2018 Philadelphia Plumbing Code Amendments Training Course

Department of
Licenses and Inspections
CITY OF PHILADELPHIA

Objective

- To review the most recent amendments to the 2018 Philadelphia Plumbing Code, these amendments will take affect April 1st 2024.
- A brief review of some of the key elements of the 2018 Philadelphia Plumbing Code.
- A digital copy of the amendments and code will be provided by the international code council.

2018 Philadelphia Plumbing Code

- 2018 PPC is based on the 2018 International Plumbing Code with local amendments specifically developed for the city of Philadelphia by the Philadelphia Plumbing Advisory Board and approved by the Commissioner of the Department of Licenses and Inspection.

2018 Philadelphia Plumbing Code

Marginal Markings

➡ = Indicates where a paragraph or item has been deleted from the requirements of the 2015 *International Plumbing Code*.

> = Indicates model code language deleted by the City of Philadelphia.

| = Indicates a technical change from the requirements of the 2015 *International Plumbing Code*.

|| = Indicates a City of Philadelphia amendment has been made to the 2018 *International Plumbing Code*.

A single asterisk [*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [**] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code. The following table indicates such relocations in the 2018 edition of the *International Plumbing Code*.

2018 LOCATION	2015 LOCATION
802.2	804.1

Formatting Features

International Plumbing Code text in the body of the code amended by Philadelphia are identified by a P- preceding the subsection or table number. Where the wording of a section title was changed, the P- precedes the title number. Philadelphia regulations are printed within the subsection under which they were promulgated and are indicated by "(R)" behind the subsection number.

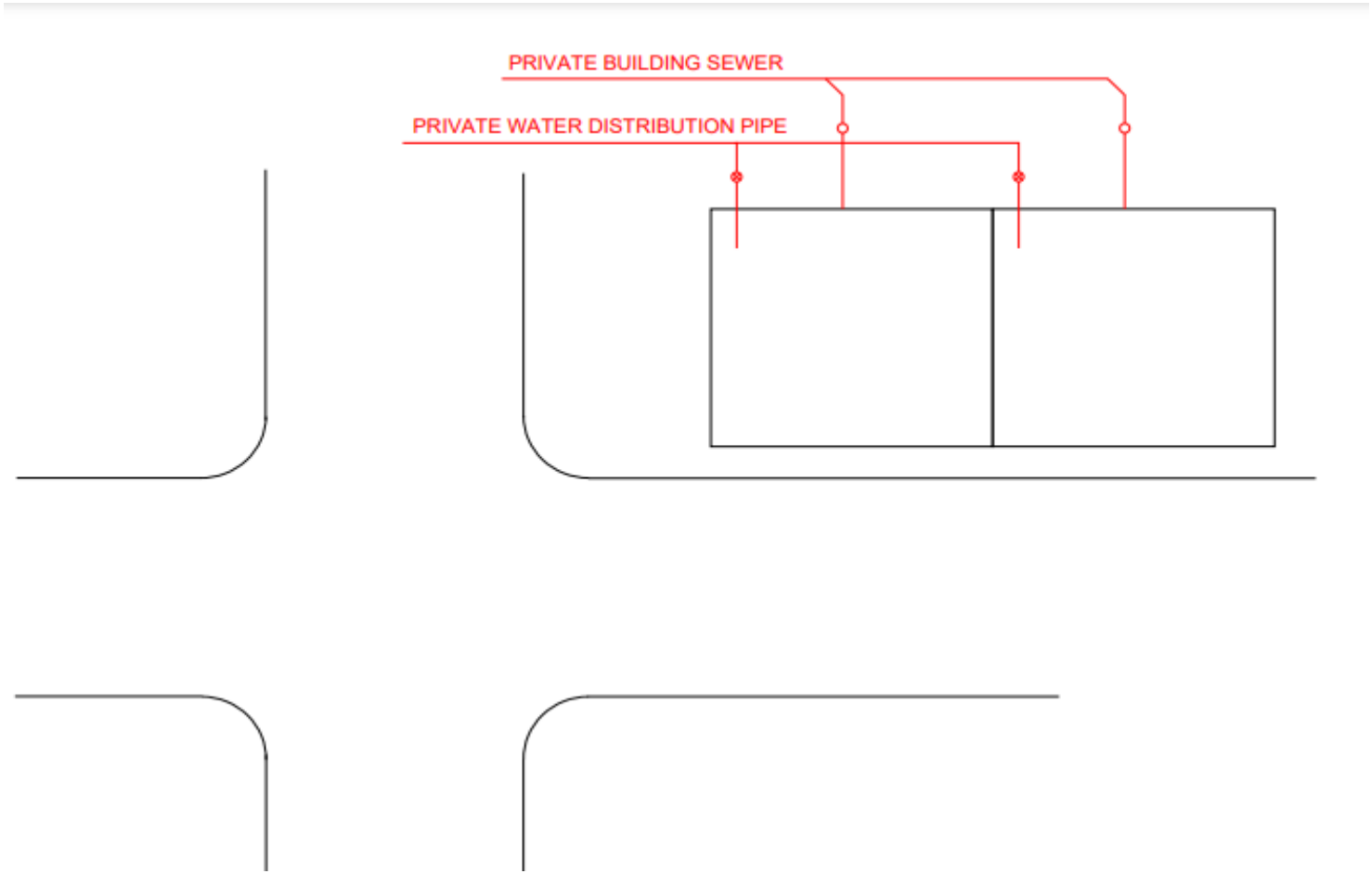
2018 Philadelphia Plumbing Code

- PRIVATE BUILDING SEWER. *Any sanitary drainage or storm drainage serving more than one building sewer privately owned and maintained and not directly controlled by the City of Philadelphia.*

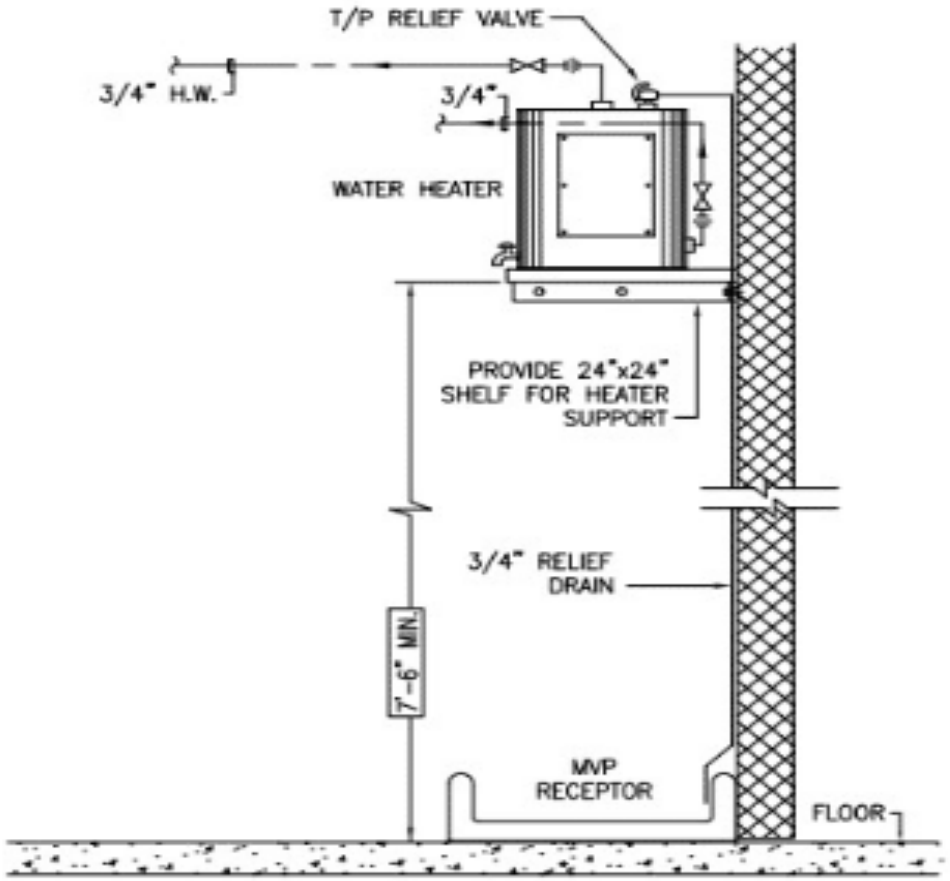
- PRIVATE WATER DISTRIBUTION PIPE. *The distribution pipe serving more than one building privately owned and maintained and not directly controlled by the City of Philadelphia.*

- WASTE RECEPTOR. A floor sink, standpipe, hub drain, or floor drain, or a *mop/slop sink* that receives the discharge of one or more indirect waste pipes.

Private Building Sewer / Private Water Distribution Pipe



Chapter 2: Definitions



Chapter 3: General Regulations

SECTION P-306 TRENCHING, EXCAVATION AND BACKFILL

- ~~P-306.4 Tunneling. Where pipe is to be installed by tunneling, jacking or a combination of both, the pipe shall be protected from damage during installation and from subsequent uneven loading. Where earth tunnels are used, adequate supporting structures shall be provided to prevent future settling or caving. The length of tunneling~~ *Tunneling shall be limited to only that required to clear the obstacle above.*

- *P-306.5 Shoring. Shoring shall be installed in ditches and trenches as per the Occupational Safety and Health Administration's (OSHA) Excavation standards, 29 Code of Federal Regulations (CFR) Part 1926, Subpart P.*

Chapter 3: General Regulations

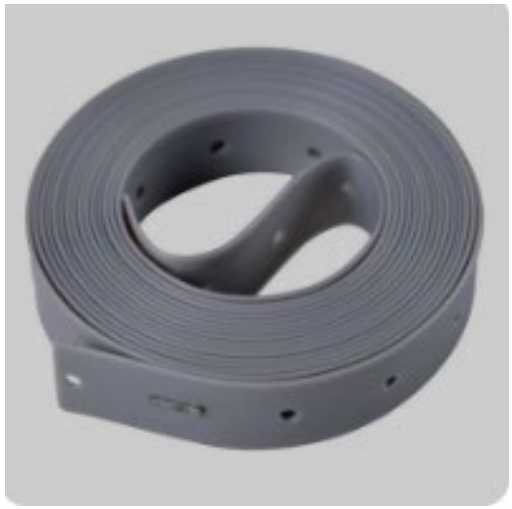
SECTION P-308 PIPING SUPPORT

- P-308.3 Materials. Hangers, anchors and supports shall support the piping and the contents of the piping. Hangers ~~and strapping material~~ shall be of approved material that will not promote galvanic action.

- Strapping removed

Chapter 3: General Regulations

Strapping / Band iron is prohibited

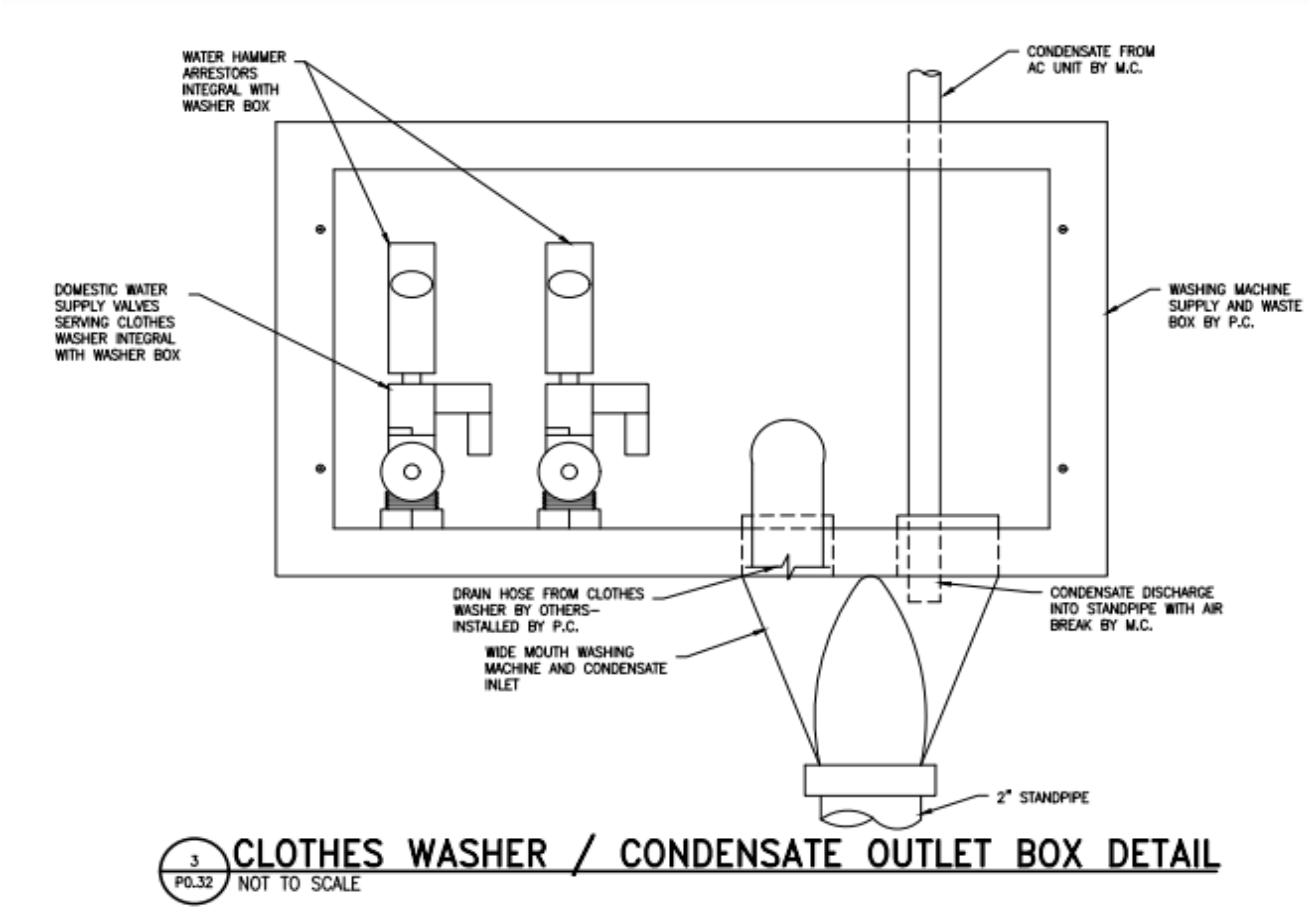


Chapter 3: General Regulations

SECTION P-314 CONDENSATE DISPOSAL

- *P-314.2.1.1 Disposal into Clothes Washer Box. Condensate shall be permitted to discharge into a clothes washer box with dual drainage outlets with one outlet dedicated to the clothes washer discharge and one outlet dedicated to condensate discharge. Condensate shall also be permitted to discharge into a clothes washer box with a single drainage outlet where the inlet of the clothes washer box outlet is sized to accommodate both the clothes washer discharge and the condensate discharge.*

Chapter 3: General Regulations



Dual outlet washer box

Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-403 MINIMUM PLUMBING FACILITIES

- P-403.1.1 Fixture calculations. To determine the occupant load of each ~~sex~~ *gender*, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each ~~sex~~ *gender* in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.

Chapter 4: Fixtures, Faucets, and Fixture Fittings

Exceptions:

1. The total occupant load shall not be required to be divided in half where approved statistical data indicates a distribution of the ~~sexes~~ *gender* of other than 50 percent of each ~~sex~~ *gender*

2. *Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple user facilities, each fixture type shall be in accordance with ICC A117.*

3. *Distribution of genders is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.*

Chapter 4: Fixtures, Faucets, and Fixture Fittings

- P-403.1.2 Single-user toilet ~~facility~~ and bathing room fixtures. The plumbing fixtures located in single-user toilet ~~facilities~~ and bathing rooms, including family or assisted use toilet and bathing rooms that are required by Section 1109.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet ~~facilities~~ and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by ~~either sex~~ *all persons regardless of gender*. *The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities*.

Chapter 4: Fixtures, Faucets, and Fixture Fittings

- P-403.1.3 Lavatory Distribution. Where two or more toilet rooms are provided for each ~~sex~~ *gender*, the required number of lavatories shall be distributed proportionately to the required number of water closets.

- P-403.2 Separate facilities. Where plumbing fixtures are required, separate *gender-based* facilities shall be provided. ~~for each sex~~

Chapter 4: Fixtures, Faucets, and Fixture Fittings

Exceptions:

5. Separate facilities shall not be required to be designated by gender where single-user toilet rooms are provided in accordance with Section 403.1.2.

6. For occupancy classifications requiring the same number of water closets for male and female under Table 403.1, separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by all genders and privacy for water closets is provided in accordance with Section 405.3.4. Urinals shall not be permitted in facilities designed for use by all genders.

Chapter 4: Fixtures, Faucets, and Fixture Fittings

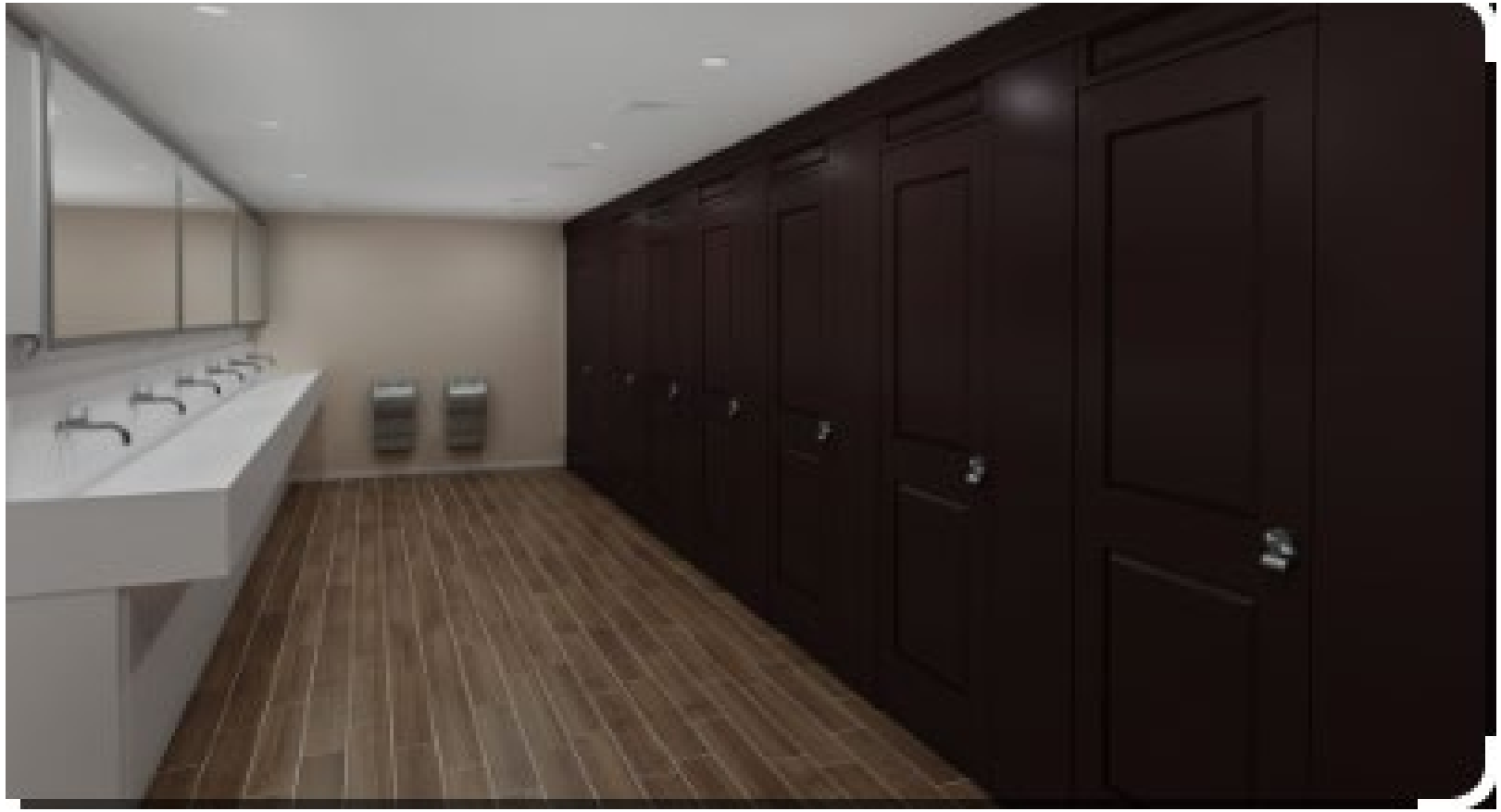
- P-403.2.1 Family or assisted-use toilet facilities serving as separate facilities. Where a building or tenant space requires a separate toilet facility for each ~~sex~~ *gender* and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted- use toilet facilities shall not be required to be identified for exclusive use by either ~~sex~~ *gender* as required by Section 403.4.

Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-405 INSTALLATION OF FIXTURES

- *P-405.3.4.1 Water closet compartments serving all genders. Partitions and doors enclosing a water closet in a toilet room serving all genders shall extend from floor to ceiling.*

Chapter 4: Fixtures, Faucets, and Fixture Fittings



Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-406 AUTOMATIC CLOTHES WASHERS

- P-406.2 Waste connection. The waste from an automatic clothes washer shall discharge through an air break into a standpipe in accordance with Section ~~802.3.3~~ *802.4.3* or into a laundry sink. The trap and fixture drain for an automatic clothes washer standpipe shall be not less than 2 inches (51 mm) in diameter. The fixture drain for the standpipe serving an automatic clothes washer shall connect to a 3-inch (76 mm) or larger diameter fixture branch or stack. Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an approved trench drain.

Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-410 DRINKING FOUNTAINS

- *P-410.6 Educational Facilities. Structures or portions of structures used for educational occupancies shall be equipped with one drinking fountain for every 100 students or fraction thereof. At least one fountain shall be on each occupied floor of the building, without regard to the number of students. Water dispensers may be substituted for not more than fifty percent (50%) of the required number of drinking fountains. Each drinking fountain shall include a filtered water supply with a filter meeting or exceeding NSF/ANSI 53 and 42 requirements and a filter change indicator in accordance with NSF/ANSI 53.*

Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-413 FLOOR AND TRENCH DRAIN.

