

ORDINANCE NO. _____

An ordinance amending Chapter 54, "Dallas Plumbing Code," of the Dallas City Code, as amended; adopting with certain changes the 2015 Edition of the International Plumbing Code of the International Code Council, Inc.; regulating the construction, enlargement, alteration, repair, use, and maintenance of plumbing work in the city; providing a penalty not to exceed \$2,000; providing a saving clause; providing a severability clause; and providing an effective date.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. That Chapter 54, "Dallas Plumbing Code," of the Dallas City Code, as amended, is amended by adopting the 2015 Edition of the International Plumbing Code of the International Code Council, Inc. (which is attached as Exhibit A and made a part of this ordinance), with the following amendments:

1. Page xi, "Legislation," is deleted.
2. Chapter 1, "Scope and Administration," of the 2015 International Plumbing Code is deleted and replaced with new Chapter 1, "Administration," to read as follows:

**"CHAPTER 1
ADMINISTRATION**

**SECTION 101
GENERAL**

101.1 Title. These regulations are known as the *Dallas Plumbing Code*, hereinafter referred to as "this code."

101.2 Scope. The provisions of this code apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code also regulates nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel gas-fired water heaters and water heater venting systems are regulated by the *Dallas Fuel Gas Code*.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures must comply with the *Dallas One- and Two-Family Dwelling Code*.
2. Plumbing systems in existing buildings undergoing repair, alteration, or additions, and change of occupancy may comply with the *Dallas Existing Building Code*.

101.3 Administrative procedures. Except as otherwise specified in this code, all provisions of Chapter 52, “Administrative Procedures for the Construction Codes,” of the *Dallas City Code* apply to this code.

101.4 Referenced codes and standards. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference only when such codes and standards have been specifically adopted by the city of Dallas. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference made to NFPA 70 or the *ICC Electrical Code* means the *Dallas Electrical Code*, as adopted. References made to the *International Building Code*, the *International Mechanical Code*, the *International Plumbing Code*, the *International Fuel Gas Code*, the *International Fire Code*, the *International Energy Conservation Code*, the *International Existing Building Code*, and the *International Residential Code*, respectively mean the *Dallas Building Code*, the *Dallas Mechanical Code*, the *Dallas Plumbing Code*, the *Dallas Fuel Gas Code*, the *Dallas Fire Code*, the *Dallas Energy Conservation Code*, the *Dallas Existing Building Code*, and the *Dallas One- and Two-Family Dwelling Code*, as amended.”

3. Section 202, “General Definitions,” of Chapter 2, “Definitions,” of the 2015

International Plumbing Code is amended by amending or adding the following definitions to read as follows:

“GRAY WATER. Waste water that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Gray water includes waste [discharged] from lavatories, bathtubs, showers, clothes washers and laundry sinks [trays].

ON-SITE NONPOTABLE WATER REUSE SYSTEM. A water system for the collection, treatment, storage, distribution and reuse of nonpotable water generated on site, including but not limited to a gray water system. [~~This definition does not include a rainwater harvest system.~~]

RAINWATER HARVEST. The rainwater collected from roofs and other on-site above ground catchment systems.

RECLAIMED WATER. Nonpotable water that, as a result of [has been derived from] the treatment of domestic waste water, is suitable for a direct beneficial use or a controlled use when such system has been submitted and approved by the building official prior to installation [by a facility or system licensed or permitted to produce water meeting the jurisdiction's water requirements for its intended uses]. Also known as “recycled water.”

STORM WATER. A drainage system that carries a [N]atural precipitation, including snow-melt, rainwater, surface water or similar liquid wastes that has contacted a surface at or below grade.”

4. Subsection 301.6, “Prohibited Locations,” of Section 301, “General,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

301.6 Prohibited locations. No plumbing system, waste disposal system, gas distribution system, rainwater piping system, irrigation system, medical gas & vacuum system or parts thereof, shall be located on any lot other than a specific lot or building site as defined by Chapter 51A of the *Dallas Development Code*. Piping, fixtures or equipment shall not be located as to interfere with the normal use thereof or the normal operation and use of any required windows, doors or other facilities. Plumbing systems shall not be located in an elevator shaft or in an elevator equipment room.

Exception: Floor drains, sumps and sump pumps shall be permitted at the base of the shaft, provided that they are indirectly connected to the plumbing system and comply with Section 1003.4.”

5. Paragraph 305.4.1, “Sewer Depth,” of Subsection 305.4, “Freezing,” of Section 305, “Protection of Pipes and Plumbing System Components,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

305.4.1 Sewer depth. [~~*Building sewers that connect to private sewage disposal systems shall be installed not less than [NUMBER] inches (mm) below finished grade at the point of septic tank connection.*~~] *Building sewers* shall be a minimum of 12 [installed not less than [NUMBER]] inches (304 mm) below grade.”

6. Subsection 305.7, “Protection of Components of Plumbing System,” of Section 305, “Protection of Pipes and Plumbing System Components,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

“305.7 Protection of components of plumbing system. Components of a plumbing system installed within 3 feet of ~~along~~ alleyways, driveways, parking garages or other locations in a manner in which they would be exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.”

7. Subsection 312.9, “Shower Liner Test,” of Section 312, “Test and Inspections,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

“312.9 Shower liner test. Where shower floors and receptors are made water tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 3[2] inches (~~76.2[54]~~ mm) measured from the top of the drain to the top of ~~at~~ the threshold. Where a threshold of at least 3[2] inches (~~76.2[54]~~ mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 3[2] inches (~~76.2[54]~~ mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.”

8. Paragraph [M] 314.2.1, “Condensate Disposal,” of Subsection [M] 314.2, “Evaporators and Cooling Coils,” of Section 314, “Condensate Disposal,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

“[M] 314.2.1 Condensate disposal. Condensate from all cooling coils and evaporators shall be conveyed from the drain pan ~~outlet~~ to an *approved* place of disposal. Such piping shall maintain a horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley, sidewalk, rooftop or other areas so as to cause a nuisance.”

9. Paragraph [M] 314.2.2, “Drain Pipe Materials and Sizes,” of Subsection [M] 314.2, “Evaporators and Cooling Coils,” of Section 314, “Condensate Disposal,” of Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended to read as follows:

[M] 314.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polyethylene, ABS, CPVC or PVC pipe or tubing. When exposed to ultraviolet light, schedule 80 PVC piping or tubing is required. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 relative to the material type. Condensate waste and drain line size shall be not less than ¾-inch (19.1 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 314.2.2. All horizontal sections of drain piping must be installed in uniform alignment at a uniform slope.”

10. Chapter 3, “General Regulations,” of the 2015 International Plumbing Code is amended by adding a new Section 317, “Irrigation Systems,” to read as follows:

“SECTION 317 IRRIGATION SYSTEMS

317.1 Irrigation systems. All potable water source irrigation systems must comply with the provisions of Appendix F, “Standards for Designing, Installing and Maintaining Landscape Irrigation Systems,” of this code. All nonpotable water source irrigation systems must comply with the provisions of Chapter 13, “Water Reuse,” and Appendix F, “Standards for Designing, Installing and Maintaining Landscape Irrigation Systems.”

11. Subsection 401.1, “Scope,” of Section 401, “General,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is amended to read as follows:

“401.1 Scope. This chapter shall govern the materials, design and installation of plumbing fixtures, faucets and fixture fittings in accordance with the type of *occupancy*, and shall provide for the minimum number of fixtures for various types of occupancies. The provisions of this chapter are intended to work in coordination with the provisions of the *Dallas Building Code*. Should any conflicts arise between the two chapters, the building official shall determine which provision applies.”

12. Subsection 403.1, “Minimum Number of Fixtures,” of Section 403, “Minimum Plumbing Facilities,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is amended to read as follows:

“403.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the type of occupancy and in the minimum number as follows:

1. **Assembly occupancies.** At least one drinking fountain must be provided at each floor level in an approved location.

Exception: A drinking fountain need not be provided in a drinking or dining establishment.

2. **Group A, B, F, H, I, M and S occupancies.** Buildings, tenant spaces or portions of buildings where persons are employed must be provided with at least one water closet for each sex as provided for in Section 403.2.

3. **Group E and R occupancies.** Fixtures must be provided as shown in Table 403.1

It is recommended, but not required, that the minimum number of fixtures provided also comply with the number shown in Table 403.1 [~~based on the actual use of the building or space~~]. Uses not shown in Table 403.1 shall be considered individually by the building [~~code~~] official. The number of occupants shall be determined by the Dallas [International] Building Code. Occupancy classification shall be determined in accordance with the Dallas Building Code.

403.1.1 Fixture calculations. To determine the occupant load of each sex, 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 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 to the next whole number.

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

403.1.2 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 of the Dallas [International] Building Code are permitted to be included in the number of required fixtures for either male or female occupants in assembly and mercantile *occupancies*.”

13. Subsection 404.2, “Accessible Fixture Requirements,” of Section 404, “Accessible Plumbing Facilities,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is amended to read as follows:

“404.2 Accessible fixture requirements. Accessible plumbing fixtures shall be installed with the clearances, heights, spacings and arrangements in accordance with the Dallas Building Code [ICC A117.1].”

