North County Fire Protection District
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Website: www.ncfire.org

FIRE PREVENTION BUREAU
RESIDENTIAL FIRE SPRINKLER SYSTEM PLAN REVIEW CHECK SHEET

For Single-Family Residences, Duplexes, Out Buildings, Ag Buildings, and Garages

Project Name: _____ Address: _____

NCFPD Plan Check#: _____ Date: _____

Items marked are to be corrected on printed on new drawings/plans before the Fire Protection District will issue its approval.

The approval of plans and specifications does not permit the violation of any section of the North County Fire Protection District Fire Code, County Ordinances, or State law. The following list does not necessarily include all errors and omissions.

To facilitate rechecking, please identify, next to each item, the sheet of the plans upon which the correction has been made. Return this correction list with the corrected plans. If new plans are provided when resubmitting, return at least one copy of the original stamped and checked set.

General Requirements:

- At least two sets of plans
- Manufacture specification sheets for piping, heads, water meter, etc.
- Corrections cannot be made on stamped plans. (No red ink or handwriting)
- Identify rooms and specify each use.
- Define all symbols and shaded areas etc.
- If there are corrections, see notes/remarks made on one set of plans. Return marked set with new/revised sets after you have complied with the requirements on the marked set of plans. Red marks on plans are part of this comments list.

County Specific Requirements:

The NCFPD has adopted the County of San Diego Consolidated Fire Code which has made amendments to NFPA 13D. The specific amendments must be followed for residential fire sprinklers systems installed in the unincorporated areas of Fallbrook, Bonsall, and Rainbow.

- All new buildings must have fire sprinklers. The only two exceptions are Group U occupancies (Out Buildings, Ag Buildings, Garages, etc.) and Agricultural buildings fabric stretched across them for plant growing purposes.
- Spare sprinkler heads, wrench, inspectors test key, and operation and maintenance instructions are required prior to final.
- If the maximum static pressure is over 130 psi, a pressure reducing valves is required to be installed and set to 175 psi.
- A 300 psi pressure gauge must be installed.
- 8-inch alarm bell must be installed in the vicinity of the master bedroom.
- Sprinklers are not required in bathrooms under 55 square feet unless there is a door leading

outside *and* the walls and ceiling are made out of noncombustible or limited combustible materials.

- Intermediate temperature heads are required in attached garages and have cages on them unless they are recessed.
- At least one quick-response intermediate temperature sprinkler must be installed above the FAU.
- The system must be designed with a 10% safety margin.

Yes No N/A

Plot or site plan:

☐ ☐ ☐ "Site inspection may reveal conditions which have changed since plan review. When such discrepancies arise, field inspection shall take precedence."

☐ ☐ ☐ Water main connection _____ inches.

☐ ☐ ☐ Square footage of building(s) _____ sq. feet.

☐ ☐ ☐ Water main connection elevation, pad elevation, etc.

☐ ☐ ☐ Meter size and configuration**.**
The meter supplying the system must be capable of providing enough flow for the designed flow of the fire system and all other demands attached. This would include domestic and irrigation use. Contact the individual water provider to become aware of specific requirements they may have. A single meter may be used to supply the main house and other accessory buildings providing there is enough flow and pressure.

☐ ☐ ☐ Size of pipe, type of pipe, and length of pipe from main to meter and meter to riser.

☐ ☐ ☐ Scale of drawing.

Floor plan:

☐ ☐ ☐ Room occupancies.

☐ ☐ ☐ Location of partitions.

☐ ☐ ☐ Size of all areas not requiring sprinklers.

☐ ☐ ☐ Ceiling construction and height.

☐ ☐ ☐ Location of all high temperature appliances and devices such as fireplaces, stoves, ranges, furnaces, space heaters, etc.

☐ ☐ ☐ Spare head cabinet location (should be in garage or guest house where no direct heat exposure exists).

