

## PROJECT SPECIFICATIONS - HVAC SYSTEM

### 1. General Requirements

The HVAC system shall provide heating, ventilation, and air conditioning for the entire facility. All equipment shall comply with ASHRAE standards and local building codes.

### 2. Performance Requirements

2.1 The system shall maintain indoor temperature between 68°F and 75°F under all operating conditions.

2.2 Minimum airflow rate shall be 1200 CFM for the main distribution unit.

2.3 The system shall provide minimum 15 CFM per person of outdoor air.

2.4 Maximum sound level shall not exceed 45 dB(A) at 5 feet from any unit.

### 3. Equipment Specifications

#### 3.1 Air Handling Unit

- Cooling capacity: minimum 48,000 BTU/hr
- Heating capacity: minimum 36,000 BTU/hr
- Supply fan motor: 5 HP, 3-phase, 460V
- Filter efficiency: minimum MERV 13
- External static pressure: minimum 1.5 in. w.g.

#### 3.2 Ductwork

- Main supply ducts shall be constructed of galvanized steel, minimum 22 gauge
- All ductwork joints shall be sealed with UL 181 rated mastic
- Insulation shall be minimum R-6 value with vapor barrier
- Maximum duct leakage shall not exceed 4% of system airflow

#### 3.3 Controls and Instrumentation

- Building automation system shall be DDC with BACnet protocol
- Temperature sensors accuracy:  $\pm 0.5^{\circ}\text{F}$
- Pressure sensors accuracy:  $\pm 2\%$  of full scale
- All control valves shall be modulating type with 0-10V control signal

### 4. Installation Requirements

- 4.1 All equipment shall be installed level and plumb with vibration isolators
- 4.2 Clearance of minimum 36 inches shall be maintained for service access
- 4.3 Refrigerant piping shall be pressure tested to 450 psi with nitrogen
- 4.4 System shall be flushed and cleaned before commissioning

### 5. Testing and Commissioning

- 5.1 Air balancing shall be performed by certified technician per AABC standards
- 5.2 Test and balance report shall verify  $\pm 10\%$  of design airflows
- 5.3 Minimum 72 hours of continuous operation required before acceptance
- 5.4 Sound level testing shall be performed at all occupied spaces

### 6. Warranty and Maintenance

- 6.1 Equipment warranty: minimum 5 years for compressors, 2 years for other components
- 6.2 Contractor shall provide 1 year of maintenance service after acceptance
- 6.3 Operation and maintenance manuals shall be provided in electronic format