14. Subsection 409.2, “Water Connection,” of Section 409, “Dishwashing Machines,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is amended to read as follows:

“409.2 Water connection. The water supply to a commercial dishwashing machine shall be protected against backflow by an *air gap* that is integral with the machine or a backflow preventer shall be installed in accordance with Section 608. *Air gaps* shall comply with ASME A112.1.2 or A112.1.3”

15. Subsection 412.4, “Public Laundries and Central Washing Facilities,” of Section 412, “Floor and Trench Drains,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is deleted and replaced as follows:

“412.4 Required location for floor drains. Floor drains shall be required in the following locations:

1. In public coin-operated laundries and in the central washing facilities of multiple-family dwellings, rooms containing automatic clothes washers shall be provided with floor drains located to readily drain the entire floor area. Such drains shall have a minimum outlet of not less than 3 inches (76 mm) in diameter.
2. Food establishments as defined by Chapter 17 of the *Dallas City Code*.
3. Public restrooms.”

16. Subsection 417.5, “Shower Floors or Receptors,” of Section 417, “Showers,” of Chapter 4, “Fixtures, Faucets and Fixture Fittings,” of the 2015 International Plumbing Code is amended to read as follows:

“417.5 Shower floors or receptors. Floor surfaces shall be constructed of impervious, noncorrosive, nonabsorbent and waterproof materials. Thresholds must be a minimum of 2 inches (51 mm) and a maximum of 9 inches (229 mm), measured from the top of the drain to the top of the threshold or dam. Thresholds must be of sufficient width to accommodate a minimum 22-inch (559 mm) door.

Exception: Showers designed to comply with ICC/ANSI A117.1 or other designs as approved by the building official.

417.5.1 Support. Floors or receptors under shower compartments shall be laid on, and supported by, a smooth and structurally sound base.

417.5.2 Shower lining. Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made water tight utilizing material complying with Sections 417.5.2.1 through 417.5.2.6. Such liners shall turn up on all sides not less than 3 [2] inches (76 [51] mm) above the finished threshold level and shall extend outward and over the threshold and be fastened to the outside of the threshold jamb to the required minimum height of the shower liner. Liners shall be recessed and fastened to an *approved* backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. The completed liner shall be tested in accordance with Section 312.9.

Exceptions:

1. Floor surfaces under shower heads provided for rinsing laid directly on the ground are not required to comply with this section.
2. Where a sheet-applied, load-bearing, bonded, waterproof membrane is installed as the shower lining, the membrane shall not be required to be recessed.

417.5.2.1 PVC sheets. Plasticized polyvinyl chloride (PVC) sheets shall meet the requirements of ASTM D 4551. Sheets shall be joined by solvent welding in accordance with the manufacturer’s installation instructions.

417.5.2.2 Chlorinated polyethylene (CPE) sheets. Nonplasticized chlorinated polyethylene sheet shall meet the requirements of ASTM D 4068. The liner shall be jointed in accordance with the manufacturer’s installation instructions.

417.5.2.3 Sheet lead. Sheet lead shall weigh not less than 4 pounds per square foot (19.5 kg/m²) and shall be coated with an asphalt paint or other *approved* coating. The lead sheet shall be insulated from conducting substances other than the connecting drain by 15-pound (6.80 kg) asphalt felt or an equivalent. Sheet lead shall be joined by burning.

417.5.2.4 Sheet copper. Sheet copper shall conform to ASTM B 152 and shall weigh not less than 12 ounces per square foot (3.7 kg/m²). The copper sheet shall be insulated from conducting substances other than the connecting drain by 15-pound (6.80 kg) asphalt felt or an equivalent. Sheet copper shall be joined by brazing or soldering.

417.5.2.5 Sheet-applied, load-bearing, bonded, waterproof membranes. Sheet-applied, load-bearing, bonded, waterproof membranes shall meet requirements of ANSI A118.10 and shall be applied in accordance with the manufacturer's installation instructions.

417.5.2.6 Liquid-type, trowel-applied, load-bearing, bonded waterproof materials. Liquid-type, trowel-applied, load-bearing, bonded waterproof materials shall meet the requirements of ANSI A118.10 and shall be applied in accordance with the manufacturer's instructions."

17. Subsection [BG] 419.3, "Surrounding Material," of Section 419, "Urinals," of Chapter 4, "Fixtures, Faucets and Fixture Fittings," of the 2015 International Plumbing Code is amended to read as follows:

"[BG] 419.3 Surrounding material. Wall and floor space to a point 2 feet (610 mm) in front of a urinal lip and 4 feet (1219 mm) above the floor and at least 2 feet (610 mm) to each side of the urinal shall be waterproofed with a smooth, readily cleanable, hard, nonabsorbent material."

18. Subsection 502.3, "Water Heaters Installed in Attics," of Section 502, "Installation," of Chapter 5, "Water Heaters," of the 2015 International Plumbing Code is amended to read as follows:

"502.3 Water heaters installed in attics. Attics containing a water heater shall be provided with an opening and unobstructed passageway large enough to allow removal of the water heater. The passageway shall be not less than 30 inches (762 mm) in height and 22 inches (559 mm) in width and not more than 20 feet (6096 mm) in length when measured along the centerline of the passageway from the opening to the water heater. The passageway shall have continuous solid flooring not less than 24 inches (610 mm) in width. A level service space not less than 30 inches (762 mm) in length, ~~and~~ 30 inches (762 mm) in width and 30 inches (762 mm) deep shall be present at the front or service side of the water heater. The clear access opening dimensions shall be not less than 20 inches by 30 inches (508 mm by 762 mm) where such dimensions are large

enough to allow removal of the water heater. A walkway to an appliance must be rated as a floor as approved by the building official. At a minimum, one of the following must be provided for access to the attic space:

1. A permanent stair.
2. A pull down stair with a minimum 300 lb. (136 kg) capacity.
3. An access door from an upper floor level.

Due to structural conditions, an access panel may be used in lieu of Items 1, 2 or 3 with the prior approval of the building official.”

19. Section 502, “Installation,” of Chapter 5, “Water Heaters,” of the 2015 International Plumbing Code is amended by adding a new Subsection 502.6, “Water Heaters Above Ground or Floor,” to read as follows:

“502.6 Water heaters above ground or floor. When the attic, roof, mezzanine or platform in which a water heater is installed is more than 8 feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

Exception: A water heater may be reached by portable ladder if the water heater has a capacity of no more than 10 gallons (or larger with prior approval), it is capable of being accessed through a lay-in ceiling, and it is installed not more than 10 feet (3048 mm) above the ground or floor level.

502.6.1. Illumination and convenience outlet. Whenever the attic, roof, mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with the *Dallas Electrical Code.*”

20. Subsection 504.6, “Requirements for Discharge Piping,” of Section 504, “Safety Devices,” of Chapter 5, “Water Heaters,” of the 2015 International Plumbing Code is amended to read as follows:

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

1. Not be directly connected to the drainage system.
2. Discharge through an *air gap* [~~located in the same room as the water heater~~].

3. Be a minimum 3/4" (1.9 mm) inside diameter but shall not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.

Exception: Multiple relief devices may be installed to a single T&P discharge piping system when approved by the building official and permitted by the manufacturer's installation instructions and installed pursuant to those instructions.

5. Discharge by indirect means [~~to the floor, to the pan serving the water heater or storage tank,~~] to an approved [a] waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate less [not more] than 6 inches (152 mm) or more than 24 inches (609 mm) above grade. When terminating at an approved waste receptor, the T&P discharge line shall terminate not more [and not less] than 6 inches (152 mm) above or less than two times the discharge pipe diameter above the [floor or] flood level rim of the waste receptor.
11. Not have a threaded connection at the end of such piping.
12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and *approved* for such use in accordance with ASME A112.4.1."

21. Paragraph 504.7.1, "Pan Size and Drain," of Subsection 504.7, "Required Pan," of Section 504, "Safety Devices," of Chapter 5, "Water Heaters," of the 2015 International Plumbing Code is amended to read as follows:

"504.7.1 Pan size and drain. The pan shall be not less than 1 1/2 inches (38 mm) in depth and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe having a diameter of not less than 3/4 inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4.

Exception: Multiple pan drains may terminate to a single discharge piping system when approved by the administrative authority and permitted by the water heater’s manufacturer installation instructions and installed according to manufacturer’s instructions.

22. Subsection 602.3, “Individual Water Supply,” of Section 602, “Water Required,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is deleted.

23. Subsection 604.4, “Maximum Flow and Water Consumption,” of Section 604, “Design of Building Water Distribution System,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended by adding a new Paragraph 604.4.1, “State Maximum Flow Rate,” to read as follows:

“604.4.1 State maximum flow rate. Where the state-mandated maximum flow rate is more restrictive than those of this section, the state flow rate takes precedence.”

24. Subsection 605.2, “Lead Content of Water Supply Pipe and Fittings,” of Section 605, “Materials, Joints and Connections,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended to read as follows:

“605.2 Lead contents of water supply pipe and fittings. On potable water systems, the maximum allowable lead content in pipes, pipe fittings, plumbing fittings and fixtures shall be not more than a weighted average of 0.25 percent with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures. [~~Pipe and pipe fittings, including valves and faucets, utilized in the water supply system shall have not more than 8 percent lead content.~~]

Exceptions:

1. Pipes, pipe fittings, plumbing fittings, fixtures or backflow preventers used only for nonpotable services such as manufacturing, industrial processing, irrigation systems as per Appendix F of the *Dallas Plumbing Code* or any other non-potable service.
2. Flush valves, fill valves, flushometer valves, tub fillers, shower valves, service saddles or water distribution main gate valves that are 2 inches (50 mm) in diameter or larger.