- P-413.3 Size of floor drains and trench drains. Floor drains*, emergency floor drains*, and trench drains shall have a drain outlet not less than *3 inches* (51 76 mm) in diameter. *Note: An adjustable repair coupling shall be permitted to connect underground piping to a floor drain or trench drain.*

SECTION P-414 FLOOR SINKS

- P-414.1 Approval. Sanitary floor sinks shall conform to the requirements of ASME A112.6.7. *Note: An adjustable repair coupling shall be permitted to connect underground piping to a floor sink*

Chapter 4: Fixtures, Faucets, and Fixture Fittings

Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-419 LAVATORIES

- P-419.1 Approval. Lavatories shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Group wash-up equipment shall conform to the requirements of Section 402. Every 20 inches of rim space*, including a faucet,* shall be considered as one lavatory. *The distance between the centerline of each faucet shall be no less than 20".*

Chapter 4: Fixtures, Faucets, and Fixture Fittings

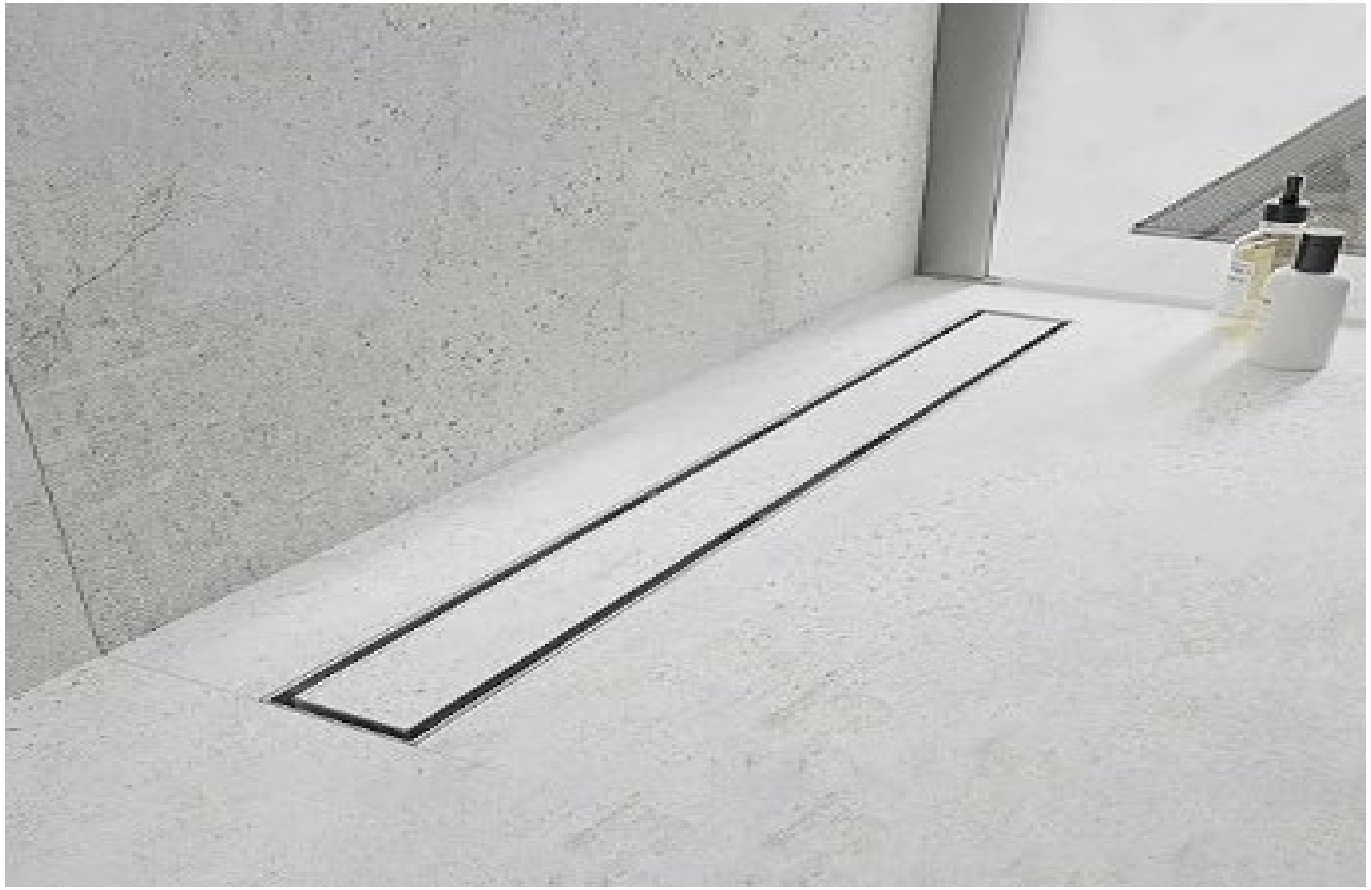
SECTION P-421 SHOWERS

- P-421.3 Shower waste outlet. Waste outlets serving showers shall be not less than 1-1/2 inches (38 mm) in diameter and, for other than waste outlets in bathtubs, shall have removable strainers not less than 3 inches (76 mm) in diameter with strainer openings not less than 1/4 inch (6.4 mm) in least dimension. Where each shower space is not provided with an individual waste outlet, the waste outlet shall be located and the floor pitched so that waste from one shower does not flow over the floor area serving another shower. Waste outlets shall be fastened to the waste pipe in an approved manner.

Exception:

- *A linear shower drain shall be permitted when sized and installed in accordance with the linear drain manufacturer. The area of any linear shower drain shall be a minimum of 7 square inches (4516 mm2).*

Linear Shower Drain



Chapter 4: Fixtures, Faucets, and Fixture Fittings

SECTION P-425 WATER CLOSETS

- P-425.3 Water closet seats. Water closets shall be equipped with seats of smooth, nonabsorbent material. Seats of water closets provided for public or employee toilet facilities shall be of the hinged open-front *elongated type*. Integral water closet seats shall be of the same material as the fixture. Water closet seats shall be sized for the water closet bowl type.

Chapter 5: Water Heaters

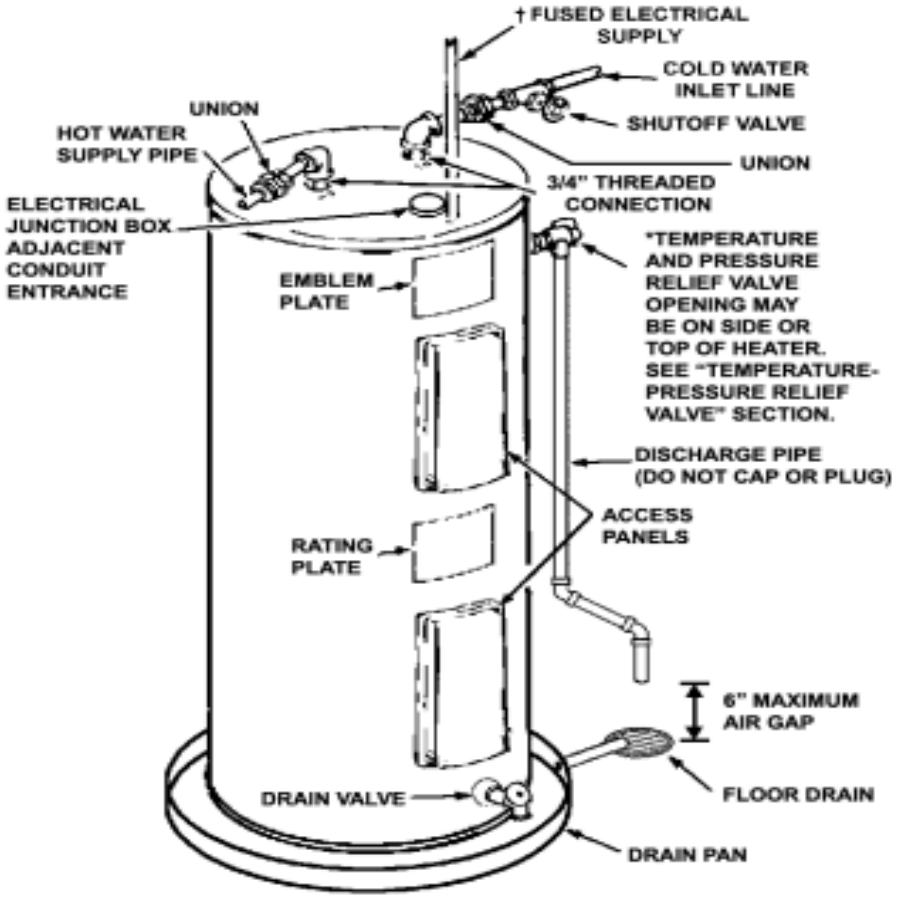
SECTION P-504 SAFETY DEVICES

- P-504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

  5. Discharge to the ~~floor, to the pan serving the water heater or storage tank~~, to a waste receptor or to the outdoors.

- *Removed T&P relief discharge into the water heater pan.*

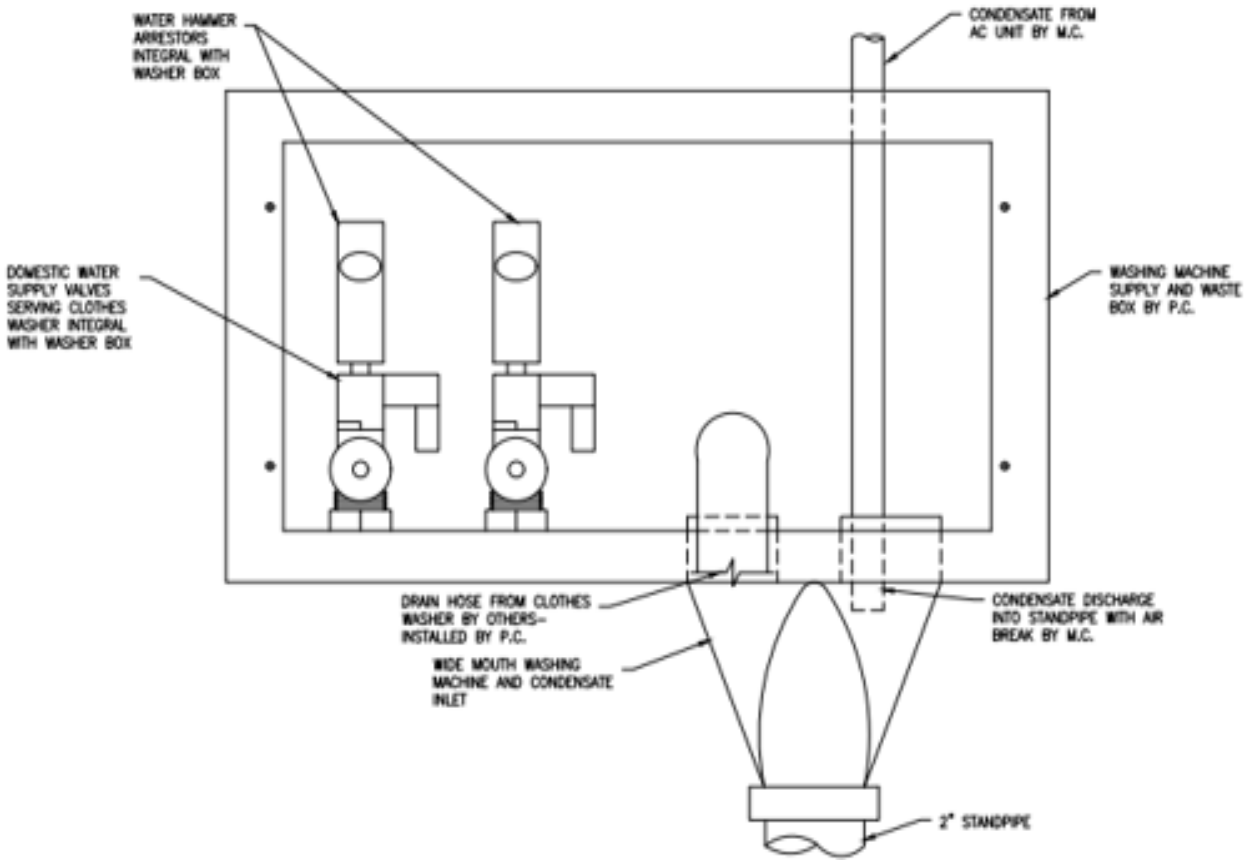
Chapter 5: Water Heaters



Chapter 5: Water Heaters

- P-504.7.2 Pan drain termination. The pan drain shall extend full size and terminate over a suitably located indirect waste receptor or floor drain or extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface. Where a pan drain was not previously installed, a pan drain shall not be required for a replacement water heater installation. *The pan drain shall be permitted to discharge into a clothes washer box with dual drainage outlets with one outlet dedicated to the clothes washer discharge and one outlet dedicated to the pan drain. The pan drain shall also be permitted to drain into a clothes washer box with a single drainage outlet where the inlet of the clothes washer box outlet is sized to accommodate both the clothes washer discharge and the pan drain discharge.*

Chapter 5: Water Heaters



Chapter 6: Water Distribution and Supply

Definitions

- Water distribution pipe. The pipe from the curb stop or curb line to the structure or through the meter pit to the first point of use if there is no structure.

- Water service pipe. The pipe from the water main to the curb stop or curb line as regulated by Philadelphia Water Department Regulations

Chapter 6: Water Distribution and Supply

- *P-602.1.1 Separate Water Connection. A building having plumbing fixtures installed and intended for human habitation, occupancy or use on premises abutting on a street, alley, or easement in which there is a public water main shall have a separate connection to the public water main. Where located on the same deeded property and maintained under the same ownership, multiple buildings shall not be prohibited from connecting to a common private water distribution pipe that connects to the public water main provided that the common private water distribution pipe is not placed underneath any building or structure and is connected after the existing water meter.*

Chapter 6: Water Distribution and Supply

- *P- 602.1.1.1Non-residential. Non-residential buildings and other structures on the same deeded property and maintained under the same ownership shall be permitted to connect to a common water supply.*

Chapter 6: Water Distribution and Supply

- *P-602.1.1.2 Residential. Where one building stands in the rear of another building on the same deeded property and maintained under the same ownership, and a separate water supply cannot be provided for the rear building through an alley, yard or other open public space, the water supply of the front building shall be permitted to serve the rear building, provided the water supply of the front building is of adequate size and in suitable condition to serve both front and rear buildings.*

Chapter 6: Water Distribution and Supply

P-602.3.1 Sources. Dependent on geological and soil conditions and the amount of rainfall, individual water supplies are of the following type ~~types~~ type: drilled well. ~~well., driven well, dug well, bored well, spring, stream or cistern. Surface bodies of water and land cisterns shall not be sources of individual water supply unless properly treated by approved means to prevent contamination.~~ Individual water supplies shall be constructed and installed in accordance with the applicable state and local laws. Where such laws do not address all of the requirements set forth in NGWA-01, individual water supplies shall comply with NGWA-01 for those requirements not addressed by state and local laws. Note: Each well's water quality requires approval by the Department of Public Health.

Chapter 6: Water Distribution and Supply

- *P-602.4 Private Water Distribution Pipe. Repairs to Existing Private water distribution pipe materials shall be in accordance with Section P-605. New or extended water distribution pipes may not cross any adjoining property lines except private water infrastructure designed in accordance with P-614.*

- *P-603.3 Property Lines. Water distribution pipes may not cross property lines except private infrastructure designed in accordance with section P-614.*

Chapter 6: Water Distribution and Supply

- P-604 Design of Building Water Supply System

- P-604.5 Size of fixture supply. The minimum size of a fixture supply pipe shall be as shown in Table 604.5. The fixture supply pipe shall terminate not more than 30 inches (762 mm) from the point of connection to the fixture. A reduced-size flexible water connector installed between the supply pipe and the fixture shall be of an approved type. The supply pipe shall extend to the floor or wall adjacent to the fixture. The minimum size of individual distribution supply lines utilized in gridded or parallel water supply systems shall be as shown in Table 604.5*. A ridged water connector shall be required in all occupancies other than one- and two-family dwellings.*

Ridge Water Connector

Chapter 6: Water Distribution and Supply

- P-605.3 Water distribution pipe.

Any water distribution pipe serving or located within occupancies other than one-and two-family dwellings and apartments shall be metallic piping in accordance with this section and listed on Table P-605.3. All water service piping from the City water main tap to the curb stop shall conform to the regulations as set forth by the Philadelphia Water Department

Chapter 6: Water Distribution and Supply

- P-605.4.1 High rise materials. Metallic piping shall be installed in buildings *with an occupied floor located more than 75 feet* ~~or more in height as measured from~~ above the lowest level of fire department vehicle access.

Exception:
Nonmetallic piping may be used within demised individual residential dwelling units located within buildings with an occupied floor located more than 75 feet and not more than 150 feet ~~in height as measured from~~ above the lowest level of fire department vehicle access.

Chapter 6: Water Distribution and Supply

- P-605.6 Flexible water connectors. Flexible water connectors *shall be prohibited*.

Exception: *In one- and two-family dwellings, flexible water connectors* where exposed to continuous pressure shall conform to ASME A112.18.6/CSA B125.6. Access shall be provided to all flexible water connectors.

Braided flexible connectors prohibited. Allowed in only One and Two Family

Chapter 6: Water Distribution and Supply

- P-605.13.5 Press-connect joints. Press-connect joints shall conform to one of the standards indicated in Table 605.5, and shall be installed in accordance with the manufacturer's instructions. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. The tube shall be fully inserted into the press- connect fitting. Press-connect joints shall be pressed with a tool certified by the manufacturer. *Press-connect joints shall be limited to above ground installations only.*

Press Connect Joint

Chapter 6: Water Distribution and Supply

- P-605.13.7 Push-fit joints. Push-fit joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions and *limited to above ground installations only.*

Push Fit Joint

Chapter 6: Water Distribution and Supply

- P-608.18 Protection of individual water supplies. An individual water supply shall be located and constructed so as to be safeguarded against contamination in accordance with Sections 608.18.1 through ~~608.18.8~~ 608.18.7.

Chapter 6: Water Distribution and Supply

- P-608.18.1 Well locations. A potable ground water source or pump suction line shall not be located closer to potential sources of contamination than the distances shown in Table 608.18.1. In the event the underlying rock structure is limestone or fragmented shale, the local or state health department shall be consulted on well site location. The distances in Table 608.18.1 constitute minimum separation and shall be increased in areas of creviced rock or limestone, or where the direction of movement of the ground water is from sources of contamination toward the well. Note: *All well-water quality requires approval by the Department of Public Health.*

Chapter 6: Water Distribution and Supply

- ~~P-608.18.6 Dug or bored well casings. Dug or bored well casings shall be of watertight concrete, tile or galvanized or corrugated metal pipe extending to not less than 10 feet (3048 mm) below the ground surface. Where the water table is more than 10 feet (3048 mm) below the ground surface, the water-tight casing shall extend below the table surface. Well casings for dug wells or bored wells con- structed with sections of concrete, tile or galvanized or corrugated metal pipe shall be surrounded by 6 inches (152 mm) of grout poured into the hole between the out- side of the casing and the ground and extending not less than 10 feet (3048 mm) below the ground surface.~~

Chapter 6: Water Distribution and Supply

- ~~608.18.7~~ P-608.18.6 Cover. Potable water wells shall be equipped with an overlapping watertight cover at the top of the well casing or pipe sleeve such that contaminated water or other substances are prevented from entering the well through the annular opening at the top of the well casing, wall or pipe sleeve. Covers shall extend downward not less than 2 inches (51 mm) over the outside of the well casing or wall. A dug well cover shall be provided with a pipe sleeve permitting the withdrawal of the pump suction pipe, cylinder or jet body without disturbing the cover. Where pump sections or discharge pipes enter or leave a well through the side of the casing, the circle of contact shall be water tight.

Chapter 6: Water Distribution and Supply

- SECTION P-614 PRIVATE WATER INFRASTRUCTURE

- *PRIVATE WATER ~~SERVICE~~ DISTRIBUTION PIPE*. For the purposes of this section, this is limited to the section of pipe located between the Private Water Infrastructure Pipe and the individual building.

Chapter 6: Water Distribution and Supply

- P-614.1.1 Definitions. The following definitions shall apply to Private Water Infrastructure.

MASTER METER. A measuring device owned and maintained by the Philadelphia Water Department used to collect data and indicate water usage from multiple individually metered units in a Condominium or ~~of~~ Planned Community.

Chapter 6: Water Distribution and Supply

- PRIVATE WATER INFRASTRUCTURE PIPE. The ~~water distribution~~ pipe that is constructed on private property between the Master Meter and the Private Water ~~Service~~ Distribution Pipe owned and maintained by the Unit Owner's Association to serve some or all units within a Condominium or Planned Community.

- PRIVATE WATER ~~SERVICE~~ *DISTRIBUTION* PIPE. For the purposes of this section, this is limited to the section of pipe located between the Private Water Infrastructure Pipe and the individual building.

Chapter 6: Water Distribution and Supply

- P-614.1.1 Definitions. The following definitions shall apply to Private Water Infrastructure.

MASTER METER. A measuring device owned and maintained by the Philadelphia Water Department used to collect data and indicate water usage from multiple individually metered units in a Condominium or ~~of~~ Planned Community.

Chapter 6: Water Distribution and Supply

- P-614.3 Connections. The Private Water ~~Service~~ *Distribution* Pipe for each house or structure shall be connected to the Private Water Infrastructure Pipe separately. A Private Water Infrastructure Pipe used to convey both domestic and fire protection in a single pipe is permitted.

Chapter 6: Water Distribution and Supply

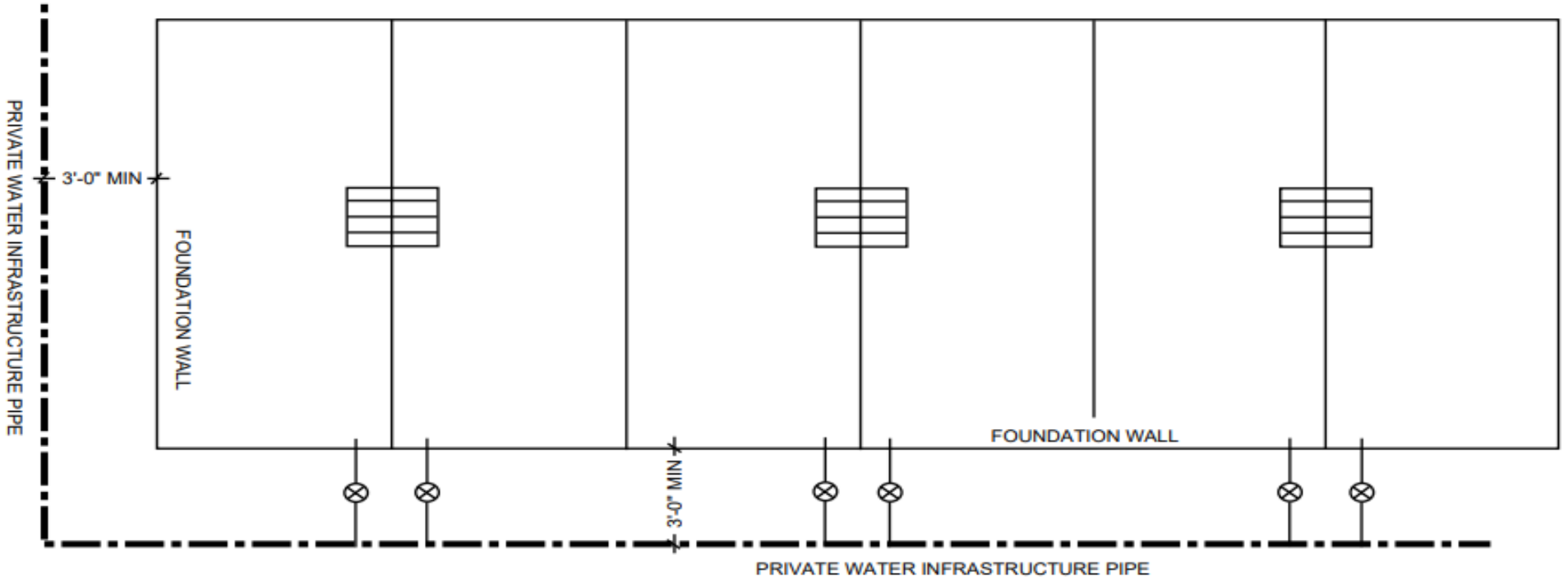
- P-614.3.1 Shut off valves. Each connection of the Private Water ~~Service~~ Distribution Pipe to the Private Water Infrastructure Pipe shall have an accessible shut off valve installed no less than 3 feet (914 mm) from the outside of the building wall and in line with the ferrule connection on the Private Water Infrastructure Pipe.

Chapter 6: Water Distribution and Supply

- P-614.5 Protection of structures. The Private Water Infrastructure Pipe installed parallel to footings and walls shall not extend into the bearing plane of a footing or wall in accordance with Section 307.5 of this code*. Private Water Infrastructure pipe shall not be installed within 5 feet of any adjoining property line.* Private Water Infrastructure Pipe shall not be installed within ~~5-~~ *3* feet of any *parallel* ~~adjoining property~~ building foundation.

