CLARK COUNTY FIRE DEPARTMENT
Fire Hazard & Prevention Services
575 E. Flamingo Road, Ls Vegas, NV 89119
(702) 455-7316 FAX (702) 455-7347

105.8.f.2-2

TITLE: **REQUIREMENTS FOR A NEW PERMANENT STANDPIPE SYSTEM IN ACCORDANCE WITH THE 2003 EDITION OF NFPA 14**

SCOPE: Standpipe systems for commercial facilities shall be designed and installed in accordance with the 2003 Edition of NFPA 14, 2002 Edition of NFPA 13 and the 2005 Clark County Fire Department.

PURPOSE: To standardize Clark County Fire Department plan review of standpipe system plans**.**

At the time of permit application, three (3) sets of plans, drawn to an indicated scale and legible, must be submitted for review and approval. Permit fees for this type of submittal vary. The standard permit fee is due upon submittal. Please see the **Clark County Fire Department Permit and Service Fee Schedule** for specific information. Please check our website for plan status. Any additional fees will be indicated on the website. Once the plans have been approved and any outstanding fees have been paid, an inspection can be scheduled.

Our website is http://www.accessclarkcounty.com/fire/firedept.htm. To check on plan status, click on the "Plan Status" button and follow the instructions. To schedule an inspection, click on "Services" in the teal strip on the top. On the left side under **Inspection** click on "Fire Inspection" and follow the instructions.

The following items shall be included on plans and in submittals:

Name, physical address, and Assessors Parcel Number (APN) of the project must be included on the plans. Plans shall also designate the authority having jurisdiction. Plans must be drawn to an indicated scale or be suitably dimensioned and legible.

1. Scope of Work (pg 2)
2. Top view of protected area, piping plan and reflected ceiling plan (pg 2)
3. Section view of protected area (pg 2)
4. NICET/FPE seal (pg 2)
5. Site Plan showing building and underground supply (pg 2)
6. Hydrant test results (pg 2)
7. Indicate the water supply, if a fire pump; provide full fire pump details/plans/specs/curve with this submittal. (pg 2)
8. Pressure Regulating Valve Chart (pg 3)
9. General Notes (pg 3)

Revised January 26, 2010, FPB Approved 04 09 2010

10. Location requirements, i.e. stairs/vestibules/horizontal exits (pg 3)
11. Coverage requirements, i.e. Class I spacing and Class II spacing (pg 3)
12. Detail of Hose cabinets, Class I and Class II (pg 3)
13. Riser Diameter Requirements (pg 3)
14. Seismic Braces, details, locations, and calculations (pg 4)
15. Pipe Hangers, details, locations, and calculations (trapeze) (pg 5)
16. Interconnection of Standpipes (pg 5)
17. Buried pipe, allowed when protected underground, not allowed under buildings (pg 5)
18. Freeze Protection (pg 5)
19. Drain pipe with 3-inch drains adjacent to each hose valve with PRV (pg 5)
20. System Attachments, including sectional valves, and bottom of standpipe drains (pg 5)
21. Gauges, provide specs, show installation locations (pg 6)
22. Fire Department Connections, quantity, listings, number of inlets, location on-site (pg 6)
23. Signage at FDC (pg 6)
24. Pressure requirements (pg 6)
25. Manual standpipe pressures provided by fire engines, pressure of 150 psi at 1,500 gpm. (pg 6)
26. Flow rate requirements, sprinklered, non-sprinklered, large floor area, and horizontal standpipes (pg 6)
27. Pressure Limitations for all Components, 350 psi max on system, list the pressures allowed for each component (pg 6)
28. Hydraulic Calculations from automatic water supply (pg 6)
29. Hydraulic Calculations from Fire Department Connections (pg 6)
30. Specifications for all components (pg 7)
31. Chart on plans for the fittings, and the pressure listings for the fittings (pg 7)
32. Requirements for Resubmitted Plans, cloud changes and previous plan copies required (pg 7)

General Items

For a new standpipe system plan, the following information is required. A separate submittal is required for each separate building:

- **Scope of Work:** Provide a detailed narrative describing the work to be conducted under this permit.
- **Top View:** The plan must show a **top view** of the area on a common architectural scale, i.e. 1/4", 1/8" 3/16", etc. All walls and doors need to be shown, and each room must be labeled according to use. The top view must show pipe layout, pipe dimensions, attachments, braces, hangers, standpipe hose outlets, hydraulic nodes, and the coverage area from each hose valve to the remote areas of the floor plan. The coverage area shall be shown on plans and be measured along the path of travel from hose valves, around walls and through doors, to the most remote areas of the floor. The 30 feet distance assigned to the hose stream shall not be allowed to bend or turn.

