

SECTION 15300

FIRE SUPPRESSION SYSTEM

PART 1 GENERAL

1 01 Not used

1 02 SUMMARY:

A The Contractor shall provide a Fire Suppression System where shown on the drawings, as specified in this section, and as needed for a complete and proper installation including, but not necessarily limited to:

1. Applications and fees for all plumbing permits, services, and inspections.
2. Obtain Flow Test data.
3. Shop drawings.
4. Sprinkler piping systems complete with valves, fittings, and specialties
5. Sprinklers
6. Alarm check valve.
7. Backflow prevention device (as may be required by the local jurisdiction).
8. Detector check valve (as may be required by the local jurisdiction)
9. Draining and testing piping.
10. Fire department siamese connection.
11. Valve supervisory switches
12. Water flow detecting alarm.
13. Access door for valves, etc , as required.
14. Concrete pads and pits as required.
15. All necessary hangers, inserts, and incidentals as required for a complete system.
16. Seismic Restraints (as may be required by the local jurisdiction).
17. Testing and adjusting of the Fire Suppression System.

1.03 RELATED WORK:

A Refer to Section 09900- Painting for description of paint work related to exposed overhead Fire Suppression System piping. All exposed overhead Fire Suppression System piping and supports shall be dry-fall painted to match adjacent painted exposed surfaces.

B Refer to Section 15255- Seismic Restraints.

1.04 SUBMITTAL: Submit Fire Suppression Shop Drawings; Hydraulic Calculations; and Fire Suppression Product Data per Section 01340-Submittals requirements, in adequate detail to demonstrate compliance with the requirements of this Section.

1.05 QUALITY ASSURANCE:

A Fire Suppression System Layout:

1. The Contractor may request a Reflected Ceiling Plan CAD file (prepared in AutoCAD format) from the Petco Project Manager and the Petco Tenant Improvement Architect, via e-mail:

Abena St. Luce
ast.luce@sblm.com

The Petco Tenant Improvement Architect should provide the requested CAD file within two working days of the Contractor's request.

2. Architect's Indemnification by Contractor for use of CAD files:

Files of text, data, graphics or other information contained thereon are furnished solely for convenience and may be used at the recipient's own risk. SBLM Architects, makes no warranties, expressed or implied, in agreeing to furnish these files. The recipient and user of the files agrees to verify all conditions and accuracy of the provided information, and agrees that data stored on electronic media and /or transferred via email can deteriorate, can be corrupted, or can be modified inadvertently, and that errors and anomalies can be introduced into the data from the use of software application packages, operating systems, or computer hardware differing from those used by SBLM Architects. By using these files, the recipient acknowledges and assumes all such risks.

By using these files, the recipient also recognizes that changes or modifications to the electronic files provided, which are introduced by anyone other than SBLM Architects may result in adverse consequences which cannot be predicted or controlled. Therefore, and in consideration of our agreement to furnish the information or data on electronic medium, the recipient agrees, to the fullest extent permitted by law, to defend, indemnify and hold harmless SBLM Architects, from and against any and all claims, liabilities, losses, damages, or costs, including but not limited to reasonable attorney's fees, arising out of or in any way connected with the conversion, modification, misinterpretation, misuse, reuse, or reliance upon, by the recipient or others, of information and data furnished by SBLM Architects, unless and until it is established by a court of competent jurisdiction or panel of arbitrators that the claim and the damages sustained by SBLM Architects were not the result of the recipient's receipt and utilization of the electronic files provided.

By requesting, receiving, accepting and using the CAD file provided by SBLM Architects, the recipient acknowledges and agrees to the conditions described above

3. The Architect will provide the most current Reflected Ceiling Plan information available at the time of the Contractor's request for the Reflected Ceiling Plan CAD file. Should a subsequent Construction Bulletin be issued that impacts that impacts the fire suppression system layout, it is the Contractor's responsibility to request a revised, updated CAD file from the Architect.

