap line
* __ Backflow Preventer
* __ Chiller, Air Cooled Recip
* __ Chiller, Air Cooled Screw
* __ Chiller, Air Cooled Scroll
* __ Chiller, Water Cooled Recip
* __ Chiller, Water Cooled Screw
* __ Compressor, Control Air
* __ Compressor, Industrial Air
* __ Dryer, Refrigerated Air
* __ Exchanger, Heat
* __ Evaporator, Freezer
* __ Evaporator, Refrigerator
* __ Fan, Exhaust
* __ Furnace, Oil
__ Heater, Space
* __ Heat Pump, Geo-Thermal
* __ Heat Pump, Indoor Unit
* __ Heat Pump, Outdoor Unit
* __ Heat Pump, Package
* __ Heat Pump, Package Terminal
* __ Pump, Chilled Water
* __ Pump, Circulating, Domestic Water
* __ Pump, Circulating, Dual Temp Water
* __ Pump, Circulating, Heating Water
* __ Pump, Condensate
* __ Pump, Condenser
* __ Pump, Sump
* __ Regulator, Temperature
* __ Tank, Hot Water Storage
* __ Tower, Cooling
* __ Unit, Air Handling
* __ Unit, AC Condensing
* __ Unit, Freezer Condensing
* __ Unit, Refrigerator Condensing
* __ Unit, Fan Coil
__ Unit, TAB (Attach Room No. List)
__ Unit, VAV (Attach Room No. List)
__ Valve, Pressure Reducing
__ Valve, Steam Pilot
* __ Water Heater
__ **Other** _____

Demolished/Removed Equipment

Maximo no: ____**N/A**___ Ser no: ____**N/A**_____

New/Replacement Equipment

Manufacturer: _____

Model no: _____

Ser no: _____

Type: __Elec __Oil __LP Gas __Nat Gas __Steam __Hot Water

Motor Data: HP___ Volts_____ Phase___ RLA_____ RPM_____ Frame___

Tons____ No. of Motors____ no. of Belts____ Belt size(s)_____ CFM _____

KW ____ Refrig type_____ Refrig Qty_____ Filter Size(s) _____