

**SECTION 23 0100****OPERATION AND MAINTENANCE FOR HVAC SYSTEMS****PART 1 - GENERAL****1.1 1.1 SECTION INCLUDES**

- A. A. This section provides for the preparation and submission of operation and maintenance manuals.
- B. B. Each section included in Division 23 - Heating, Ventilating and Air Conditioning incorporates this section by reference and is incomplete without the provisions stated herein.

**1.2 1.2 RELATED SECTIONS**

- A. A. Section 23 0590 - Contractor Coordination with Testing, Adjusting, and Balancing for HVAC.

**1.3 1.3 PREPARATION**

- A. A. Furnish four copies of complete operation and maintenance instructions, service manuals and parts list applicable to each manufactured item of equipment furnished. Bind operation and maintenance information in four separate looseleaf binders with the electronic copy in the binder of the top copy and deliver to the A/E at least four weeks prior to final review of the project.
- B. B. Organize binders to contain like equipment such as pumps, piping, valves or air handlers, terminal boxes, condensers, etc., in separate divisions. Provide a complete double index for each binder to include:
  - 1. An alphabetized list of the products by name.
  - 2. An alphabetized list of manufacturers whose products have been
  - 3. incorporated in the work, together with their addresses and the name, addresses and telephone numbers of the local sales representative or supplier.
  - 4. For each section of product, equipment or system, organize the data as follows:
    - a. Furnish a general description of the equipment or system listing

**1.4 THE MAJOR COMPONENTS, INTENDED SERVICE AND OTHER GENERAL DATA.**

- A. Building Automation System (BAS) shall be Siemens compatible with the existing campus system. Each DX roof top unit and DX split system will have integral controls with a BACnet interface. The Siemens System will connect to the BAC net interfaces and monitor and trend the points and connect to the existing campus system via the campus LAN.
- B. Furnish technical data including nameplate data, design parameters, ratings, capacity, performance data, operating curves, characteristics and the like. Clearly distinguish between information which does and does not apply.
- C. List warnings and cautions to be observed during both installation and operations.
- D. Fully detailed installation and operation instructions including special tools required, alignment instructions, start-up, and shut-down sequences.
- E. Furnish maintenance, service and repair instructions including maintenance and service schedules, materials, and methods for performing routine and annual service.
- F. Furnish a troubleshooting guide and check list indicating common failures, test methods and procedures for determining component fault or failure.
- G. Furnish a spare parts list indicating part and order number with name, address, and telephone number of supplier. Include current prices of replacement parts and supplies.
- H. Furnish diagrams including controls, wiring, installation or operation of the equipment or system.
- I. Furnish copies of all approved submittals. Refer to Section 01 33 00.
  - 1. Furnish copies of all test reports. Refer to Section 23 05 93, and Section 01 33 00.

2. Print copies of the "AS-BUILT" drawings and supply one copy electronically. Refer to Section 01 78 39.
3. Furnish all warranties and guarantees.
4. Furnish hard copy of all points controlled by BAS system, and fire alarm system.
5. Furnish electronic and hard copy of all programs involved with fire alarm and BAS control systems.

**PART 2 - PRODUCTS**

**2.1 NOT USED.**

**PART 3 - EXECUTION**

**3.1 NOT USED.**

**END OF SECTION 23 0100**