☐ ☐ ☐ Location of alarm bell(s) and size**.** "Alarm bell shall have a minimum diameter of 8 inches and be mounted on the exterior in the vicinity of the master bedroom. The alarm bell shall be clearly audible in all bedrooms with intervening doors closed."

☐ ☐ ☐ Location of fire riser.

Yes No N/A

Fire Sprinkler Riser:

☐ ☐ ☐ Must be in garage. Exceptions would be guest houses, barns, pool houses, etc. In this case a separate riser and alarm bell will be required

☐ ☐ ☐ Riser detail**.** Including the main drain valve, main drain size, type of material, flow switch, 300 psi pressure gauge, and pressure relief valve if pressure exceeds 130 PSI

☐ ☐ ☐ No shutoff valves past the shut off for the house.

Sprinkler Piping:

☐ ☐ ☐ Type of material being used.

☐ ☐ ☐ All pipe sizes indicated**.**

☐ ☐ ☐ Inspectors test valve type and location. (Should be located at the furthest point of the system).

☐ ☐ ☐ Layout of piping and location of hangars/braces.

☐ ☐ ☐ Areas of exposed piping.

Water Supply Information:

☐ ☐ ☐ Water department supplying the system including name, phone number, and contact person.

☐ ☐ ☐ Available water pressure and the date the information is obtained.

☐ ☐ ☐ Pressure relief valve if it exceeds 130 psi.

Yes No N/A

Sprinklers Heads:

☐ ☐ ☐ Manufacturer and type of head.

☐ ☐ ☐ Total number of sprinkler heads to be installed. If there are more than 100 heads, then the system must be monitored.

☐ ☐ ☐ Sprinklers spacing per manufacturer's listing

☐ ☐ ☐ Location of special, high temperature heads in the garage, patios, etc.

☐ ☐ ☐ Dimensions to walls and adjacent sprinkler heads

☐ ☐ ☐ Total area protected

Full Height Cross Section:

☐ ☐ ☐ Location where section is taken

☐ ☐ ☐ Piping shown

☐ ☐ ☐ Heads shown

☐ ☐ ☐ Elevation of building finished floor

Hydraulic Calculations:

☐ ☐ ☐ Single most hydraulically demanding head.

☐ ☐ ☐ Most hydraulically demanding multiple heads (2) _____ sq. feet.

☐ ☐ ☐ Hydraulic reference points indicated.

☐ ☐ ☐ Source pressure indicated.

☐ ☐ ☐ Source elevation indicated.

☐ ☐ ☐ Elevation at remote heads.

☐ ☐ ☐ Proper Hazen-Williams coefficient used.

☐ ☐ ☐ Loss through tees on run calculated.

☐ ☐ ☐ System demand 10% below available supply.

☐ ☐ ☐ Proper sprinkler head data used (flow, GPM, K Factor).

☐ ☐ ☐ Domestic demand added.

☐ ☐ ☐ A booster pump may be required if the flow pressure is lower than the calculated residual pressure at acceptance testing.

Yes No N/A

General Notes and Information:

☐ ☐ ☐ All material and installation shall conform to the standards of NFPA 13D, the County of San Diego Consolidated Fire Code, and the manufacturer's installation instructions.

☐ ☐ ☐ Spare fire sprinkler heads (one of each type or as approved by the FAHJ) wrench, inspectors test key an operation and maintenance instructions shall be provided in the vicinity of the riser. (CSDCFC §8001, NFPA 13D §5.1.1.2)

☐ ☐ ☐ If maximum static pressure from the water supply exceeds 130 psi, a pressure-reducing valve acceptable to the FAHJ shall be installed before the system riser. If pressure reducing valves are installed a pressure relief valve shall be installed and set at 175 psi. When such valves are installed submittal documents must include manufacturer information sheets along with charts showing the dimensions (size) and flow characteristics inlet and outlet pressures at various flows for the type of valve being installed, and the valve shall be included in the design calculations. (CSDCFC §8001, NFPA 13D §7.1.5)

