

# Fire Alarm Systems Permit Packet

## City of Greer Fire Department



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**If you have any questions or comments regarding the information contained within; or of you need assistance interpreting these requirements, please contact**

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## **I. PURPOSE**

This handout has been developed in an effort to provide the highest level of service to the customers of the City of Greer Fire Department. The major goal of the fire alarm plan review is to insure the design of the fire alarm system meets the minimum requirements of the adopted codes and/or ordinances. To meet this goal, the submitted plans and supporting documentation must contain all the necessary information needed to conduct a comprehensive plan review, as indicated in this document.

This information packet outlines the requirements set forth in the adopted codes and standards (*International Fire Code* and *NFPA*) as they relate to the installation and maintenance of a fire alarm system. Also provided within this packet is information that is required to be included on the shop drawings and supporting documents.

It is not our intent to cover all phases of the fire alarm system design or the generation of the plan itself.

## **II. SCOPE**

The City of Greer has adopted the *International Fire Code* and related Standards published by the *National Fire Protection Association*. The type and design of the proposed fire alarm is dependent upon the requirements set forth within the adopted codes. This fire alarm packet is intended for contractors who will submit fire alarm system plans to the City of Greer and purchase City of Greer fire alarm permits.

## **III. DEFINITIONS**

GFD	City of Greer Fire Department
NFPA	National Fire Protection Association
IFC	International Fire Code
IBC	International Building Code
FCP	Fire Control Panel
FSAP	Fire System Annunciator Panel

## **IV. INTRODUCTION**

1. Fire alarm systems shall meet the criteria of the 2000 edition of *The International Fire Code* and all applicable requirements of the most recent edition of the NFPA standards.
2. Plan submittal, City of Greer Fire Marshal approval and permits shall be completed before any fire alarm work begins.

## **V. TYPES OF SYSTEMS**

One of the first items to determine prior to designing the fire alarm system is what type of system is required? Fire alarm systems shall be submitted to The City of Greer Fire Marshal for review of all buildings with the exception of one and two family dwellings. The GFD has divided fire alarm systems into three major categories:

1. Required / Approved

This is an alarm system that is required by adopted codes and the installation is intended to meet the current code requirements. This type of system is required to be submitted for review to The City of Greer Fire Marshal and permit will be issued.

2. Non-Required / Approved

This is an alarm system that is NOT required to be installed by adopted codes. The system is being installed at the request of the building owner and/or occupant and the installation is intended to meet current code requirements. This type of system is required to be submitted for review to The City of Greer Fire Marshal and a permit will be issued.

3. Non-Required / Non- Approved

An example of this type of system is a building that is not required to have a fire alarm system but the occupant requests one or more detection devices to be installed. This type of system is required to be submitted to The City of Greer Fire Marshal and a permit will be issued.

## **VI. SUBMITTAL INFORMATION**

This section provides information as to documentation that is to be provided at the time of plan submittal. This information is required to assure the plan submittal package contains the necessary documentation for a complete plan review. The supporting documents and cut sheet shall be included with the submitted plans. Items to be provided as part of the plan submittal documentation are as follows:

- A. Number of Plans to be Submitted.

A minimum of two sets of fire alarm plans shall be provided for review. After plans have been reviewed and approved by the Fire Marshal, one set of the approved plans will be maintained on file within the Fire Marshal's office and the remaining set(s) will be available for pick-up by the submitting contractor.

## **SUBMITTAL INFORMATION CONTINUED**

### **a. Manufacturers Product Information**

One set of the manufacturer's product information sheets shall be provided. The devices being used shall be highlighted. This is to include the information on all devices that are part of, or being connected to, the fire alarm system. The product data sheets will be returned with the approved plans. The product data sheets are to be kept with the approved plans, on the job site, for reference use by fire department inspectors during inspections and/or tests.

### **b. Battery Calculations**

Two sets of the battery calculations shall be provided for all power supplies being installed within the system. This is to include the voltage and amperage information on all batteries being installed within the main panel and any supplemental power panels being provided. The secondary power supply shall have sufficient capacity to operate the fire alarm system in a non-alarm condition for a minimum of 24 hours and at the end of that period, shall be capable of operating all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 5 minutes. (2002 NFPA 72 4.4.1.5.3.1) One set will be kept on file and the other set shall be kept with the approved set of plans.

### **c. Voltage Drop Calculation**

Two sets of voltage drop calculations shall be submitted. One set will be kept on file and the other set shall be kept with the approved set of plans. This information shall include:

2. The total number of devices on each wiring circuit,
3. The current draw of each device.
4. The maximum length of wire utilized on each circuit.
5. The wire size being used.
6. Intelligent Horn/ Strobes: Must show the manufacturers information of how voltage drops shall be calculated.
7. Adjustable Multi-Candela Horn/ Strobes: The battery calculations shall be calculated according to the candela rating on the fire alarm plans. For example, if the fire alarm plans indicate the candela rating is a 110 candela, the battery calculation shall calculate for a 110 candela.

