



Hickory Fire Department
Division of Fire and Life Safety

City of Hickory
76 N Center St NE
Hickory, NC 28601
Phone: (828) 323-7522

**Fire Alarm & Detection System
Plan Review Submittal Requirements**

The NC Fire Prevention Code requires that a construction permit be obtained for the installation of/or modification to fire alarm and detection systems and related equipment. The code also requires that construction documents be submitted for review and approval prior to system installation.

The following information and construction documents are required to be provided with the **Construction Permit Application and payment (see fee schedule for payment amount)** for a fire alarm and detection system. Not every project will require the same amount of information, however, the more information that is provided with the plans, the less likelihood that additional information will be needed for the plan review process or the need for modifications being identified during the inspection process. **Some jobs, such as modifications or alterations to an existing system, may not require all of the following information.** If some of the information is not needed, it is important that you call and discuss the circumstances before submitting the Construction Permit Application.

1. Signed and sealed design drawings for fire alarm and detection systems are required, however, a shop drawing prepared from signed and sealed design drawings (also referred to as construction documents) do not have to be signed and sealed and can be submitted for permitting as required in the NC Fire Prevention Code.
2. Two sets of plans, one will be returned. The plans must be drawn to scale, a graphic representation of scale used, point of compass, and include a descriptive name of the various rooms and spaces. They must be legible and only contain the fire alarm components and the building features necessary to review the fire alarm and detection plans.
3. Must identify the intended area(s) of coverage.
4. Legend for all symbols shown on the plans.
5. Designer. The plans must include the name of the system designer and the date of design.
6. Location of alarm-initiating and notification appliances. Notification devices must include their candela ratings and their mounting heights. The mounting heights must be shown for manual pull stations. (Elevation view)
7. Manufactures model numbers and listing information for equipment, devices, and materials. *Manufactures specifications must verify compatibility of new equipment with any existing equipment.* If the specification sheets include model numbers for several devices then highlight the number of the devices being used.
8. Alarm control and troubling equipment. Must show the location of the fire alarm control panel.
9. Annunciation. Must show the location of all annunciation devices as well as annunciation zones.
10. Power connection. Dedicated branch circuit must be identified and the method used to secure from tampering. Must show over-current protection device. Must show the location of all auxiliary power supplies.
11. Battery calculations. Must include all devices (quantities used), amps for each device in both modes (normal and in alarm). The type of fire alarm system will dictate how many hours the batteries need to operate the system under normal and alarm condition. This information will then determine the minimum amp/hours of batteries required.
12. Conductor type and sizes. The NEC has information about the types of conductors and allowable substitutions. The conductor must be approved for its location.
13. Voltage-drop calculations. Voltage to a device must be between 85% and 110% of the nameplate primary and secondary input voltage for that device.
14. Details of ceiling height and construction. Due to the prescriptive requirements for visual devices, this information is very important. Construction features such as headers, columns, beams, storage-shelves and racks, etc. need to be shown as well as the ceiling height.

15. Interface of fire safety and control functions. This includes all tamper and flow switches, high and low air pressure switches, fire suppression systems, delayed egress and access controlled doors, two way communication for Area of Rescue Assistance, elevator recall, smoke control, etc.
16. Type of fire alarm and detection system. Local, auxiliary, remote station, central station, or proprietary.
17. Operational matrix. Must show the sequence of operation detailing all inputs and outputs.
18. Building construction and occupancy classification.
19. Applicable codes, standards, and other design criteria to which the system is required to comply.
20. Riser diagram. Does not need to be to scale but it must group devices into geographic areas and includes zoning, sequence of device connection, end of line devices, and conductor counts for each run.

The issuance of a Construction Permit from the Hickory Fire Department Division of Fire and Life Safety does not relieve the applicant of any permits required by the Catawba County Building Services Department. They can be reached at (828) 465-8399.