1 General

1.1 REFERENCES

.1 American National Standards Institute/National Fire Prevention Association (ANSI/NFPA)
  .1 ANSI/NFPA 13 , Installation of Sprinkler Systems.
.2 Underwriters Laboratories of Canada (ULC)

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit product data shop drawings in accordance with Submittal Procedures and in accordance with ANSI/NFPA 13, working plans and design requirements.

.2 Submit a complete set of shop drawings and hydraulic calculations are to the Fire Protection Engineer of HRSDC for approval.

1.3 ENGINEERING DESIGN CRITERIA

.1 Design system in accordance with ANSI/NFPA 13, using following parameters:
  .1 Hazard:
    .1 To suit occupancy.
  .2 Pipe size and layout:
    .1 Hydraulic design .
    .2 Sprinkler head layout: to ANSI/NFPA 13 or as directed by authorities having jurisdiction .
    .3 Revise head locations to suit new ceiling grid.

1.4 CLOSEOUT SUBMITTALS

.1 Provide maintenance data for incorporation into manual specified in Closeout Submittals.
.2 provide hard copy as-built drawings for each manual and one copy of AutoCad plans in version 2007 or newer.

1.5 EXTRA MATERIALS

.1 Provide maintenance materials in accordance with Closeout Submittals.
.2 Provide spare sprinklers and tools as required by ANSI/NFPA 13 and as specified elsewhere.

2 Products

2.1 PIPE, FITTINGS AND VALVES

.1 Pipe:
- .1 Ferrous: to ANSI/NFPA 13.
- .2 Copper tube: to ANSI/NFPA 13.
- .3 Flexible, braided, stainless steel hose: to ANSI/NFPA 13 and ULC listed for fire protection service.

.2 Fittings and joints to ANSI/NFPA 13:
- .1 Ferrous: screwed, welded, flanged or roll grooved.
- .2 Copper tube: screwed, soldered, brazed.

.3 Valves:
- .1 ULC listed for fire protection service.
- .2 Up to NPS 2: bronze, screwed ends, OS & Y; gate.
- .3 NPS 2 1/2 and over: cast iron, flanged or roll grooved ends, indicating butterfly valve.
- .4 Swing check valves.
- .5 Ball drip.

.4 Pipe hangers:
- .1 ULC listed for fire protection services.

.5 Produce pipe and fittings from minimum 50% recycled materials.

2.2 SPRINKLER HEADS

.1 General: to ANSI/NFPA 13 and ULC listed for fire services.

.2 Refer to schedule on drawings for sprinkler head types.

2.3 SUPERVISORY SWITCHES

.1 General: to ANSI/NFPA 13 and ULC listed for fire service.

.2 Valves:
- .1 Mechanically attached to valve body, with normally open and normally closed contacts and supervisory capability.

.3 Flow switch type:
- .1 With normally open and normally closed contacts and supervisory capability.

.4 Pressure alarm switch:
- .1 With normally open and normally closed contacts and supervisory capability.

2.4 FIRE DEPARTMENT CONNECTION

.1 To ANSI/NFPA 13 and ULC S543 listed, siamese type, location as indicated. Thread specifications to be compatible with local fire department.

.2 Polished bronze. Threaded metal caps and chains.

2.5 SIGNS

.1 Signs for control drain and test valves: to ANSI/NFPA 13.

3 Execution

3.1 INSTALLATION

.1 Install, inspect and test to acceptance in accordance with ANSI/NFPA 13 and the approval of the Authority Having Jurisdiction.
.2 Relocate heads / provide new where required to suit architectural, mechanical and electrical revisions. Offset piping where required to provide room for new ductwork. Coordinate exact requirements on site.
.3 Adjust pipe routing to suit structure, ceilings & partitions. Coordinate sprinkler head locations with final partition layouts, ceiling arrangement and diffuser & light locations.
.4 Provide and install all main drains, auxiliary drains for test connections, flow stations etc., and carry to sanitary system, suitable floor drain or building exterior.
.5 Protect sprinkler heads against mechanical injury with chrome metal guards where necessary.
.6 Provide chrome plated escutcheons to all piping through walls, floors, ceilings in finished areas.
.7 Revise head locations to suit new ceiling grid. Align heads in rows, and center within each tile.

3.2 ELECTRICAL GENERAL

.1 Do complete installation in accordance with requirements of:
  .1 Electrical Specifications and this specification.
  .2 CSA 22.1 Canadian Electrical Code.
  .3 ANSI/NFPA 70.
  .4 ANSI C2.
.2 Provide 120V power wiring for components and accessories from spare breakers in 120V emergency power panels.
.3 Fully enclose or properly guard electrical wiring, terminal blocks, high voltage above 70 V contacts and mark to prevent accidental injury.
.4 Do underground installation to CAN/CSA C22.3No.7, except where otherwise specified.
.5 Conform to manufacturer's recommendations for storage, handling and installation.
.6 Check factory connections and joints. Tighten where necessary to ensure continuity.
.7 Install electrical equipment between 1000 and 2000 mm above finished floor wherever possible and adjacent to related equipment.
.8 Protect exposed live equipment such as panel, mains, outlet wiring during construction for personnel safety.
.9 Shield and mark live parts "LIVE 120 VOLTS" or other appropriate voltage.
.10 Install conduits, and sleeves prior to pouring of concrete.

.11 Holes through exterior wall and roofs: flash and make weatherproof.

.12 Make necessary arrangements for cutting of chases, drilling holes and other structural work required to install electrical conduit, cable, pull boxes, outlet boxes.

.13 Install cables, conduits and fittings which are to be embedded or plastered over, neatly and closely to building structure to minimize furring.

End of Section