PART 1 - GENERAL

1.01 Design by NICET Level IV certified fire protection technician, fire protection engineer, or mechanical engineer registered in the state of Alaska. Each drawing and the cover of each set of calculations signed and dated by the NICET certified technician or engineer.

1.02 Consultant to comply with requirements of NFPA 13 Owner’s Certificate. Consultant to provide, at a minimum, the following information in the bid documents:

A. Building Floor Plan Layout

B. Building Cross Section including ceiling construction and non-metallic pipe protection

C. Location and rating of firewalls

D. Location of concealed and small spaces, enclosures in which no sprinklers are to be installed

E. Occupancy classes

F. High temperature sprinkler information

G. Capacity of dry pipe system

H. Pipe type and schedule

I. All valves, alarms, and test connections

J. Product data for pipe, valves, alarms, and other appurtenances

K. Provisions for inspection and flushing

L. Horizontal Force Factor

M. Clear indication of extent and connections to any existing water or sprinkler systems if applicable

1.03 Consultant to require, at a minimum, the following information to be submitted by the contractor:

A. Building Floor Plan Layout

B. Building Cross Section including ceiling construction and non-metallic pipe protection

C. Location of concealed and small spaces
D. High temperature sprinkler information

E. Capacity of dry pipe system

F. Pipe type, schedule, and cutting lengths

G. All valves, alarms, and test connections

H. Product data for sprinklers, valves, alarms, and other appurtenances

I. Provisions for inspection and flushing

J. Clear indication of extent and connections to any existing water or sprinkler systems if applicable

1.04 Ordinary Hazard Group 1 occupancies are the minimum allowed on campus. Exceptions such as 13R or 13D in residential occupancies require approval by AHJ. (Designers allowed to use LH sprinkler spacing in typical LH areas while providing OH hydraulics out to the branch connections.)

1.05 Hydraulic calculations for each zone will demonstrate that the required pressure is a minimum 10% lower than supplied pressure at design flow rate.

1.06 An NFPA compliant sprinkler system shall be installed in all UAF buildings where required by code or where an adequate water supply is available. Coordinate elevator sprinklers with Division 14 and 26, NFPA 13 and 72, and ASME 17.1. Exemptions allowed in codes are authorized. The intent is to follow all State of Alaska amended codes or standards. This requirement is intended for new construction and not intended for existing UAF buildings.

1.07 Consultant shall evaluate sprinkler supply and demand and determine the need for a fire pump. Notify Facilities Services when calculations indicate need for fire pump. Coordinate emergency power supply with Division 26, FS/DDC, and the FS Division of Utilities.

1.08 Provide justification for dry pipe or preaction systems prior to design.

1.09 If existing system is being upgraded or extended, consultant shall show the necessary as-built condition within the contract documents. Consultant shall investigate existing condition of the system and make recommendation to the Facilities Services as to its replacement, renovation, or upgrade.

1.10 Consultant to provide horizontal force factor in bid documents for use in NICET Designer’s analysis of horizontal bracing
1.11 Special Construction features:

A. Pipe main drains outside building to a point clear of building foundation. Make provisions for draining inside the building during cold weather. Size for full flow during winter draining.

B. Main drain discharges to have large capacity interior catch basins to contain the large flow rate of a 2 inch main drain. Catch basin to contain the rust and scale and 4 inch waste connection.

C. Zone building by floor to the extent possible.

D. Install Control Valves Assemblies so each zone can be isolated from the rest of the system. Co-locate control valves whenever possible. Floor drain or catch basin receptor is to have adequate capacity to accept the high flow rate of drains. It is preferred that these devices be located in utility spaces.

E. Locate inspectors test ports at the farthest point of each sprinkler zone. Discharge all test ports to an appropriate location near a floor drain or outside of the building.

F. Insure access to all serviceable equipment especially inspectors test points.

G. Install piping and valves to allow for a full forward flow test of the back flow preventer. Require full flow test to be witnessed by FS/DDC and description of testing and results in the project O&M Manuals.

1.12 Written review and approval of the entire fire protection system design and arrangement from the following authorities are required:

A. Design engineer of record

B. Authority Having Jurisdiction.

C. Facilities Services

PART 2 - PRODUCTS

2.01 All products shall be third party independent, (e.g. U.L or F.M.) listed, labeled, and specifically approved for the fire protection application where they are used. Test or pressure gauges must include manufacturer or calibration dates within one year of substantial completion date.

2.02 Backflow preventer assemblies must be listed by Foundation for Cross-Connection Control and Hydraulic Research. Backflow prevention valves: Febco, Watts, or Ames, no alternate brands, no substitutions.

2.03 Piping to comply with NFPA 13. CPVC pipe permitted one (1) inch OD and above only and
only in residential applications with a protective covering. Threaded Schedule 10 and Polybutylene pipe are not permitted.

2.04 Sprinkler heads:

A. For concealed spaces and crawlspace use standard upright sprinklers with plain finish.

B. For unfinished areas such as storage rooms, mechanical rooms, and utilidors, use standard pendent type, plain finish, with wire protectors.

C. For finished areas, sprinkler heads shall be semi-recessed, chrome-plated pendent type with chrome escutcheon.

D. It is permissible to reuse existing sprinkler heads as long as the heads will not be directly removed from piping and in any way physically impacted by construction activities. The consultant will review the potential impacts with UAF FS/DDC and provide clear direction in the bid documents on which existing heads can be reused.

E. In high-end of specialty-use occupancies, consult with FS/DDC on use of full-concealed or semi-recessed sprinklers with finish other than chrome or corrosion resistant finish.

2.05 Flex sprinkler hose with threaded end fittings for sprinkler head installations heads shall be stainless steel braided and equivalent to 1-inch schedule for flow and pressure drop. Flexible sprinkler heads shall only allowed in certain retrofit situations or in non-frangible ceiling systems.

PART 3 – EXECUTION (NOT USED)

END OF SECTION