21 00 00 Fire Suppression

1.0 General

A. Wet Automatic Sprinkler Systems:

1. Design system hydraulically. Design to be done by qualified designer or FPE.
2. Victaulic piping systems are allowed. Polybutylene may be used when in conformance with the Illinois State Fire Prevention and Building Code.
3. A Post Indicator Valve Assembly shall be installed on the fire service entrance.
4. Control panels must be indoors. Sprinkler system controls shall be vertically mounted and accessible without the need for a ladder.
5. Service side and systems side pressure gauges shall be provided for all installations.
6. Ceiling type sprinkler control installations are not preferred. If this type installation is provided, adequate access panels (for service and maintenance) must be provided, 3’ x 3’ minimum.
7. A representative of the Office of Environmental Health and Safety as well as the construction project manager shall witness back flushing of all new installations and hydrostatic testing of new sprinkler installations. City of Normal Fire Department requires that they have a representative witness sprinkler and standpipe hydrostatic testing of new installations. Advanced notice shall be given, preferably seventy-two (72) hours.
8. Water gongs shall not be used.
9. Provide easily accessible fire pump test manifolds at grade level.

2.0 Products

A. Hydrants:

1. Specify standard butt height above finished grade, minimum 24".
2. Butts and steamer connections to face roadway or easiest means of access.
3. Hydrants with 5” or 5¼” valves. Hydrants shall be ordered with threads that match Town of Normal construction standards.
4. Hydrants shall have two 2½” national standard thread hose connection and one 4” national standard thread 6” pumper connection.
5. Hydrants shall be painted with the finish coat in the following colors: Illinois State high pressure system, fire hydrant red with a white bonnet.

B. Standpipe Station Cabinets:

1. The Town of Normal fire department does not need hoses.
2. Specify a 2½” national standard thread. The local fire department will use this for their hoses.

C. Portable Fire Extinguishers:

1. Provide fire extinguishers of type "ABC", "K", or "D" according to the space usage and the latest NFPA 10 standard for Portable Fire Extinguishers.
2. "ABC" type extinguishers shall be UL rating: 4-A: 60-B:C. Construction shall include steel shell, brass valve, and stainless steel handles. Preferred supplier shall be Amerex, model 441; other acceptable suppliers are Ansul and Badger.
3. Fire extinguishers must be mounted according to ADA standard.
4. Fire extinguisher cabinets
   A. Where shown on drawings, provide recessed cabinets for the extinguisher of sufficient depth to suit the style of trim designated by the engineer. Locked cabinets shall be requested in most areas. Acceptable manufacturers include: J.L. Industries, and Larsen's Manufacturing Co.
   B. The Office of Environmental Health and Safety will provide information regarding the location of extinguishers when space allocations are determined.

D. Fixed Wet Chemical Extinguishing Systems (Restaurant Systems)

1. Provide fixed wet chemical extinguishing systems (restaurant systems) according to the latest:
   a. NFPA 17A, Standard for Wet Chemical Extinguishing Systems
   c. BOCA National Building Code
   d. International Building Code
   e. Standard Building Code
   f. Uniform Building Code
2. Acceptance test must be done on systems.

3.0 Execution

A. Sprinkler Systems Installation:

1. Standpipe drain shall be piped to a floor drain.
2. Connecting main to be flushed prior to connection to sprinkler system.
3. Sprinkler system to be thoroughly flushed prior to connection to water supply.
21 30 00  Fire Pumps

1.0 General

A. The fire pump electric service shall be connected ahead of the building main secondary circuit breaker using either a tap off the switchgear line side bus or a tap directly off of the transformer secondary bushings. A line side tap is not required if the fire pump has emergency power backup.

B. If the building has an emergency generator, the generator shall be connected to the fire pump via a transfer switch in the fire pump controller. The generator shall start upon loss of voltage at the fire pump transfer switch.

C. If the building has a double-ended secondary system, the fire pump controller shall be connected ahead of both main breakers using the above methods and a transfer switch in the fire pump controller. If an emergency generator is used to provide backup power for the pump, connection to one of the normal sources and the emergency generator is sufficient.

D. Where copper clad conductors serve fire pumps, conductor must be prominently labeled at no less than three-foot intervals, to avoid confusion with compressed air lines or other fluid distribution lines.

E. All fire pumps are required to pass an acceptance test.

F. Fire pump testing shall be scheduled with the ISU Project Manager at least 72 hours in advance and shall be witnessed by Environmental Health and Safety.