A. Codes and Regulations:

1. The Fire Sprinkler Contractor shall be licensed with applicable state and local jurisdictions, and evidence of the ability of this contractor to provide work of this scope shall be provided to the PETCO Project Manager upon request.
2. The Contractor shall apply for, pay for and obtain all necessary permits and fees required by any applicable state and local jurisdictions, including all connection charges and fees.
3. The following specifications are minimum requirements and shall govern, except that applicable building codes, Underwriter Laboratory requirements and/or drawings shall govern when the requirements are in excess hereof.
4. All work shall be in accordance with the "Standards of the National Fire Protection Association for Installation of Sprinkler and Systems", NFPA 13, NFPA 231 and NFPA 231C (all latest editions), as referenced in the design criteria shown on the prototype fire suppression system drawings, the local fire marshal, and any other authorities having jurisdiction.
5. Make all necessary arrangements, give all notices and obtain all permits required by the utilities companies for connection to water main and for installation of detector check valves, backflow preventers, vaults, etc., in order to provide a complete system.
6. Prepare all necessary shop drawings and complete hydraulic calculations required for this sprinkler system installation. Drawings and calculations shall be reviewed and approved by the local fire department, the State Insurance Governing Board, and all other authorities having jurisdiction.

- B. Fire suppression system piping with visible rust, labels or surface dirt shall be cleaned prior to painting in accordance with Section 09900- Painting surface preparation requirements Piping with visible rust, labels or surface dirt which are not otherwise painted, such as semi-concealed piping, shall be cleaned free of rust, labels and surface dirt

PART 2 PRODUCTS

2.01 MATERIALS:

- A. The Contractor shall provide all required materials, new and in conformance with the requirements of the local jurisdiction.
- B. Piping and fittings:
 - 1. Piping: Provide Schedule 40 black steel ASTM A795. Schedule 10 lightwall piping ASTM A135 or ASTM A795 is permitted for sizes 4" and smaller, and only where allowed by NFPA 13, and only where not subject to physical damage during activity within a retail store.
 - 2. Fittings: Provide forged steel screwed, cast iron screwed, or mechanical grooved couplings with composition sealing gasket and steel fastening hardware.
- C. Valves: National Fire Protection Association (NFPA) approved by 175 PSI design
 - 1. Control Valves: Provide rising system (OS&Y) iron body, bronze mounted Milwaukee No. F-4 or approved equal.
 - 2. Drain Valves: Provide angle or globe pattern type, screwed with brass bodies and trimmings and iron wheeled handles.
 - 3. Check Valves: Provide iron body with bronze swing disc and hinge for 175 psi water working pressure. Viking Model "D".
 - 4. Waterflow/Alarm Valves: Provide Viking Corporation Model "F.1" type with retarding chambers and hydraulically operated gong. Note that check valve in Fire Department Siamese Connection shall be tapped for 3/4" ball drip. Siamese connection line shall be tapped for 3/4" ball drip and shall be furnished with Star automatic ball drip valve.
- D. Sprinkler Heads: Provide Viking Model "M" automatic spray sprinklers upright or pendant with 1/2" orifice of the required temperature rating as manufactured by the Viking Corporation, Hastings, Michigan or approved equal. Stock of extra sprinklers (6 of each type used), wrench and locking cabinet shall be provided. Sprinkler heads occurring in areas that have finished ceilings shall be recessed type with white escutcheons. Sprinkler heads in toilet areas and areas with surface mounted lighting fixtures on ceiling shall be pendant type with extended chrome escutcheons. Finish on pendant heads shall be chrome. Sprinkler heads shall be UL listed and FM approved.
- E. Detector Check: Provide a detector check in the sprinkler system water main. Detector check shall be Viking Model "E" complete with by-pass, shutoff valve, magnetic line disc meter and swing check valve, where required by the administrative authority.
- F. Provide water flow detectors in the sprinkler system mains where shown. Detectors shall be installed in the mains at the point of entry into the building. Detectors shall be Viking Model "VSR-D", vane type, and shall be designed for mounting on either vertical or horizontal piping. Detectors shall not be mounted in a fitting or within 12 inches of any fitting that changes the direction of water flow. Detectors shall have a sensitivity setting to signal any flow of water that equals or exceeds the discharge from one sprinkler head. Detector switch mechanisms shall incorporate an instantly recycling pneumatic retar element with an adjustable range of 0 to 60 seconds. Switches shall have a minimum rated capacity of 7 amp,

125 volts, AC 0.25 amp, 24 volts DC and shall be actuated by a polyethylene vane extending into the waterway of the piping. Detectors shall be weatherproof, dust tight construction, and shall be provided with a 3/4" conduit entrance. Detectors shall be finished with a tamperproof bolt that requires the use of a special wrench for removal. Detectors shall be Underwriters Laboratories listed and Factory Mutual approved. Flow detectors will be wired into the building fire alarm system by the security alarm contractor.