Chapter 6: Water Distribution and Supply

P-614.5



Chapter 6: Water Distribution and Supply

- P-614.6 Fire hydrants. The Private Water Infrastructure Pipe with Fire hydrant connections shall be metered and require backflow protection in accordance with Philadelphia Water Department (PWD) Regulations. The Philadelphia Fire Department shall govern the placement of fire hydrants. PWD may direct the placement of blow-offs and meters on the Private Water ~~Service~~ *Distribution* Pipe to ensure water quality.

Chapter 6: Water Distribution and Supply

- P-614.7 Easement required. Private Water Infrastructure Pipe shall require an easement with a minimum width of 12 foot (3657 mm) and must provide adequate space to replace/ repair the private infrastructure. Minimum vertical drive height clearance of 13 feet 6 inches (4115 mm) or two times the pipe depth to pipe bottom, whichever is greater, shall be provided. The easement shall also provide access to individual private water ~~service~~ *distribution* pipes and valves and allow for shut- offs when necessary. No permanent structures shall be built over or in the easement unless these vertical height clearances are met.

Chapter 7: Sanitary Drainage

- *P-701.2.1 Private Building Sewer. Repairs to existing private building sewer pipe materials shall be in accordance with Table P-702.3. New or extended private building sewers may not cross any adjoining property lines except private sanitary sewer infrastructure designed in accordance with Sections P-717.*

Chapter 7: Sanitary Drainage

- P-701.8 Abandonment of building sewer and lateral. Abandoned laterals shall have the house trap removed, and the pipe shall be hermetically sealed by a cap or plug *encased in concrete* at the curb line. Laterals 8 inches (203 mm) and greater shall be *sealed by a cap or plug encased in concrete at the point of connection to the public sewer*. Abandoned drainage piping within the building shall be hermetically sealed by a cap or plug.

Chapter 7: Sanitary Drainage

- P-701.8 Abandonment of building sewer and lateral. Abandoned laterals shall have the house trap removed, and the pipe shall be hermetically sealed by a cap or plug *encased in concrete* at the curb line. Laterals 8 inches (203 mm) and greater shall be *sealed by a cap or plug encased in concrete at the point of connection to the public sewer*. Abandoned drainage piping within the building shall be hermetically sealed by a cap or plug.

Chapter 7: Sanitary Drainage

- *P-701.9 Property Lines. Drainage piping may not cross adjoining property lines except private sewer infrastructure designed in accordance with Section P-717*.

Chapter 7: Sanitary Drainage

SECTION P-702 MATERIALS

- TABLE 702.1 ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
* * *	
Copper or copper-alloy tubing [a] (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
* * *	

a. Type K copper tubing must be used for the drainage of all urinals

Chapter 7: Sanitary Drainage

- P-702.1.1 High-rise material. Metallic piping shall be installed throughout buildings with an occupied floor located more than 75 feet ~~or more in height as measured from~~ above the lowest level of fire department vehicle access.

Chapter 7: Sanitary Drainage

- P-702.2.1 High-rise material. Metallic piping shall be installed for all underground building sanitary drainage and vent piping for buildings- or *with an occupied floor located more than 75 feet* ~~or more in height as measured from~~ above the lowest level of fire department vehicle access.

Chapter 7: Sanitary Drainage

TABLE P-702.2 UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

- *Ductile iron pipe class 56 AWWA C151/A21.51; AWWA C115/A21.15*

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid~~, cellular core or composite~~ wall	ASTM D2661; ~~ASTM F628; ASTM F1488;~~ CSA B181.1
Cast-iron pipe	ASTM A74; ~~ASTM A888; CISPI 301~~
***	***
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid~~, cellular core or composite~~ wall	ASTM D2665; ~~ASTM F891; ASTM F1488;~~ CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid~~, cellular core or composite~~ wall	ASTM D2949~~, ASTM F1488~~
***	***
Ductile iron pipe class 56	***AWWA C151/A21.51; AWWA C115/A21.15***

Chapter 7: Sanitary Drainage

TABLE P-702.3 BUILDING SEWER PIPE

Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140) with a solid ~~cellular core or composite~~ wall	**ASTM D2661; ~~ASTM F628; ASTM F1488;~~ CSA B181.1**
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters, including SDR 42 (PS 20), PS 35, SDR 35 (PS 45), PS 50, PS 100, PS 140, SDR 23.5 (PS 150) and PS 200; with a solid~~, cellular core or composite~~ wall	**~~ASTM F1488;~~ ASTM D2751**
Cast-iron pipe	**ASTM A74; ~~ASTM A888; CISPI 301~~**
* * *	* * *
Ductile iron pipe class 56	***AWWA C151/A21.51; AWWA C115/A21.15***
* * *	* * *
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters, including PS 25, SDR 41 (PS 28), PS 35, SDR 35 (PS 46), PS 50, PS 100, SDR 26 (PS 115), PS 140 and PS 200; with a solid~~, cellular core or composite~~ wall	**~~ASTM F891; ASTM F1488;~~ ASTM D3034; CSA B182.2; CSA B182.4**
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid~~, cellular core or composite~~ wall	**ASTM D2949~~; ASTM F1488~~**
* * *	* * *

Chapter 7: Sanitary Drainage

TABLE P-702.4 PIPE FITTINGS

Ductile iron pipe class 56 AWWA C151/A21.51; AWWA C115/A21.15

Chapter 7: Sanitary Drainage

- P-702.3.1 High-rise material. Metallic piping shall be installed for all building sewer pipe for buildings *with an occupied floor located more than* 75 feet ~~or more in height as measured from~~ *above* the lowest level of fire department vehicle access.

Chapter 7: Sanitary Drainage

SECTION P-703 BUILDING SEWER

- *P-703.4.1 Connections to existing private building sewers. Where connections are made to existing private building sewers, all provisions of 703.4 shall apply including confirmation and acceptance of condition and sizing by a registered design professional.*

- *P-703.4.1.1 Extension of existing private building sewers. Extension of existing private building sewers is prohibited.*

Chapter 7: Sanitary Drainage

SECTION P-704 DRAINAGE PIPING INSTALLATION

- P-704.1 Slope of horizontal drainage piping. Horizontal drainage piping shall be installed in uniform alignment at uniform slopes. The slope of a horizontal drainage pipe shall be not less than that indicated in Table 704.1 except that where the drainage piping is upstream of a grease interceptor, the slope of the piping shall be not less than ¼ inch per foot (2- percent slope). *Building sewer force mains are not permitted.*

Chapter 7: Sanitary Drainage

SECTION P-706 CONNECTIONS BETWEEN DRAINAGE PIPING AND FITTINGS

- d. *A quarter bend shall be permitted, in lieu of an ideal bend, on a dry vent above the highest fixture and in a storm system.*

TABLE 706.3 - FITTINGS FOR CHANGE IN DIRECTION

TYPE OF FITTING PATTERN	CHANGE IN DIRECTION		
	Horizontal to vertical	Vertical to horizontal	Horizontal to horizontal
Quarter bend	X	X [a, d]	X [a]

Chapter 7: Sanitary Drainage

SECTION P-708 CLEANOUTS

- P-708.1 Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections 708.1.1 through 708.1.11*. A cleanout shall be provided at or near the base of each vertical waste or soil stack.*

Chapter 7: Sanitary Drainage

- P-708.1.1 Horizontal drains and building drains. Horizontal drainage pipes and building drains in buildings shall have cleanouts located at intervals of not more than 50 feet for lines four inch in diameter or less. *Horizontal drainage pipes and building* ~~Building~~ drains shall have cleanouts located at intervals of not more than 100 feet ~~for lines five inch in diameter and above~~. except where manholes are used instead of cleanouts, the manholes shall be located at intervals of not more than 200 feet. The interval length shall be measured from the cleanout or manhole opening, along the developed length of the piping to the next drainage fitting providing access for cleaning, the end of the horizontal drain or the end of the building drain.

Chapter 7: Sanitary Drainage

- P-708.1.10.2 Floor cleanout assemblies. Where it is necessary to protect a cleanout plug from the loads of vehicular traffic, cleanout assemblies in accordance with ASME A112.36.2M shall be installed. Note*: An adjustable repair coupling shall be permitted to connect underground piping to a cleanout.*

Chapter 7: Sanitary Drainage

SECTION P-709 FIXTURE UNITS

- TABLE P-709.1 DRAINAGE FIXTURE UNITS FOR FIXTURES AND GROUPS

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS	MINIMUM SIZE OF TRAP (inches)
Emergency floor drain	0	~~2~~ 3

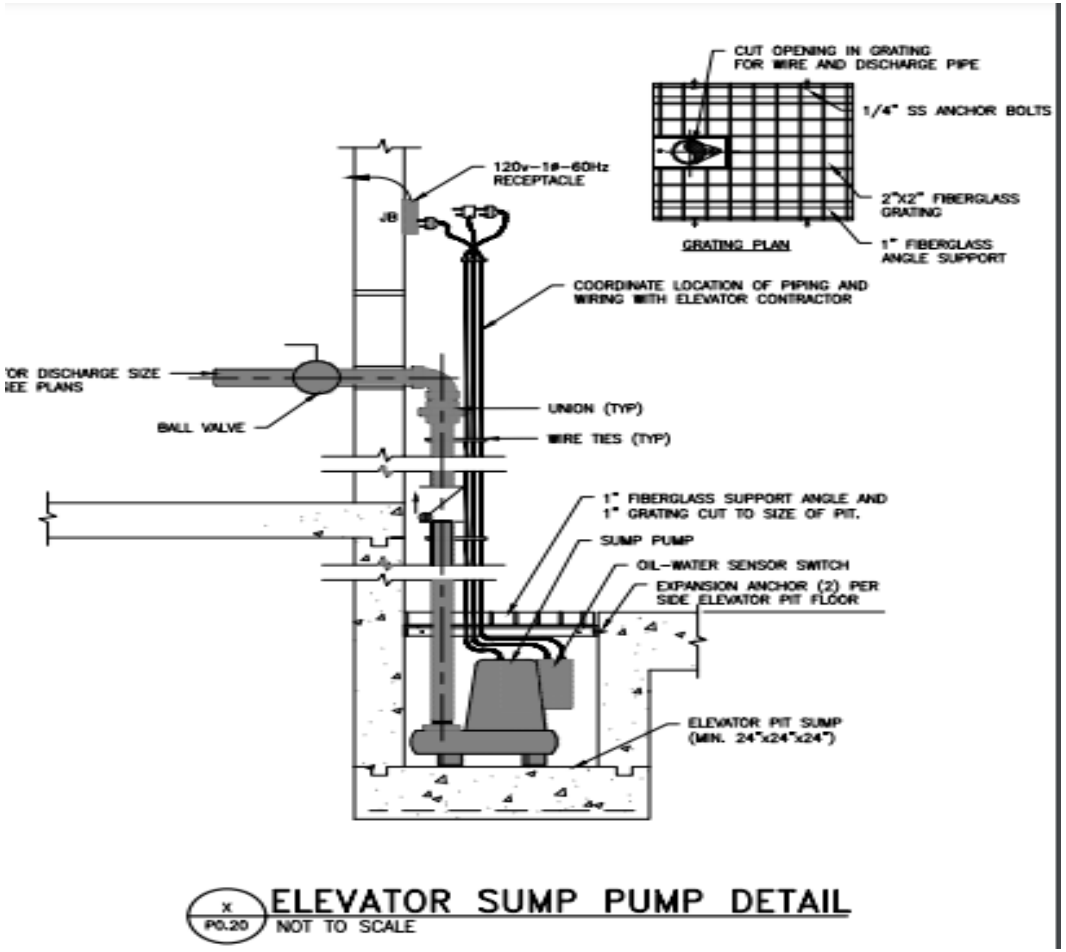
Chapter 7: Sanitary Drainage

SECTION P-712 SUMPS AND EJECTORS

- P-712.3.2 Sump pit. The sump pit shall be not less than 18 inches (457 mm) in diameter and not less than 24 inches (610 mm) in depth, unless otherwise approved. The pit shall be provided with access and shall be located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, concrete, steel, plastic or other approved materials. The pit bottom shall be solid and pro- vide permanent support for the pump. The sump pit shall be fitted with a gastight removable cover that is installed not more than 2 inches (51 mm) below grade or floor level. The cover shall be adequate to support anticipated loads in the area of use. The sump pit shall be vented in accordance with Chapter 9.

- *Exception: An elevator sump pit shall not require a sealed cover.*

Chapter 7: Sanitary Drainage



Chapter 7: Sanitary Drainage

SECTION P-714 BACKWATER VALVES

- P-714.1 Sewage backflow. Where plumbing fixtures are installed on a floor with a finished floor elevation below the fresh air inlet termination, such fixtures shall be protected by a backwater valve installed in the building drain, or horizontal branch serving such fixtures. Plumbing fixtures installed on a floor with a finished floor elevation above the elevation of the fresh air inlet termination shall not discharge through a backwater valve.

Chapter 7: Sanitary Drainage

Exception:

- In existing buildings, fixtures above the elevation of the fresh air inlet termination shall not be prohibited from discharging through a backwater valve.

Note: *For building sub-drains that service fixtures below the fresh air inlet termination that discharges into the building gravity drainage system by automatic pumping equipment, the required check valve installed with the pump shall provide sufficient means of protection against backflow.*

Chapter 7: Sanitary Drainage

SECTION P-715 VACUUM DRAINAGE SYSTEMS

- P-715.2.5 Materials. Vacuum drainage pipe, fitting and valve materials shall be in accordance with the vacuum drainage system manufacturer's instructions and the requirements of this chapter *and supersede the requirements contained in Section 702*.

Chapter 7: Sanitary Drainage

SECTION P-717 PRIVATE SANITARY SEWER INFRASTRUCTURE

- P-717.2 Materials. Private Sanitary Sewer Infrastructure shall conform to *all of the requirements* listed in *Section 702* of this code.

Chapter 7: Sanitary Drainage

- P-717.7 Protection of structures. Private sanitary sewer infrastructure piping installed parallel to footings and walls shall not extend into the bearing plane of a footing or wall in accordance with Section 307.5 of this code. *Private sanitary sewer infrastructure piping shall not be installed within 5 feet of any adjoining property line.* Private sanitary sewer infrastructure Pipe shall not be installed within ~~5-~~ *3* feet of any ~~adjoining property~~ parallel building foundation.

Chapter 8: Indirect / Special Waste

SECTION P-802 INDIRECT WASTES

- P-802.1.4 Swimming pools. Waste water from swimming pools, backwash from filters shall discharge to the sanitary drainage system and water from pool deck drains discharge to the ~~building~~ *sanitary drainage system*. Swimming pool waste water discharge and pool deck drains shall be through an indirect waste pipe by means of an air gap.

Chapter 8: Indirect / Special Waste

- P-802.1.5 Non-potable clear-water waste. Where devices and equipment such as process tanks, filters, drips and boilers discharge non-potable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air break or an air gap*. Note: This waste may discharge on to a roof and into the storm system*

Chapter 8: Indirect / Special Waste

- P-802.1.7 Food utensils, dishes, pots and pans sinks. Sinks, in other than dwelling units, used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food shall discharge indirectly through an air gap ~~*or an air break*~~ to the drainage system.

Chapter 8: Indirect / Special Waste

- P-802.4 Waste receptors. For other than hub drains that receive only clear-water waste and standpipes, a removable strainer or basket shall cover the outlet of waste receptors. Waste receptors shall not be installed in concealed spaces. Waste receptors shall not be installed in plenums, crawl spaces, attics, interstitial spaces above ceilings and below floors. Ready access shall be provided to waste receptors. *For the purpose of this section, a mop/slop sink shall be considered a waste receptor for clear water waste only.*

Chapter 8: Indirect / Special Waste

- P-802.4.2 Hub drains and floor sinks. A hub drain shall be in the form of a hub or a pipe extending not less than 1 inch above ~~a water-impervious~~ *the finished floor*.

- Floor sinks shall be set not less than 1 inch above ~~a water impervious~~ *the finished floor* to the flood level rim.

Chapter 9: Vents

SECTION P-917 SINGLE-STACK VENT SYSTEM

- P-917.6 Additional venting required. Additional venting shall be provided where more than one water closet discharges to a horizontal branch and where the distance from a fixture trap to the stack exceeds the limits in Section 917.4. Where additional venting is required, the fixture(s) shall be vented by individual vents, common vents, wet vents, circuit vents, or a combination waste and vent pipe. The dry vent extensions for the additional venting shall connect to a branch vent, vent stack, stack vent, ~~*air admittance valve*~~, or shall terminate outdoors

Chapter 9: Vents

SECTION P-919 PHILADELPHIA SINGLE-STACK WASTE AND VENT SYSTEM

- P-919.1 Scope. The City of Philadelphia has the oldest known model plumbing code in the country dating back to June 30, 1885. Since the inception of the Philadelphia Plumbing Code, one of the main characteristics and theories has been the single stack method of waste and vent. This code and the single stack theory has stood the test of time and continues today to be a model code copied by many other codes as a base line. Every building and structure in the City of Philadelphia as of this writing has been built incorporating this methodology of the single stack theory. This section is intended to be used [as an option] for any modification or rebuilding of any of these existing structures, homes or buildings or as an option for any planned new construction in the future*. Systems utilizing this section shall not be permitted to incorporate any other methods of design contained in other sections of this Code.*

Chapter 9: Vents

- P-919.2 Drainage system sizing.

- P-919.2.2.1 *Values for indirect waste receptor. The drainage fixture unit load of an indirect waste receptor receiving the discharge of indirectly connected fixtures shall be the sum of the drainage fixture unit values of the fixtures that discharge to the receptor, but not less than the drainage fixture unit value given for the indirect waste receptor in Table P-919.2(a) or 919.2(b).*

Chapter 9: Vents

- *P-919.2.2.2 Clear-water waste receptors. Where waste receptors such as floor drains, floor sinks and hub drains receive only clear-water waste from display cases, refrigerated display cases, ice bins, coolers and freezers, such receptors shall have a drainage fixture unit value of one half*

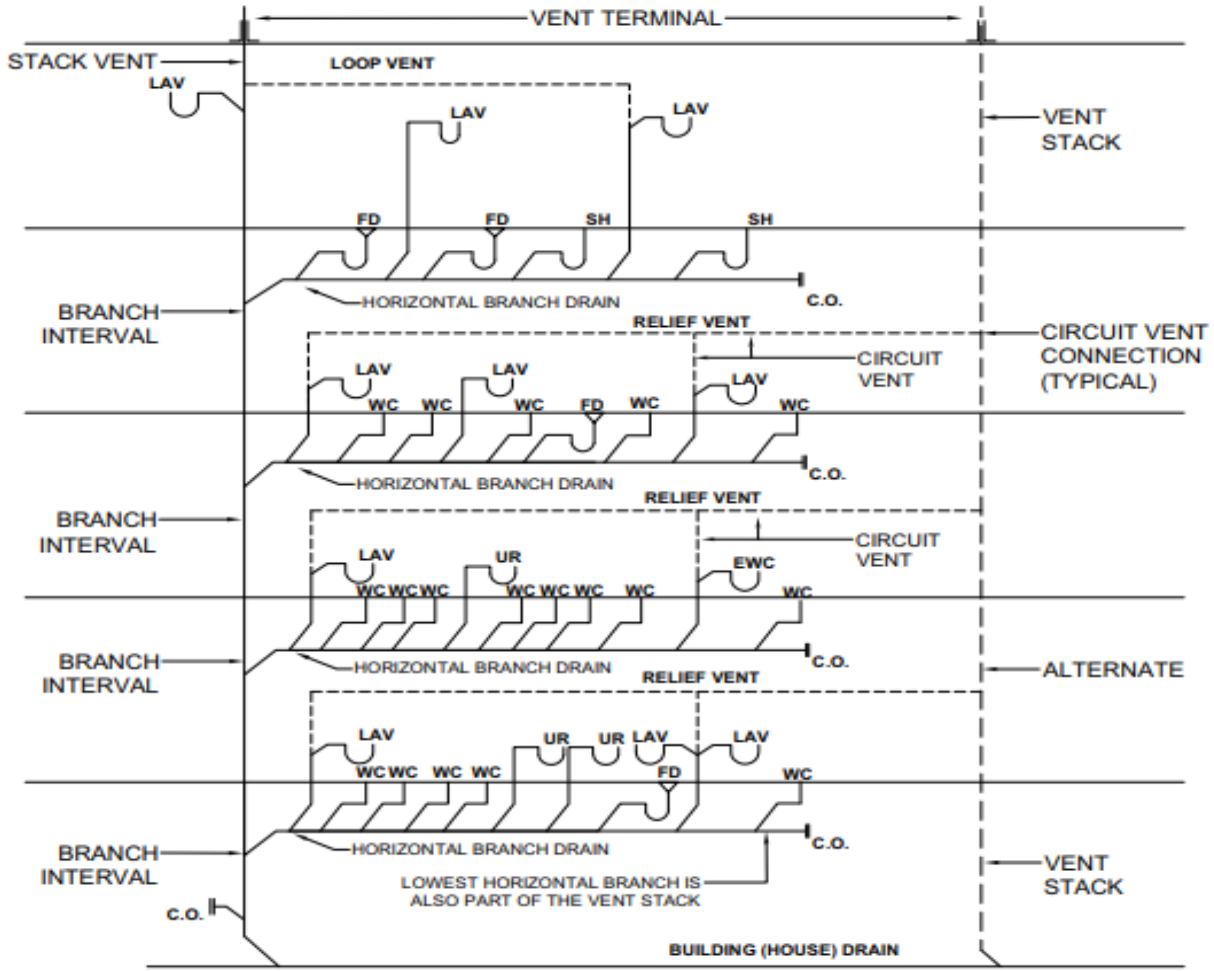
Chapter 9: Vents

- P-919.2.5 Soil stack size. The size of a soil or waste stack is determined by the fixture units on the stack plus the fixture units on the horizontal branch from the base of the soil or waste stack connected to the *building drain.*
- P-919.2.6 Horizontal branch size. The size of *all horizontal branch* lines including the horizontal branch from the base of the soil or waste stack connected to the *building drain* is determined by the fixture units and gradient fall.
- P-919.2.7 Building drain/building sewer size. The size of the *building drain* is determined by its gradient fall and total number of fixture units.