- **Section View:** The plan must show **section views** with a riser diagram to describe the locations of mains, lines, and hose valves within the structure. A minimum of one view is required, although additional views may be necessary to determine compliance with NFPA 14. The section view must be drawn to a common architectural scale, i.e. 1/4", 1/8" 3/16", etc.
    - **Verify a riser diagram** for the system. The riser diagram must indicate all components on the riser, including:
        - Fire department connections
        - Water supply components, including fire pumps and supply lines
        - Interconnecting horizontal pipe
        - All standpipes on the system
        - Control valves at the base of all standpipes
        - Hose valves fed by the standpipes
        - Where required for testing of pressure regulating valves, show the drain lines
- **Seal:** The plans must be **sealed** either by a Fire Protection Engineer or a designer holding a minimum **Level II** certification in automatic sprinkler layout from the National Institute for Certification in Engineering Technologies **(NICET).**
- **Water Supply:** All plans must include a **water supply plan** describing the supply to the standpipe system. The plan must show necessary site features. The site plan must show and label all fronting roads, show the public water mains, show the location of water meters, show the on-site underground water supply, show the building outline, show the riser location, show the FDC location, show the fire access lane within 100 feet of the FDC, and show the flow and gauge hydrants used for the water supply test, as applicable. Water supply results must be provided on the plans adjacent to the site plan. The data that must be provided include the static pressure, the residual pressure, the outlet opening, the pitot reading, the calculated flow, time the test is conducted, and who conducted the test. For systems with fire pumps, the plan must show the location of the fire pump and indicate the pump rating. Also, full pump information, including drawings, specifications, and curve are required to be included in the standpipe submittal. For high-rise buildings, show also the location of the secondary water supply. For high-zone standpipe systems, show the location of the water storage tank, and the location and rating of the high-zone fire pumps.
- **Pressure Regulating Hose Valve Chart:** Where direct-acting pressure regulating hose valves are provided anywhere in the building, provide a chart on the plans. The chart shall have eight columns, as follows:
    1. Floor Level – Provide numerical designation for all floor levels in the building.
    2. Static Pressure, Inlet – Indicate the static pressure at the inlet of the hose valve on all floor levels. Provide a supporting hydraulic calculation at zero flow with churn pressure, providing a node at the hose valve on each floor level to indicate the static pressure at each hose valve.
    3. Residual Pressure, Full Flow, Inlet – Indicate the residual pressure at the inlet of hose valves on each floor. Provide a supporting hydraulic

calculation at full standpipe design flow per NFPA 14 (750 or 1,000 gpm), providing a node on each floor level to indicate the residual pressure at each hose valve.

4. Residual Pressure, 250-gpm flow, inlet - Indicate the residual pressure at the inlet of hose valves on each floor while flowing 250 gpm. Provide a supporting hydraulic calculation at 250 gpm flow at the most remote standpipe outlet, providing a node on each floor level of the most remote standpipe to indicate the residual pressure at each hose valve.
5. Valve Make and Model – Indicate the manufacturer of the valve on all floors, and the model number for the specific valve. Provide supporting manufacturer specifications.
6. Valve Setting – Indicate the hose valve setting or bonnet number proposed for each valve. The setting or bonnet number must be associated with the manufacturer specifications for the valve.
7. Residual Pressure, Full Flow, Outlet – Indicate the residual outlet pressure at the outlet of the hose valve under the full-flow condition. For PRV installations, the residual pressure is taken from pressure relation charts provided by the manufacturer. For non-PRV installation, the residual pressure is taken by analysis of the equivalent lengths of the fittings and the hose valve.
8. Residual Pressure, 250-gpm flow, Outlet - Indicate the residual outlet pressure at the outlet of the hose valve when flowing 250 gpm. This is necessary to establish the residual pressure expected during field inspection. For PRV installations, the residual pressure is taken from pressure relation charts provided by the manufacturer.

