HOUSTON FIRE MARSHAL'S OFFICE
STANDPIPE PLAN REVIEW CHECKLIST

Standpipe systems shall be installed where required by the 2015 Houston *Building Code* and *Fire Code,* in accordance with Section 905 and referenced NFPA standards.

Where standpipes are required, submit a complete set of standpipe drawings electronically via ProjectDox into the *Fire Marshal* Standpipe - Pump Room subfolder for review. Label sheets **FP**.

Submissions should include a complete set of standpipe drawings starting from the back flow preventer to the top of each riser. Include pumps, tank, the location of FDC's, and an isometric riser diagram with a complete run of underground and above ground pipes and size on the first-floor layout. Drawings should be labeled with information needed instead of referring to charts. Do not include any plumbing plans or state "refer to civil plans". Sprinkler plans are not reviewed by our department. Do not add sprinkler information to the standpipe plans.

Temporary standpipes for superstructures shall be submitted with the superstructure permit. A full set of standpipe plans shall be submitted separately. Highrise standpipe plans need to indicate the riser that will be provided for use during construction on the architectural drawings. Stairwell identification shall be in accordance with the *2015 Houston IFC Appendix H*. Temporary standpipes during construction shall comply with the *2015 Houston IBC 3311.4 Temporary standpipes*.

Houston Amended IBC Code Excerpt:

> ***3311.4 Temporary standpipes.*** *Temporary standpipes may be provided in place of permanent systems if they are designed to furnish a minimum of 500 gallons (1,893 L) of water per minute at 50 pounds per square inch (345 kPa) pressure with a standpipe size of not less than 4 inches (102 mm). All outlets shall be not less than 2½ inches (63.5 mm). Pumping equipment sufficient to provide this pressure and volume shall be available at all times when the building reaches 150 feet (45,270 mm) above grade.*

REQUIRED PLAN INFORMATION FOR STANDPIPE SYSTEM PLAN REVIEW:

	PROVIDE THE FOLLOWING INFORMATION IN THE GENERAL NOTES
☐	Type of standpipe system. *NFPA 14 - 5.4 Required Type of System.* Dry standpipes shall not be installed. *2015 Houston IFC - 905.8 Dry standpipes*
☐	Class of standpipe system. *NFPA 14 - 3.3.17 System Classes*
☐	Standpipes that are a part of a combined system shall be 6 inches in size. Where the building is protected throughout by an approved automatic sprinkler system, the minimum pipe size shall be 4 inches if hydraulically designed. *NFPA 14 - 7.6 Minimum Sizes for Standpipes and Branch Lines*
☐	A complete set of hydraulic calculations shall be submitted with the plans. *NFPA 14 – 8.2.2* Describe the method used for the design. Flow rate should be in accordance with *NFPA 14 - 7.10 Flow Rate*.
☐	All exposed piping shall be insulated from freezing in non-heated areas. *NFPA 14 – 6.1.2.3*
☐	Indicate the manufacturer, type, and model of the fire pump and jockey pump. *2015 Houston IFC 901.13 Fire pumps*
☐	Indicate the water tank size. Tanks shall be served from a city main sized as required by *NFPA 20 – 4.31.2 Break Tank Size*, or a minimum 2500 gallons, whichever is more restrictive. *2015 Houston IFC 901.13 Fire pumps*. Auxiliary water supply shall meet the 30-minute minimum water supply requirements. *NFPA 14 – 9.1.4.1*
☐	A waterflow test shall be conducted no more than 12 months prior to working plan submittal. Waterflow test results shall be provided on the fire pump sheet. *NFPA 14 – 10.2 Procedure*
☐	A minimum of 100 PSI shall be provided at the topmost connection of the riser. *NFPA 14 – 7.8.1 Minimum Design Pressure for Hydraulically Designed Systems*
☐	The maximum flow rate shall be 1000 gpm for buildings that are sprinklered throughout, and 1250 gpm for non-sprinklered buildings. *NFPA 14 – 7.10.1.1.5*

	PROVIDE THE FOLLOWING IN DRAWINGS / SHEETS. MUST BE LABELED FP.
☐	Site plan with FDC's and fire hydrants. Label all streets. Provide a graphic scale to verify the distance from the FDC to the hydrant. FDC's shall be placed on the street side of the building. *2015 Houston IFC 903.3.7*. Two, two-way FDC's are required if there are three or more standpipe risers. *2015 Houston IFC 905.2.1.* Fire department connections shall be located not more than 100 ft from the nearest hydrant. *NFPA 14 – 6.4.5.4*
☐	Provide isometric riser diagram and the interconnection of standpipes and FDC(s). Label the stairwells and pipe size. *NFPA 14 – 7.5 Interconnection of Standpipes*
☐	Indicate the location of the standpipe riser with pipe size and the location of angle valves on each floor level. Hose connections shall be located at the main floor landing. *2015 Houston IFC 905.4 Location of Class I standpipe hose connections*. Show a detailed view of the hose valves 2 ½" and 1 ½", and the height from the floor. *NFPA 14 – Locations of Hose Connections*
☐	Stairwell identification should be in accordance with the *2015 Houston IFC – Appendix H Stairway Identification*.
☐	Pump room layout should include side and overhead view. Fire pump separation and fire rated construction should be in accordance with *NFPA 20 – 4.12.1.1 and 4.12.1.1.2 Fire Pump Units*.
☐	Show anti-vortex plate and size. *NFPA 20 - 4.14.10 Anti-Vortex Plate*
☐	Show OS&Y by tank and all other valves, tampers, and flows. *NFPA 20 – 4.14.5.1*
☐	Show jockey pump tie-in. *NFPA 20 - 4.25 Pressure Maintenance (Jockey or Make-Up) Pumps*
☐	Show break tank and size. *NFPA 20 – 4.31 Break Tanks*
☐	Show pipe diameter, suction, and discharge. *NFPA 20 – 4.26 Summary of Centrifugal Fire Pump Data*
☐	Show interconnection of all piping in the pump room with side view and overhead. Include water supply, tank, fire pump, jockey pump tie in, test line, bypass line, and controllers. *NFPA 14 – 7.5 Interconnection of Standpipes*

Houston Amended IBC and IFC Code Excerpt:

SECTION 905 – STANDPIPE SYSTEMS

[F] 905.3 Required installations. *Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.8. Standpipe systems are allowed to be combined with automatic sprinkler systems.*

Exception: *Standpipe systems are not required in Group R-3 occupancies.*

[F] 905.3.1 Height*. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9144 mm) above the lowest level of fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.*

Exceptions:

1. *Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.*
2. ~~*Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access.*~~
3. ~~*Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.*~~
4 2. *Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.*
5 3. *In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:*
   - 5 3.1. *Recessed loading docks for four vehicles or less; and*
   - 5 3.2. *Conditions where topography makes access from the fire department vehicle to the building impractical or impossible*