~~“605.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent or less.”~~

25. Subsection 606.1, "Location of Full-Open Valves," of Section 606, "Installation of the Building Water Distribution System," of Chapter 6, "Water Supply and Distribution," of the 2015 International Plumbing Code is amended to read as follows:

"606.1 Location of full-open valves. Full-open valves shall be installed in the following locations:

1. [~~On the building water service pipe from the public water supply near the curb.~~
- 2.] On the water distribution supply pipe at the entrance into the structure.
- ~~3.] On the discharge side of every water meter.~~
4. ~~On the base of every water riser pipe in occupancies other than multiple-family residential occupancies that are two stories or less in height and in one- and two-family residential occupancies.~~
5. ~~On the top of every water down-feed pipe in occupancies other than one- and two-family residential occupancies.]~~
- 2[6]. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.
- 3[7]. On the water supply pipe to a gravity or pressurized water tank.
- 4[8]. On the water supply pipe to every water heater."

26. Subsection 606.2, "Location of Shutoff Valves," of Section 606, "Installation of the Building Water Distribution System," of Chapter 6, "Water Supply and Distribution," of the 2015 International Plumbing Code is amended to read as follows:

"606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers, or similar type valves, in one- and two-family residential *occupancies*, and other than in individual sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar *occupancies*.
2. [~~On the water supply pipe to each sillcock.~~
- 3.] On the water supply pipe to each appliance or mechanical equipment."

27. Subsection 607.2, “Hot or Tempered Water Supply to Fixtures,” of Section 607, “Hot Water Supply System,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended to read as follows:

“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 (15 240 mm). Recirculating system piping and heat-traced piping shall be considered to be sources of *hot* or *tempered* water and shall be installed in accordance with the *Dallas Energy Conservation Code*.

~~[607.2.1 Circulation systems and heat trace systems for maintaining heated water temperature in distribution systems. For Group R2, R3 and R4 occupancies that are three stories or less in height above grade plane, the installation of heated water circulation and temperature maintenance systems shall be in accordance with Section R403.5.1 of the *International Energy Conservation Code*. For other than Group R2, R3 and R4 occupancies that are three stories or less in height above grade plane, the installation of heated water circulation and heat trace systems shall be in accordance with Section C404.6 of the *International Energy Conservation Code*.~~

~~607.2.1.1 Pump controls for hot water storage systems. The controls on pumps that circulate water between a water heater and a storage tank for heated water shall limit operation of the pump from heating cycle startup to not greater than 5 minutes after the end of the cycle.~~

~~607.2.1.2 Demand recirculation controls for distribution systems. A water distribution system having one or more recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe shall be a demand recirculation water system. Pumps shall have controls that comply with both of the following:~~

- ~~1. The control shall start the pump upon receiving a signal from the action of a user of a fixture or appliance, sensing the presence of a user of a fixture, or sensing the flow of hot or tempered water to a fixture fitting or appliance.~~
- ~~2. The control shall limit the temperature of the water entering the cold water piping to 104°F (40°C).]~~

607.2.1[2] Piping for recirculation systems having master thermostatic valves. Where a thermostatic mixing valve is used in a system with a hot water recirculating pump, the *hot* water or *tempered* water return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the thermostatic mixing valve.”

28. Subsection 608.1, “General,” of Section 608, “Protection of Potable Water Supply,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended to read as follows:

“608.1 General. A potable water supply system shall be designed, installed and maintained in such a manner so as to prevent contamination from nonpotable liquids, solids or gases being introduced into the potable water supply through cross-connections or any other piping connections to the system. Backflow preventer applications shall conform to applicable local regulations, Table 608.1, and [except] as specifically stated in Sections 608.2 through 608.16.10, and Chapter 13 of the *Dallas Plumbing Code*.”

29. Subsection 608.8, “Identification of Nonportable Water Systems,” of Section 608, “Protection of Potable Water Supply,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended to read as follows:

“608.8 Identification of nonpotable water systems. Where nonpotable water systems are installed, the piping conveying the nonpotable water shall be identified either by permanently installed color marking, metal tags or tape in accordance with Sections 608.8.1 through 608.8.2.3.

608.8.1 Signage required. Nonpotable water outlets, such as hose connections, open ended pipes and faucets, shall be identified with permanently posted signage that reads as follows: “Nonpotable water is utilized for [application name]. CAUTION: NONPOTABLE WATER – DO NOT DRINK.” The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inch (12.7 mm) in height and in white letters on a contrasting purple (consistent with Pantone color # 512) background [colors in contrast to the background on which they are applied]. In addition to the required wordage, the pictograph shown in Figure 608.8.1 shall appear on the required signage. The signs must be located in a manner that is visible to all users and approved by the building official. The number of signs installed must also be approved by the building official.



**FIGURE 608.8.1
PICTOGRAPH—DO NOT DRINK**

608.8.2 Distribution pipe labeling and marking. Nonpotable distribution piping shall be purple in color (consistent with Pantone # 512) and shall be embossed, or integrally stamped or marked, with the words: “CAUTION: NONPOTABLE WATER – DO NOT DRINK” or the piping shall be installed with a purple identification tape or wrap (consistent with Pantone # 512). Pipe identification shall include the contents of the piping system and an arrow indicating the direction of flow. Hazardous piping systems shall also contain information addressing the nature of the hazard. Pipe identification shall be permanently installed and repeated at intervals not exceeding 20 [25] feet (6096 [7620] mm) and at each point where the piping passes through or over a wall, floor or roof. Lettering shall be readily observable within the room or space where the piping is located.

608.8.2.1 Color. The color of the pipe identification shall be discernable and consistent throughout the building. The color purple (consistent with Pantone # 512) shall be used to identify all nonpotable water reuse [~~reclaimed, rain and gray water~~] distribution systems.

608.8.2.2 Lettering size. The size of the background color field and lettering shall comply with Table 608.8.2.2.

**TABLE 608.8.2.2
SIZE OF PIPE IDENTIFICATION**

PIPE DIAMETER (inches)	LENGTH BACKGROUND COLOR FIELD (inches)	SIZE OF LETTERS (inches)
¾ to 1 ¼	8	0.5
1 ½ to 2	8	0.75
2 ½ to 6	12	1.25
8 to 10	24	2.5
Over 10	32	3.5

For SI 1 inch = 25.4 mm.

608.8.2.3 Identification tape. Where used, identification tape shall be at least 3 inches (76 mm) wide and have white or black lettering on a purple field (consistent with Pantone # 512) stating “CAUTION: NONPOTABLE WATER – DO NOT DRINK.” Identification tape shall be readily observable on [~~installed on top of~~] nonpotable

rainwater and all other nonpotable water reuse distribution pipes, permanently fastened at least every 10 feet (3048 mm) to each pipe length and run continuously the entire length of the pipe.”

30. Paragraph 608.16.5, “Connections to Lawn Irrigations Systems,” of Subsection 608.16, “Connections to the Potable Water System,” of Section 608, “Protection of Potable Water Supply,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code is amended to read as follows:

“608.16.5 Connections to lawn irrigation systems. The potable water supply to lawn irrigation systems shall be protected against backflow by an atmospheric vacuum breaker, a pressure vacuum breaker assembly, a double-check assembly or a reduced pressure principle backflow prevention assembly. Valves shall not be installed downstream from an atmospheric vacuum breaker. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow prevention assembly and all piping installation and identification shall comply with the requirement of Appendix F and Section 608.8 of the *Dallas Plumbing Code*.”

31. Subsection 608.17, “Protection of Individual Water Supplies,” of Section 608, “Protection of Potable Water Supply,” of Chapter 6, “Water Supply and Distribution,” of the 2015 International Plumbing Code shall be deleted.

32. Subsection 703.6, “Combined Sanitary and Storm Public Sewer,” of Section 703, “Building Sewer,” of Chapter 7, “Sanitary Drainage,” of the 2015 International Plumbing Code is deleted.

33. Paragraph 705.11.2, “Solvent Cementing,” of Subsection 705.11, “PVC Plastic,” of Section 705, “Joints,” of Chapter 7, “Sanitary Drainage,” of the 2015 International Plumbing Code is amended to read as follows:

“705.11.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F 656 shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3, CSA B181.2 or CSA B 182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D 2855. Solvent-cement joints shall be permitted above or below ground.

~~[Exception: A primer is not required where both of the following conditions apply:~~

- ~~1. The solvent cement used is third party certified as conforming to ASTM D 2564.~~
- ~~2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in non pressure applications in sizes up to and including 4 inches (102 mm) in diameter.]”~~

34. Section 712, “Sumps and Ejectors,” of Chapter 7, “Sanitary Drainage,” of the 2015 International Plumbing Code is amended by adding a new Subsection 712.5, “Dual Pump System,” to read as follows:

“712.5 Dual pump system. All sumps must be automatically discharged and, when in any “public use” occupancy where the sump serves more than 10 fixture units, must be provided with dual sumps or ejectors arranged to function independently in case of overload or mechanical failure. For storm drainage sumps and pumping systems, see Section 1113.”

35. Section 714, “Computerized Drainage Design,” of Chapter 7, “Sanitary Drainage,” of the 2015 International Plumbing Code is retitled as Section 714, “Engineered Drainage Design.”