- **General Notes:** Check that **general notes** are provided. The general notes need to indicate the following information:
    - Indicate compliance with **NFPA 14, 2003 edition**, as adopted by the Clark County Fire Code
    - Indicate the **type** of system per Section 5.2 and the **class** of the system per Section 5.3.
    - Indicate the **minimum and maximum pressure** requirements and the **minimum required system** and individual valve flow for the class of system installed.
    - Description of **hose valves used**, detailing the manufacturer, model number(s), and outlet size.
    - Manufacturer, schedule and type of **piping**
    - Manufacturer and type of **fittings**
    - Type of **freeze protection** (building heated, dry system, anti-freeze system, heat-trace, etc)
    - Indicate the pressure required for the **hydrostatic test**, being 200 psi or 50 psi about pump churn pressure, whichever is higher
    - Indicate the **quantity** of hose valves shown on the submittal

Placement of Valves

- **Class I Hose Valve Locations:** Class I hose valves shall be provided in stairs at the main level landing, on each side of horizontal exits (within 5 feet of exit doors), in every exit passageway at the entrance from the building, in covered mall buildings at the entrance to exit passageway and exit corridors, and elsewhere in exit corridors and passageways on the floor level to provide full coverage with 100 feet of hose and 30 feet of stream. The coverage area shall be shown on plans and be measured along the path of travel from hose valves, around walls and through doors, to the most remote areas of the floor. The 30 feet distance assigned to the hose stream shall not be allowed to bend or turn.
- **Class I Hose Cabinets:** Where Class I valves are located in cabinets, such cabinets shall be designed to provide sufficient clearances. All hose valve outlets shall face directly to the outside of the hose cabinet so that no short hose bends are required. The cabinet size, and the placement of items within the cabinet, shall be such to provide a minimum clearance of 6 inches perpendicularly from the face of the valve, a minimum of 1 inch around the circumference of the valve, and a minimum of 6 inches around the circumference of the hose outlet cap. Class I valve cabinets shall be conspicuously labeled. Cabinets shall be used for fire equipment only.
- **Class II Hose Station Locations:** Class II hose stations shall be provided in Group A-1 and A-2 occupancies, located on each side of a stage, on each side of the rear of auditoriums, on each side of the balcony, and on each tier of dressing rooms. Also, Class II hose stations are required in exhibition areas in Group A-3 and Group A-4 occupancies, with full coverage of the exhibition area with 100 feet of hose and 30 feet of stream. The coverage area shall be shown on plans and be measured along the path of travel from hose valves, around walls and through doors, to the most remote areas of the floor. The 30 feet distance assigned to the hose stream shall not be allowed to bend or turn. Class II hose stations shall include a minimum 100 feet length of 1.5-inch hose and a nozzle listed for Class II use.
- **Class II Hose Cabinets**: Where Class II hose stations are located in cabinets; such cabinets shall be designed to provide sufficient clearances. The cabinet size, and the placement of items within the cabinet, shall be such to provide a minimum clearance of 6 inches perpendicularly from the face of the valve and a minimum of 1 inch around the circumference of the valve. Class II hose station cabinets shall be conspicuously labeled. Cabinets shall be used for fire equipment only.
- **Height**: Hose valves shall be located between 3 feet and 5 feet above the floor.

Piping Requirements

- **Riser and Supply Line:** The minimum diameter of a dedicated standpipe riser is 4-inch. The minimum diameter of a combination standpipe/sprinkler riser is 6-inch, unless 4-inch riser is hydraulically proven. The minimum diameter of a horizontal supply line to an individual hose valve shall be 2.5-inch.

