



## Bureau of Fire Prevention Application for Permit

Occupant at  
Jobsite\_\_\_\_\_

Address of  
Jobsite\_\_\_\_\_

Contractor\_\_\_\_\_

Contractor's  
Address\_\_\_\_\_

Contractor's Phone  
#\_\_\_\_\_ Fax#\_\_\_\_\_

Date work is to begin\_\_\_\_\_ Set of plans included? Yes No

Description and plans of work to be done and the appropriate fee paid in full must accompany this application. **Checks should be made payable to "THE CITY OF JACKSON."** A permit shall constitute permission to maintain, store or handle materials, or to conduct processes, which produce conditions hazardous to property, or to install equipment used in conjunction with such activities in accordance with the provisions of the City of Jackson Fire Prevention Code, Chapter 10.

The permit shall be revoked if any violation of the code exist, or if any false statement or misrepresentations to material fact in the application, data or plans upon which the permit or approval was based. The permit shall be invalid if the authorized work or activity is not commenced within six months after issuance, or if the authorized work or activity is suspended or abandoned for a period of six months after the time of commencement. The permit is not transferable and any change in use, operation or tenancy shall require a new permit. A permit must be applied for a minimum of seven days before work is to start. All site inspections require 48-hour notice.

**I have read, understand, and agree to the permit application and submittal requirements.**

Signature of Applicant\_\_\_\_\_ Date\_\_\_\_\_

### For Fire Department Use

Received \_\_\_/\_\_\_/\_\_\_ Reviewed \_\_\_/\_\_\_/\_\_\_

Approved \_\_\_\_\_

BID \_\_\_\_\_ CID \_\_\_\_\_ Permit Code \_\_\_\_\_ Permit # \_\_\_\_\_ Voucher # \_\_\_\_\_

## Sprinkler System Plans and Calculations

Working plans shall be submitted for approval along with an application for permit to:

City of Jackson Fire Department  
518 N Jackson St  
Jackson MI 49201  
517-788-4150

before any equipment is installed or remodeled. Deviation from approved plans will require written permission from the City of Jackson Fire Department.

Working plans shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor, and shall show those items from the following list that pertain to the design of the system.

- (a) Name of owner and occupant.
- (b) Location, including street address.
- (c) Point of compass.
- (d) Full height cross-section, or schematic diagram, if required for clarity; including ceiling construction and method of protection for nonmetallic piping.
- (e) Location of partitions.
- (f) Location of firewalls.
- (g) Occupancy class of each area or room.
- (h) Location and size of concealed spaces, closets, attics, and bathrooms.
- (i) Any small enclosures in which no sprinklers are to be installed.
- (j) Size of city main in street and whether dead-end or circulating; and, if dead-end, direction and distance to nearest circulating main. City main test results and system elevation relative to test hydrant.
- (k) Other sources of water supply, with pressure or elevation.
- (l) Make, type, and nominal orifice size of sprinklers.
- (m) Temperature rating and location of high temperature sprinklers.
- (n) Total area protected by each system on each floor
- (o) Number of sprinklers on each riser per floor.
- (p) Total number of sprinklers on each dry pipe system, preaction system,

combined dry pipe-preaction system, or deluge system.

(q) Approximate capacity in gal of each dry pipe system.

(r) Pipe type and schedule of wall thickness.

(s) Nominal pipe size and cutting lengths of pipe (or center-to-center dimensions).

NOTE: Where typical branch lines prevail, it will be necessary to size only one typical line.

(t) Location and size of riser nipples.

(u) Type of fittings and joints and location of all welds and bends. The contractor shall specify

on drawing any sections to be shop welded and the type of fittings or formations to be used.

(v) Type and locations of hangers, sleeves, braces, and methods of securing sprinklers when applicable.

(w) All control valves, check valves, drain pipes, and test connections.

(x) Make, type, model, and size of alarm or dry pipe

(y) Make, type, model, and size of preaction or deluge valve.

(z) Kind and location of alarm bells.

(aa) Size and location of hose outlets, hand hose, and related equipment.

(bb) Underground pipe size, length, location, weight, material, point of connection to city main; the type of valves, meters, and valve pits; and the depth that the top of the pipe is laid below grade.

(cc) Piping provisions for flushing.

(dd) Where the equipment is to be installed as an addition to an existing system, enough of the existing system indicated on the plans to make all conditions clear.

(ee) For hydraulically designed systems, the information on the hydraulic data nameplate.

(ff) A graphic representation of the scale used on all plans.

(gg) Name and address of contractor.

(hh) Hydraulic reference points shown on the plan shall correspond with comparable reference points on the hydraulic calculation sheets.

(ii) The minimum rate of water application (density), the design area of water application, in-rack sprinkler demand, and the water required for hose streams both inside and outside.

(jj) The total quantity of water and the pressure required noted at a common reference point for each system.

(kk) Relative elevations of sprinklers, junction points, and supply or reference points.

(ll) If room design method is used, all unprotected wall openings throughout the floor protected.

(mm) Calculation of loads for sizing, and details of, sway bracing.

(nn) The setting for pressure-reducing valves.

(oo) Information about backflow preventers (manufacturer, size, type).

(pp) Information about antifreeze solution used (type and amount).

Working plans for automatic sprinkler systems with nonfire protection connections. Special symbols shall be used and explained for auxiliary piping, pumps, heat exchangers, valves, strainers, and the like, clearly distinguishing these devices and piping runs from those of the sprinkler system. Model number, type, and manufacturer's name shall be identified for each piece of auxiliary equipment.

