# PART 1: GENERAL

## 1.01 Requirements:

## A. Metering:

- 1. Building utilities are required to be metered including but not limited to: chilled water, hot water, domestic water and electricity. Building BTU metering shall also be provided in accordance with SHSU Standards and construction details. Locate hydronic metering equipment inside a machine room. Provide isolation valves and/or bypasses to accommodate meter service.
- 2. For buildings with mixed occupancy (E&G and non-E&G), provide sub- metering to properly allocate utility costs between organizations. Coordinate sub-metering requirements with the University.

## B. Valves:

- 1. Provide valves with extended stems to be accessible on outside of insulation. Valve body and stem shall be insulated.
- 2. Provide means of access where valves are not exposed.
- 3. Provide valve vaults or boxes, as conditions demand, to provide access to valves installed below grade. CONNECT DRAIN TO STORM SEWER
- 4 Hydronic equipment connections shall be provided with shutoff valves and pressure relief valves on supply and return piping.
- 5. Shut off valves shall be provided at each floor, AHU, and FCU
- 6. All hydronic isolation valves shall be integral gasketed butterfly valves.
- 7. Flow control valves for ATU & AHU 1-1/4" or smaller shall be ball valves, greater than 1-1/4 shall be globe valves.
- 8. GATE VALVES ARE NOT ALLOWED
- C. Hangers and Supports:
  - 1. NO ROOF TOP UNITS for Residence Life Buildings without prior approval
- D. Vibration and Sound Control:
  - 1. All pumps shall be floor mounted
- E. Mechanical Identification:
  - 1. Hydronic Piping: Mark all piping with plastic pipe markers. Color and letter coding Standard is ANSI A13.1, "Scheme for Identification of Piping Systems."

F. Testing, Adjusting, and Balancing:

1. TAB work shall be done by a University approved, independent contractor.

## **PART 2: PRODUCTS**

2.01 Motors:

A. Motors shall be high efficiency - speed drive: ABB Speed Drives Only.

## 2.02 Valves:

- A. Section Valves 2" and smaller shall be full port ball type, 2<sup>1</sup>/<sub>2</sub>" and larger shall be butterfly type.
- B. Shutoff Valves 2" and smaller shall be full port ball type, 2<sup>1</sup>/<sub>2</sub>" and larger shall be butterfly type.
- C. Drain Valves 2" and smaller shall be full port ball type, 2<sup>1</sup>/<sub>2</sub>" and larger shall be butterfly type.
- D. Check Valves shall be spring-loaded silent type.
- E. Ball valves shall be full-port, bronze valve, with Teflon seat. Watts or Nibco valves preferred.
- F. Pratt or Keystone butterfly valves preferred.

### 2.03 Piping:

A. All piping and fittings shall be DOMESTIC MANUFACTURED

### END OF STANDARD