- G. Provide supervisory switches for all sprinkler system OS&Y gate valves. Supervisory switches shall be Notifier Series NGV, or approved equal. Switches shall be mounted such that they do not interfere with the normal operation of the valve and shall be adjusted to operate within two revolutions of the valve control or when the stem has moved no more than one-fifth of the distance from its normal position. The switch mechanism shall be contained in a weatherproof die cast aluminum housing that shall provide a 3/4" tapped conduit entrance and incorporate the necessary facilities for attachment to the valve. Switch housings shall be finished in red baked enamel. The switch mechanism shall have a minimum rated capacity of 7 amp, 125 volt AC – 0.25 amp, 25 DC. The entire installed assembly shall be tamperproof and arranged to cause a switch operation if the housing cover is removed or if the unit is removed from its mounting. Gate valve switches shall be Underwriters' Laboratories listed and Factory Mutual approved. Valve supervisory switches will be wired into the Building Fire Alarm System by the security alarm contractor.
- H. Test the sprinkler system as required by and in the presence of representatives of agencies having jurisdiction. Conduct, duration and other details of tests not covered by agencies' requirements shall be in accordance with NFPA 13. Provide instruments, equipment, pay expenses incurred in making tests; obtain approvals and certificates. Where evidence of stoppage appears in piping or equipment, disconnect, clean, repair, reconnect obstructed parts; bear cost of cutting and patching adjoining work necessitated by such cleaning, repairing.
- I. Double Check Valve Backflow Preventer shall be furnished and installed in the location where required by administrative authority. The backflow preventer shall be such as Viking Model "A-1", complete with OS&Y gate valves each side of backflow preventer. The upstream OS&Y gate valve shall be tapped for 3/4" corporation stop furnished with backflow preventer.
- J. Reduced Pressure Principle Backflow Preventer shall be furnished and installed in the location as required by the administrative authority. The reduced pressure back flow preventer shall be such as Watts Model 909, complete with OS&Y gate valves and supports.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS: The Contractor shall examine the areas and conditions under which work of this section will be provided, shall correct conditions detrimental to the timely and proper completion of the work, and shall NOT proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION:

- A. Sprinkler system shall conform to all requirements of the local ordinances and governing bodies or agencies. System shall be installed in accordance with approved drawings.
- B. Excavating, trench work and backfilling required for the installation of the work shall be performed in accordance with the requirements of governing authorities.
- C. Piping shall be run concealed in all finished areas and shall be sleeved and sealed at all wall, ceiling and floor penetrations. Care shall be taken to support mains from adequate structural members.

- D Piping run in exposed construction areas shall be run at the bottom chord of the roof joists for laterals and against walls for drops and rises.
 - E. Sprinkler Heads: Sprinkler heads shall be located to clear all lights and air conditioning devices and equipment and shall be spaced so as to provide a symmetrical ceiling pattern in finished ceiling areas. The drawings indicate sprinkler head locations. This pattern is a straight-line arrangement in both direction of the room and shall be followed unless local jurisdiction, code or rule supersedes.
 - F. Do all cutting, chipping, digging and drilling under the supervision of the Contractor as may be necessary for the proper installation of the work specified or shown. Make certain all chases, shafts and openings are properly located.
 - G. Any and all electrical work, conduits, wires, devices, equipment and connections of alarms, etc. required in conjunction with the above systems shall be furnished under other parts of these specifications.
- 3.03 VALVE SEALS, SIGNS, TAGS & CHARTS: Provide copper wire and approved seals for manually operated shut-off valves required to be sealed in "OPEN" position. Provide identification signs of standard design and fasten securely at designated locations as per NFPA13. Tags shall be fastened to all control valves.
- 3.04 EQUIPMENT AND EXTRA HEADS: This work includes furnishing and installing a plastic cabinet (with cover) on the wall near the A.S.R. and 48" above the floor containing six extra sprinkler heads of each type used along with a proper wrench.
- 3.05 FINAL CLEANING:
- A Piping shall be cleaned free of visible rust, labels or surface dirt.
 - B After the sprinkler installation has been completed, tested, and approved, the Contractor shall remove all oil and grease from piping, heads, and other visible parts of the fire suppression system and shall leave the system in a neat, clean, and workmanlike manner.
 - C. Exposed Fire Suppression System piping shall be painted per Section 09900- Painting.
 - D. After inspection of this work, the Contractor shall remove from the premises and legally dispose of all Fire Suppression System waste material and construction debris.

END OF SECTION