## **VII. PLAN INFORMATION**

When submitting for review, the shop drawings must contain sufficient information to allow a complete plan review. This section of the handout will provide a listing of information required for the review.

## General Information

Regardless of the size or type of fire alarm system being installed, there is a minimum amount of information that shall be provided. The following is a listing of general information required:

1. The drawings need to be scaled to 1/8 or ¼ inch to the foot. To insure accuracy if the shop drawings have been reduced, please provide a graphic representation of the scale on the plan.
2. The address of the project, including the suite number and business name is to be shown within the title block.
3. A detailed paragraph describing the scope of work shall be placed on the front sheet of the plans. The scope of work should describe if the project is new construction, tenant up-fit, remodel, new addition, fire alarm panel upgrade, etc.
4. City of Greer Fire Alarm submittal sheet shall be included with shop drawings.
5. Please provide the information as to the type of communication system being utilized. Provide the name, address and type (central, remote, etc.) of the monitoring agency.
6. All buildings containing a fire alarm system will be required to provide:
  - a. A fire alarm panel or annunciator at the main entrance.
  - b. A Knox key box on the exterior of the building in an approved location. Information concerning the ordering and mounting may be obtained by contact the City of Greer Fire Marshal's office at (864) 848-2169.
7. The location of all elevators and elevator equipment rooms shall be indicated.
8. The location of HVAC system duct smoke detectors shall be indicated. This information is to include the location of the remote test switch, when the remote test switch is required, in accordance with NFPA 72. **Note:** Upon detector activation the duct detectors are to indicate a supervisory condition. The general evacuation signal of the building is not to be activated (NFPA 90A).
9. Rated corridors and/or area separation walls shall be indicated on the plans. The location of electromagnetic door holders and the smoke detectors that release those doors shall be shown. The ceiling elevation in front of these doors must be indicated on the plans.
10. Locations of all initiating devices shall be shown on the plans. This information is to include point-to-point wiring and the address or zone of the device. On intelligent systems, the address of the device shall be placed next to the device on the plans. On zone systems, the zone circuit shall be identified on the plans next to the device.

11. The locations of all system notification appliances shall be provided. Include the point-to-point wiring and circuit number between devices on the plans. The candela rating of each device shall be indicated on the plans next to the device.
  - a. For addressable notification circuits, provide the full address for each device next to the device on the plans.
12. A zoned fire alarm system shall include the zone identification of each zone to be displayed at the FCP. In addition, a listing of the zones shall be included.
13. All addressable fire alarm systems are to provide a listing of the addresses being used on each indicating device. This information is to include the device identification number, type of device, location of the device and the location description to be displayed at the FCP.
14. Information as to the type and size wiring being installed shall be provided. Refer to NFPA 70 for proper wiring for fire alarm systems.

#### **Wiring Requirements- Zoned systems**

1. Each floor of a multi floor building shall be zoned separately.
2. Manual and automatic initiation devices located within the same fire zone or floor zone may be wired on the same zone. Duct detectors shall be zoned separately from manual and automatic devices.
3. Automatic fire suppression systems shall be monitored by the fire alarm system.

### **VIII. INSTALLATION AND TESTING**

#### **Installation**

1. The installation of the fire alarm system is not to commence, including any pre-wiring until working plans have been reviewed and approved by the City of Greer Fire Marshal and a City of Greer Fire Alarm Permit has been issued. The permit and plans are required to be on the job site at all times.
2. Smoke detectors shall not be installed until final clean up of the entire project. The shipping covers that come with the smoke detectors are not considered listed dust covers and are not to be considered as protection against dust or other contaminants. (NFPA 72)

#### **Testing**

Prior to scheduling an inspection with the City of Greer, the installing company shall complete the following items:

1. Conduct a full operational pre-test of the fire alarm system. The test is to follow the requirements as outlined in NFPA 72.
2. The *Fire Alarm System Record of Completion* form is to be provided to the City of Greer Fire Inspector at the time of inspection. This form is located in chapter 10 of the 2003 NFPA 72.

### **Completion Documents**

Upon final acceptance of the system, the installing contractor is to deliver the following items to the building owner or owner's representative:

1. An owner's manual and installation instructions covering the fire alarm systems equipment.

### **IX. Rooms Requiring Notification Devices**

The City of Greer Fire Marshal has established a list of rooms that will be used as guidelines but not limited to when designing a fire alarm system.

- Reception lobbies
- Waiting lobby/area
- Conference/ meeting rooms
- Corridors
- Restrooms
- Elevator lobbies
- School office areas
- School health/ nurse rooms
- Theater, auditorium, Gymnasium
- Classrooms
- Accessible rooms: Hotels, Hearing impaired rooms, etc.
- Lockers/shower rooms
- Indoor pool areas
- Break/lunch rooms
- Dining/ cafeteria areas
- Sales floors/ customer areas
- Mechanical, electrical, data, phone, utility rooms greater than 300 sq ft.
- Medical exam/ treatment/patient care areas
- Copy/mail rooms greater than 100 sq ft.
- Dressing rooms
- Open work areas greater than 100 sq ft.