Chapter 9: Vents

- P-919.2.10 High-rise buildings.
- *The diameter of a relief vent shall not be less than one-half the diameter of the horizontal branch to which it is connected, with a minimum size of 1½ inches. The maximum number of fixture units connected to the relief vent shall be in accordance with Table 919.9(a). The size of the branch line and its stack shall be determined by the developed length of the stack*

Chapter 9: Vents



Chapter 9: Vents

TABLE P-919.9(a)
SIZE AND LENGTH OF VENTS

FIXTURE UNITS CONNECTED	DIAMETER OF VENT (inches) MAXIMUM LENGTH OF VENT (feet)							
	1¼"	2"	2½"	3"	4"	5"	6"	8"
13	75	310						
26	70	300						
47	35	140	450					
72	23	85	260	650				
98	18	75	240	600				
195		30	95	240	1,000			
293		22	70	180	750			
390			28	70	320	1,000		
624			20	50	240	750		
969				20	95	240	1,000	
1,320				18	70	180	750	
2,165					30	80	350	1,000

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

TABLE P-919.2(a) - FIXTURE-UNIT VALUES

FIXTURES	PRIVATE INSTALL-ATIONS	PUBLIC INSTALL-ATIONS	MINIMUM TRAP SIZES (INCHES)
Bathroom group consisting of 1 lavatory, 1 water closet, 1 bathtub or shower stall	6	-	-
Bathtub with 1-1/2 inch trap [a]	2	3	1-1/2
Bathtub with 2-inch trap [a]	3	4	2
Cup sink	-	2	1-1/4
Dishwashers, domestic, automatic	4	-	1-1/2[c]
Drinking fountain	-	1/2	1-1/4
Floor drain	3	3	3
Kitchen sink with 1-1/2 inch trap [b]	3	3	1-1/2
Kitchen sink with 2-inch trap [b]	-	4	2
Laundry tray with 1-1/2 inch trap (1 or 2 compartment)	3	3	1-1/2
Laundry tray with 2-inch trap	-	4	2
Lavatory with 1-1/4 inch or 1-1/2 inch trap	1	2	1-1/4
Lavatory, barber, beauty parlor, or surgeons	-	3	1-1/2
Service sink (slop sink), mop receptor	-	3	3
Service sink, flushing rim with flush valve	-	6	3
Shower stall with 1-1/2 inch or 2 inch trap	2	3	1-1/2
Shower stall with required 3-inch trap	-	6	3
Urinal, stall and washout	-	2	1-1/2

Chapter 9: Vents

Urinal, pedestal, siphon-jet and blow-out	-	4	2
Urinal, non-water	-	1	1-1/2
Wash fountain, duo	-	2	2
Wash fountain, any other size	-	5	2
Washing machine, domestic, automatic	4	-	2
Water closet	3	6	3
Fountain cuspidor (dental chair)	-	1	1-1/4
Sink, soda fountain or bar	-	2	1-1/2

For SI:1 inch=25.4 mm

a. With or without showerhead over bathtub.

b. With or without garbage grinder unit, or dishwasher, in sink with 1-1/2 or 2-inch trap.

c. Commercial dishwasher shall include minimum 2-inch trap.

Chapter 9: Vents

P-919.7 Venting of offsets.

P-919.7.2 Yoke venting offsets. Such offsets shall be provided with a yoke vent equal to one-half the diameter of the vent stack or soil stack but not less than 1-1/2 inches. The lower end of the yoke vent shall connect to the soil or waste stack through a wye below the offset and above the next lower horizontal branch, and the upper end shall connect to the stack vent or the vent stack not less than 6 inches above the highest fixture. *The yoke vent may connect to a vent stack on the floor level above or higher provided the connection is a minimum of 6 inches above the flood level rim of the next fixture on the stack above the offset.*

Chapter 9: Vents

- P-919.9 Size and length of vents.

- P-919.9.3 Size of vent stacks. A vent stack or main vent connecting relief vents, circuit vents or loop vents shall have a diameter of at least one-half the diameter of the soil or waste stack to which the vent stack or main vent is connected, but in no case less than 1-1/2 inches. The maximum number of fixture units connected to the vent stack shall be in accordance with Table 919.9(a). The vent stack or main vent shall not be less in size than the branch, circuit, or loop vent it is servicing. Where fixtures are installed on the house drain behind the line of vent, a minimum vent stack of 1-1/2 inches shall be required for small fixtures having a fixture unit value not greater than 10 *drainage fixture units* and a minimum of a 2 *inch vent* for one or more water closets and other fixtures, except if a larger size is required according to Table 919.9(a).

Chapter 10: Traps, Interceptors, and Separators

- P-1002.3 Prohibited traps.

The following types of traps are prohibited:

- 1. Traps that depend on moving parts to maintain the seal.
- 2. Bell traps.
- 3. Crown-vented traps.
- 4. Traps not integral with a fixture and that depend on interior partitions for the seal, except those traps constructed of an approved material that is resistant to corrosion and degradation.
- 5. “S” traps.
- 6. Drum traps

Exceptions:

- 1. Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.
- 2. *“S” traps are permitted to be used as a direct replacement to a previously installed “S” trap*

Chapter 10: Traps, Interceptors, and Separators

SECTION P-1003 INTERCEPTORS AND SEPARATORS

- P-1003.1 Where required. Interceptors and separators shall be provided to prevent the discharge of oil, grease, sand and other substances harmful or hazardous to the public sewer, the private sewage system or the sewage treatment plant or processes. *Interceptors and separators shall be connected to the sanitary sewer.*

Chapter 10: Traps, Interceptors, and Separators

- P-1003.2 Approval. The size, type and location of each interceptor and of each separator shall be designed and installed in accordance with the manufacturer's instructions and the requirements of this section based on the anticipated conditions of use. Wastes that do not require treatment or separation shall not be discharged into any interceptor or separator*. As an appurtenance contained within the plumbing system, the interceptor or separator shall not be limited by the material construction of the unit.*

Chapter 10: Traps, Interceptors, and Separators

- P-1003.3 Grease interceptors. Grease interceptors shall comply with the requirements of Sections 1003.3.1 through 1003.3.8.

- P-1003.3.5.1 Grease interceptor capacity. Grease interceptors shall have the grease retention capacity indicated in Table 1003.3.5.1 for the flow-through rates indicated with a *minimum capacity of 20 gallons per minute of flow and 40 pounds of grease retention capacity.*

Chapter 10: Traps, Interceptors, and Separators

TABLE 1003.3.5.1 – CAPACTIY OF GREASE INTERCEPTORS

TOTAL FLOW-THROUGH RATING (gpm)	GREASE RETENTION CAPACITY (pounds)
~~4~~	~~8~~
~~6~~	~~12~~
~~7~~	~~14~~
~~9~~	~~18~~
~~10~~	~~20~~
~~12~~	~~24~~
~~14~~	~~28~~
20	40
25	50
35	70
50	100
75	150
100	200

Chapter 10: Traps, Interceptors, and Separators

- P-1003.4 Oil separators required. At repair garages where floor or trench drains are provided, car washing facilities, factories where oily and flammable liquid wastes are produced and hydraulic elevator pits, oil separators shall be installed into which oil-bearing, grease-bearing or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal. *Interceptors and separators shall be connected to the sanitary sewer.*

Chapter 10: Traps, Interceptors, and Separators

- P-1003.11 Hair interceptor. An approved hair interceptor shall be installed wherever hair is introduced into the drainage system in sufficient quantity to cause line stoppage and shall be installed in connection with the following uses or occupancies. ~~when required by the Industrial Waste Division of the Water Department.~~

Chapter 11: Storm Drainage

- *P-1101.1.1 Private Building Storm Sewer. Repairs to Existing Private Building Storm Sewer pipe materials shall be in accordance with Table P-1102.4. New or extended private Building Storm Sewers may not cross any adjoining property except when included as part of an approved post-construction Storm Water Management Plan in accordance with Philadelphia Water Department regulations or private storm sewer infrastructure designed in accordance with P-1115.*

Chapter 11: Storm Drainage

- P-1101.3 Prohibited drainage. Storm water shall not be drained into sewers intended for sewage only.

Exceptions:

1. *Drains contained in enclosed parking garage not exposed to the outside climatic elements.*

2. *Drains receiving washdown, soil, oil, fat/grease or any other hazardous waste.*

Chapter 11: Storm Drainage

- P-1101.7 Roof design. Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked. The maximum possible depth of water on the roof shall include the height of the water required above the inlet of the secondary roof drainage means to achieve the required flow rate of the secondary drainage means to accommodate the design rainfall rate as required by Section 1106.

Exception:

Canopies, marquees, balconies, and similar extended roof surfaces with a total of 300 square feet or less, shall not require drainage unless the areas include a parapet.

Chapter 11: Storm Drainage

- P-1101.9 Backwater valves. Storm drainage systems shall be provided with backwater valves as required for sanitary drainage systems in accordance with Section 714. *For building sub-drains that service fixtures below the fresh air inlet termination that discharges into the building gravity drainage system by automatic pumping equipment, the required check valve installed with the pump shall provide sufficient means of protection against backflow.*

Chapter 11: Storm Drainage

SECTION P-1102 MATERIALS

- P-1102.2 Inside storm drainage conductors. Inside storm drainage conductors installed above ground shall conform to ~~one~~ *all* of *the* *requirements* and standards listed in ~~Table~~ Section *702* ~~702.1~~.

- P-1102.3 Underground building storm drain pipe. Underground building storm drain pipe shall conform to ~~one~~ *all* of the *requirements* *and standards* listed in Table Section *701* ~~702.2.~~

Chapter 11: Storm Drainage

SECTION P-1109 COMBINED SANITARY AND STORM PUBLIC SEWER

- P-1109.3 Size of existing combined building drains and building sewers when adding additional load. The size of a combination sanitary and storm drain or sewer shall be computed in accordance with the method in Table 1109.4. The fixture units shall be converted into an equivalent projected roof or paved area. *Allowance in square feet of pitched roofs or paved areas for fixture units shall be as follows: 7 square feet for each of the first 1,500 Fixture Units; 5 square feet for each of the next 1,500 Fixture Units, 4 square feet for each of the next 2,000 Fixture Units, and 3 square feet for each Fixture Unit thereafter. These values are based on a rainfall rate of 6 inches per hour.*

Chapter 11: Storm Drainage

TABLE P-1109.4 MAXIMUM HORIZONTAL PROJECTED ROOF AREA IN SQUARE FEET FOR BUILDING STORM DRAINS AT VARIOUS SLOPES

Diameter (Inches)	Fall Per Foot			Vertical Leaders
	1/8"	1/4"	1/2"	
3		930	1,300	1,750
4	1,585	2,100	3,300	3,650
5	2,875	3,800	5,300	6,000
6	4,300	6,000	9,000	10,800
8	9,200	13,000	18,000	23,000
10	16,500	25,000	35,000	40,000
12	26,600	40,000	60,000	65,000
15	47,500	75,000	100,000	115,000
16	57,250	92,500	131,000	
18	67,000	110,000	162,000	
20	85,500	135,000	196,000	
24	155,000	225,000		
30	295,000	416,000		

Chapter 11: Storm Drainage

SECTION P-1114 SUSTAINABLE GREEN ROOF DRAINAGE SYSTEMS

- P-1114.2.1 Green roof rainfall rates. The green roof drainage system shall be designed based on the reduced rainfall rate in accordance with Section 1106.1 only where approved through the Philadelphia Water Department and shall satisfy the design, installation and maintenance requirements set forth by the Philadelphia Water Department ~~storm water management regulations~~ and, if applicable, the Philadelphia Zoning Code.

Chapter 11: Storm Drainage

SECTION P-1115 PRIVATE STORM SEWER INFRASTRUCTURE

- P-1115.3 Slope of private storm sewer infrastructure. Private storm sewer infrastructure shall be installed in uniform alignment at uniform slopes. The slope of private storm sewer infrastructure shall be in accordance with ~~Table 704.1~~ *Section 704* of this code.

Chapter 11: Storm Drainage

- P-1115.7 Protection of structures. Private storm sewer infrastructure installed parallel to footings and walls shall not extend into the bearing plane of a footing or wall in accordance with Section 307.5 of this code*. Private storm sewer infrastructure shall not be installed within 5 feet of any adjoining property line.* Private storm sewer infrastructure Pipe shall not be installed within ~~5-~~ 3 feet of any ~~adjoining property~~ parallel building foundation

Chapter 11: Storm Drainage

- P-1115.10 Storm backflow. Backwater valves shall be installed in accordance with Section 1101.9 of this code. *For building sub-drains that service fixtures below the fresh air inlet termination that discharges into the building gravity drainage system by automatic pumping equipment, the required check valve installed with the pump shall provide sufficient means of protection against backflow.*

Appendix E: Sizing of Water Piping System

- *WATER DISTRIBUTION PIPE. The pipe from the curb stop or curb line to the structure or through the meter pit to the first point of use if there is no structure.*
- WATER SERVICE PIPE. The pipe from the water main to the curb stop or curb line as regulated by Philadelphia Water Department Regulations.
- *WATER SUPPLY PIPES. The pipes within a structure or premises which convey water from the water distribution pipe to the plumbing fixtures or other outlets.*

Review of Key Elements of the 2018 PPC

Department of
Licenses and Inspections
CITY OF PHILADELPHIA

Appendix E: Sizing of Water Piping System

Code applies to:

- Erection
- Installation
- Alterations Repairs
- Relocation
- Replacement
- Addition to
- Use or maintenance

Code doesn’t apply to:

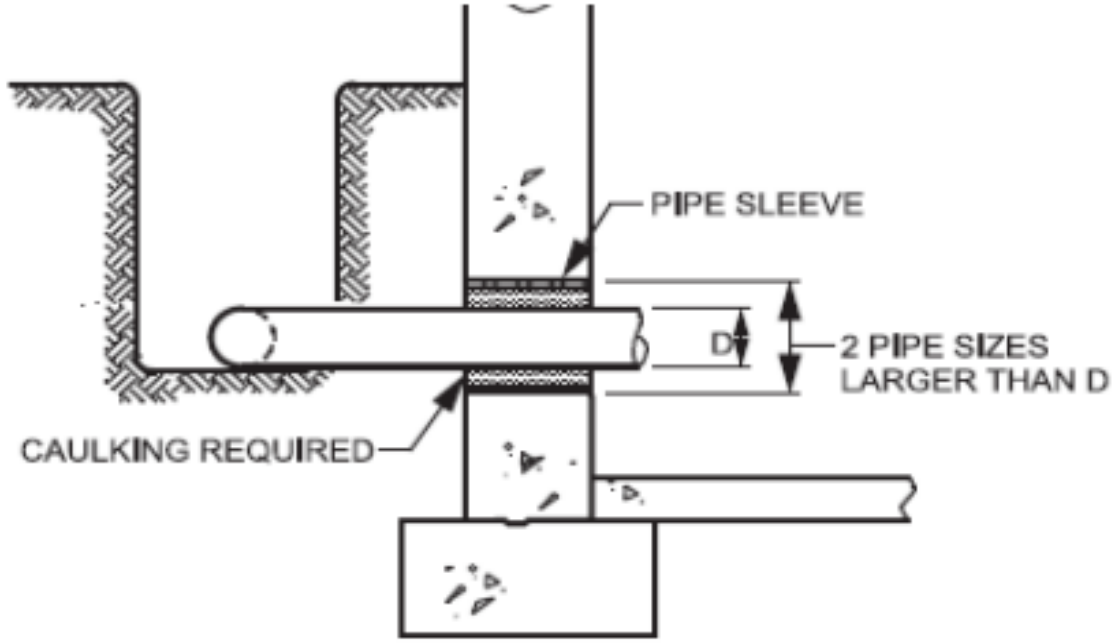
- Fuel gas systems
- Plumbing systems located beyond the curb line

P-101.2.1: Jurisdiction of Property Lines Outside

- All plumbing systems leading from a structure or premises and extending to the curb line of the street shall be regulated by this code.
- Sanitary, Storm, and Domestic Water piping in the street is regulated by Philadelphia Water Department(PWD).

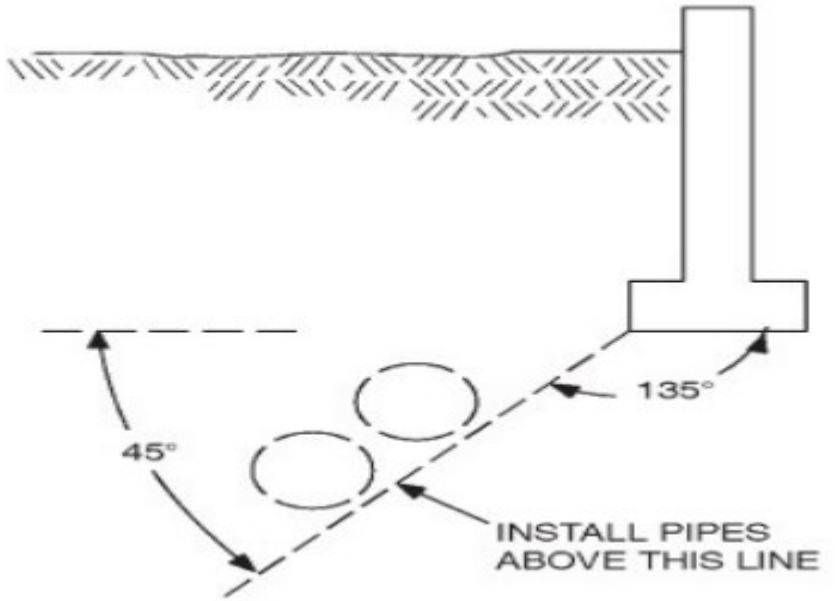
305.3 Pipes through foundation walls

- A pipe sleeve or relieving are is required when a pipe passes through a foundation wall. The sleeve shall be 2 pipe sizes greater than the pipe passing through the wall.



307.5: Protection of Footings

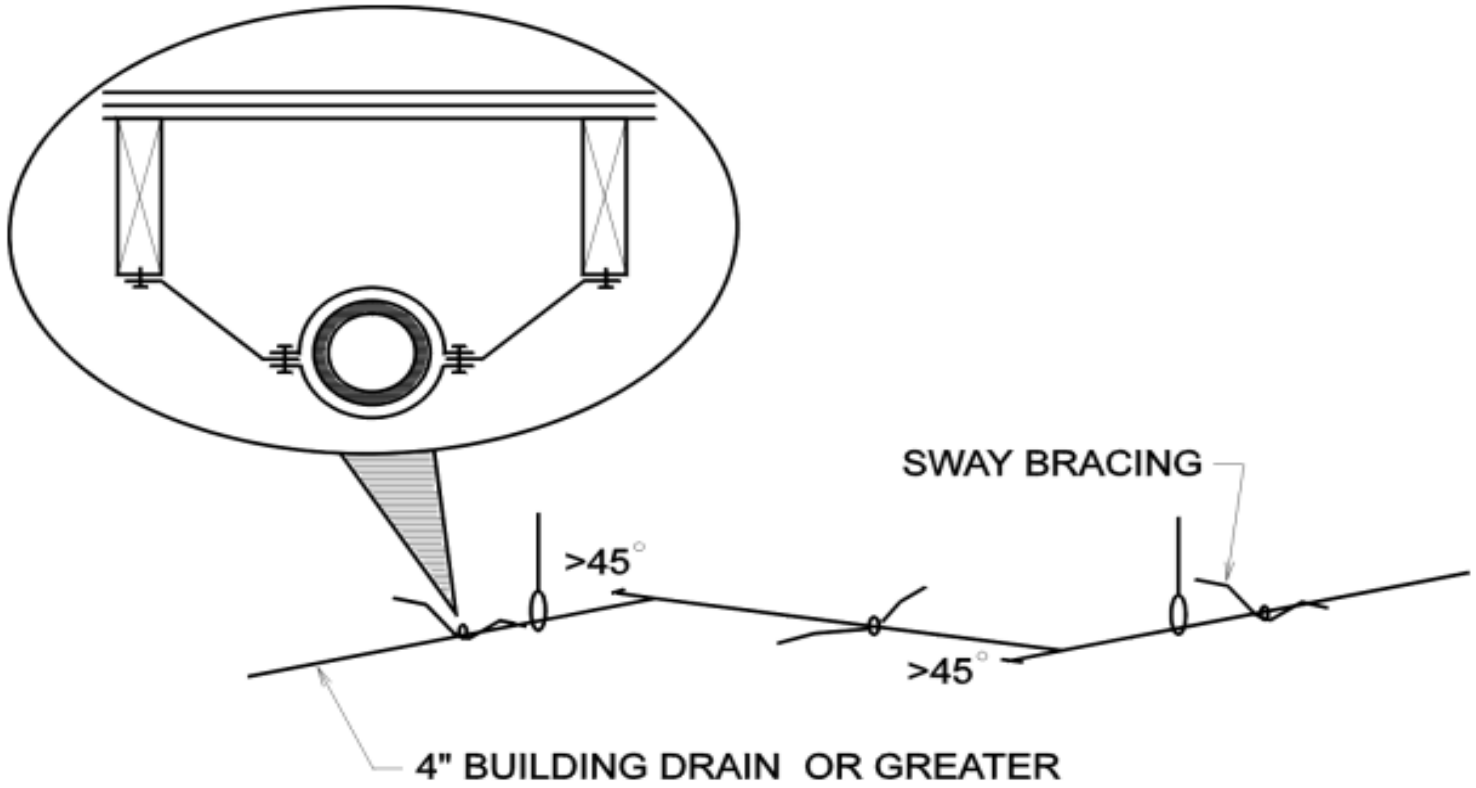
- Trenches installed parallel to footings must remain outside the bearing plane of the bottom of the footing.



308.6: Sway Bracing

- Where horizontal pipes 4 inches and larger convey drainage or waste, and where a pipe fitting in that piping changes the flow direction greater than 45 degrees.

308.6: Sway Bracing



308.9: Parallel Water Distribution System
Pex Piping

- Piping bundles for manifold systems shall be supported in accordance with Table 308.5.
- Support at changes in direction shall be in accordance with the manufacturer's instructions. Where hot water piping is bundled with cold or hot water piping, each hot water pipe shall be insulated.

