

## Division 28 Electronic Safety and Security

### 1.1 283111 – DIGITAL, ADDRESSABLE FIRE ALARM SYSTEMS

- A. The manufacturer shall be FCI, 7100 Series FACP.
- B. Approval by an authority having jurisdiction is required before shop drawings are reviewed.
- C. Record Drawings: Include changes made during system testing and acceptance.
  - 1. Record drawings shall be provided a minimum of 48 hours prior to the time of scheduling of partial or final inspection. Indicate the following:
    - a. Alarm initiation devices with addresses.
    - b. Alarm signal devices with module location/address and circuit number.
    - c. Door holder and smoke dampers with module location/address.
    - d. Air handling units with module location/address.
    - e. Junction and pull boxes.
    - f. Layout of conduit.
    - g. 120 VAC power source for control panel, door holders, and fire/smoke dampers.
    - h. Location of all “end-of-line resistors”.
    - i. Calculations for voltage drop on circuits, battery, and audio amplifier sizing.
  - 2. Record drawings shall be updated and resubmitted after all testing and checkout has been completed and accepted, and shall include any corrections and/or changes made during final inspection.
- D. Fire alarm systems shall be addressable-type. The system shall be capable of on-site programming without use of computer connections. The control panel shall be capable of disabling and enabling all addressable devices during periods of maintenance or construction.
- E. Initiating Devices:
  - 1. Smoke detectors shall be photoelectric.
  - 2. Heat detectors shall be a combination of rate-of-rise and fixed temperature.
  - 3. Duct-mounted smoke detectors shall be photoelectric.
  - 4. Manual stations shall be single-action addressable.
- F. Signaling Devices:
  - 1. Audible devices shall be multi-tone horns or voice speakers.
  - 2. Visual devices shall be synchronized zenon strobes.
  - 3. Audible/visual devices shall be a combination of those above.

- G. Manual station guards, where required, shall be STI Stopper II with a 9-volt battery powered warning horn.
- H. Resident's Room Smoke Alarm:
  - 1. 120-volt powered
  - 2. Local annunciation
  - 3. Connected to fire alarm system
- I. All changes, modifications, or addendums to alarm systems require the approval of a facilities fire safety specialist.
- J. Fire alarm panel must report a fire or trouble and system reset (normal) to public safety via digital communicator. Provide Radionics communicator for existing fire alarm systems.
- K. Provide full output/input table of fire alarm monitor and control points to Owner upon completion of installation.
- L. Install fire alarm cable in factory-colored red EMT conduit. Exposed raceways shall be Wiremold.
- M. Fire alarm testing shall be witnessed by a representative of Creighton University Environmental Health and Safety.
- N. FACP shall be keyed to match pull stations. Key shall match other systems on campus. Coordinate with Owner.
- O. FACP shall signal energy management system on alarm.
- P. Provide two (2) phone lines to digital communicator.
- Q. At completion of fire alarm testing, reprogram security access codes per Owner's requirements.

**1.2 336113 – UNDERGROUND HYDRONIC ENERGY DISTRIBUTION**

- A. Pipe Schedule:

<b>SERVICE</b>	<b>MATERIAL</b>
Chilled water piping, buried	Preinsulated piping system consisting of service pipe, polyurethane foam insulation and seamless extruded HDPE jacket

**1.3 336313 – UNDERGROUND STEAM AND CONDENSATE DISTRIBUTION PIPING**

- A. Pipe Schedule:

**SERVICE**

**MATERIAL**

Steam and condensate piping, buried

Preinsulated piping system consisting of service pipe, preformed high temperature mineral wool insulation and 10-gallon steel conduit insulated with polyurethane foam and a FRP jacket