- **Seismic Braces**: Verify sufficient **seismic braces** on the plans. Seismic braces must be attached to primary structural members, and never are allowed to be attached to the bottom plate of trusses or to any lightweight structural members. There are three general items of interest; **calculations, details**, and **locations** on mains.
    - **Calculations, Lateral and Longitudinal Braces**: **Lateral braces** are those where the brace pipe is perpendicular to the main/line that the brace supports. **Longitudinal braces** are those where the brace is parallel to the main supported. **Lateral braces** and **Longitudinal braces** need to support the loads of mains plus a safety factor, within the zone of influence.
        - **Zone of Influence**: The zone of influence is determined by calculating the proposed separation between braces, and splitting the main at the middle between the braces. Therefore, if lateral braces are shown 40 feet apart, then each brace must support 40 feet of main (20 feet to each side with brace at center). Also, if longitudinal braces are shown 80 feet apart, then each brace must support 80 feet of main (40 feet to each side with brace at center).
        - **Earthquake Load (pounds)**: For **lateral braces** and **longitudinal braces**, the load is one-half the weight of the main. Use NFPA 13 Table A.9.3.5.6 for weights with respect to pipe diameter and schedule when verifying load (note; dyna-flow, dyna-thread, etc have lower weights; check specification sheets for weights of those pipes). The **safety factor** required by NFPA 13, Section 9.3.5.6.1 is 1.15 (15%).
        - **Brace Selection**: When the load (pounds) is verified, check that the **brace** is sufficient for the load, with **l/r not exceeding 200**, per local amendment to NFPA 13 Sections 9.3.5.8.2 and 9.3.5.8.6. See NFPA 13 Table 9.3.5.8.9(a) and Table 9.3.5.8.9(b) to verify that the brace is of sufficient diameter and maximum length to meet the l/r 200 max requirement and is sufficient to maintain the calculated load.
        - **Fasteners, per NFPA 13**: When the load (pounds) is verified, check that the **fasteners** are sufficient to maintain the attachment between the brace and the structure. There are multiple variables with fasteners, including angles of attachments, type of construction attached to (wood, concrete, steel), and fastener diameter and length. See NFPA 13 **Figure 9.3.5.9.1** for prescriptive requirements. For attachment up into the roof/ceiling assembly, use details A-C, depending on brace angle. For attachment to members (beams, trusses, etc) where the brace is perpendicular to the member (top view), use details D-F, depending on brace angle. For attachment to members where the brace is parallel to the member (top view), use details G-I, depending on brace angle.

        - **Fasteners, Manufacturer Specified**: Many manufacturers, TOLCO, AFCON, etc., produce **specific sway brace fasteners**. These fasteners are allowed to be installed by NFPA 13, Section 9.3.5.10. Where the fasteners are attached to braces that are not perfectly horizontal (braces typically at an angle), the manufacturer **rating for the fastener needs to be decreased** by a certain percentage, per **NFPA 13 Table 9.3.5.10.3**.
    - **Seismic Brace Details**: Section view details are required to be shown on plans. The details need to specifically indicate the following:
        - **Brace** type, diameter, and length
        - **Angle** of brace from **vertical**, 0° to 90°.
        - **Fastener** type, diameter, length, and location into member (side attachments)
    - **Brace Locations**: Braces shall be provided on mains as follows:
        - **Lateral Braces** shall be spaced at a maximum separation of **40 feet**. Where the lateral brace calculations require a smaller separation distance, then the smaller separation distance shall apply. The distance from the last lateral brace to the end of the pipe braced shall not exceed 20 feet, or ½ the maximum separation distance, and the last length of pipe shall be provided with a lateral brace. Lateral braces are required on **mains**. Lateral braces are allowed to be **deleted** where the pipe is supported by **hangers with rods less than 6 inches long**.
        - **Longitudinal Braces** shall be spaced at maximum separation of **80 feet**. Where longitudinal brace calculations require a smaller separation distance, the smaller separation distance shall apply. The distance from the last longitudinal brace and the end of the pipe shall not exceed 40 feet, or ½ the maximum separation distance. Longitudinal braces are required on **mains** regardless of size. Longitudinal braces may not be deleted where the pipe is supported by hangers with rods less than 6 inches long.
        - **Combination Braces**: When a brace is located within **24 inches** of an elbow/tee, it may serve as a longitudinal brace for one main and for a lateral brace for the perpendicular main. Where a brace serves **dual purpose**, it shall be capable of supporting the **lateral load and longitudinal load added together.**
        - **Four-Way Braces**: Four-Way braces shall be provided at the tops of all risers exceeding **3 feet** in height. These may act as lateral and longitudinal braces for the main if calculated to support the imposed loads.
        - **Risers**: Braces shall be provided at the top of all risers