36. Subsection 714.1, “Design of Drainage System,” of Section 714, “Engineered Drainage Design,” of Chapter 7, “Sanitary Drainage,” of the 2015 International Plumbing Code is amended to read as follows:

“714.1 Design of drainage system. The sizing, design and layout of the drainage system shall be permitted to be designed by a registered engineer using approved ~~[computer]~~ design methods.”

37. Paragraph 802.1.1, “Food Handling,” of Subsection 802.1, “Where Required,” of Section 802, “Indirect Wastes,” of Chapter 8, “Indirect/Special Waste,” of the 2015 International Plumbing Code is amended to read as follows:

“802.1.1 Food handling. Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap into a floor sink sized in accordance with Section 802.3.1. ~~[Each well of a multiple compartment sink shall discharge independently to a waste receptor.]”~~

38. Paragraph 802.1.2, “Floor Drains In Food Storage Areas,” of Subsection 802.1, “Where Required,” of Section 802, “Indirect Wastes,” of Chapter 8, “Indirect/Special Waste,” of the 2015 International Plumbing Code is amended to read as follows:

“802.1.2 Floor drains in food storage areas. Floor drains located within walk-in refrigerators or freezers in food service and food establishments shall be indirectly connected to the sanitary drainage system by means of an *air gap* into a floor sink sized in accordance with Section 802.3.1. Where a floor drain is located within an area subject to freezing, the waste line serving the floor drain shall not be trapped and shall indirectly discharge by means of an air gap into a floor sink sized in accordance with Section 802.3.1, and ~~[waste receptor]~~ located outside the area subject to freezing.

~~[Exception: Where protected against backflow by a backwater valve, such floor drains shall be indirectly connected to the sanitary drainage system by means of an *air break* or an *air gap*.]~~”

39. Paragraph 802.1.7, “Commercial Dishwashing Machines,” of Subsection 802.1, “Where Required,” of Section 802, “Indirect Wastes,” of Chapter 8, “Indirect/Special Waste,” of the 2015 International Plumbing Code is amended to read as follows:

“802.1.7 Commercial dishwashing machines. The discharge from a commercial dishwashing machine shall be through an *air gap* ~~[or *air break*]~~ into a floor sink sized ~~[waste receptor]~~ in accordance with Sections 802.2.”

40. Paragraph 802.1.8, “Food Utensils, Dishes, Pots and Pans Sinks,” of Subsection 802.1, “Where Required,” of Section 802, “Indirect Wastes,” of Chapter 8, “Indirect/Special Waste,” of the 2015 International Plumbing Code is amended to read as follows:

“802.1.8 Food utensils, dishes, pots and pans sinks. Sinks and equipment, 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* into a floor sink sized in accordance with Section 802.3.1 ~~[or an *air break* to the drainage system]~~.”

41. Paragraph 802.3.3, “Standpipes,” of Subsection 802.3, “Waste Receptors,” of Section 802, “Indirect Wastes,” of Chapter 8, “Indirect/Special Waste,” of the 2015 International Plumbing Code is amended to read as follows:

“802.3.3 Standpipes. Standpipes shall be individually trapped. Standpipes shall extend not less than 18 inches (457 mm) but not greater than 42 inches (1066 mm) above the trap weir. *Access shall be provided to standpipes and drains for rodding. No trap serving a standpipe may be installed below the floor.”*

42. Subsection 903.1, “Roof Extension,” of Section 903, “Vent Terminals,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is amended to read as follows:

“903.1 Roof extension. Open vent pipes shall ~~that~~ extend through or above a roof and shall ~~be~~ terminate~~d~~ not less than 6 ~~[NUMBER]~~ inches (152 mm) above the roof. Where a roof is to be used for assembly or as a promenade, observation deck, sunbathing deck or similar purposes, open vent pipes shall terminate not less than 10 ~~[7]~~ feet (3048 ~~[2134]~~ mm) above the roof.

903.1.1 Vents above grade. Open vent pipes above grade and adjacent to a structure shall meet the requirements of Section 903.5 and terminate not less than 10 feet (3048 mm) above grade. Remote vents must terminate no less than 6 inches (152 mm) above grade.”

43. Subsection 905.4, “Vertical Rise of Vent,” of Section 905, “Vent Connections and Grades,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is amended to read as follows:

“905.4 Vertical rise of vent. Every dry vent shall rise vertically to a point not less than 6 inches (152 mm) above the *flood level rim* of the highest trap or trapped fixture being vented.

Exceptions:

1. Vents for interceptors located outdoors.

2. Where structural conditions prohibit the vent to rise 6 inches (152 mm), before offsetting horizontally, and whenever multiple vent pipes converge, each such vent shall rise 6 inches (152 mm) in height above the *flood level rim* of the fixture it serves before connecting to any other vent. Vents less than 6 inches (152 mm) above the *flood level rim* of the fixture shall comply with Sections 905.2 and 905.3 and they shall have a full size cleanout installed on the vent stack in an accessible location.”

44. Subsection 909.1, “Distance of Trap from Vent,” of Section 909, “Fixture Vents,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is amended to read as follows:

“909.1 Distance of trap from vent. Each fixture trap shall have a protecting vent located so that the slope and the *developed length* in the *fixture drain* from the trap weir to the vent fitting are within the requirements set forth in Table 909.1.

~~[**Exception:** The *developed length* of the *fixture drain* from the trap weir to the vent fitting for self-siphoning fixtures, such as water closets, shall not be limited.]”~~

45. Subsection 915.1, “Type of Fixtures,” of Section 915, “Combination Waste and Vent System,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is amended to read as follows:

“915.1 Type of fixtures. A *combination waste and vent system* shall not serve fixtures other than floor drains~~[-sinks, lavatories]~~ and indirect waste receptors ~~[drinking fountains]~~. *Combination waste and vent systems* shall not receive the discharge from a food waste disposer or clinical sink.”

46. Paragraph 915.2.3, “Connection,” of Subsection 915.2, “Installation,” of Section 915, “Combination Waste and Vent,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is amended to read as follows:

“915.2.3 Connection. The vent connection for a combination waste and vent system shall be downstream of the uppermost fixture ~~[provided with a dry vent connected at any point within the system or the system shall connect to a horizontal drain that serves vented fixtures located on the same floor]~~. *Combination waste and vent systems* connecting to building drains receiving only the discharge from one or more stacks shall be provided with a dry vent. The vent connection to the combination waste and vent pipe shall extend vertically to a point not less than 6 inches (152 mm) above the flood level rim of the highest fixture being vented before offsetting horizontally.”

47. Subsection 916.2, “Vent Connection,” of Section 916, “Island Fixture Venting,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is deleted and replaced with a new Subsection 916.2, “Installation,” to read as follows:

“916.2 Installation. Traps for island sinks and similar equipment must be roughed in above the floor and may be vented by extending the vent as high as possible, but not less than the drain board height and then returning it downward and connecting it to the horizontal sink drain

immediately downstream from the vertical fixture drain. The return vent must be connected to the horizontal drain through a wye-branch fitting and must, in addition, be provided with a foot vent taken off the vertical fixture vent by means of a wye-branch immediately below the floor and extending to the nearest partition and then through the roof to the open air or may be connected to other vents at a point not less than 6 inches (152 mm) above the flood level rim of the fixtures served. Drainage fittings must be used on all parts of the vent below the floor level and a minimum slope of ¼ inch per foot (20.9 mm/m) back to the drain must be maintained. The return bend used under the drain board must be a one piece fitting or an assembly of a 45 degree (0.79 radius), a 90 degree (1.6 radius) and a 45 degree (0.79 radius) elbow in the order named. Pipe sizing must be as required elsewhere in this code. The island sink drain, upstream of the return vent, must serve no other fixtures. An accessible cleanout must be installed in the vertical portion of the foot vent.”

48. Subsection 916.3, “Vent Installation Below the Fixture Flood Level Rim,” of Section 916, “Island Fixture Venting,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is deleted.

49. Section 917, “Single Stack Vent System,” of Chapter 9, “Vents,” of the 2015 International Plumbing Code is deleted.

50. Subsection 1002.3, “Prohibited Traps,” of Section 1002, “Trap Requirements,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended to read as follows:

“**1002.3 Prohibited traps.** The following types of traps are prohibited:

1. Traps that depend on moving or removable 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.

Exception: Drum traps used as solids interceptors and drum traps serving chemical waste systems shall not be prohibited.”

51. Subsection 1002.10, “Plumbing in Mental Health Centers,” of Section 1002, “Trap Requirements,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is deleted.