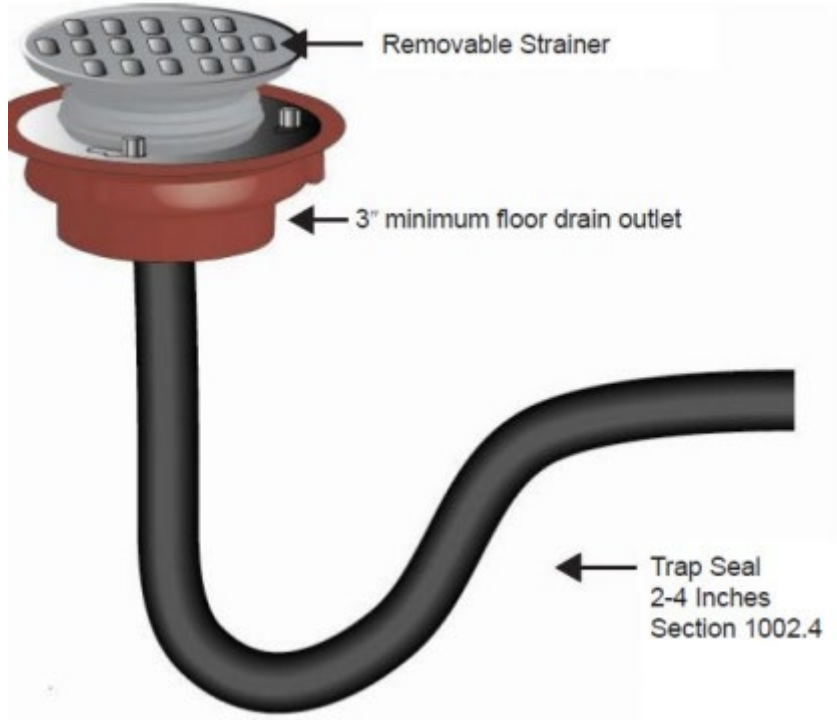
Table 308.5

Cross-linked polyethylene (PEX) pipe 1 inch and smaller	2.67 (32 inches)	10[b]
Cross-linked polyethylene (PEX) pipe $1^1/_4$ inch and larger	4[c]	10[b]
Cross-linked polyethylene/ aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	2.67 (32 inches)	4

P-413.3: Size of Floor Drains and Trench Drains

- Minimum floor drain or trench drains is outlet 3”

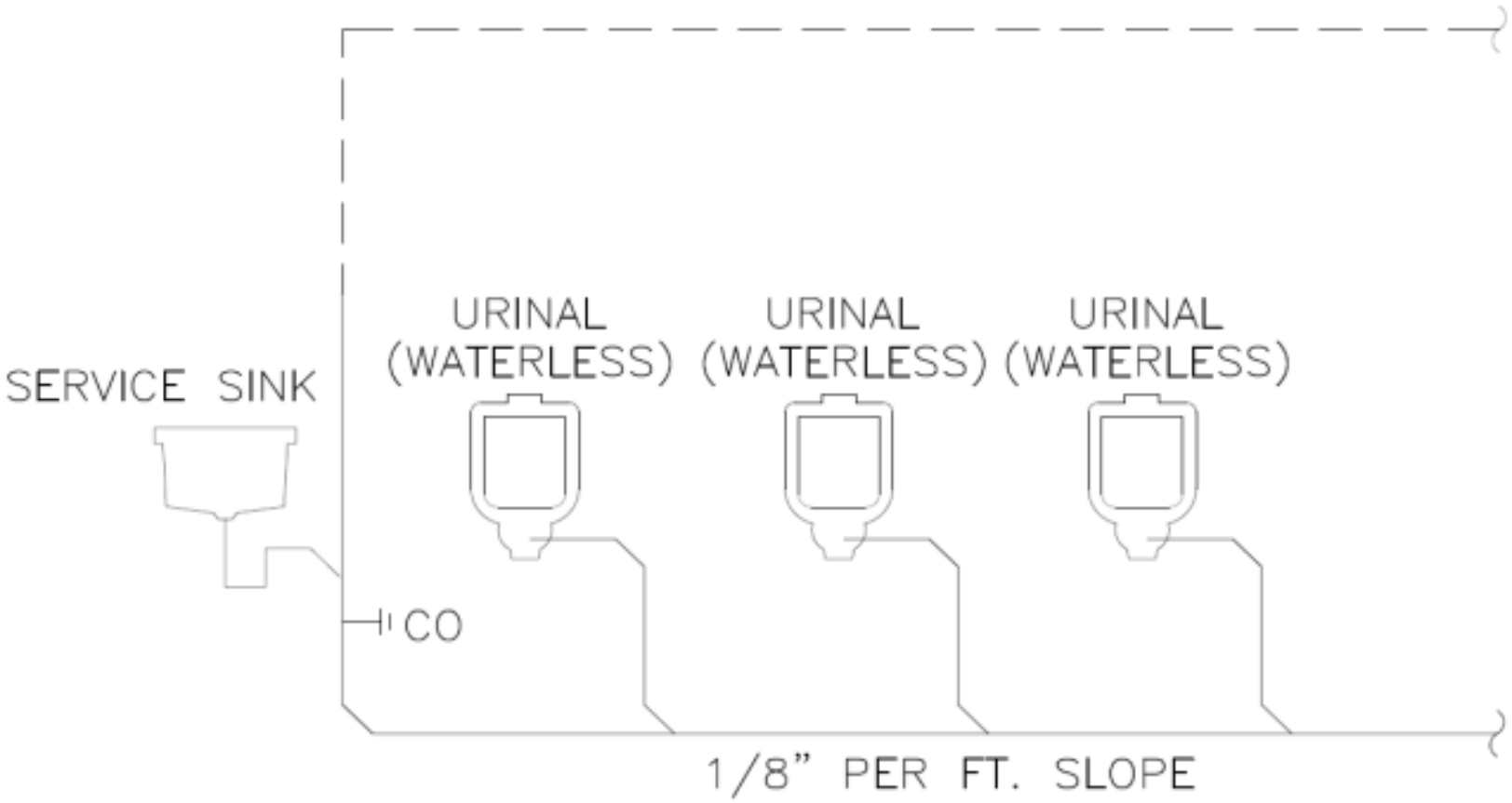
Exception: One- and two- family dwellings 2” min floor drain outlet.



P-424.3: Non-Water Urinal Water Connection

- The fixture drain for a non-water urinal shall independently connect to a branch drain that serves one or more lavatories, water closets or water-using fixtures with not less than one drainage fixture unit that discharges upstream of such non-water urinals.

P-424.3: Non-Water Urinal Water Connection



P-503.3: Water Heaters Materials

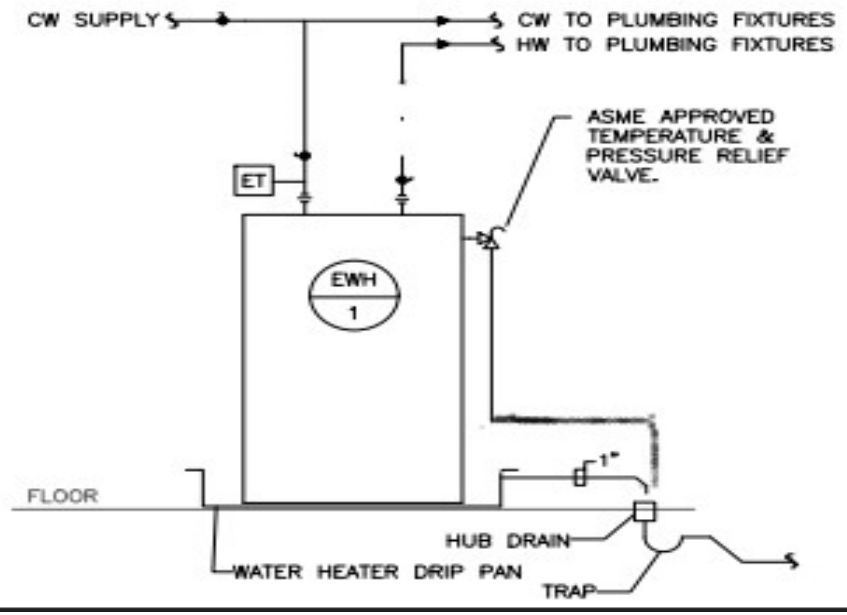
- All water heaters and water heating equipment shall have a minimum of 4 feet of developed length of copper tubing or similar metallic piping material connecting directly to the inlet and outlet of the unit.

P-503.3: Water Heaters Materials

1. DRIP PAN SHALL BE INSTALLED UNDER WATER HEATER AT LEAST 1.5 IN. DEEP AND SHALL BE OF SUFFICIENT SIZE AND SHAPE TO RECEIVE ALL DRIPINGS OR CONDENSATE FROM THE TANK OR WATER HEATER. DRAIN PAN SHALL BE MADE OF A MINIMUM 24 GAGE GALVANIZED STEEL. INDIRECT CONNECT DRIP TO HUB DRAIN.

2. WATER HEATERS SHALL BE PROTECTED FROM THERMAL EXPANSION BY INSTALLING AN EXPANSION TANK. THE THERMAL EXPANSION TANK SHALL BE SUPPORTED BY THE STRUCTURE.

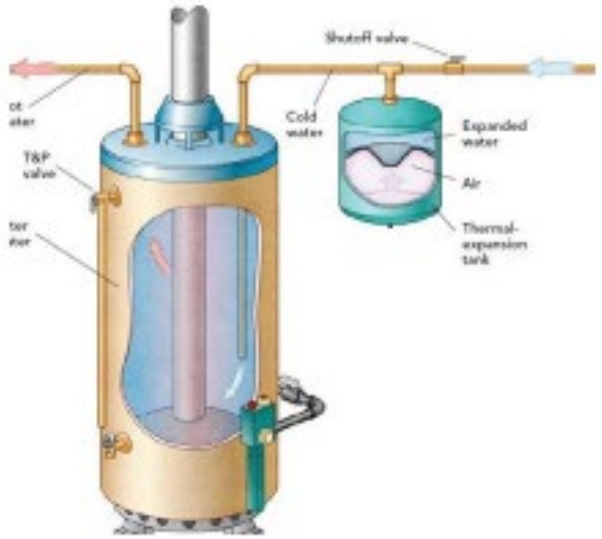
3. ALL CONNECTIONS TO HOT WATER HEATER SHALL HAVE A DEVELOPED LENGTH OF 4 FEET OF COPPER PIPE.



P-501.9: Water Heaters

- P-501.9 Thermal expansion control. Where a storage water heater is supplied with cold water that passes through a check valve, pressure reducing valve or backflow preventer, a thermal expansion control device shall be connected to the water heater cold water supply pipe at a point that is downstream of all check valves, pressure reducing valves and backflow preventers. Thermal expansion tanks shall be sized in accordance with the tank manufacturer's instructions and shall be sized such that the pressure in the water supply system shall not exceed that required by Section 604.8.

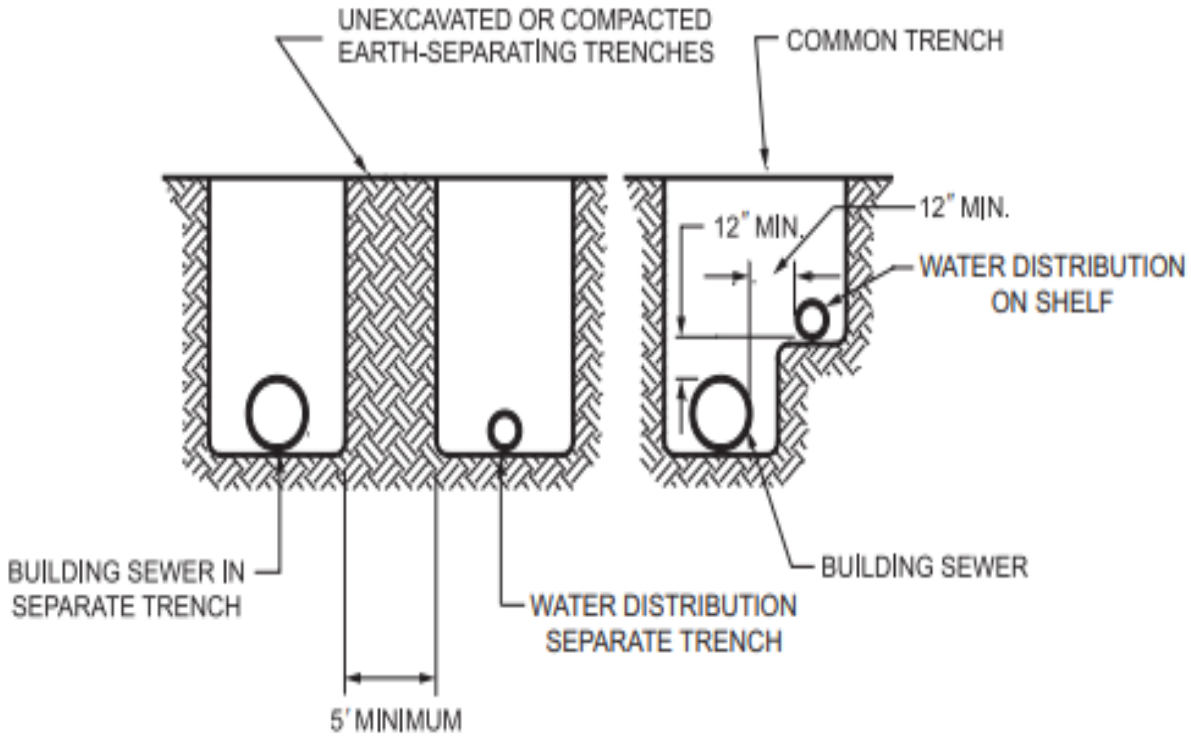
P-501.9: Water Heaters



P-603.2: Separation of water distribution piping, building drains, storm sewer or storm drainage piping.

- Separation is required from the building sewer, building drain, storm sewer and storm drainage piping.
- Water distribution pipe must be horizontally separated 5’ min by undisturbed or compacted earth when adjacent to nonmetallic piping.
- Water distribution pipe must be separated by 12” min vertical and 12” min horizontal from the outer edge of piping for metallic piping.
- Separation is not required where the water distribution crosses the piping only and is at least 12” above and sleeved at least 5’ from the centerline on both sides of the crossing.

P-603.2: Separation of water distribution piping, building drains, storm sewer or storm drainage piping.



P-605.3: Water Distribution Pipe

- Water distribution pipe shall conform to NSF 61 and shall conform to one of the standards listed in Table 605.3.
- Water distribution piping 3” and larger must be ductile iron to the meter.

P-605.3: Water Distribution Pipe

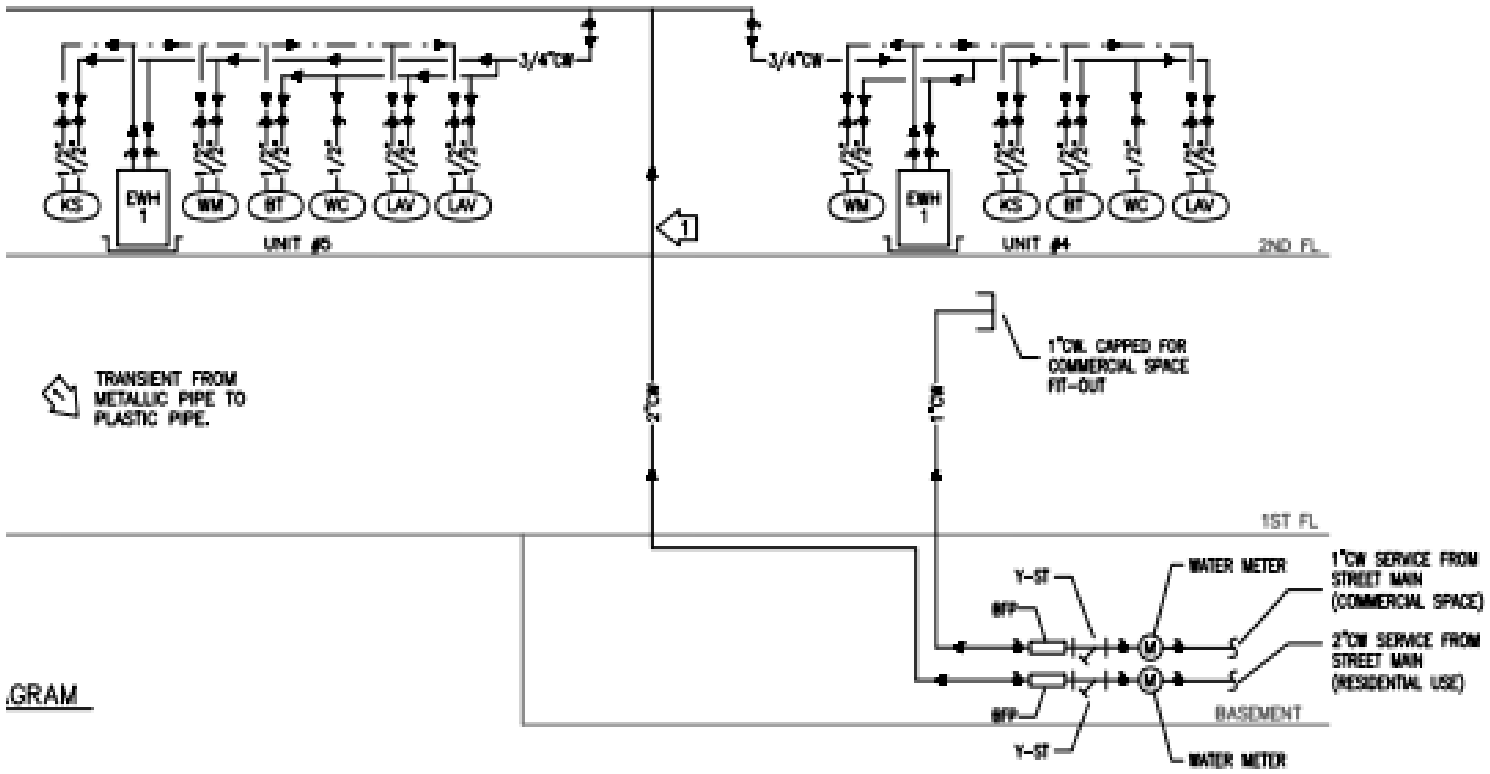
TABLE P-605.3
WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D1527; ASTM D2282
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876; AWWA C904; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Ductile iron water pipe	AWWA C151/A21.51; AWWA C115/A21.15
Galvanized steel pipe	ASTM A53
Polyethylene (PE) plastic pipe	ASTM D2239; ASTM D3035; AWWA C901; CSA B137.1
Polyethylene (PE) plastic tubing	ASTM D2737; AWWA C901; CSA B137.1
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F1282; CSA B137.9
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic pipe	ASTM D1785; ASTM D2241; ASTM D2672; CSA B137.3
Stainless steel pipe (Type 304/304L)	ASTM A312; ASTM A778
Stainless steel pipe (Type 316/316L)	ASTM A312; ASTM A778

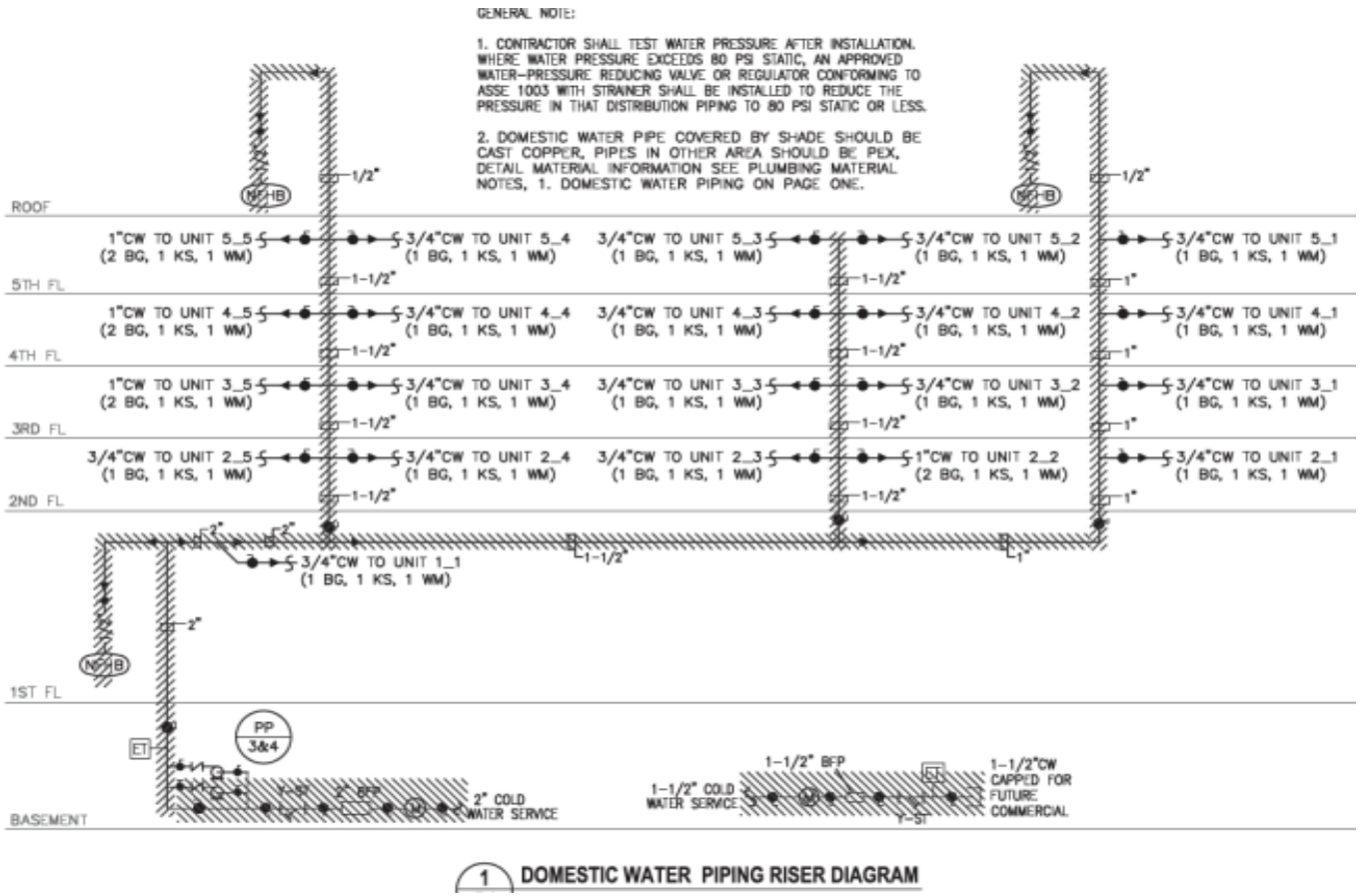
P-605.4: Water Supply Pipe

- Water supply piping and tubing located within occupancies other than one- and two-family dwellings and apartments shall be metallic piping.

P-605.4: Water Supply Pipe



P-605.4: Water Supply Pipe



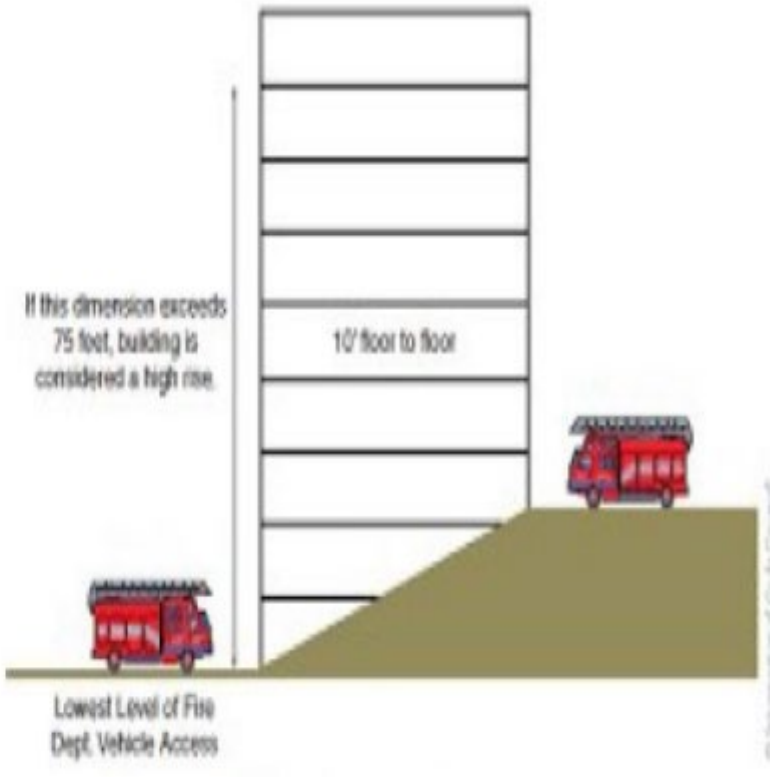
1 DOMESTIC WATER PIPING RISER DIAGRAM

P-605.4.1: High-Rise Materials

- Metallic piping shall be installed in buildings with an occupied floor located more than 75 feet in height as measured from the lowest level of fire department vehicle access.

Exception: Nonmetallic piping may be used within demised individual residential dwelling units located within buildings not more than 150 feet in height as measured from the lowest level of fire department vehicle access.

