



# Clark County Department of Building & Fire Prevention

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**Permit Type: 105.7.5.a**

**Control Number: A.0**

**Effective Date: 11/15/11**

**TITLE: FIRE ALARM SYSTEMS**

**SCOPE:** Clark County Department of Building & Fire Prevention requirements for the submittal and design of a Fire Alarm System.

For new work in existing buildings, see the "New Work in Existing Buildings" guideline.

**PURPOSE:** To standardize plan/permit requirements of the Fire Prevention in accordance with the Clark County Fire Code. Permits are valid through the duration of construction. Work must commence within 180 days, and remain active with no period of inactivity exceeding 180 days, or the permit becomes invalid.

## **DEFINITIONS:**

**Assessor's Parcel Number (APN):** A unique number assigned to each property by the Clark County Assessor's office.

**NICET:** NICET is an acronym for "The National Institute for Certification in Engineering Technologies", which is an organization that was established in 1961 to create a recognized certification for engineering technicians and technologist within the United States.

## **PERMIT FEES:**

Permit fees shall be assessed in accordance with the Permit Fee Schedule as adopted in the Clark County Fire Code. For applications that are expedited, additional fees shall apply.

## **SPECIFICATIONS AND SUBMITTAL REQUIREMENTS:**

An application must be completed for each submittal. A minimum of three sets of plans and three sets of specifications shall be submitted with the permit application. The plans shall be drawn to an indicated scale (1/8" scale and 1/4" scale are preferred). Plans shall show compliance in accordance with Chapter 9 of the Clark County Fire Code, as adopted and amended. All submittals must be legible and readable or the plan shall be issued a correction letter for cause.

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Plans shall address the following:

1. Indicate the project name, address, and APN (Assessor's Parcel Number). Note that each separate building/tenant space having a unique address requires a separate permit.
2. Contractor name, address, phone number, license numbers, license classification, and license limit.
3. Wet signature of licensee (contractor's Master or Qualified Employee).
4. Wet signature of the NICET designer or Nevada Registered Fire Protection Engineer who prepared the plan, drawing and calculations. For plans prepared by a NICET designer, the designer's printed name and certificate number shall follow the signature.
5. Occupancy classification. For all occupancies, state the occupant load.
6. Fire alarm circuit classification (power-limited or non-power-limited).
7. Class/style designation of all initiating device circuit (IDC), signaling line circuits (SLC), and notification appliance circuits (NAC).
8. Conductor type and size.
9. Sequence of operation input/output matrix as required by NFPA 72.
10. Symbol legend with equipment description (manufacturer's name and model number) and mounting description (surface, semi-flush, flush, and exterior).
11. Site plan.
12. Floor plan drawn to an indicated scale on sheets of a uniform size showing:
  - a. Point of compass (north arrow).
  - b. Walls, doors, windows, openings, stairs, elevators, passageways, high piled storage racks, etc., as applicable to depict the facility.
  - c. Room use identification labels.
  - d. Alarm initiating device, notification appliance, and auxiliary controlled or monitored equipment and systems, control and annunciation equipment location(s).
  - e. Conductor/conduit routing and size.
  - f. Location of end-of-line resistors.
  - g. Zone identification (conventional system).
  - h. Device addresses (addressable systems).
  - i. Notification appliance numbering by circuit and device corresponding to the riser and/or one line diagrams.
  - j. Power panels and circuit connections.
  - k. Key plan.
  - l. Ceiling heights, and construction (i.e., beam, joist, soffit, or other projection extending below the ceiling when a ceiling mounted device and/or appliance is used).