    - **Flexible Couplings:** Flexible couplings shall be provided on systems per NFPA 13 Section 9.3.2.3. Flexible couplings are required in the following locations
        - **Tops of Risers**: Within 24 of the top and bottom of risers
            - **Note**: Exceptions allowed for risers less than 7 feet in height, per code allowances
        - **Vertical Floor Penetrations**: Within 12 inches above floor slab and 24 inches below floor slab
        - **Through Walls**: Within 12 inches of the wall surface on both sides
        - **Expansion Joints**: Within 24 inches of expansion joints
        - **System Drops**: Within 24 inches of the top and bottom of drops to hose lines, rack sprinklers, and mezzanine sprinklers
        - **Riser Supports**: Above and below intermediate riser supports.
- **Hangers**: Verify that the **hanger** detail indicates a code compliant hanger assembly. Verify that the **attachment to the structure** is as specified in Section 9.1 of NFPA 13 or complies with a manufacturer information sheet. Where the method of attachment is specific to a manufacturer product, verify that the manufacturer name and product model number is indicated on the plan. Verify that the **rod size** is correct in accordance with Table 9.1.2.1 of NFPA 13. Verify that the hanger assembly is capable to support the correct diameter of pipe for which the assembly is intended.
- **Hangers**: If there are **multiple hanger details**, verify that each **detail is labeled** and that each **hanger on the plan is also labeled** to identify which hanger assembly is proposed for each hanger location.
- **Hangers:** Verify correct **spacing of hangers**. Hanger spacing is dependent on pipe material and diameter in accordance with **Table 9.2.2.1** of NFPA 13.
- **Interconnection of Standpipes:** Show the piping that interconnects standpipes within the building. All standpipes within the same building/zone are required to be interconnected.
- **Underground Piping:** Pipe shall not be allowed to run under buildings. Underground piping shall be protected from corrosion, and the means of protection shall be indicated on the plans
- **Freeze Protection:** Piping shall be run through heated enclosures, or otherwise protected so that wet piping occurs in an atmosphere having a minimum temperature of 40º F.
- **Supply for High Zones:** High zones shall be supplied with a minimum of two supply lines from the lower zone.
- **Test Connection/Drain Line:** Where pressure-regulating valves are required, 3-inch drain lines shall be provided for testing purposes. Test connections shall be a minimum of 2.5-inch diameter, and shall be located adjacent to the hose valve equipped with the pressure-regulating valve.

System Attachments

- **Systems Attachments**: Various system attachments must be shown, such as the **control valves, gauges** and the **FDC**. Verify a detail of the valve and the FDC, and that these items are shown on the plan view. The FDC must be located on a wall facing a fire access lane, and must be within 100 feet of the fire access lane. The FDC must be sized per Section 8.16.2.3.
- **Control Valves:** Isolation valves shall be provided for each standpipe. All outlets shall be able to be controlled by a control valve dedicated for a standpipe. Where horizontal branch lines are provided to supply hose valves, individual branch lines shall be provided with individual control valves.
- **Gauges:** Gauges shall be provided at the main drains and at the tops of standpipes. Gauges shall be 3-1/2 inch diameter.
- **Fire Department Connection Design:** Fire Department Connections shall be located on a wall facing a fire access lane, and shall be within 100 feet of the access lane. The Fire Department Connection shall be between 18-inches and 48-inches high off the grade around the connection. A minimum of 3-feet clearance shall be provided around the entire circumference of the Fire Department Connection. The Fire Department Connection shall be provided with the minimum number of inlets required to achieve design flow while flowing a maximum of 250 gpm into each individual inlet. A minimum of three inlets, for 750 gpm of design flow, is required. For standpipe systems with a demand flow of 1,000 gpm, a minimum of four inlets is required. Please note that for combination systems, the number of inlets may need to be increased, in order to achieve the minimum required flow for the most demanding sprinkler system
- **Fire Department Connection Signage:** A sign shall be provided adjacent to each FDC indicating what systems are being served, what areas of the building are served, and the minimum required pressure and flow at the Fire Department Connection for correct system operation.
- **Standpipe Test Outlets:** Outlets shall be provided at the rooftop or the top stair landing for testing purposes. For exterior outlets, a normally closed valve, with tamper, shall be provided for freeze protection. A minimum number of hose valves shall be provided to allow full flow tests while flowing a maximum of 250 gpm from each test outlet. Show on the plans the valves to be used for testing and the proposed testing layout. For manual systems, indicate the method for providing pump supply to allow for testing of the system.
- **Pressure Reducing Valves:** For all pressure reducing valves, including direct-acting and pilot-operated valves, which are shown on the plans, indicate the make, model, and setting of the pressure-reducing valve.
- **Main Drains:** Mains drains shall be provided to facilitate draining of a standpipe riser. Drains must have a minimum diameter of 2-inches, and shall be located at the lowest point downstream of the standpipe control valve.