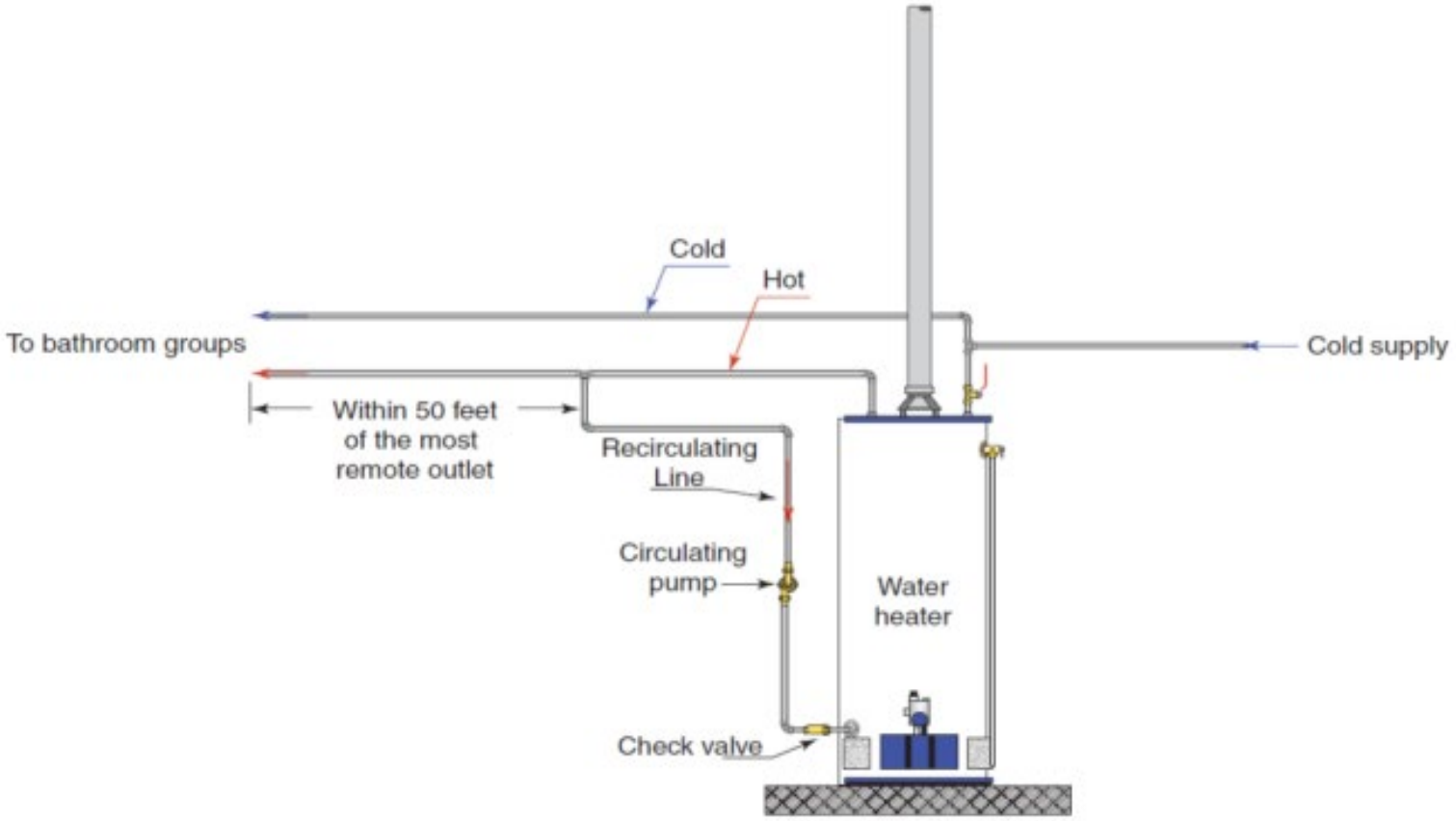
P-605.4.1: High-Rise Materials



P-607.2: Hot or Tempered Water Supply to Fixtures

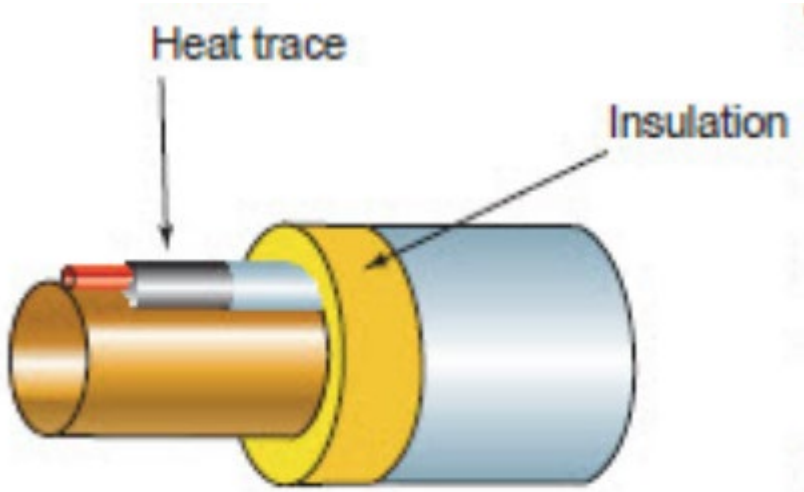
- The developed length of hot or tempered water piping, from the source of hot water to the fixtures that require hot or tempered water, shall not exceed 50 feet. Recirculating system piping and heat-traced piping shall be considered to be sources of hot or tempered water.

P-607.2: Hot or Tempered Water Supply to Fixtures



P-607.2.1: Circulation Systems and Heat Trace Systems for Maintaining Heated Water Temperature in Supply Systems

- Residential occupancies shall comply with the energy code section R403.5 .1.
- Commercial occupancies shall comply with the energy code section C404.6.



Heat-trace temperature maintenance for hot water system

[E] 607.5: Insulation of Piping

- The following piping conditions for hot water piping shall be insulated with a thermal resistance R-value of not less than R-3 in accordance with 2018 IECC, Section R403.5.3:

  1. Piping with a nominal diameter of 3/4-inch or larger
  2. Piping serving more than one dwelling unit
  3. Piping located outside the conditioned space
  4. Piping from the water heater to a distribution manifold
  5. Piping located under a floor slab
  6. Buried piping
  7. Supply and return piping in recirculation systems other than demand recirculation systems

[E] 607.5: Insulation of Piping

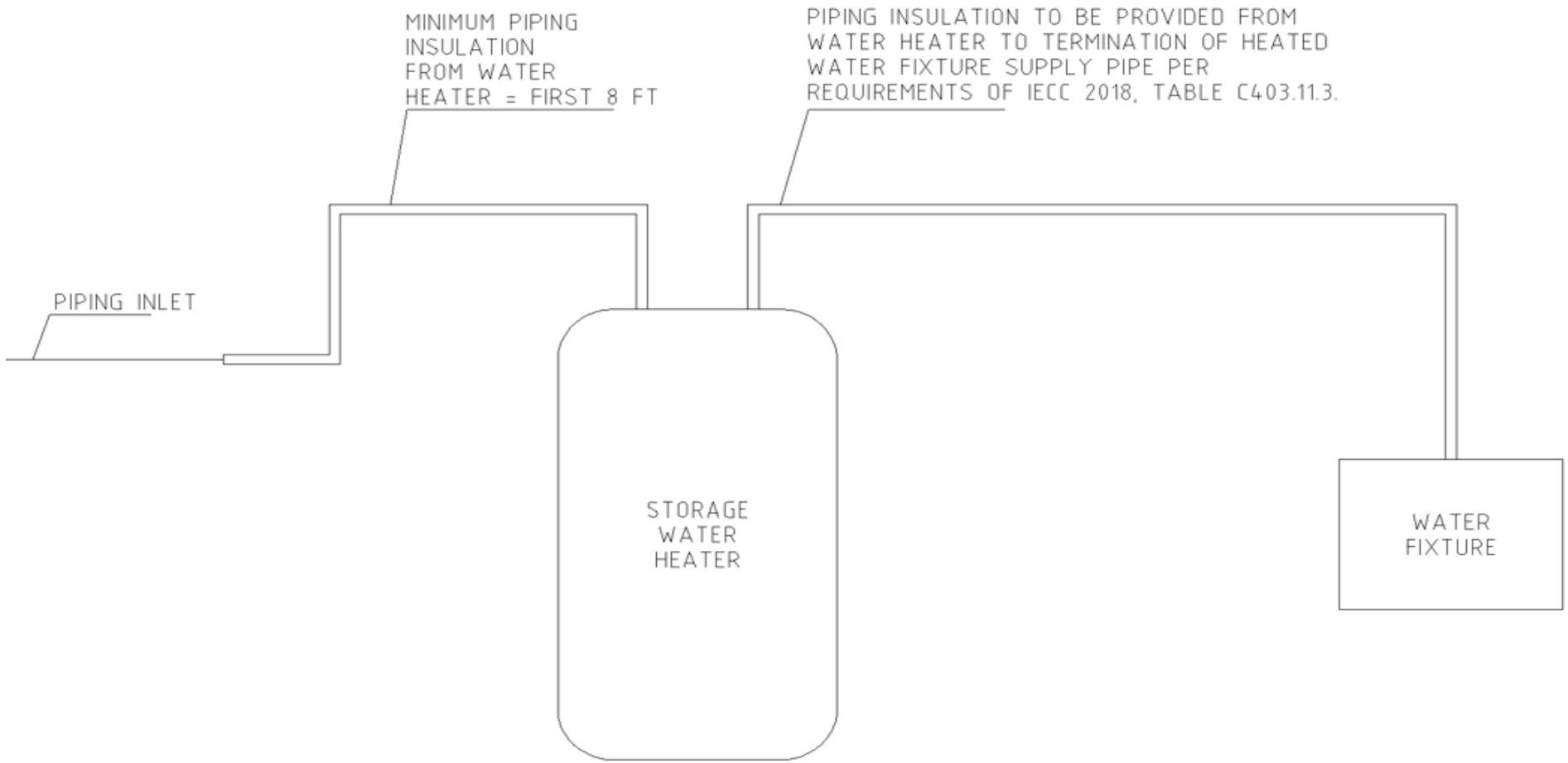
- All hot water piping shall be insulated in all of the following locations in accordance with 2018 IECC, Section C404.4:

  1. At the water heater to the terminal end of the plumbing fixture supply pipe

  2. On the inlet and outlet of a storage water heater, insulation shall be provided to the piping to a heat trap or the first 8 feet of piping, whichever is less.

  3. For any piping that is heat traced

[E] 607.5: Insulation of Piping



608: Protection of Potable Water Supply

- P-608.1.1 Backflow containment assemblies required. Backflow containment assemblies shall be installed in all buildings.

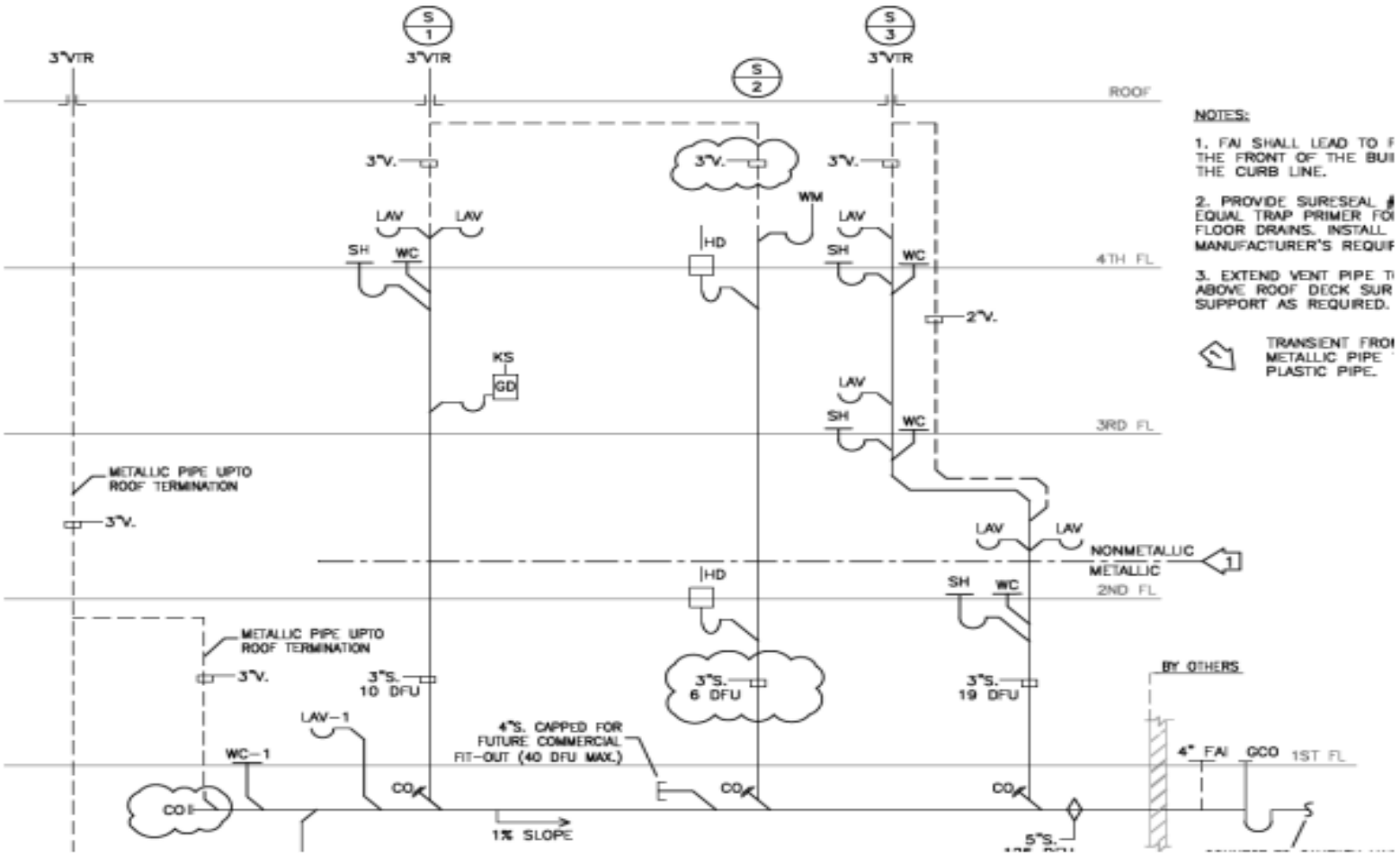
Exception: Residential buildings with four dwelling units or less.

- P-608.1.2 Installation of backflow containment assemblies. Installation shall be in accordance with Philadelphia Water Department Regulation 403 and the Philadelphia Water Department Cross Connection Control Manual, as amended

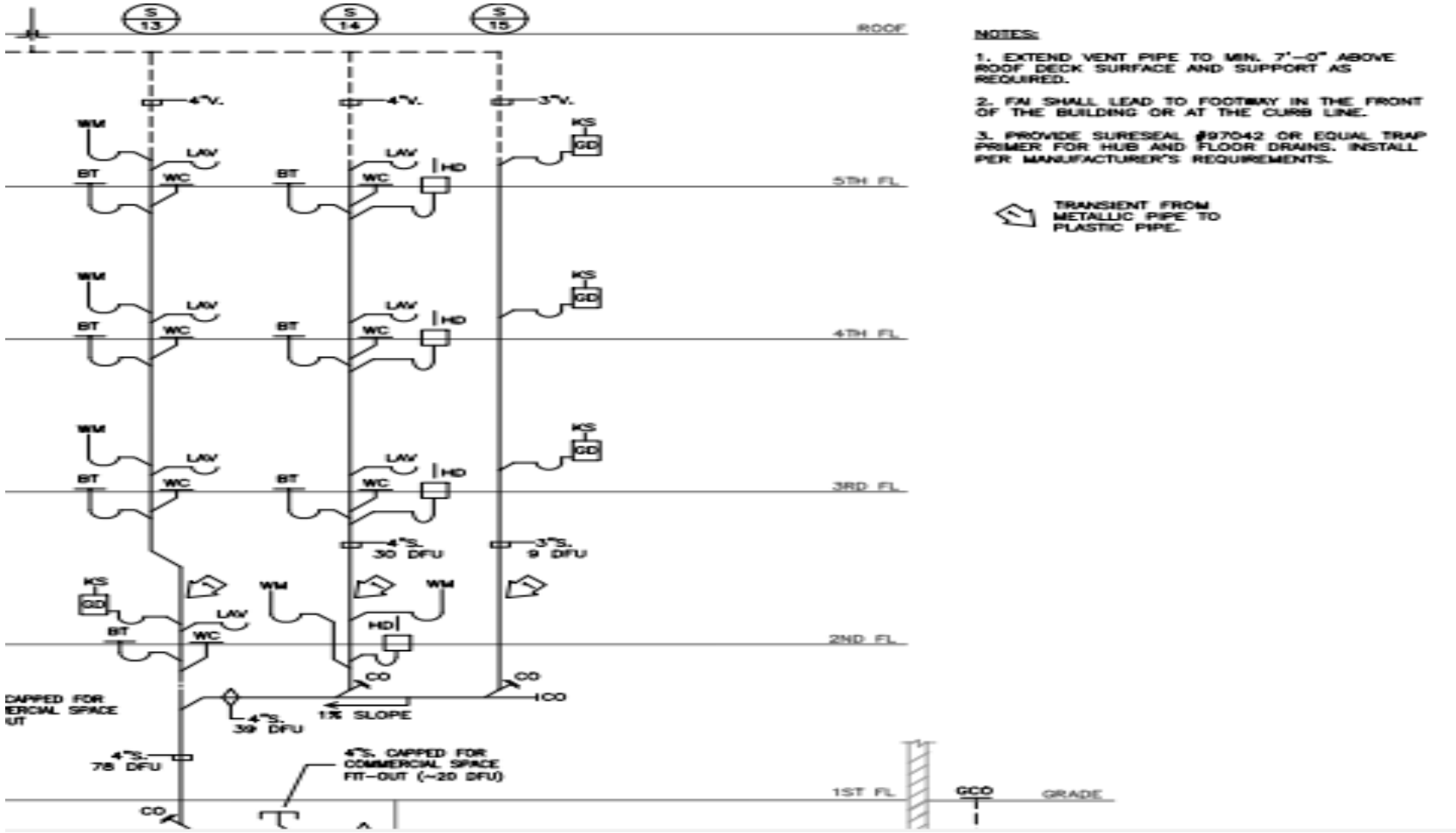
P-702.1: Above-Ground Sanitary Drainage and Vent Pipe

- Above-ground soil, waste and vent pipe shall conform to one of the standards listed in Table 702.1. Any above-ground soil, waste and vent piping serving or located within occupancies other than one- and two-family dwellings and apartments shall be metallic piping.

P-702.1: Above-Ground Sanitary Drainage and Vent Pipe



P-702.1: Above-Ground Sanitary Drainage and Vent Pipe

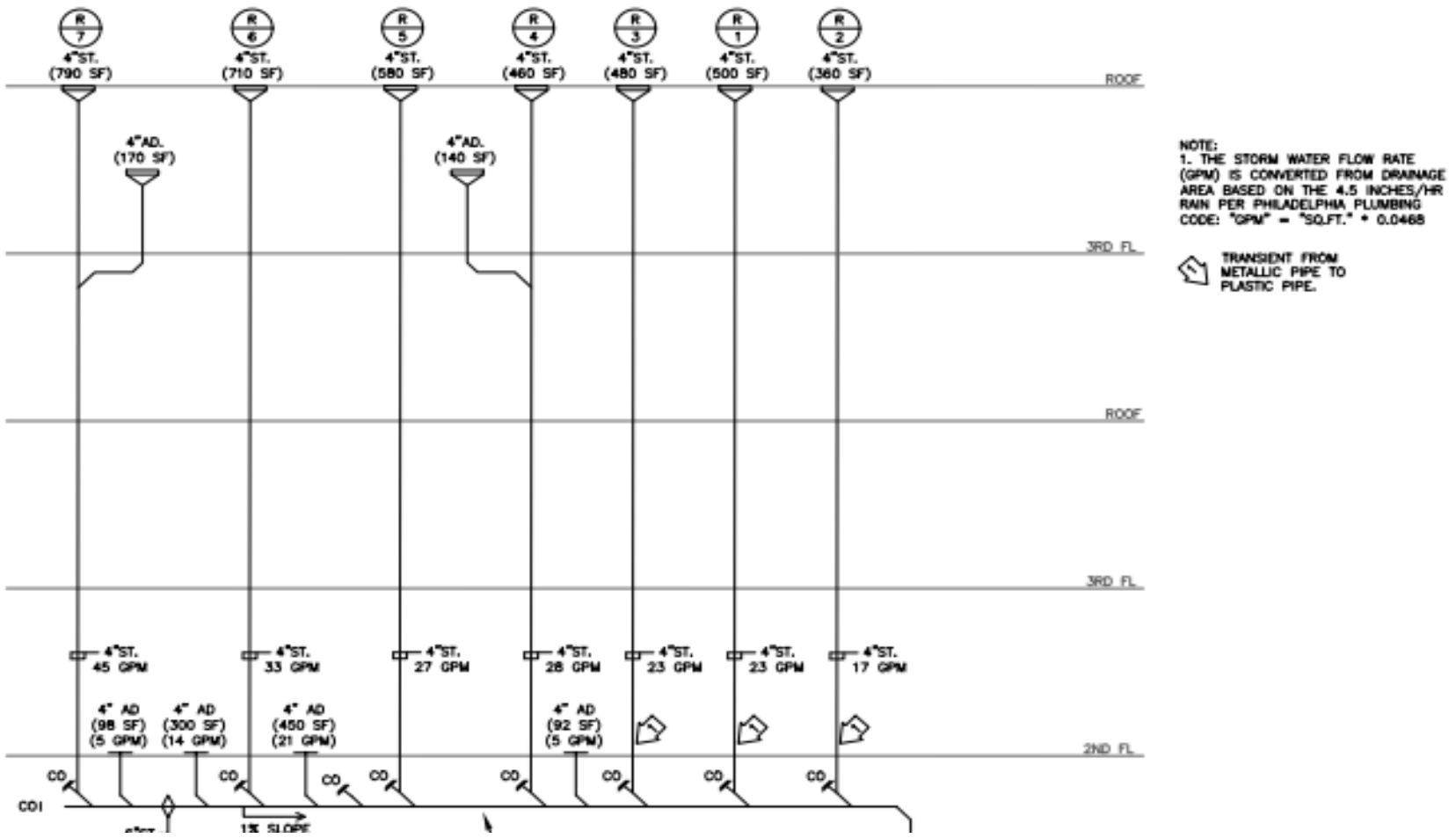


NOTES:

1. EXTEND VENT PIPE TO MIN. 7'-0" ABOVE ROOF DECK SURFACE AND SUPPORT AS REQUIRED.
2. F/N SHALL LEAD TO FOOTWAY IN THE FRONT OF THE BUILDING OR AT THE CURB LINE.
3. PROVIDE SURESEAL #97042 OR EQUAL TRAP PRIMER FOR HUB AND FLOOR DRAINS. INSTALL PER MANUFACTURER'S REQUIREMENTS.