52. Paragraph 1003.3.1, “Grease Interceptors and Automatic Grease Removal Devices Required,” of Subsection 1003.3, “Grease Interceptors,” of Section 1003, “Interceptors and Separators,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended to read as follows:

“1003.3.1 Grease interceptors and automatic grease removal devices required. A grease interceptor or automatic grease removal device shall be required to receive the drainage from fixtures and equipment with grease-laden waste exposure located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, school kitchens, bars, factory cafeterias and clubs. Fixtures and equipment capable of generating or receiving grease-laden waste shall include, but not be limited to, pot sinks, prerinse sinks; hand sinks; 3-compartment sinks; mop sinks; soup kettles or similar devices; work stations; floor drains; ~~[or] floor~~ sinks ~~[into which kettles are drained]~~; automatic hood wash units and dishwashers ~~[without prerinse sinks]~~. Grease interceptors and automatic grease removal devices shall receive waste only through indirect means from fixtures and equipment that allow fats, oils or grease to be discharged. ~~[Where lack of space or other constraints prevent]~~ T[he] installation ~~[or replacement]~~ of ~~[a]~~ grease interceptors~~[-one]~~ or automatic ~~[more]~~ grease removal devices must comply with Section 17-5.2(e) of Chapter 17 of the Dallas City Code ~~[interceptors shall be permitted to be installed on or above the floor and upstream of an existing grease interceptor].”~~

53. Subparagraph 1003.4.2.2, “Garages and Service Stations,” of Paragraph 1003.4.2, “Oil Separator Design,” of Subsection 1003.4, “Oil Separators Required,” of Section 1003, “Interceptors and Separators,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended to read as follows:

“1003.4.2.2 Garages and service stations. Where automobiles are serviced, greased, repaired or washed or where gasoline is dispensed, oil separators shall have a capacity of not less than 6 cubic feet (0.168 m³) for the first 100 square feet (9.3 m²) of area to be drained, plus 1 cubic foot (0.028 m³) for each additional 100 square feet (9.3 m²) of area to be drained into the separator. Parking garages in which servicing, repairing or washing is not conducted, and in which gasoline is not dispensed, shall not require a separator. Areas of commercial garages utilized only for storage of automobiles are not required to be drained through a separator.

Exception: Automobiles or equipment wash bays larger than 60 inches by 120 inches must use a sand interceptor with a minimum capacity of 1000 gallons.”

54. Subsection 1003.9, “Venting of Interceptors and Separators,” of Section 1003, “Interceptors and Separators,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended to read as follows:

“1003.9 Venting of interceptors and separators. Interceptors and separators shall be designed so as not to become air bound. A vent shall be installed on the effluent side of the interceptor or separator. A 2 inch (50.8 mm) relief vent shall be required on the influent line where fixtures are on a floor level more than 4 feet above the top of the interceptor or separator. A vent shall be installed on any interceptor or separator designed and constructed with vent connections. Vent sizing and installation shall comply with Chapter 9 of the code. ~~[Interceptors and separators shall be vented in accordance with one of the methods in Chapter 9.]”~~

55. Section 1003, “Interceptors and Separators,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended by adding a new Subsection 1003.11, “Effluent Sampling,” to read as follows:

“1003.11 Effluent sampling. An effluent sampling well shall be installed at or near the outlet of an interceptor or separator.”

56. Section 1003, “Interceptors and Separators,” of Chapter 10, “Traps, Interceptors and Separators,” of the 2015 International Plumbing Code is amended by adding a new Subsection 1003.12, “Abandoned Traps, Interceptors or Separators,” to read as follows:

“1003.12 Abandoned traps, interceptors or separators. Abandoned traps, interceptors or separators shall be plugged or capped and shall have the contents pumped and discarded in an approved manner. The top or entire vessel shall be removed and the remaining portion of the tank or excavation shall be immediately filled with approved materials.”

57. Subsection 1101.8, “Cleanouts Required,” of Section 1101, “General,” of Chapter 11, “Storm Drainage,” of the 2015 International Plumbing Code is amended to read as follows:

“1101.8 Cleanouts required. Cleanouts shall be installed in the building storm drainage system and shall comply with the provisions of this code for sanitary drainage pipe cleanouts.

[Exception: ~~Subsurface drainage system.~~”

58. Subsection 1106.1, “General,” of Section 1106, “Size of Conductors, Leaders and Storm Drains,” of Chapter 11, “Storm Drainage,” of the 2015 International Plumbing Code is amended to read as follows:

“1106.1 General. The size of the vertical conductors and leaders, building *storm drains*, building *storm sewers*, and any horizontal branches of such drains or *sewers* shall be based on a 6 inch (152.4 mm) per hour ~~[the 100-year hourly]~~ rainfall rate ~~[indicated in Figure 1106.1 or on other rainfall rates determined from approved local weather data].~~”

59. Figure 1106.1 of Section 1106, “Size of Conductors, Leaders, and Storm Drains,” of Chapter 11, “Storm Drainage,” of the 2015 International Plumbing Code is deleted.

60. Subsection 1108.3, “Sizing of Secondary Drains,” of Section 1108, “Secondary (Emergency) Roof Drains,” of Chapter 11, “Storm Drainage,” of the 2015 International Plumbing Code is amended to read as follows:

“1108.3 Sizing of secondary drains. Secondary (emergency) roof drain systems shall be sized in accordance with Section 1106 ~~[based on the rainfall rate for which the primary system is sized]~~. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall have an opening dimension of not less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.”

61. Subsection [F] 1202.1, “Nonflammable Medical Gases,” of Section 1202, “Medical Gases,” of Chapter 12, “Special Piping and Storage Systems,” of the 2015 International Plumbing Code is amended to read as follows:

“[F] 1202.1 Nonflammable medical gases. Nonflammable medical gas systems, inhalation anesthetic systems and vacuum piping systems shall be designed and installed in accordance with NFPA 99.

Exception[s]:

~~[1.]~~ This section shall not apply to portable systems or cylinder storage.

~~[2. Vacuum system exhaust terminations shall comply with the *International Mechanical Code*.]~~”

62. Chapter 13, “Nonpotable Water Recycling Systems,” of the 2015 International Plumbing Code is retitled as Chapter 13, “Water Reuse Systems”, and replaced with the following.

**“CHAPTER 13
WATER REUSE SYSTEMS**

**SECTION 1301
GENERAL**

1301.1 Scope. The provisions of Chapter 13 shall govern the materials, design, construction and installation of rainwater, reclaimed, storm and gray water systems for flushing of water closets and urinals and for subsurface landscape irrigation. Reuse of water for any other application must be submitted to the building official for prior approval.

1301.1.1 Permit required. It is unlawful for any person to construct, install or alter any water reuse system without first obtaining a permit to perform such work. No water reuse permit may be issued until a plot plan with appropriate data satisfactory to the building official has been submitted and approved. Plans and specifications must be drawn to scale and must be of sufficient clarity to indicate the location, nature and extent of the work proposed and show that it will conform to the codes and all applicable laws, ordinances, rules and regulations.

1301.2 Installation. In addition to the provisions of Section 1301, systems for flushing of water closets and urinals shall comply with Section 1302 and systems for subsurface landscape irrigation shall comply with Chapter 14. Except as provided for in this chapter, all systems shall comply with the provisions of the other chapters and appendices of this code.

1301.3 Materials. Above-ground drain, waste and vent piping for gray water systems shall conform to one of the standards listed in Table 702.1. Water reuse, underground building drainage and vent pipe shall conform to one of the standards listed in Table 702.2.

1301.4 Tests. Drain, waste and vent piping for gray water systems shall be tested in accordance with this code.

1301.5 Inspections. Water reuse systems shall be inspected in accordance with this code.

1301.6 Public water connections. Only connections in accordance with Section 1302.3 shall be made between a water reuse system and a potable water system. Where potable water is used for makeup water to a nonpotable system, a reduced pressure backflow assembly shall be installed immediately at the connection to protect the potable water. When the non-potable connection is at the water meter, the reduced pressure backflow assembly shall be installed as close to the water meter as possible.

1301.7 Waste water connections. Water reuse systems designed specifically for gray water recycling systems shall receive only the waste discharge of bathtubs, showers, lavatories, clothes washers or laundry trays.

1301.8 Collection reservoir. Water for reuse systems shall be collected in a reservoir approved for water reuse and shall be constructed of durable, nonabsorbent and corrosion-resistant materials. The system shall be protected to prevent the entrance of insects and vermin into the storage tanks and piping systems. Screen materials shall be compatible with contacting system components and shall not accelerate the corrosion of system components. Rainwater harvest collection systems and reservoirs shall comply with the *Dallas Green Construction Code*.

1301.9 Filtration. Water for reuse entering the reservoir shall pass through an approved filter such as a media, sand or diatomaceous earth filter. Filters shall be installed with shutoff valves immediately upstream and downstream to allow for isolation during maintenance.

1301.10 Overflow. The collection reservoir shall be equipped with an overflow pipe having the same or larger area as the sum of the areas of all tank inlet pipes. The overflow pipe shall be protected from insects or vermin and the discharge from such pipe shall be indirectly connected to the sanitary drainage system by means of an air gap or shall extend in an approved manner consistent with storm water runoff requirements of the jurisdiction. The overflow drain shall not be equipped with a shutoff valve. A backwater valve shall be installed on each overflow pipe in accordance with Section 715. A minimum of one cleanout shall be provided on each overflow pipe in accordance with Section 708 of the *Dallas Plumbing Code*.

1301.11 Drain. A drain shall be located at the lowest point of the collection reservoir and shall meet the requirements of Section 1301.10.

1301.12 Vent required. The reservoir shall be provided with a vent sized in accordance with Chapter 9 and based on the diameter of the reservoir influent pipe(s). The pipe shall be screened to prevent the infiltration of mosquitos or other insects. The reservoir vent shall not be connected to other drainage system vent.

1301.13 Hose bibbs. Hose bibbs are not allowed on reclaimed and gray water piping systems. Hose bibbs on rainwater harvesting and storm water outdoor irrigation piping systems must be identified as required by Section 608.8 and shall be installed as required by Section F104.12 of the *Dallas Plumbing Code*.

1301.14 Pipes. Water reuse pipes must not be run or laid in the same trench as potable water pipes. A 10-foot (3048 mm) horizontal separation must be maintained between any water reuse pipe and potable water piping. Buried potable water pipes crossing water reuse piping must be laid a minimum of 18 inches (457.2 mm) above the water reuse pipes. All piping shall be protected from freezing as required by Section 305.4.