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13. Mounting height detail for wall mounted device and/or appliance.
  14. Riser diagram including the following information:
    - a. General arrangement of the system, in building cross-section.
    - b. Wall/shaft/stairwell and/or cable ratings when survivability or class A requirements apply.
    - c. Type and number of circuits in each riser.
    - d. Type and number of fire alarm system components/devices on each circuit, on each floor or level.
  15. Provide CCFD General Notes as follows:
    - a. This installation conforms with all applicable Nevada State Statutes and Clark County Fire Codes and Ordinances which are in effect at the time of installation.
    - b. The contractor (or his designee) must provide testing equipment and perform all testing required by the Clark County Fire and Building Departments.
    - c. The contractor shall conduct a "pretest" of the entire system before scheduling an acceptance test.
    - d. Areas protected by audible alarms will achieve a minimum of 80 db sound at any place within the protected property.
    - e. An acceptable performance test will be scheduled prior to final acceptance with a minimum of two (2) working days notice.
  16. Standardized calculations (shown on the plans unless otherwise approved):
    - a. Battery calculations (all panels).
    - b. Load calculations (all notification appliance and auxiliary circuits).
    - c. Voltage drop calculations (all notification appliance circuits, including remote annunciators and auxiliary appliances). For an existing notification appliance circuit where new appliance(s) are being added to the circuit, voltage drop calculations will need to be produced. For an existing notification appliance circuit where no new appliance(s) are being added to the circuit, voltage drop calculations will need to be produced either when the circuit modification adds load to that existing circuit or when the circuit is being extended by more than 10 feet. When voltage drop calculations are required, the entire existing modified circuit(s) shall be shown on the plans. Unless all of the new and existing appliances on a circuit utilize the UL-listed current draws at 16 volts, the allowable voltage drop for the notification appliance circuit shall not exceed 2 volts.
    - d. Power loss calculations (all speaker circuits). For an existing speaker circuit, power loss calculations need to be produced either when the circuit modification adds wattage to that existing circuit or when the circuit is being extended by more than 10 feet. When power loss calculations are required, the entire existing modified circuit(s) shall be shown on the plans.
  17. Product data submittal including a cover index sheet listing products used by make and model number, manufacturer data sheets and listing information for all equipment, devices, materials, wire and cable.

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18. Design number and detail of penetration fire stop system when required.
  19. Provide a detailed, written scope of work on the plans. Clearly identify the scope of work for the permit utilizing shading, clouding, or other means to differentiate the scope of work from areas that are not within the scope of work. Clearly indicate on the plans what devices are being installed and what devices were previously installed.
  20. If the fire alarm system is an emergency voice/alarm communications system, display the automatic message(s) that are to be played during an alarm condition.
  21. Show that there is a dedicated disconnect for the fire alarm control unit, and that it is labeled as "Fire Alarm System".
  22. Any additional information determined necessary by the fire code official.

### **PERMIT REVISIONS AND RESUBMITTALS:**

Revisions to approved plans are required to be submitted and approved. Revisions will be assessed additional plan review fees. A copy of the previously approved plan shall accompany the revised submittal to facilitate the review. Clearly indicate all changes to the revised plans by clouding the change with a delta number to signify the date of plan change. When several changes have been made, a detailed list of changes is required.

Re-submittals to address a Letter of Correction will require a full submittal. These plans require a copy of the red lined plan from the previous submittal to facilitate the review. Clearly indicate all changes by clouding the change with the delta number to signify the date of plan change.

### **PLANS CHECK STATUS INSTRUCTIONS:**

The status of the review can be checked by logging on to:  
[www.clarkcountynv.gov/building/fire-prevention](http://www.clarkcountynv.gov/building/fire-prevention)

### **INSPECTIONS THAT MAY BE REQUIRED AND SCHEDULING INSTRUCTIONS:**

If approved, an inspection will need to be scheduled. To schedule an inspection, go to:  
[www.clarkcountynv.gov/building/fire-prevention](http://www.clarkcountynv.gov/building/fire-prevention)  
A fire inspector will review your site in accordance with the approved plans and this guideline and, if compliant, will issue the permit.

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The Fire Prevention (FP) may witness and accept inspection, testing and maintenance of fire and life safety systems conducted by approved individuals as required by and within the scope and authority of the Clark County Fire Code.

This Guideline does not take the place of the Fire Code and does not take precedence over any Fire Code requirement or position taken by the Fire Chief. When a conflict exists between the requirements of this Guideline and the Fire Code or the opinion of the Fire Chief, the Fire Code or opinion of the Fire Chief prevails.

Technical Assistance, when required by the fire chief, will require a Technical Opinion and Report prepared by a State of Nevada licensed: qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the Fire Chief and the owner. The Fire Chief is authorized to require design submittals to bear the Wet Stamp and Signature of a professional engineer.

Acceptance of Alternative Materials and Methods requires a Technical Opinion and Report prepared by a State of Nevada licensed: qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the Fire Chief and the owner. The Fire Chief is authorized to require design submittals to bear the Wet Stamp and Signature of a professional engineer.