# Omaha Fire Department

## Hood Suppression System

### Plan Requirements

**MINIMUM PLAN REVIEW DOCUMENT REQUIREMENTS**

#### General Requirements

- Mechanical permit fee must be paid in full before plans will be accepted for plan review.
- Four (4) full sets of the drawings and specifications must be submitted. One set will be stamped and returned to the contractor and must be kept on the job site.
- Plans stamped “Preliminary” and/or “Not for Construction” will not be accepted for review.
- Plan sheet size options are 24” x 36” or 11” x 17” and all sheets must be of the same size.
- Systems shall not be placed in-service until it has received a final inspection and approval of both the Omaha Fire Department and the Omaha Mechanical Department.

#### Plan and Specifications required to be shown on, and provided with the Plans.

- Contractor name, address and phone number shall be shown on the plan cover sheet.
- Include names of any other contractors performing work on the system (electrical, fire alarm, mechanical).
- The plans/specifications submitted shall designate the authority having jurisdiction as the City of Omaha.
- Plans shall specify the adopted IFC and NFPA code editions the plans were designed for.
- Plans shall be required for all pre-engineered and engineered systems.
- The plan/specifications shall indicate that only equipment that is specifically listed and compatible for use with the extinguishing system shall be used.
- The specifications shall include system acceptance tests (system shall not be placed in service for use prior to the acceptance test).
- Include a scale floor plan of the area where the suppression system will be installed (see attachment “A”) showing:
  - All equipment with names and sizes, to be protected.
  - Elevation View of the room and equipment.
• Show the location of automatic gas (or electrical) shut off valves (shall be installed per NFPA 54).

• Show and label the types, locations, and dimensions of exhaust hoods, ducts, cooking equipment, piping, tanks, pull stations and nozzles.

• Type of gas valve

➢ Include the manufacture’s drawing of the system as designed (see attachment “B”)

• System type and brand

• Show and label the types, locations, and dimensions of exhaust hoods, ducts, cooking equipment, piping, tanks, pull stations, fusible links (temperature), and nozzles.

• Appliances with sizes of protected surface, nozzle height, type, and aiming point.

• Style or design of control head.

• Tank drawing showing size

• Pipe layout

• Type of gas valve

• Number of manual pull locations

• Key chart or legend to explain
  o All symbols
  o Quantity of each nozzle and flows
  o Maximum flows of tank(s)
  o Indicate if the hood is existing or new
  o Explain appliances (if fryer(s) have a drip board, size & number of burners on range, etc.)
  o Indicated that any appliance with wheels have positive placement device

➢ Prior to final city inspection signoff, the installing contractor is to provide city inspectors with a completed “Kitchen hood suppression installation certification”

➢ System manual must be on site at the time of inspection

➢ The contractor (or designee) must provide all necessary testing equipment and perform all testing required by city inspectors.

➢ The hood suppression system will be interconnected with any existing fire alarm system. Activation of the hood system will initiate a general alarm throughout the occupied interior space per NFPA17/17A section 5.2.1.9

➢ Provide proper class K extinguishers per IFC section 904.11.5

➢ Location of manual pull station shall be next to an exit door on path of egress 10’ minimum and a maximum of 20’ from hood. IFC 904.11.1

➢ Manual pull station shall be located between 42 to 48 inches above finished floor level

➢ Manual pull system shall activate the system

➢ System automatic detections system shall activate the system

➢ On activation of the hood fire suppression system, the exhaust fans are to continue running and the make-up air is to shut down.

➢ On activation of any cooking equipment fire extinguishing system, all sources of fuel and electric power that produce heat to all equipment protected by the system shall be shut down per NFPA 17A 4.4.3.1

➢ Fuel of power shutdown device operates on system activation and all equipment under the hood shall shutdown when the system activates.

➢ Fuel or power shutdown must be manually reset.
Operation of detection device activates the system: (perform a nitrogen blow off test.)

Operation of any manual actuator shall be all that is required to bring about the full operation of the system.

Systems protecting two or more hoods or plenums, or both that meet the requirements of NFPA 17A Section 5.1.5. Shall be installed to ensure the simultaneous operation of all systems protecting the hoods, plenums, and associated cooking appliances located below the hoods. NFPA 17A 5.6.1.

When a listed mechanism is used employing a single line for mechanical detection and remote manual control the remote manual control shall be installed inline, prior to all detection devices, so malfunction of one does not impede operation of the other.

Provide manufacturer's specifications verifying tank flow point capacities and manufacturers nozzle flow chart, system component cut sheets and installation instructions corresponding to each protected cooking appliance.

Where field conditions necessitate any change from the approved plans, the corrected as-installed plans shall be submitted to the City of Omaha for approval.

The details on a UL-300 system shall include sufficient information and calculations on the amount of chemical; the size, length, and arrangement of connected piping, or piping and hose; and the description and location of nozzles so that the adequacy of the system can be determined. Flow rates of nozzles used shall be provided for engineered systems. Information shall be submitted pertaining to the location and function of detection devices, operating devices, auxiliary equipment, and electrical circuitry, if used. Sufficient information shall be indicated to properly identify the apparatus and devices used.
Attachment “B” - Elevation Layout and Manufacturer’s Design Model of Actual Equipment Covered

This example illustrates the minimum information required for plan submittal for a Type I hood fire suppression system.

<table>
<thead>
<tr>
<th>No.</th>
<th>Garbur</th>
<th>Flow P.U. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1652</td>
<td>(1)</td>
<td>(1-4 gal/min)</td>
</tr>
</tbody>
</table>

Pipe:
- Diameter: 3/4" |
- Type: Steel

Nozzle:
- Flow: 5-15 gpm

Fire Protection Device:
- Type: Spray head

Distribution System:
- Type: Steel pipe

NOTE: Use the 1990 Decal of Brand X design manual.
Total nozzle flow p.u. count = 12. Total flow p.u. count allowed = 14

Included in the following:
- Address:
- Room no:
- Design manual:
- Manufacturer:
- Equipment:
- Type:
- Pipe:
- Flow p.u.:
- Arrangement:
- Area:
- Source:
- Cylinder location:
Kitchen Hood Suppression System Installation Certification

Permit #:__________________________  Date:__________________________

<table>
<thead>
<tr>
<th>Business Name:</th>
<th>Property Protected</th>
<th>System Installed</th>
<th>System Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Representative:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type of System: __________________________________________________________
Location of Plans: _______________________________________________________
Location of Owner’s Manual: _______________________________________________

1. Certification of System Installation: Complete this section after system is installed, but prior to conduction operational acceptance test. This system installation was inspected and found to comply with the installation requirements of:
   - [ ] NFPA 13 or NFPA 17A
   - [ ] NFPA 96
   - [ ] IFC and IMC
   - [ ] Manufacturer’s Instructions
   - [ ] Other (specify: FM, UL, etc.) ______________________________________

Print Name: ___________________________________________________________
Signed: _________________________________ Date: _________________________
Organization: __________________________________________________________

2. Certification of System Operation: All operationsl features and functions of this system were tested and found to be operating properly in accordance with the requirements of:
   - [ ] NFPA 13 or NFPA 17A
   - [ ] NFPA 96
   - [ ] IFC and IMC
   - [ ] Design Specifications
   - [ ] Manufacturer’s Instructions
   - [ ] Other (specify: FM, UL, etc.) ______________________________________

Print Name: ___________________________________________________________
Signed: _________________________________ Date: _________________________
Organization: __________________________________________________________