1 TRANSIENT FROM METALLIC PIPE TO PLASTIC PIPE.

P-1102.2: Inside Storm Drainage Conductors



P-702.1: Above-Ground Sanitary Drainage and Vent Pipe

TABLE 702.1
ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Galvanized steel pipe	ASTM A53
Glass pipe	ASTM C1053
Polyolefin pipe	ASTM F1412; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200), and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949, ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

Table P-702.2: Underground Buildings Drainage and Vent Pipe

TABLE P-702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

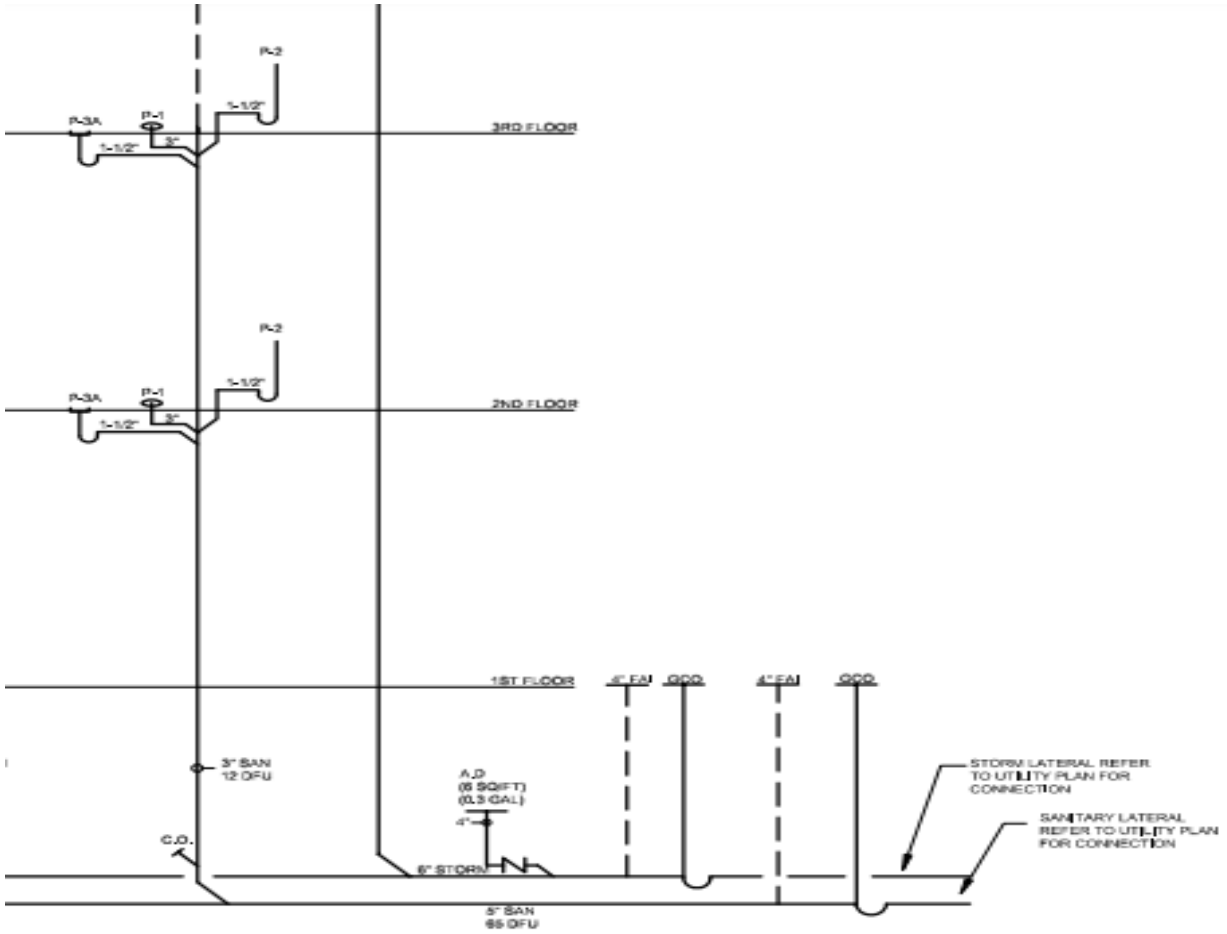
MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid wall	ASTM D2661; CSA B181.1
Cast-iron pipe	[a]ASTM A74
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyolefin pipe	ASTM F1412; ASTM F714; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid wall	ASTM D2665; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid wall	ASTM D2949
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Type 316L	ASME A112.3.1

P-703.6: Combined Sanitary and Storm Public Sewer

- Where the public sewer is a combined system for both sanitary and storm water, the sanitary sewer shall be connected independently to the lateral, unless otherwise approved by the Philadelphia Water Department.

Exception: The repair or replacement of an existing combined building sewer as of the initial adoption date of this code. The size of such replacements shall comply with Section 1109.2.

P-703.6: Combined Sanitary and Storm Public Sewer



P-705.3.4: Repair or Connection of the Building Drain or Sewer (Underground Only)

- P-705.3.4 Repair or connection of the building drain or building sewer.
- 2- adjustable repair couplings allowed with concrete encasement on both couplings.
- 1- adjustable repair coupling allowed concrete encasement is not required.
- Only 1-MG clamp Allowed.

P-705.3.5: Replacement of Existing Building Traps

- For replacement of an existing building trap an adjustable repair coupling shall be permitted on one side of the trap.
- Under severe conditions, an adjustable repair coupling shall be permitted on each side of the trap. The use of two adjustable repair couplings shall require a concrete encasement of the coupling on the street side of the trap

P-712.4: Sewage Pumps and Sewage Ejectors

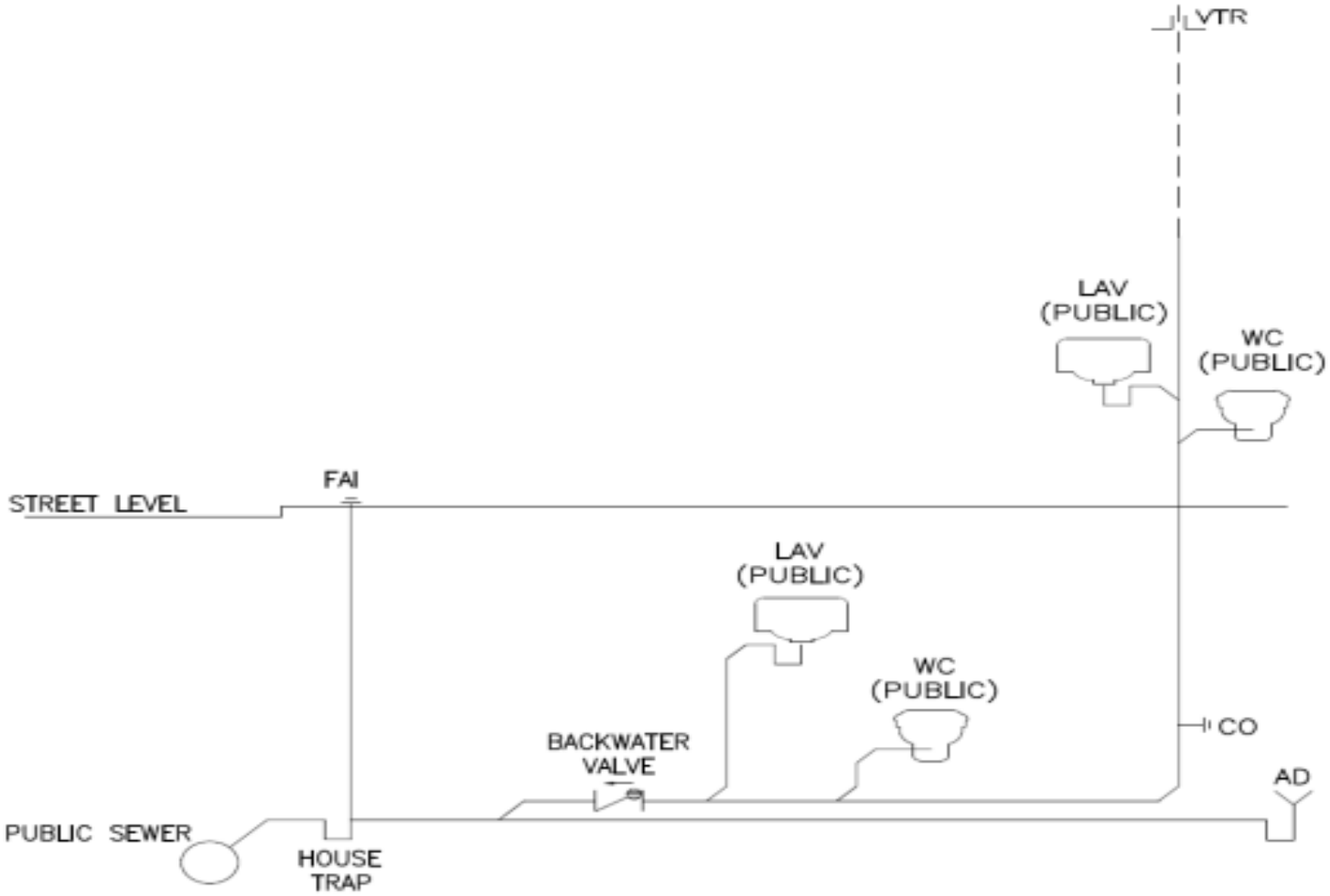
- A duplex sewage pump or sewage ejector shall automatically discharge the contents of the sump to the building drainage system. A simplex pump or sewage ejector shall be permitted for one- and two-family dwellings and where serving a single plumbing fixture waste, a single waste receptor or both in all other occupancies.

- P-712.4.1 Macerating toilet systems. Macerating toilet systems shall be installed in accordance with the manufacturer’s instructions and shall be limited to use in one- and two-family residential dwellings only.

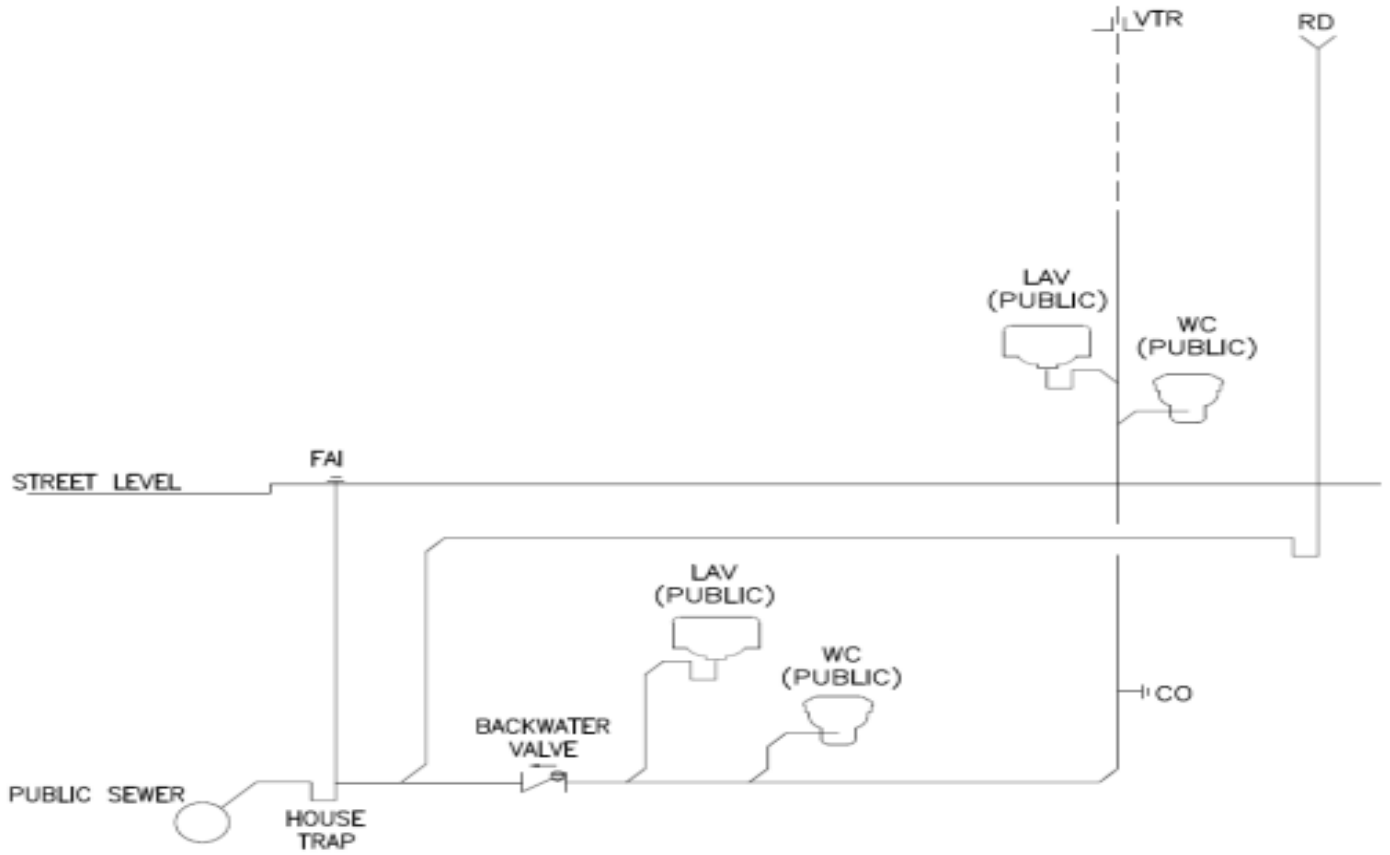
P-714: Backwater Valves

- Where plumbing fixtures are installed on a floor with a finished floor elevation below the fresh air inlet termination, such fixtures shall be protected by a backwater valve installed in the building drain, or horizontal branch serving such fixtures.

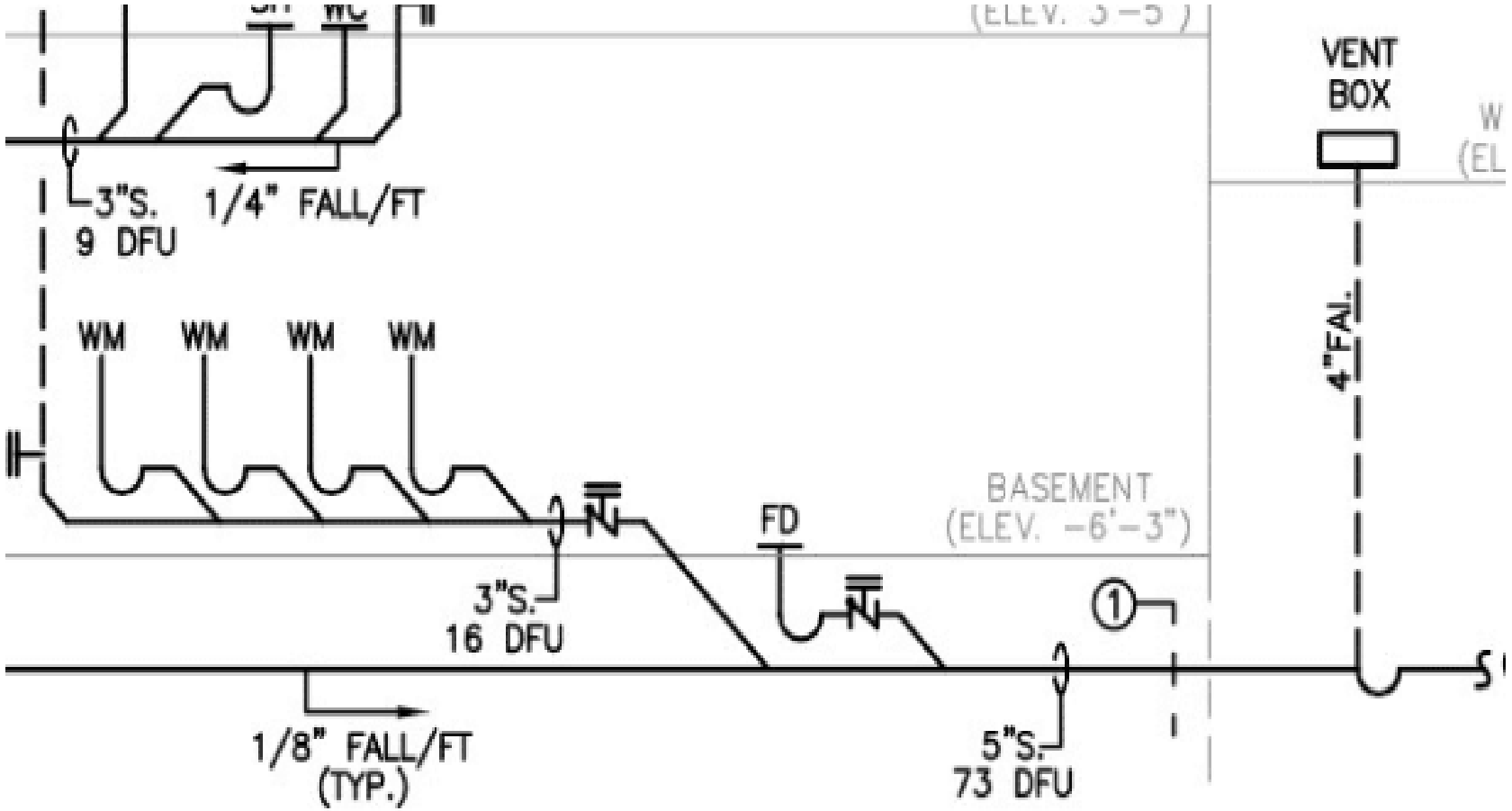
P-714: Backwater Valves



P-714: Backwater Valves



P-714: Backwater Valves



P-918: Air Admittance Valves

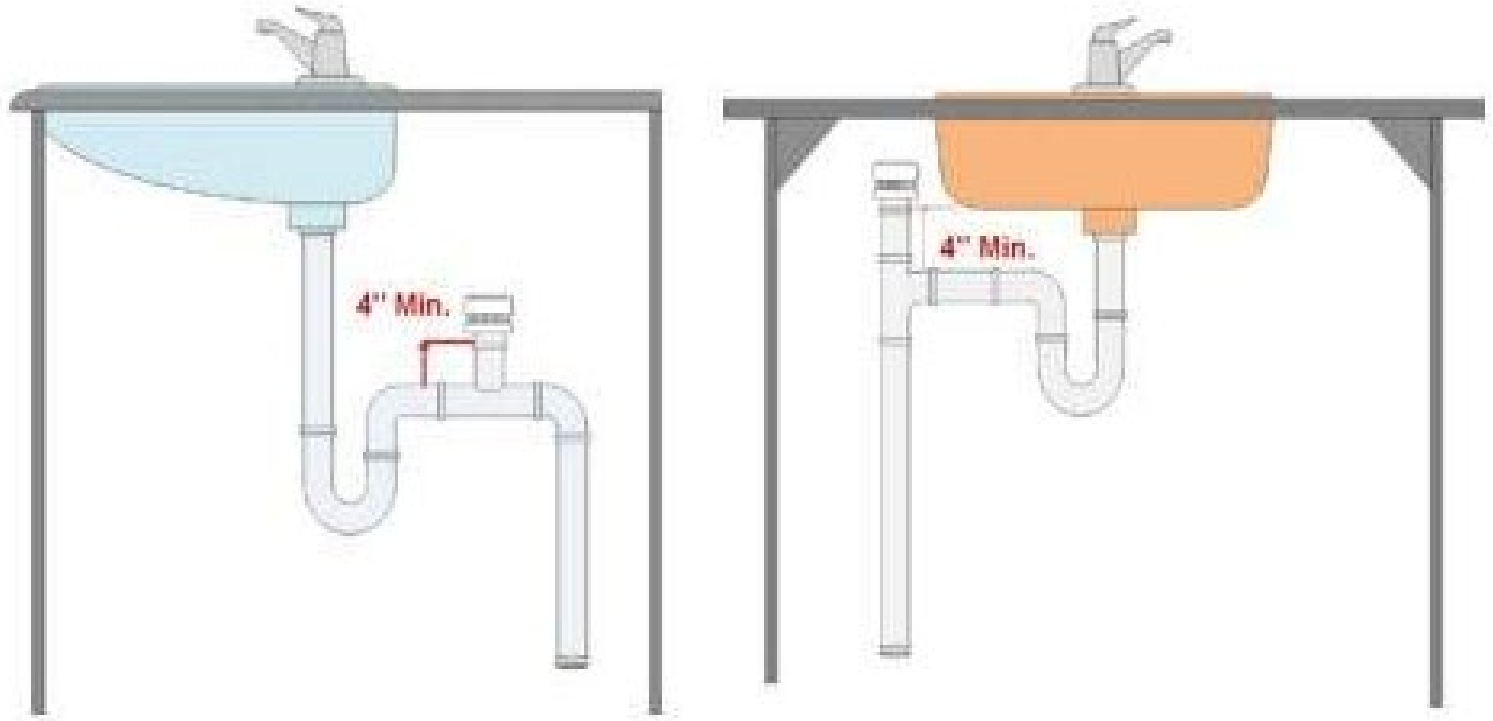
- P-918.1 General. Vent systems utilizing air admittance valves shall comply with this section. Individual air admittance valves shall conform to ASSE 1051.

- Air admittance valves shall be allowed for permitted alterations to the plumbing system in one- and two-family dwellings in place of an individual vent for a single fixture drain other than a water closet or any other soil waste.

P-918: Air Admittance Valves

- P-918.3 Where permitted.
- An individual vent shall be permitted to terminate with a connection to an individual air admittance.
- Stack vents and vent stacks shall be prohibited to terminate to stack type air admittance valves.

P-918: Air Admittance Valves



P-919: Philadelphia Single-Stack Waste and Vent System

- This design can be used in new construction and in alterations but can not be used with sections 906-918 and all of Chapter 7

P-919: Philadelphia Single-Stack Waste and Vent System

3" soil stacks are limited to 6 water closets and 75 DFU's.

TABLE P-919.2(c)
MINIMUM PIPE SIZES ACCORDING TO FIXTURE LOAD
(Maximum Fixture Units that may be Connected)

	HOUSE DRAIN OR HORIZONTAL BRANCH				VERTICAL SOIL OR WASTE STACK
PIPE SIZE (Inches)	1/16" FALL	1/8" FALL	1/4" FALL	1/2" FALL	
1 1/4			2	2	
1 1/2			4	6	6
2			10	18	20
2 1/2			27	36	36
3			48[a]	65[a]	75[b]
4		50	100	200	225
5		130	225	420	480
6		330	480	875	1,015
8	500	850	1,100	2,000	2,320
10	1,050	1,650	2,320	3,800	4,500
12	1,800	3,000	4,500	6,500	8,100
15	3,600	6,000	8,100	10,000	13,600

For SI: 1 inch = 25.4 mm.

a. Limit 2 water closets.

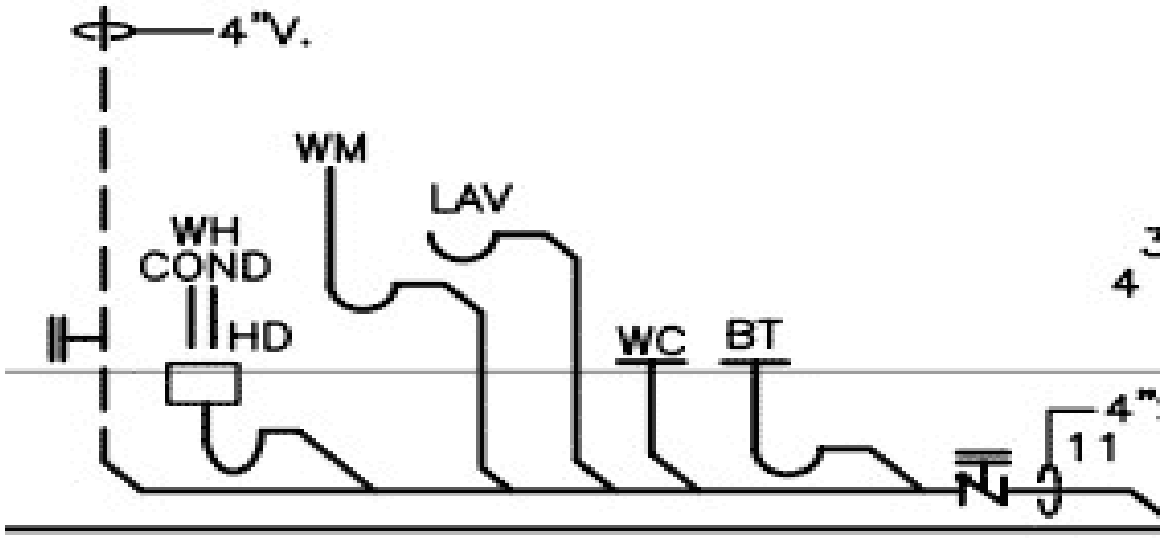
b. Limit 6 water closets.

P-919: Philadelphia Single-Stack Waste and Vent System

- 4" is the minimum size building drain/building sewer when receiving the discharge of water closets
- Soil and waste stacks are required to maintain full size from the base of the stack through the roofline. If 3" is at the base then 3" is required above the roofline.
- Every building must have a least one 3" vent stack.

