

# STAFF RECOMMENDATION

ORDINANCE NO. \_\_\_\_\_

1 AN ORDINANCE AMENDING ARTICLE 11 AND REPEALING AND  
2 REPLACING ARTICLE 6 OF CITY CODE CHAPTER 25-12 RELATING TO  
3 PLUMBING REQUIREMENTS.

4 BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

5 PART 1. City Code Section 25-12-241 (*International Residential Code*) is amended to  
6 amend Subsections (A), (C), and (D) to read as follows:

7 (A) The International Residential Code For One- and Two-Family Dwellings,  
8 2015 Edition, published by the International Code Council ("2015  
9 International Residential Code") and Appendices A, B, C, E, H, J, N, P, R,  
10 and S are adopted and incorporated by reference into this section with the  
11 deletions in Subsections (B), (C), and (D) and amendments in Section 25-12-  
12 243 (*Local Amendments to the International Residential Code Code*).

13 (C) The following provisions of [Except for P2904,] Part VII (Plumbing) of the  
14 2015 International Residential Code are [is] deleted:

15 P2503.4

P2503.5.1

P2503.8

16 P2503.8.1

P2503.8.2

P2601.2

17 P2602.1

P2603.5.1

P2801.5

18 P2804.6.1

P2901-P2901.2.2.3

19 P2902 -P2902.6.3

P2903.3.1

P2904.1

20 P2909 – P2913.4.2

P3009.1-P3009.11

P3301.1-P3303.4

21 (D) The definition of "Height, Building" and "Plumbing System" in Section  
22 R202 (*Definitions*) of the 2015 International Residential Code are [is]  
23 deleted.

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1 **PART 2.** City Code Section 25-12-243, Section R202 (*Local Amendments to the*  
2 *International Residential Code*) is amended to add a new definition of “Plumbing  
3 System” to read as follows:

4 **PLUMBING SYSTEM** means all potable water, building supply, and distribution  
5 pipes; all plumbing fixtures and traps; all drainage and vent pipes; and all building  
6 drains and building sewers, including their respective joints and connections,  
7 devices, receptors, and appurtenances within the property lines of the premises and  
8 includes potable water piping, alternate or auxiliary water source systems,  
9 irrigation systems, potable water treating or using equipment, medical gas and  
10 medical vacuum systems, liquid and fuel gas piping, and water heaters and vents  
11 for same.

12 **PART 3.** City Code Section 25-12-243 (*Local Amendments to the International*  
13 *Residential Code*) is amended to amend and add certain local amendments for plumbing  
14 requirements to read as follows:

15 **R101.2.1 Plumbing.** The provisions of Part VII of the 2015 International Residential  
16 [Plumbing] Code [and the Plumbing Code] apply when a person installs, alters, repairs,  
17 and replaces plumbing systems, including equipment, appliances, fixtures, fittings, and  
18 appurtenances, and where connected to a water or sewage system. [~~The Plumbing Code~~  
19 ~~supersedes the International Plumbing Code to the extent of conflict.~~]

20 **Exception to R101.2.1.** The provisions of the Plumbing Code apply to backflow  
21 prevention and protection, water protection, cross-connection control, landscape  
22 irrigation, alternate and auxiliary water source systems, and water conservation. [~~A~~  
23 ~~residential fire sprinkler system shall be designed and installed as required by~~  
24 ~~Section P2904 and shall comply with the Fire Code. Backflow prevention shall be~~  
25 ~~provided as required by the Plumbing Code.~~]

26 **R101.2.3 System.** Except as otherwise provided in the Residential Code, a plumbing  
27 system, drainage system, building sewer, private sewage disposal system, or parts of  
28 these systems must be located on the same lot that is the site of the building, structure, or  
29 premises served by the system.

30 **R105.1.1 Separate Permit.** A separate permit must be obtained for each building or  
31 structure.

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1 **R105.1.3 Persons authorized to obtain permits for plumbing work.** A responsible  
2 master plumber licensed by the State of Texas and registered with the City may obtain a  
3 permit required by the Plumbing Code. Only a responsible master plumber with a master  
4 water supply protection specialist endorsement may obtain a plumbing permit for an  
5 auxiliary water system that supplies plumbing fixtures.

6 **Exception to R105.1.3.** An individual who is not licensed as a plumber may obtain  
7 a plumbing permit for plumbing work that may, under state law, be completed by  
8 an unlicensed individual.

9 **R105.2 Work exempt from permit.** A permit is not required for the work described in  
10 this provision. Work exempt from a permit must still comply with the Residential Code  
11 and all other applicable laws and City Code requirements.