System design criteria

- **Class I Flow, single valve:** Each Class I valve outlet shall be designed to flow a minimum of 250 gpm
- **Class I Flow, System Flow:** For systems in sprinklered buildings, design shall allow flows of 500 gpm for the most remote standpipe, and 250 gpm for each additional standpipe up to a maximum demand of 1,000 gpm. For systems in unsprinklered buildings, design shall allow flows of 500 gpm for the most remote standpipe, and 250 gpm for each additional standpipe up to a maximum demand of 1,250 gpm.
- **Class I Minimum Outlet Pressure:** The minimum residual pressure required at the outlet when flowing 250 gpm is 125 psi.
- **Class I Maximum Outlet Pressure:** The maximum static pressure at allowed at the outlet during churn is 200 psi.
- **Class II Flow, single valve:** Each Class II hose station shall be designed to flow a minimum of 100 gpm
- **Class II Minimum Outlet Pressure:** The minimum residual pressure required at the outlet when flowing 100 gpm is 100 psi.
- **Class II Maximum Outlet Pressure:** The maximum static pressure allowed at the outlet during churn is 150 psi
- **Maximum System Pressure:** The maximum system pressure allowed at churn is 350 psi.
- **Manual System Pressure:** Manual systems require pressures at outlets as indicated above. The supply shall be taken as fire engine pump supply discharging @ 150 psi up to 1, 500 gpm.

Hydraulic calculations

- **Hydraulic Calculations** shall be provided to prove that the standpipe system can perform to meet the requirements of NFPA 14. Hydraulic calculations prove that the system can achieve required flow and required pressures.
- **General Hydraulic Calculation Requirements**. Hydraulic calculation forms must be provided to completely prove that the system will perform to NFPA 14 requirements. Separate calculations are required from automatic supply and from each FDC and must be included on the hydraulic placard. There are several submittal requirements that apply to all types of hydraulic calculations, as follows:
    - **Supply Information**: Water supply information is required to be shown on the plans. Further, the water supply information is required to be indicated on the hydraulic calculations. A curve showing the water supply with respect to the system demand must be provided.

- **Hydraulic Nodes:** All points of analysis, which include flowing hose outlets, points where pipe size changes, tees where internal water flow splits along two directions, top of riser, bottom of riser, supply point, meters (if supply calculation is off-site), and other chosen points of analysis shall be indicated on the plans and on the calculations with hydraulic node labels.
- **Hydraulic Summary:** Hydraulic summaries are required on the plan sheets and in the hydraulic calculation forms. Generally, the summary shown on the plan sheets should be shown adjacent to the most remote standpipe outlet. A detail of the hydraulic design information sign conforming to Section 6.7 shall be included on the plan sheets.
- **Graph Sheet**: A graph sheet must be included with the hydraulic calculation forms. The graph sheet must graphically depict the water supply. Also, the graph sheet must graphically depict the demand for the standpipe system.
- **Node Summary**: Each node that is analyzed needs to be listed on the node summary. The node summary will indicate whether the node is flowing, the elevation of the node, the k-factor for sprinklers, the pressure in the node, etc.
- **Node-to-Node Pipe Summary:** The pipe summary describes the flow between nodes. The summary will indicate flow through each section of pipe, pipe diameter, pipe length, flowing hose outlets, pipe C factor (see Table 14.4.4.5), velocity, node elevations, pressure at nodes, friction pressure loss along pipe, pressure loss due to elevation, loss through fittings, etc.

Additional Submittal Requirements

Specifications:

A minimum of one copy of specifications shall be provided in the submittal. Specifications shall cover all components that are installed. Specifications shall indicate that a nationally recognized laboratory for fire service lists the components. Further, specifications shall indicate the pressure limitations for the component. A chart listing all components shall be provided on the plans, indicating the component manufacturer, model number, the size, and the pressure rating. For pressure regulating valves, the specifications shall include the pressure charts relating the inlet pressure, the outlet pressures, the flow, and the setting/model of the hose valve.

Resubmitted Plans:

Where plans are resubmitted due to a field change from existing approved plans or from a plan review rejection, such submittal shall include all items set forth in this guideline. Further, all of the changes that occurred on the plans must be clouded on the plans to allow for distinction between the areas that were and were not changed. In addition, either a copy of the previous approved plan, or the red-line marked plans from the denied submittal, must be provided with the submittal. These are required to allow review of changes that occur on the plans between different submittals