PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:
   1. Furnish and install electric heating cables in roof drain lines as described in Contract Documents.
   2. Furnish and install electric heat trace cable system and thermostat control on hot and cold water piping in water heater room as described in Contract Documents.
   3. Furnish and install heating cable system for rain gutters and roof eaves as described in Contract Documents.
   4. Furnish and install electric heating cable for freezer sub-floor heat trace system as described in Contract Documents.

B. Related Sections:
   1. Section 26 0501: Common Electrical Requirements

1.2 SYSTEM DESCRIPTION

A. Performance Requirements:
   1. Roof Drain Heaters: Cabling shall maintain piping at 38 deg F 3 deg C when air temperature is 9 deg F minus 13 deg C. Heat loss per foot of pipe for wattage requirements shall be 15 to 20 watts per linear foot.
   2. Heat Trace: Protect piping systems against freezing with specified cable, one inch thick glass fiber insulation, and at ambient temperature down to minus 10 deg F.

1.3 SUBMITTALS

A. Shop Drawings: Show layout spacing and cable sizing required by Cable Manufacturer for site conditions. Provide watts per lin ft at required volts AC of cable to be used.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Pipe Trace
   1. Cable:
      a. Flat, flexible, low heat density, self-regulating, parallel circuit heat trace cable with overall jacket, rated at 3 watts/lin ft at 120 volts AC and at 50 deg F, and can be cut in field to any length without effect on operation. UL listed system.
      b. Class One Quality Standard: Type 3XL by Raychem Corp.
   2. Connection, Splice, And Accessory Kits:
      a. Class One Quality Standard: Type XLK by Raychem Corp.
   3. Control Thermostat: Surface mounted with ambient sensor, non-adjustable setpoint of 40 deg F, enclosure with conduit opening, rated at 22 amps at 120 volt AC, and UL listed.

B. Rain Gutter And Roof Eave Heaters
   1. Cable:
      a. Class One Quality Standard: Chromalox TW6-CR.
   2. Temperature And Moisture Sensitive Controller:
a. Quality Standard: Chromalox GIT-3B.

3. Contactor (if required):
   a. Category Four Approved Products. See Section 01 6000 for definitions of Categories.
      2) Square 'D': Class 8502.

4. Pilot Light:
   a. Include plate with engraved text, 'ROOF HEATING CABLE.'
   b. Class Two Quality Standard: Pass & Seymour 2151 Red.

5. Factory prepared, UL / ULC recognized splice and termination kits by Cable Manufacturer.

2.2 MANUFACTURERS

A. Contact Information:
   8. Technitrace Inc, Murray, UT  (801) 685-2500.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pipe trace:
   1. Install cable for full length of piping before installation of piping insulation. Tape at 2-foot intervals
      on straight pipe and on each side of valves, fittings, and piping accessories with glass cloth
      adhesive tape furnished by Heat Trace Cable Manufacturer. Make splices, tee connections, end
      seals, and power connections with accessory kits furnished by Heat Trace Cable Manufacturer.
   2. Route 120 volt power connections to heating cable through control thermostat and energize only
      when room ambient temperature is at 40 deg F, fixed setpoint of thermostat, and lower.
   3. Mount control thermostat on wall near piping. Coil and tape sensor capillary. Secure sensor
      element and coiled capillary to wall with metal clips to prevent damage and to accurately sense
      room temperature near piping.

B. Rain Gutter And Roof Eave Heaters:
   1. Install moisture probe for controller in rain gutter.
   2. Install pilot light in corridor or foyer to indicate when cables are operating.
   3. Terminate raceway on exterior of building at heat cable location with weatherproof junction box.