### 12 Building:

- 13 1. A one-story detached accessory structure that is no more than 200 square feet  
14 (18.58 m<sup>2</sup>) of floor area, no more than 15 feet (4572 mm) in height, does not create  
15 a dwelling, contains no plumbing, and is not located within a flood hazard area.
- 16 2. Unless located within a flood hazard area, a fence that is not over 8 feet (2438 mm)  
17 high.
- 18 3. Unless supporting a surcharge or located within a flood hazard, a retaining wall  
19 that is not over 4 feet (1219 mm) in height measured from the bottom of the  
20 footing to the top of the wall.
- 21 4. A water tank that is supported directly upon grade if the tank's capacity does not  
22 exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2  
23 to 1, and the tank is not located within a flood hazard area.
- 24 5. A sidewalk or driveway that is not located in the public right-of-way.
- 25 6. Painting, papering, tiling, carpeting, cabinets, counter tops, and similar work.
- 26 7. A swimming pool that is prefabricated and less than 24 inches (610 mm) deep.

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- 1 8. Playground equipment, including a swing.
- 2 9. A window awning that does not project more than 54 inches (1372 mm) from the
- 3 exterior wall and the only required support is the exterior wall.
- 4 10. A deck that is no more than 200 square feet (18.58 m<sup>2</sup>) in area, is no more than 30
- 5 inches (762 mm) above grade at any point, is not attached to a dwelling, does not
- 6 provide egress from the dwelling, and is not located within a flood hazard area.
- 7 11. A gypsum board repair that does not exceed 64 square feet, is not part of a fire-
- 8 resistance-rated construction assembly, a shear-wall assembly, or a tub and shower
- 9 surround.
- 10 12. Asphalt shingles that replace existing asphalt shingles.
- 11 13. A foundation repair that does not exceed 64 square feet.
- 12 14. A floor decking repair that does not exceed 64 square feet.
- 13 15. A non-structural exterior deck repair that is limited to the existing deck boards and
- 14 does not include guardrails or handrails.
- 15 16. Repairing or replacing exterior trim components including wood fascia, trim, and
- 16 soffits.
- 17 17. Siding that does not exceed 64 square feet and is not part of a fire-resistance rated
- 18 assembly.
- 19 18. Roof decking that does not exceed 64 square feet.
- 20 19. Replacing or installing an overhead garage door on a garage.
- 21 20. Other work as determined by the building official.

### Mechanical:

- 23 1. A portable heating appliance.

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- 1 2. A portable ventilation appliance.
- 2 3. A portable cooling unit.
- 3 4. A steam, hot- or chilled-water pipe within heating or cooling equipment regulated  
4 by the Residential Code.
- 5 5. Replacing a minor part of equipment that does not alter its approval or make it  
6 unsafe.
- 7 6. A portable evaporative cooler.
- 8 7. A self-contained refrigeration system that contains 10 pounds (4.54 kg) or less of  
9 refrigerant or that is actuated by motors of 1 horsepower (746 W) or less.
- 10 8. A portable-fuel-cell appliance that is not connected to a fixed pipe system and is  
11 not interconnected to a power grid.
- 12 9. Replacing three or fewer supply and return duct runs.
- 13 10. Replacing an exhaust or dryer duct run measuring less than 15 feet (4572 mm) in  
14 length.

### Plumbing:

- 16 1. Work required to stop a leak in a drain, soil, waste, or vent pipe if it is not  
17 necessary to remove and replace a defective concealed trap, drain, pipe, solid,  
18 waste, or vent pipe with new device.
- 19 2. Work required to clear a stoppage, including removing and reinstalling a water  
20 closet or to repair a leak in a pipe, valve, or fixture if the repair does not involve or  
21 require the valves, pipes, or drains be replaced or rearranged.

22 **P2503.4 Building sewer testing.** To test a building sewer, a test plug must be inserted at  
23 the point of connection with the public sewer and the sewer must be filled with water  
24 with not less than a 5-foot (152.4 mm) head of water. The sewer must be able to maintain  
25 the proper pressure for a minimum of 15 minutes.