### **Hydraulic Calculation Forms.**

Hydraulic calculations shall be prepared on form sheets that include a summary sheet, detailed work sheets, and a graph sheet.

The summary sheet shall contain the following information, where applicable:

(a) Date.

(b) Location.

(c) Name of owner and occupant.

(d) Building number or other identification.

(e) Description of hazard.

(f) Name and address of contractor or designer.

(g) Name of approving agency.

(h) System design requirements.

1. Design area of water application, sq ft.

2. Minimum rate of water application (density), gpm per sq ft.

3. Area per sprinkler, sq ft.

(i) Total water requirements as calculated including allowance for inside hose, outside hydrants, and water curtain and exposure sprinklers.

(j) Allowance for in-rack sprinklers, gpm.

(k) Limitations (dimension, flow, and pressure) on extended coverage or other listed special sprinklers.

Detailed work sheets or computer printout sheets shall contain the following information:

(a) Sheet number.

(b) Sprinkler description and discharge constant (K).

- (c) Hydraulic reference points.
- (d) Flow in gpm.
- (e) Pipe size.
- (f) Pipe lengths, center-to-center of fittings.
- (g) Equivalent pipe lengths for fittings and devices.
- (h) Friction loss in psi per ft of pipe.
- (i) Total friction loss between reference points.
- (j) In-rack sprinkler demand balanced to ceiling demand.
- (k) Elevation head in psi between reference points.
- (l) Required pressure in psi at each reference point.
- (m) Velocity pressure and normal pressure if included in calculations.
- (n) Notes to indicate starting points, reference to other sheets, or to clarify data shown.
- (o) Diagram to accompany gridded system calculations to indicate flow quantities and directions for lines with sprinklers operating in the remote area.
- (p) Combined K-factor calculations for sprinklers on drops, armovers, or sprigs where calculations do not begin at sprinkler.

A graphic representation of the complete hydraulic calculation shall be plotted on semilogarithmic graph paper and shall include the following:

- (a) Water supply curve.
- (b) Sprinkler system demand.
- (c) Hose demand (where applicable).
- (d) In-rack sprinkler demand (where applicable).

### **Water Supply Information**

The following information shall be included:

- (a) Location and elevation of static and residual test gauge with relation to the riser reference point.
- (b) Flow location.
- (c) Static pressure, psi.
- (d) Residual pressure, psi.
- (e) Flow, gpm.
- (f) Date.
- (g) Time.
- (h) Test conducted by or information supplied by.
- (i) Other sources of water supply, with pressure or elevation.

**Please be advised that neither approval of plans nor any statements made by City of Jackson Fire Department employees or agents shall relieve the architect, contractor or owner from compliance with applicable codes, regulations, or any Federal or State regulations including but not limited to the Americans with Disabilities Act.**

## **FIRE ALARM PERMIT APPLICATION INSTRUCTIONS**

Your submittal shall consist of the following:

### **1. Floor plan showing:**

- room, walls, and partitions;
- location of all initiating and indicating appliances;
- mounting heights of initiating devices and indicating appliances;
- device to device wiring diagram;
- size and number of conductors from device to device;
- zone identification (for addressable system--the particular address for each device);
- source of primary power (dedicated branch circuit with proper identification and that is secure from tampering);
- location of EOLR if used stating size and capacity of EOLR;
- wiring arrangement and relays for elevator capture;
- wiring arrangement and relays for HVAC shut down;
- minimum and maximum air velocities for HVAC UNITS to determine compatibility with duct mounted smoke detectors;
- zone description;
- interconnections of fire alarm control panels with offsite supervisory panel or equipment;
- number and location of phone lines, if used for offsite transmission of signals;
- where applicable, a scaled cross-section representation of detector mounting locations for door closure service;
- location of all fire alarm control panels, annunciator panels, digital communicator, or other offsite premises reporting devices;
- and a sequence of operation of the alarm system and the required "reset" procedures.

### **2. A single line zone riser diagram which indicates the zone, number of devices per initiating or indicating zone or circuit, EOLR--size and capacity.**

### **3. Manufacturer's cut-sheets on the following:**

- make, model, type of all fire alarm control panels;
- make, model, type of all fire alarm annunciator panels;
- make, model, type of all automatic detection devices;
- make, model, type of all manual pull stations;
- make, model, type of all automatic fire detection devices;
- make, model, type of all audible/visual indicating appliances including decibel rating (dBA) for audible devices;
- make, model, type of fire department command center equipment;
- make, model, type of all offsite premises reporting equipment;

- make, model, type of wire or cable to be used for field wiring of the alarm system;
- and make, model, type of door hold open devices, smoke dampers, HVAC shut down devices, or similar devices that affect buildings or fire protection equipment services.

4. Battery calculations, when batteries are used as secondary power supply, indicating the total standby duration and alarm duration in accordance with NFPA 72.

5. Other sources of secondary power other than battery.

6. Name, address, telephone number, and contact person with the offsite premises monitoring service.

7. Name, address, telephone number, and contact person with the installing contractor.

8. Name and address of project or tenant.

**9. Application for permit completed and submitted along with a check for fifty dollars (\$50.00) made payable to "City Clerk."**

The City of Jackson Fire Department requires forty-eight hours notice prior to any acceptance test, and such test must be scheduled with the fire department by calling 517-788-4079.

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