1301.15 Identification. All piping, fittings, valves, reservoirs, appurtenances and devices within a water reuse system must be identified as containing nonpotable water. Piping used for water reuse must be identified as required by Section 608.8.

1301.16 Signage

1301.16.1 Room entrance signs. All installations using water reuse for flushing of water closets or urinals must be identified with permanently posted signs. Each sign must contain the statement “TO CONSERVE WATER, THIS BUILDING USES NONPOTABLE WATER TO FLUSH TOILETS AND URINALS.” The words shall be legibly and indelibly printed on a sign constructed of corrosion-resistant waterproof material. The letters shall be not less than 0.5 inch (12.7 mm) white letters on a contrasting purple (consistent with Pantone color # 512) background. In addition to the required wordage, the pictograph shown in Figure 608.8.1 shall appear on the required signage. The signs must be located in a manner that is visible to all users and approved by the building official. The number of signs installed must also be approved by the building official.

1301.16.2 Equipment room signs. Each equipment room containing water reuse equipment must have a sign permanently posted in a visible location that contains the statement “CAUTION: NONPOTABLE WATER, DO NOT DRINK, DO NOT CONNECT TO DRINKING WATER SYSTEM,” in 1-inch (25.4 mm) white letters on a contrasting purple (consistent with Pantone # 512) background. In addition to the required wordage, the pictograph shown in Figure 608.8.1 shall appear on the required signage. The signs must be located in a manner that is visible to all users and approved by the building official. The number of signs installed must also be approved by the building official. Nonpotable water outlets such as hose connections, open ended pipes and faucets shall be identified at the point of use for each outlet with signage required in this section.

1301.17 Approved uses of water reuse systems.

1301.17.1 Gray water. Only treated recycled gray water may be utilized for flushing water closets and urinals located in the same building and property as the gray water recycling system. Treated recycled gray water may be utilized for other commercial or industrial uses with prior approval of the building official for the specific use intended. Treated or untreated recycled gray water may be utilized for subsurface irrigation systems.

1301.17.2 Rain water harvesting. The rainwater collected from roofs and other on-site, above ground catchment systems may be used for flushing water closets and urinals located in the same building and property as the rainwater harvesting system. A rainwater harvesting system may be used for landscape irrigation.

1301.17.3 Storm water. All roofs, paved areas, yards, courts and courtyards must drain into a separate storm sewer system, or to an approved place of disposal. Storm water is permitted to discharge onto flat areas, such as streets or lawns provided that the storm water flows away from the building. Storm water may also be collected in an approved storage reservoir to be used for irrigation or water retention systems. Systems must be equipped with an overflow drain and the drain shall be installed as per Section 1301.10. The authority having jurisdiction shall give specific approval for the collection of storm water.

1301.17.4 Reclaimed water. Reclaimed water systems may be utilized for flushing water closets and urinals when approved by the building official. Reclaimed water may be utilized for other commercial or industrial uses with prior approval of the building official.

**SECTION 1302
SYSTEMS FOR FLUSHING WATER CLOSETS AND URINALS**

1302.1 Collection reservoir. The holding capacity of the reservoir shall be a minimum of twice the volume of water required to meet the daily flushing requirements of the fixtures supplied with nonpotable water, but not less than 50 gallons. The reservoir shall be sized to limit the retention time of gray water to a minimum of 72 hours.

1302.2 Disinfection. Gray water shall be disinfected and treated by an approved method that employs one or more disinfectants such as chlorine or ozone that are recommended for the use with the pipes, fittings and equipment by the manufacturer of the pipe, fittings and equipment. Gray water shall be disinfected and treated as needed to ensure that the required water quality is delivered at the point of use. Where chlorine is used for disinfection, the nonpotable water shall not contain more than 4 ppm (4mg/L) of chloramines or free chlorine when tested in accordance with ASTM D 1253. Where ozone is used for disinfection, the nonpotable water shall not contain gas bubbles having elevated levels of ozone at the point of use. The water reuse treatment system shall be on-site and shall comply with NSF 350.

1302.2.1 Water quality. All non-potable water systems for each end use application shall meet the minimum water quality requirements established for the intended application by the authority having jurisdiction. Where nonpotable water from different sources is combined in a system, the system shall comply with the most stringent of the water quality requirements for the intended end use. Except where site conditions as specified in ASTM E 2727 affect the rainwater, collected rainwater shall be considered to have the parameters indicated in Table 1302.2.1.

**Table 1302.2.1
Rainwater Quality**

PARAMETER	VALUE
pH	6.0-7.0
BOD	Not greater than 10 mg/L
NTU	Not greater than 2
Fecal Coliform	No detectable fecal coli in 100 mL
Sodium	No detectable sodium in 100 mL
Chlorine	No detectable chlorine in 100 mL
Enteroviruses	No detectable enteroviruses in 100 mL

1302.2.2 Filtration. Nonpotable water utilized for flushing of water closets and urinals shall be filtered by a 100-micron or finer filter.

1302.3 Makeup water. Potable water may be supplied as a source of makeup water for a water reuse system. The potable water supply shall terminate at the reservoir by means of an approved air gap in accordance with Section 608 to prevent a backflow condition. There shall be a full-open valve located on the makeup water supply line to the collection reservoir. Make up water connections to a potable water system shall comply with Section 1301.6.

1302.4 Coloring. The gray water shall be dyed blue or green with a food grade vegetable dye before such water is supplied for flushing of water closets and urinals.

1302.5 Materials. Distribution piping shall conform to one of the standards listed in Table 605.4.

1302.6 Identification. Distribution piping and reservoirs shall be identified as containing nonpotable water. Piping identification shall be in accordance with Section 608.8.”

63. Subsection 1401.1, “Scope,” of Section 1401, “General,” of Chapter 14, “Subsurface Landscape Irrigation Systems,” of the 2015 International Plumbing Code is amended to read as follows:

“**1401.1 Scope.** The provisions of Chapter 14 shall govern the materials, design, construction and installation of subsurface landscape irrigation systems connected to nonpotable water from on-site water reuse systems. Other provisions of this code associated with nonpotable water systems shall also apply.”

64. Subsection 1401.4, “Inspections,” of Section 1401, “General,” of Chapter 14, “Subsurface Landscape Irrigation Systems,” of the 2015 International Plumbing Code is amended to read as follows:

“**1401.4 Inspections.** Subsurface landscape irrigation systems shall be inspected in accordance with Section 304 [407] of Chapter 52, the Administrative Procedures for the Construction Codes of the Dallas City Code.”

65. The ANSI standards of Chapter 15, “Referenced Standards,” of the 2015

International Plumbing Code are amended to read as follows:

Standard reference number	Title	Referenced in code section number
<p>“ANSI American National Standards Institute 25 West 43rd Street, Fourth Floor New York, NY 10036</p>		
A117.1—09	Accessible and Useable Buildings and Facilities	417.5
A118.10—99	Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin Set Ceramic Tile and Dimension Stone Installation	417.5.2.5, 417.5.2.6
Z4.3—95	Minimum Requirements for Nonsewered Waste-disposal Systems	311.1
Z21.22—99(R2003)	Relief Valves for Hot Water Supply Systems with Addenda Z21.22a—2000 (R2003) and Z21.22b—2001 (R2003)	504.2, 504.4, 504.4.1
CSA B45.5—11/ IAPMO Z124—11	Plastic Plumbing Fixtures	407.1, 415.1, 416.1, 416.2, 417.1, 418.1, 419.1, 420.1”

66. Appendix E, “Sizing of Water Piping System,” of the 2015 International Plumbing Code is adopted.

67. A new Appendix F, “Standards for Designing, Installing and Maintaining Landscape Irrigation Systems,” is adopted as part of the 2015 International Plumbing Code to read as follows:

**“APPENDIX F
STANDARDS FOR DESIGNING, INSTALLING
AND MAINTAINING LANDSCAPE IRRIGATION SYSTEMS**

**SECTION F101
SCOPE AND PURPOSE**

F101.1 Scope. This appendix applies to the installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of *irrigation systems* within the city. This appendix regulates the installation of backflow prevention devices, control valves, automatic irrigation controllers, control wiring and *water conservation* required for the proper design, installation and operation of *irrigation systems*. All *irrigation systems* must comply with the provisions of this appendix and with 30 *Texas Administrative Code* Chapter 344. All irrigation systems supplied by a nonpotable water source shall comply with Chapter 13 and all other sections of this code applicable to nonpotable water uses.

F101.2 Purpose. The purpose of this appendix is to require all *irrigation systems* to be designed, installed, maintained, altered, repaired, serviced and operated in a manner that will promote *water conservation*.

SECTION F102 DEFINITIONS

F102.1 Definitions. The following words and terms shall have the meanings shown herein:

IRRIGATION SYSTEM. An assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate any type of landscape vegetation in any location, reduce dust or control erosion. This term does not include a system that is used on or by an agricultural operation as defined by Section 251.002 of the *Texas Agriculture Code*.

IRRIGATION TECHNICIAN. A person who works under the supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an *irrigation system*, including the connection of such system in or to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under this ordinance or 30 *Texas Administrative Code* Chapter 344.

MAINTENANCE, ALTERATION, REPAIR OR SERVICE. Any activity that involves opening the irrigation main line to the atmosphere at any point prior to the discharge side of any irrigation zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve or repairing a zone control valve in a manner that opens the system to the atmosphere.