P-919: Philadelphia Single-Stack Waste and Vent System

- Every branch with 2 or more fixtures must have a branch vent the same size of the branch

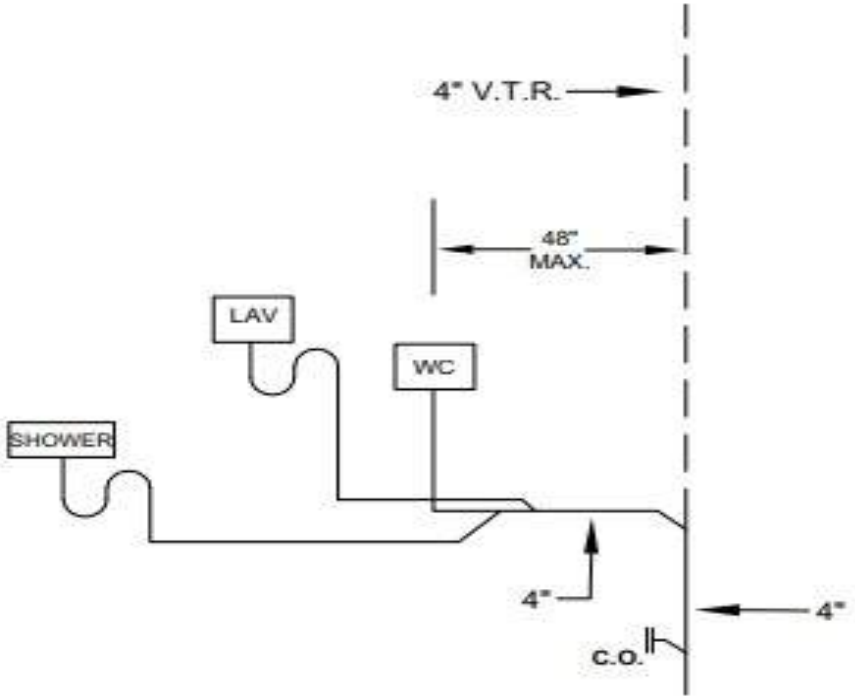


P-919: Philadelphia Single-Stack Waste and Vent System

- A 4" ideal bend (closet bend) can be used to receive the maximum 2 fixtures with a maximum size of 1-1/2". Lavatories, bathtubs, showers, urinals and drinking fountains are permitted . Kitchen sinks, dishwater, and washing machine waste are not allowed due to suds. The most common material can be cast iron or plastic pipe. 3" ideal bends (closet bends) with connections for 2 small fixtures is not allowed. The closet bend branch is limited to 4' develop length from the stack or building drain.

P-919: Philadelphia Single-Stack Waste and Vent System

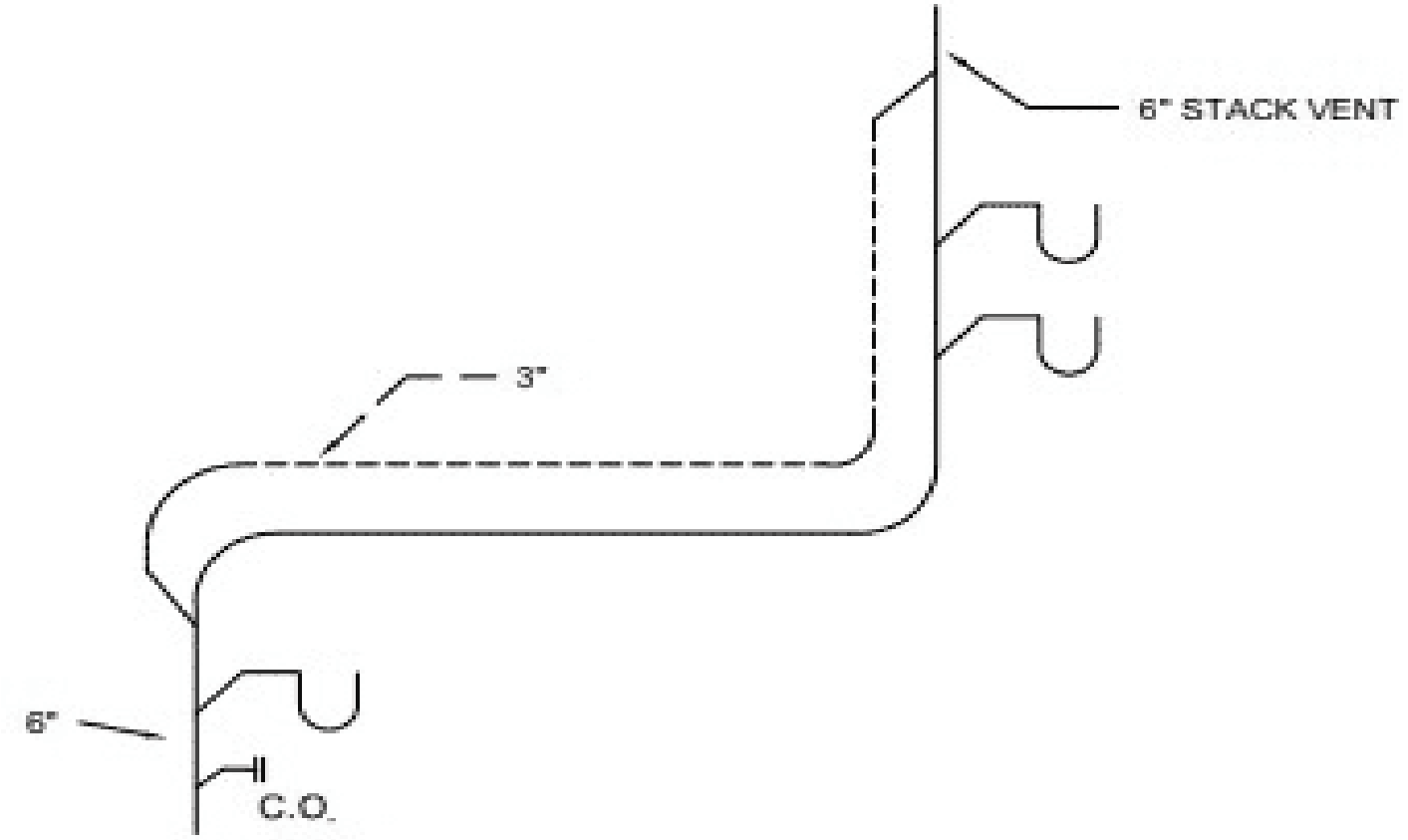
P-919: Philadelphia Single-Stack Waste and Vent System



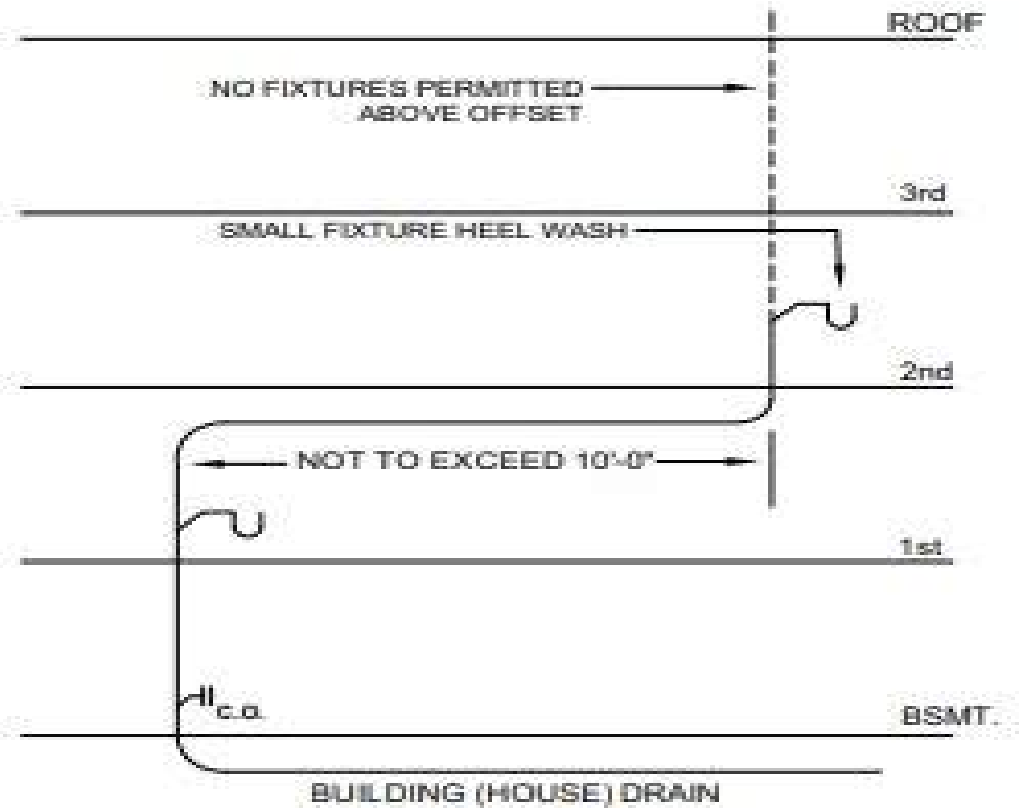
P-919: Philadelphia Single-Stack Waste and Vent System

- A yoke vent is required for stack offsets at an angle greater than 45 degrees when fixtures are above the offset. A yoke vent is not required in buildings 3 stories or less and the offset is no greater than 10‘ with fixtures on the offset, one small fixture is allowed above the offset to serve as a heal wash for the vent.

P-919: Philadelphia Single-Stack Waste and Vent System



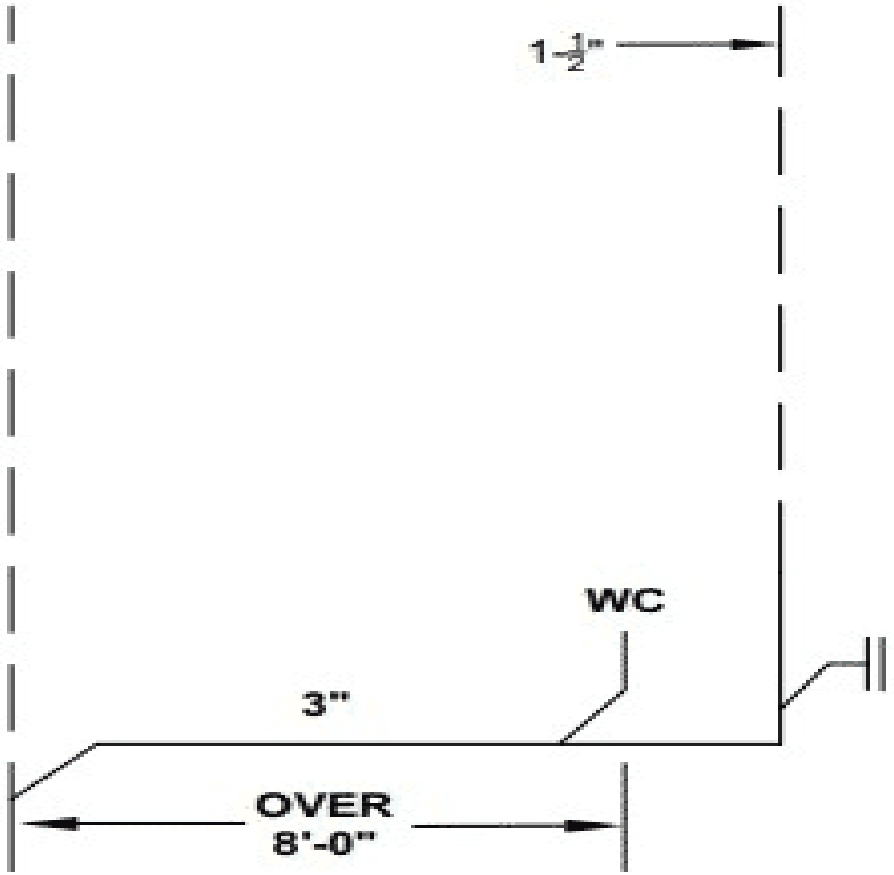
P-919: Philadelphia Single-Stack Waste and Vent System



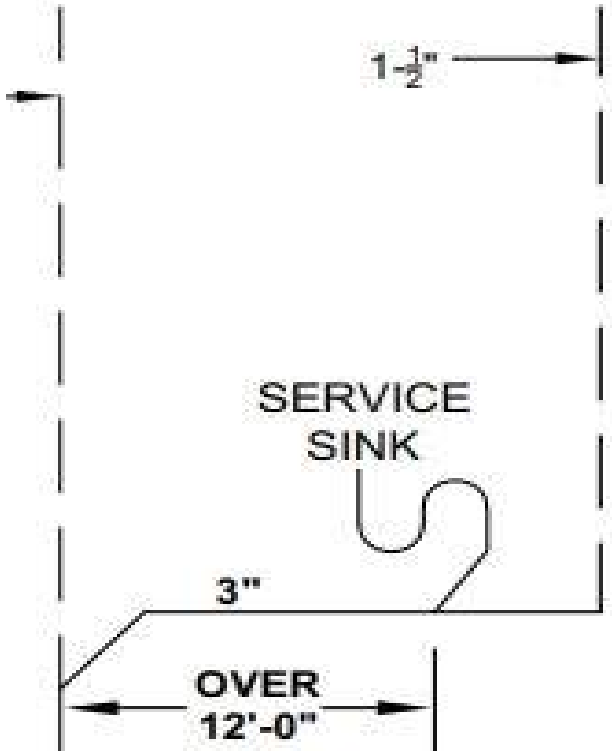
P-919: Philadelphia Single-Stack Waste and Vent System

- Any single water closet branch more than 8 feet in length or waste branch for fixtures other than water closets more than 12 feet in length shall have a vent sized at least one-half the diameter of the branch pipe and minimum size vent is 1-1/2". Fixture vents are not required when the develop lengths of the fixture drains are 8' and less for water closets and 12' and less for all other fixtures.

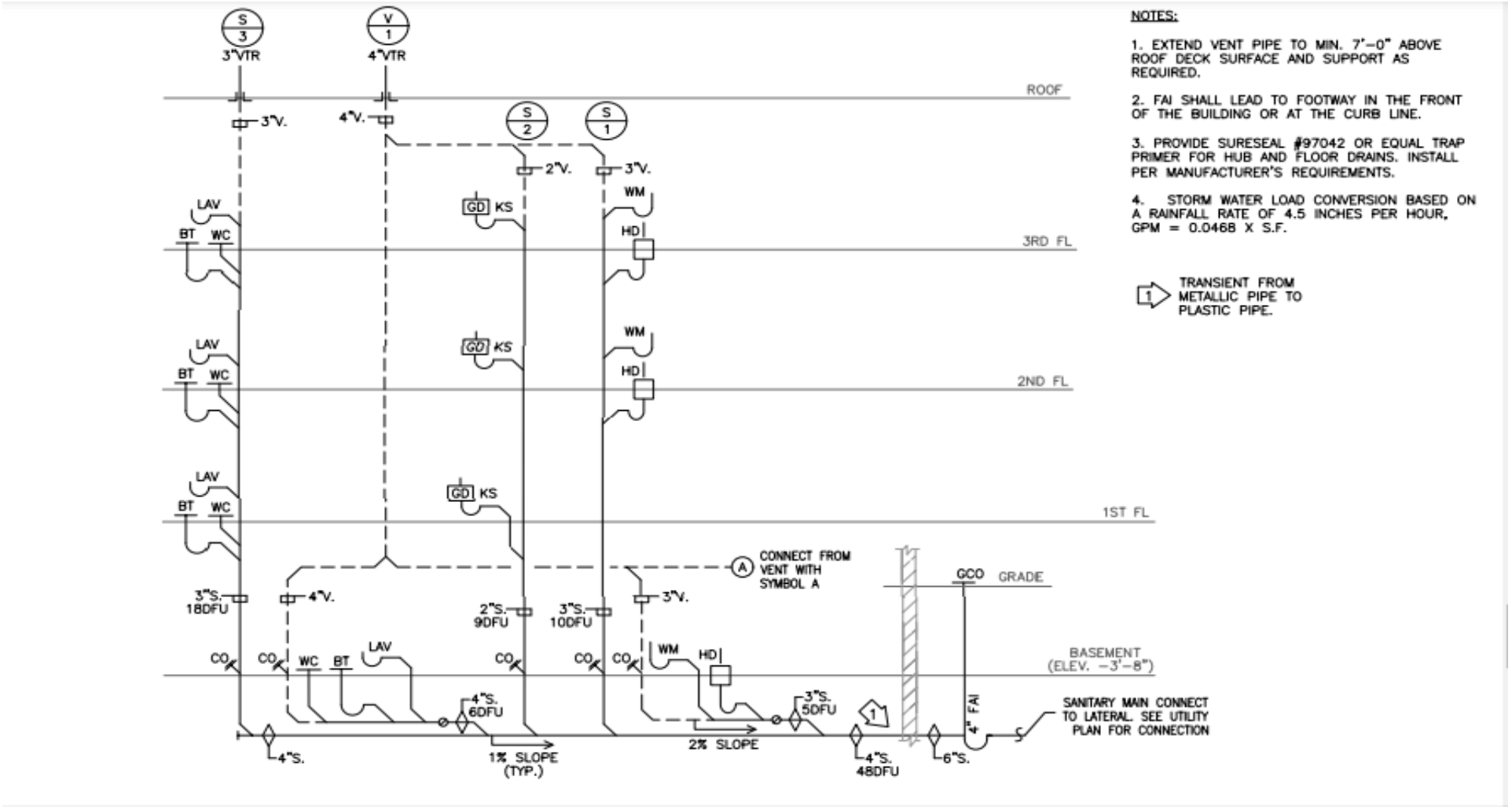
P-919: Philadelphia Single-Stack Waste and Vent System



P-919: Philadelphia Single-Stack Waste and Vent System



P-919: Philadelphia Single-Stack Waste and Vent System



P-1002.6: Building Traps and Fresh Air Inlets

- All buildings are required to have a sanitary, storm or a combination storm and sanitary building trap.
- The building trap shall not be less in size than the house drain pipe it traps.
- 5" is the minimum size for sanitary and combination building sewers.
- 6" is the minimum size for storm building sewers.
- Cleanout tee can be installed in place of a storm water building trap when discharging to a storm only sewer with a minimum size of 6" and a 4" upright to grade.

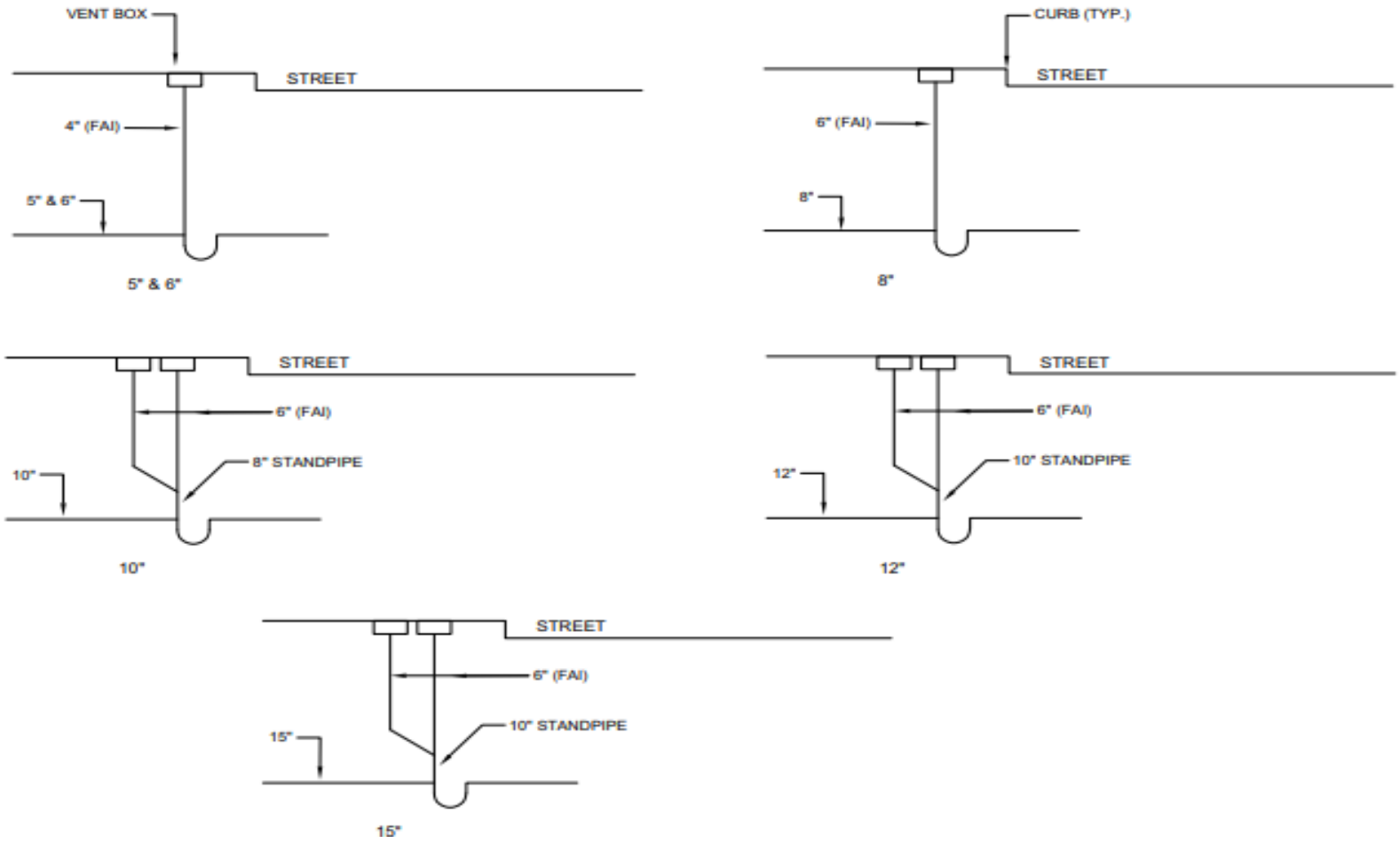
P-1002.6: Building Traps and Fresh Air Inlets
Separate Sanitary and Storm Building Traps

P-1002.6: Building Traps and Fresh Air Inlets
Separate Sanitary and Storm Building Traps

P-1002.6: Building Traps and Fresh Air Inlets

- Fresh air inlets shall be 4 inches for 5-inch and 6-inch drains.
- 6" inches for 8-inch drains.
- Two 6-inch vents for 10-inch drains with 8-inch standpipe.
- Two 6-inch vents for 12-inch drains with 10-inch standpipe.
- Two 6- inch vents for 15-inch drains with 10- inch standpipe.
- Fresh air inlets are required to be cast iron pipe when the building is a mix use, commercial and within 5' horizontally from the water distribution pipe.
- Fresh air inlets shall be a minimum 10' from any door, window or fresh air intake.

P-1002.6: Building Traps and Fresh Air Inlets



P-1003.3.5: Hydromechanical Grease Interceptors

- Grease interceptors that are hydromechanical are required to be semi-automatic design equipped with a full port type ball valve on the discharge side of the interceptor and a draw-off located in the grease accumulating chamber of the interceptor.

P-1003.3.5: Hydromechanical Grease Interceptors

P-1003.3.5: Hydromechanical Grease Interceptors

- Grease interceptors are required to receive the drainage from fixtures and equipment with grease laden waste located in food preparation areas in restaurants, hotel kitchens, hospitals, commercial kitchens, cafeterias, and at these plumbing fixtures.
- Pot sinks
- Pre-rinse sinks
- Wok stations
- Floor drains where soup kettles are drained
- Automatic hood wash units
- Dishwasher where without pre-rinse sinks

Thank You

Department of
Licenses and Inspections
CITY OF PHILADELPHIA