



Corona Fire Department

Residential Fire Sprinkler Underground and Overhead Piping Plans Guideline per 2022 California Residential Codes

PURPOSE

The purpose of this guide is to provide information necessary to ensure that the design and installation of residential fire sprinkler underground and overhead piping systems will comply with the applicable provisions of the 2022 California Residential Codes, as amended. The guideline will also explain the processing of residential sprinkler plans.

SCOPE

This guideline is applicable to both the underground and overhead plans for one and two-family dwellings designed in accordance with NFPA 13D or California Residential Code R313.

SUBMITTAL REQUIREMENTS

A. General Important Note:

Overhead plans shall be approved prior to the underground plans being submitted for review and approval. A "Reference only" copy of the approved overhead plan shall be submitted with the underground plan for both *Master Tract* plans and individual single-family dwellings.

B. Residential Underground Plan Submittal Requirements:

1. A minimum of three (3) sets of plans for installation shall be approved by the City of Corona Fire Department, prior to installation. This plan is similar to a precise grade plan. For *tracts*, the plan will be a "*Master Plan*". The *Master Plan* shall include, but not be limited to: overall site, each individual plan underground detail, materials, double check valve size, make and model #, and calculation with DWP Standard 408 or 409 water service connection detail and Fire Department Residential Underground General Notes.
2. For Single Family Dwellings, *not a part of a tract*, one underground plan will be submitted for each separate address.
3. A plan check fee will be charged for each plan type to be reviewed.
4. The residential underground plans will be reviewed by the following departments:
 - Fire
 - Public Works
 - Department of Water and Power
5. The Building Permit for each single-family dwelling shall be charged for two (2) water services; for fire and domestic. The Building Department will be inspecting the fire underground; however, an inspection fee will not be assessed with the plan review fee and is incorporated into the Building Permit.

Residential underground plans shall include the following details:

1. Provide the installation and/or design contractor's name and address, state license classification and number on the plans. Contractors may possess any of the following licenses: A, C16, C34, C36 or a registered professional engineer (RPE).
2. If the piping plan is designed by an RPE, it shall contain the license number, classification, name and address and phone number of the installing contractor. Email addresses are particularly helpful.



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3. Show the locations of water mains, including pipe size and locations of public hydrants within 300 feet of the site.
4. Specify class, size and material of all piping and fittings, along with installation details and elevations.
5. A water availability form shall be submitted with the underground plans. The form shall be dated within six months of the submittal.

C. Residential Underground General Notes

1. Prior to installation, required permits shall be secured from the Fire Department.
2. Installation shall comply with NFPA 13D or California Residential Code (CRC) R313.
 - The potable water supply shall be protected against backflow in accordance with Health & Safety Code Section 13114.7. The location and type of control devices shall be approved by the Fire Department and the Department of Water and Power.
3. The water supply shall provide not less than the required design flow rate for sprinklers in accordance with CRC Section R313.3.4.2 at a pressure not less than that used to comply with CRC Section R313.3.6. Where a water supply serves both domestic and fire sprinkler systems, 5 gpm shall be added to the sprinkler system demand at the point where the systems are connected.

The overhead plan shall be approved before the underground plan is submitted for review and approval. A "reference only" copy of the approved overhead plan shall be submitted with the underground plan for both *Master tract* plans and individual single-family dwellings.

D. Residential Overhead Plan Submittal Requirements:

1. For *Tract* plans: Submit three (3) sets of overhead fire sprinkler plans per plan type with one (1) copy of the *Proposed Master* underground fire line plan, for reference. Each residential overhead plan review (FR) will be submitted per individual address.
2. Each residential overhead plan review will be charged a plan check and inspection fee.
3. For *Tract Plans*: Once *all* plan types for *Master tracts* have been approved, the remaining plans (or phases) can be submitted with one(1) copy of the plan to be reviewed, one (1) copy of the approved overhead for each plan type, the proposed underground fireline plan, and one(1) copy of all manufacturer's cut sheets and calculations (to be archived). Each plan review (FR) will be submitted per address and charged a repetitive plan check and inspection fee. The *Master* underground fire sprinkler plan check will be referenced in the overhead sprinkler permit description.
4. For individual single family dwellings: Submit three (3) sets of overhead fire sprinkler plans and one (1) copy of the proposed underground fireline plan, for reference. Submit two (2) copies of manufacturer's cut sheets and calculations; one (1) to be archived and one (1) to be maintained on site with the approved plans, during construction.
5. All obstructions to fire sprinklers shall be shown on the reflected ceiling plan. Obstructions shall include, but not be limited to, detection devices, lights, fans, soffits and/or beams. Proximity to heat sources shall be shown. The minimum allowable distance between sprinklers and obstructions shall meet the requirements of NFPA 13D Section 8.2.5, or 2022 CRC Figure R313.3.2.4.2.



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E. Residential Fire Sprinkler General Notes

1. The system shall be designed and installed in accordance with NFPA 13D, 2022 edition, or California Residential Code R313, and any amendments as adopted by the City of Corona.
2. Only new fire sprinklers shall be employed in the installation of the fire sprinkler system.
3. Sprinkler plans shall be approved prior to the installation of any pipe. A set of approved plans shall be maintained at all times at the construction site.
4. Hydrostatic testing is required and may be performed at static pressure.
5. All fire sprinkler control valves shall be locked in the open position.
6. A stock of spare fire sprinklers of each style, type and temperature rating along with a spare head wrench shall be located at the main system riser or other approved location.
7. All fire sprinklers shall be installed at a minimum distance of 4" from any wall and a minimum distance of 6' between any two fire sprinklers. Fire sprinklers shall not be obstructed.
8. All products used in this installation shall be listed by a nationally recognized testing laboratory for service in a fire protection system or products shall be subject to acceptance by the Corona Fire Department, prior to installation.
9. Inspections shall be scheduled a minimum of 48 hours in advance. Cancellations or changes to schedule made less than 24 hours prior to scheduled appointment shall forfeit fees. Call (951) 736-2220 to schedule inspections.