TCEQ. Texas Commission on Environmental Quality.

WATER CONSERVATION. The design, installation, service and operation of an *irrigation system* in a manner that prevents the waste of water, promotes the most efficient use of water, and applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust and control erosion.

SECTION F103 DESIGN OF THE IRRIGATION PLAN

F103.1 Minimum standards for the design of the irrigation plan.

F103.1.1 Irrigation plan. A licensed irrigator or landscape architect shall prepare an irrigation plan for each site where a new *irrigation system* will be installed. A city approved irrigation plan must be on the job site at all times during the installation of the *irrigation system*. A drawing showing the actual system installation must be provided to the *irrigation system* owner on completion of the installation. During installation, variances from the original plan may be authorized by the licensed irrigator if the variance from the plan does not:

1. Diminish the operational integrity of the *irrigation system*;
2. Violate any requirements of this ordinance or 30 *Texas Administrative Code* Chapter 344; and

3. Go unnoted in red on the irrigation plan.

F103.1.2 Coverage area. The irrigation plan must include complete coverage of the areas to be irrigated; areas not irrigated must be noted on the irrigation plan.

F103.1.3 Plan requirements. All irrigation plans used for *irrigation system* installation must be drawn to scale. Two sets of irrigation drawings must be submitted, one set to be retained as part of the inspection records, the other set is required for onsite inspection and must be given to the property owner on completion of the *irrigation system*. Submitted irrigation plans must have a minimum font size of 3/32", a maximum drawing sheet size of 36" X 48" and must include the following information:

1. the dated seal and signature of either a licensed irrigator or a landscape architect;

Exceptions:

1. Not required for property that is owned and occupied solely as a person's homestead.
 2. Not required for irrigation plans submitted by a licensed and registered plumbing contractor.
2. all major physical features and the boundaries of the area to be watered;
 3. north arrow;
 4. a legend;
 5. the zone flow measurement for each zone;
 6. location and type of each:
 - 6.1. controller;
 - 6.2. rain and freeze sensors;
 - 6.3. all electrical splices; and
 7. location, type, and size of each:
 - 7.1. water source, such as, but not limited to a water meter and point(s) of connection;
 - 7.2. backflow prevention device;

- 7.3. water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip or micro-sprays;
- 7.4. valve, including, but not limited to, zone valves, station solenoid valves, automatic master valves and isolation valves;
- 7.5. pressure regulation components;
- 7.6. main line and lateral piping;
- 7.7. scale used; and
- 7.8. design pressure.

SECTION F104 DESIGN AND INSTALLATION

F104.1 Minimum design and installation requirements.

F104.1.1 Backflow protection. Any *irrigation system* connected to a public or private potable water system must be connected through a *TCEQ*-approved backflow prevention method. The backflow prevention device must be approved by the American Society of Sanitary Engineering or the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, the *Uniform Plumbing Code*, the *Dallas Plumbing Code* or a city-approved laboratory that has equivalent capabilities for both the laboratory and field evaluation of backflow prevention assemblies. Backflow prevention devices must be installed in accordance with the laboratory approval standards, or if the approval does not include specific installation information, the manufacturer's current published recommendations.

F104.1.1.1 Backflow device installation. Connections between the potable water supply and the approved backflow preventer must be of the same type of material and joining method as required by the *Dallas Plumbing Code* and *Dallas One- and Two-Family Dwelling Code*. The backflow device must be installed a maximum of 10 feet from the water meter on the property being served by the *irrigation system*. Backflow devices may not be installed in the parkway (between the sidewalk and the public right-of-way.)

Exceptions:

1. Atmospheric vacuum breakers must be installed in an accessible location.
2. Backflow devices may be installed in the public right-of-way or at a distance greater than 10 feet from the water meter or potable water supply with prior approval from the building official.

F104.1.1.2 Approved types of backflow devices. The following types of backflow devices are approved:

1. Air gap.
2. Atmospheric vacuum breaker (AVB).
3. Pressure vacuum breaker (PVB).
4. Double check backflow preventer (DCA).
5. Reduced pressure principal backflow preventer (RPZ).

F104.1.1.3 Double check backflow assembly (DCA). A DCA must be installed and made accessible by a minimum jumbo valve box (length 26 inches X 19 inches) or larger.

F104.1.1.3.1 Valve box. A valve box must be installed on compacted soil. Rocks, brick or other types of support may not be used. A valve box cover must be installed flush with finish grade. A minimum 2 inch air gap is required between the bottom of the DCA and 12 inches of washed rock.

F104.1.1.4 Reduced pressure principal backflow preventer (RPZ). An RPZ must be installed according to the manufacturer's installation requirements for aboveground installation and protected from freezing. Twelve inches of washed rock must be installed under the RPZ.

F104.1.2 Isolation valve and y-type strainer. An isolation valve and y-type strainer must be installed prior to the approved backflow prevention assembly in an approved valve box. The isolation valve and y-type strainer must be installed a maximum of 24 inches from the installation of the approved backflow prevention assembly.

F104.2 Limitation. No irrigation design or installation may require the use of any component, including the water meter, in a way which exceeds the manufacturer's published performance limitations for the component.

F104.3 Emission devices.

F104.3.1 Emission devices. The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure.

F104.3.2 Aboveground spray. New *irrigation systems* may not utilize aboveground spray emission devices in landscaped areas that are less than 60 inches in width or length not including impervious surfaces which contain impervious pedestrian or vehicular traffic surfaces, along two or more perimeters. If pop-up sprays or rotary sprinkler heads are used in

a new *irrigation system*, the sprinkler heads must direct flow away from any adjacent surface and may not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers or stones set with mortar.

Exception: Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement if the runoff drains into a landscaped area.

F104.3.3 Water pressure. Emission devices must be installed to operate at the minimum and not above the maximum sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. Methods to achieve the water pressure requirements include, but are not limited to, flow control valves, a pressure regulator or pressure compensating spray heads.

F104.4 Misting. Misting must be kept to a minimum and may not be used as an irrigation method for shrubs and groundcover.

F104.5 Piping.

F104.5.1 Velocity. Piping in *irrigation systems* must be designed and installed so that the flow of water in the pipe will not exceed a velocity of 5 feet per second for polyvinyl chloride (PVC) pipe or exceed the manufacturer's recommendation for other piping materials.

F104.5.2 PVC pipe primer solvent. All new *irrigation systems* installed using PVC pipe and fittings must be primed with a colored primer prior to applying the PVC cement in accordance with the *Dallas Plumbing Code* and the *Dallas One-and Two-Family Dwelling Code*.

F104.5.3 Depth coverage of piping. Piping must be installed to provide a minimum depth coverage of 6 inches of select backfill between the top of the pipe and the natural grade of the topsoil. All portions of the *irrigation system* that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at a depth of 6 inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan and discussed with the *irrigation system* owner or owner's representative to address any safety issues. All trenches and holes created during installation of an *irrigation system* must be backfilled and compacted to the original grade. Mechanical excavation is not allowed where damage could occur to a tree root system per Section 51A-10.136 of the *Dallas Development Code*.

Exception: If a utility, man-made structure or roots create an unavoidable obstacle which makes the 6 inch depth coverage requirement impractical, the piping must be installed to provide a minimum of 2 inches of select backfill between the top of the pipe and the natural grade of the topsoil.

F104.6 Irrigation zones. *Irrigation systems* must have separate zones based on plant material type, microclimate factors, topographic features, soil conditions and hydrological requirements.

Zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate.

F104.7 Spray over impervious surfaces prohibited. *Irrigation systems* must not spray water over surfaces made of concrete, asphalt, brick, wood, stones set with mortar or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.

F104.8 Master valve. A master valve must be installed on the discharge side of the backflow prevention device on all new installations in an approved valve box.

F104.9 Rain and freeze shut-off devices. All automatically controlled *irrigation systems* must include sensors or other technology designed to inhibit or interrupt operation of the *irrigation system* during periods of moisture, rainfall or freezing temperatures. Rain or moisture and freeze shut-off technology must be installed according to the manufacturer's published recommendations. All existing automatic *irrigation systems* must include a sensor or other technology designed to inhibit or interrupt operation of the *irrigation system* during periods of moisture, rainfall or temperatures of 37° or below.

F104.10 Valves. All new *irrigation systems* and major *maintenance, alterations, repairs or service*, including repair or replacement of the backflow device, must include an isolation valve and y-type strainer between the water meter and the backflow prevention device. A master valve must be installed after the backflow preventer. Zone valve(s), station solenoid valve(s), an automatic master valve and isolation valves must be installed in an approved valve box for accessibility, repair and service.

F104.11 Irrigation system wiring.

F104.11.1 Underground electrical wiring. Underground electrical wiring used to connect an automatic controller to any electrical component of the *irrigation system* must be listed by Underwriters Laboratories as acceptable for direct underground burial.

F104.11.2 Component wiring size. Electrical wiring that connects any *irrigation system* electrical components must be sized according to the manufacturer's recommendation.

F104.11.3 Wire splicing. Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer. Electrical splice locations must be noted on the irrigation plan.

F104.11.4 Automatic controller wiring. Underground electrical wiring that connects an automatic controller to any electrical component of the *irrigation system* must be buried with a minimum of 6 inches of select backfill.

F104.11.5 Exposed wiring. All exposed wiring must be protected from physical damage in compliance with the *Dallas Electric Code*.