☐ ☐ ☐ A water flow switch shall be provided and located on the sprinkler riser above the check valve and main drain and shall actuate an audible fire alarm signal bell and may be required to be interconnected to the interior smoke alarms. The water flow switch shall be a retarding type with a delay between 15-60 seconds before activation of the signal bell. Alarm bell shall have a minimum diameter of 8 inches and be mounted on the exterior in the vicinity of the master bedroom. The alarm bell shall be clearly audible in all bedrooms with intervening doors closed. (CSDCFC §8001, NFPA 13D §7.6)

☐ ☐ ☐ Sprinklers are not required in bathrooms where the area does not exceed 55 sq. ft. unless there is door exiting directly to the outside, and the walls and ceilings including behind fixtures, are of noncombustible or limited combustible materials providing a fifteen-minute thermal barrier. (CSDCFC §8001, NFPA 13D §8.3.2)

☐ ☐ ☐ Storage in attic is not allowed if sprinkler heads have not been provided in these areas.

☐ ☐ ☐ Access to areas under enclosed stairwells have not been provided and sprinklers have not been provided for these areas. If access is available, sprinklers shall be installed in those areas in accordance with NFPA 13D.

☐ ☐ ☐ Pipe hangers shall be in accordance with NFPA 13D and the written instructions of the pipe manufacturer.

☐ ☐ ☐ All penetrations through firewalls such as walls and ceilings between attached garage and residence will be sealed in an approved manner to maintain the integrity of the firewall.

☐ ☐ ☐ Drilling or notching of structural members shall be performed in strict accordance with the current CBC.

☐ ☐ ☐ Sprinklers may be omitted from carports and open attached porches. However, attached garages shall be protected with intermediate temperature rated sprinklers. Sprinkler heads in garages shall be protected against mechanical damage by approved guards, unless recessed heads are provided. Garage doors may be disregarded in the layout of the fire sprinkler system. (CSDCFC §8001, NFPA 13D §8.3.4)

☐ ☐ ☐ Where a fire department connection is not provided, the system shall be hydrostatically tested at 200 psi for 2 hours. (CSDCFC §8001, NFPA 13D §11.2.1.1)

NCFPD's Auotmatic Fire Sprinkler System Requirement for Feference

Automatic Fire Sprinkler Systems - Where required (CSDCFC §903.2)

All new buildings constructed shall have an approved NFPA 13, NFPA 13R, or NFPA 13D automatic sprinkler system installed per Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3. The Fire Code Official has the final decision of which NFPA 13 standard to apply, as required due to access, water supply and travel time.

Exceptions:

1. Group U occupancies not greater than 500 square feet, when the building is more than 10 feet from an adjacent building or property line measured from the farthest projection from the building.
2. Agricultural buildings constructed of wood or metal frames over which fabric or similar material is stretched, which are specifically used as green houses are exempt from the automatic sprinkler requirements unless physically connected to other structures.

(a) Additions. An automatic sprinkler system may be required to be installed throughout the building when the addition is more than 50% of the existing building or when the altered building will exceed a fire flow as calculated pursuant to Section 507.3. The fire code official may require an automatic sprinkler system to be installed in buildings where no water main exists to provide the required fire flow or where a special hazard exists, such as poor access roads, steep grades and canyon rims, hazardous brush and response times greater than 5 minutes by a fire department. The fire code official may require that other protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit.

(b) Remodels or reconstructions. The fire code official may require an automatic sprinkler system to be installed throughout buildings if a remodel or reconstruction includes significant modification to the interior or roof of the building. The fire code official may require that other protective measures be taken based on existing conditions and/or potential hazards. The preceding addition or remodel exception is limited to one permit per three-year period from the date of the last permit approval.

(c) Group U Occupancies. For Group U Occupancies greater than 500 square feet, an approved automatic sprinkler system shall be installed as per NFPA 13D edition referenced in Chapter 80 of the CFC, or as approved by the FAHJ.

Plan reviewed by: _____ Date: _____ Phone: (760) 723-

Comments:

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