Exception: Listed cord and plug.

F104.12 Non-potable water. Water contained within the piping of an *irrigation system* is deemed to be non-potable. No drinking or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, may be connected to an *irrigation system*. If a hose bibb (an outdoor water faucet that has hose threads on the spout) is connected to an *irrigation system* for the purpose of providing supplemental water to an area, the hose bibb must be installed using a quick coupler key on a quick coupler installed in a covered purple valve box (consistent with Pantone # 512). The hose bibb and the valve box cover must be labeled "NON-POTABLE WATER – DO NOT DRINK" and "AGUA DE RECUPERACION – NO BEBER". The lettering shall be white on a purple background (consistent with Pantone # 512). In addition to the required wordage, the pictograph shown in Figure 608.8.1 shall appear on the required signage. An isolation valve must be installed upstream of a quick coupler connecting a hose bibb to an *irrigation system*. The area being watered with a non-potable source shall be identified as per Section F106.1.5.

F104.13 Check valves. Check valves are required where elevation differences may result in low head drainage. Check valves may be located at the sprinkler head(s) or on the lateral lines.

F104.14 Direct supervision. Job site supervision is required by either a licensed irrigator or *irrigation technician* while work is being performed. When a licensed irrigator is not onsite, the licensed irrigator shall be responsible for ensuring that a licensed *irrigation technician* is on-site to supervise the installation of the *irrigation system*.

F104.15 Programmable irrigation controller. All new *irrigation system* installations require the installation of a programmable irrigation controller. The programmable irrigation controller must be equipped with an emergency back-up power supply in the event of a primary power failure.

F104.15.1 Manufacturer's instructions. A programmable irrigation controller must be installed according to the manufacturer's installation instructions.

F104.15.2 Maximum height. A programmable irrigation controller may not be mounted more than 60 inches above a level floor surface.

F104.15.3 Power surges. The electrical power supplying a programmable irrigation controller must be protected from power surges or utilize a dedicated electrical circuit.

F104.15.4 Minimum installation distance. A programmable irrigation controller must be installed at least 15 inches from center to any side wall or similar obstruction.

Exception: When the manufacturer's installation instructions require a lesser distance.

SECTION F105
COMPLETION AND MAINTENANCE

F105.1 Completion of irrigation system installation.

F105.1.1 Completion. The licensed irrigator, installer or technician shall complete the following items upon completion of the *irrigation system* installation:

1. A final "walk through" with the *irrigation system's* owner or the owner's representative to explain the operation of the system.
2. A maintenance checklist with the signature of the *irrigation system's* owner or owner's representative and signed, dated and sealed by the licensed irrigator, installer or technician. If the *irrigation system's* owner or owner's representative is unwilling or unable to sign the maintenance checklist, the irrigator shall note the time and date of the refusal on the *irrigation system's* owner or owner's representative's signature line. The *irrigation system* owner or owner's representative will be given the original maintenance checklist and a duplicate copy of the maintenance checklist shall be maintained by the licensed irrigator. The items on the maintenance checklist must include but are not limited to:
 - 2.1. The manufacturer's manual for the automatic controller.
 - 2.2. A seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical reference evapotranspiration (historical ET) data, monthly effective rainfall estimates, plant landscape coefficient factors and site factors.
 - 2.3. A list of components, such as the nozzle or pump filters, and other such components that require maintenance and the recommended frequency for the service.
3. A permanent sticker which contains the licensed irrigator's name, license number, company name, telephone number and the dates of the warranty period affixed to each programmable irrigation controller installed by the licensed irrigator, installer or technician. If the *irrigation system* is manual, the sticker must be affixed to the original maintenance checklist. Programmable irrigation controllers listed and installed for outdoor installation require a water proof permanent sticker. The information contained on the sticker, whether indoor or outdoor, must be printed with waterproof ink.
4. Provide the *irrigation system's* owner or owner's representative a copy of the irrigation plan indicating the actual system installation.
5. The statement, "This irrigation system has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or orders. I have tested

the system and determined that it has been installed according to the irrigation plan and is properly adjusted for the most efficient application of water at this time.”

6. Provide a certificate of compliance to the building official and the property owner or the property owner's representative stating that the requirements of this section and 30 *Texas Administrative Code* Chapter 344 have been completed.

F105.2 Maintenance, alteration, repair or service of irrigation systems.

F105.2.1 Irrigator responsibility. The irrigator is responsible for all work that the irrigator performed during the *maintenance, alteration, repair or service* of an *irrigation system* during the warranty period. The irrigator or business owner is not responsible for the professional negligence of any other irrigator who subsequently conducts any irrigation service on the same *irrigation system*.

F105.2.2 Trenches and holes. All trenches and holes created during the *maintenance, alteration, repair or service* of an *irrigation system* must be returned to the original grade with compacted select backfill.

F105.2.3 PVC primer. Colored PVC pipe primer solvent must be used on all pipes and fittings used in the *maintenance, alteration, repair or service* of an *irrigation system* in accordance with the *Dallas Plumbing Code* or *Dallas One- and Two-Family Dwelling Code*.

F105.2.4 Maintenance, alteration, repair or service. *When maintenance, alteration, repair or service* of an *irrigation system* is required and performed and an isolation valve, y-type strainer, rain and freeze sensors or approved backflow device are not present, the valve(s) and or sensors must be installed, permitted, tested and inspected. Existing approved backflow device(s) must be tested and test report given to the building official.

SECTION F106 RECLAIMED WATER OR WATER WELLS

F106.1 Reclaimed water or water wells. Reclaimed water, storm water, rainwater harvest, gray water or water wells may be utilized in landscape *irrigation systems*.

F106.1.1 Connections. An *irrigation system* utilizing reclaimed water, storm water, rainwater harvest, gray water or well water must not be directly connected to the potable water supply.

Exception: When potable water is protected by an air gap as defined by and installed in accordance with the *Dallas Plumbing Code* or the *Dallas One- and Two-Family Dwelling Code* and the potable water system shall be protected by means of a reduced pressure backflow preventer immediately at the point of connection.

F106.1.2 Edible crops. Water from an *irrigation system* utilizing reclaimed water, storm water, rainwater harvest, gray water or well water may not make direct contact with edible crops, unless the crop is pasteurized before consumption.

F106.1.3 Property lines. An *irrigation system* utilizing reclaimed water, storm water, rainwater harvest, gray water or well water must not spray water across property lines.

F106.1.4 Purple components. An *irrigation system* utilizing reclaimed water, storm water, rainwater harvest, gray water or well water must be installed using purple components (consistent with Pantone # 512) as detailed in the *Dallas Plumbing Code* per the *Dallas One- and Two-Family Dwelling Code*.

F106.1.5 Sign. Areas being irrigated utilizing a water reuse system or well shall be properly identified. Signs shall be a minimum 8 inch by 8 inch corrosion-resistant waterproof sign. Signage shall read as follows: "NON-POTABLE WATER - DO NOT DRINK" and "AGUA DE RECUPERACION - NO BEBER." The words shall be legibly and indelibly printed and shall be not less than 0.5 inch (12.7 mm) in height on a purple background (consistent with Pantone color # 512) with white letters. In addition to the required wordage, the pictograph shown in Figure 608.8.1 shall appear on the required signage. The signs must be located in a manner that is visible to all persons and approved by the building official. The number of signs installed must also be approved by the building official.

F106.1.6 Backflow prevention. Backflow prevention on the reclaimed water supply line must be in accordance with the *Dallas Plumbing Code*, *Dallas One- and Two-Family Dwelling Code*, and Dallas Water Utilities rules and regulations."

68. Appendices A, B, C and D of the 2015 International Plumbing Code are not adopted.

69. All chapters of the 2015 International Plumbing Code adopted by this ordinance are subchapters of Chapter 54 of the Dallas City Code, as amended.

70. All references in the 2015 International Plumbing Code to the fire code, building code, mechanical code, electrical code, residential code, existing building code, energy conservation code, fuel gas code, and green construction code refer, respectively, to Chapters 16, 53, 55, 56, 57, 58, 59, 60, and 61 of the Dallas City Code.

SECTION 2. That a person violating a provision of this ordinance, upon conviction, is punishable by a fine not to exceed \$2,000. No offense committed and no liability, penalty, or forfeiture, either civil or criminal, incurred prior to the effective date of this ordinance will be discharged or affected by this ordinance. Prosecutions and suits for such offenses, liabilities, penalties, and forfeitures may be instituted, and causes of action pending on the effective date of

this ordinance may proceed, as if the former laws applicable at the time the offense, liability, penalty, or forfeiture was committed or incurred had not been amended, repealed, reenacted, or superseded, and all former laws will continue in effect for these purposes.

SECTION 3. That Chapter 54 of the Dallas City Code, as amended, will remain in full force and effect, save and except as amended by this ordinance. Any existing structure, system, development project, or registration that is not required to come into compliance with a requirement of this ordinance will be governed by the requirement as it existed in the former law last applicable to the structure, system, development project, or registration, and all former laws will continue in effect for this purpose.

SECTION 4. That the terms and provisions of this ordinance are severable and are governed by Section 1-4 of Chapter 1 of the Dallas City Code, as amended.

SECTION 5. That this ordinance will take effect on March 1, 2017, and it is accordingly so ordained.

APPROVED AS TO FORM:

LARRY E. CASTO, City Attorney

By _____
Assistant City Attorney

Passed _____