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1 **P2503.5.1 Rough plumbing.** A drain, waste, and vent (DWV) system must be tested  
2 after rough piping installation is complete. The test may occur after the entire drainage  
3 system is installed or after a section is installed and must demonstrate the absence of  
4 leaks. The test may be conducted using water or air:

- 5 1. Water test. Each section must be filled with water to a point that is at least 5 feet  
6 (1524 mm) above the highest fitting connection in the section, or to the highest  
7 point in the completed system. The section or system must hold the water for a  
8 minimum of 15 minutes. A visual inspection must occur and cannot reveal a leak.
- 9 2. Air test. The section or the system must maintain a gauge pressure of three pounds  
10 per square inch (psi) (34 kPa) or ten inches of mercury column (34 kPa) for a  
11 minimum of 15 minutes without adding air. The test must not exceed three pounds  
12 per square inch (psi).

13 **P2601.2 Connections to drainage system.** Except for indirect waste connections  
14 allowed by City Code, a plumbing fixture, drain, appurtenance, and appliance that is used  
15 to receive or discharge liquid waste or sewage must, consistent with the requirements of  
16 the Residential Code, connect directly to the sanitary drainage system of the building or  
17 premises.

18 **P2602.1 Sewage system connection required.** If any part of a lot or tract that contains  
19 a house or building is located within 100 feet in horizontal distance (measured based on  
20 the closest practicable access route) of a public sewage disposal system, the drainage  
21 system of the house or building must be separately and independently connected to the  
22 public sewage disposal system. The drainage system is not required to be connected if:

- 23 1. the property owner received a denial of service in writing from the owner or  
24 governing body of the public sewage disposal system;
- 25 2. the property owner received a written determination from Austin Water Utility that  
26 it is not feasible for the building to be connected to the public sewage disposal  
27 system;
- 28 3. the director of the Austin Water Utility administratively waived the requirement to  
29 connect to the public sewage disposal system; or

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- 1           4. a composting toilet serves the property and Austin Water Utility approved the  
2           disposal of liquid wastes in a private on-site sewage facility.

3           **P2602.1.1 Water system connection required.** If any part of a lot or tract that contains a  
4           house or building is located within 100 feet in horizontal distance (measured based on the  
5           closest practicable access route) of a public potable water system, the water system of the  
6           house or building must be separately and independently connected to the potable water  
7           system. The water system is not required to be connected if:

- 8           1. the property owner received a denial of service in writing from the owner or  
9           governing body of the public potable water system;
- 10          2. the property owner received a written determination from Austin Water Utility that  
11          it is not feasible for the building to be connected to the public potable water  
12          system; or
- 13          3. the director of the Austin Water Utility administratively waived the requirement to  
14          connect to the public potable water system.

15          **P2603.5.1 Sewer depth.** A building's sewer must be at least 12 inches (304.8 mm) below  
16          grade. If a building's sewer connects to a private sewage disposal system, it must be  
17          located at least 12 inches (304.8 mm) below finished grade at the point of septic tank  
18          connection.

19          **P2801.5 Prohibited locations.** A storage type of water heater with a capacity that  
20          exceeds 17 gallons may not be installed in an attic or above a ceiling unless the water  
21          heater is accessible through a vertical door opening that is located in an occupied space  
22          on the same floor level. If the water heater is installed in an attic or under-floor space, it  
23          must be accessible through an opening and passage way that is at least as large as the  
24          largest component of the water heater, but no smaller than 22 inches by 30 inches (559  
25          mm by 762 mm).

26          **P2804.6.1 Requirements for discharge pipe.** A discharge pipe that serves a pressure-  
27          relief valve, temperature relief valve, or combination valve:

- 28          1. cannot be connected directly to the drainage system;

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- 1           2.    must discharge through an air gap that is located within the same room as  
2           the water heater;
- 3           3.    may not be smaller than the diameter of the valve served;
- 4           4.    must discharge full size to the air gap;
- 5           5.    must discharge to a waste receptor or to the outdoors,
- 6           **Exception.** for a pre-existing condition, may discharge to the floor, to the  
7           pan serving the water heater or storage tank, to a waste receptor, or to the  
8           outdoors; and
- 9           6.    must discharge in a manner that does not cause personal injury or structural  
10          damage;
- 11          7.    must discharge to a termination point that is readily observable by the  
12          building's occupants;
- 13          8.    may not be trapped;
- 14          9.    must be installed to flow by gravity;
- 15          10. must terminate less than six inches (152.4 mm) but more than two times the  
16          discharge pipe diameter above the finish grade, floor, or waste receptor flood  
17          level rim;
- 18          11. may not have a threaded connection at the end of the pipe;
- 19          12. may not have valves or tee fittings;
- 20          13. must be constructed of materials described in Section P2906.5 or materials  
21          tested, rated, and approved for this use in accordance with ASME A112.4.1;  
22          and

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14. when constructed of PEX or PE-RT tubing, must be one nominal size larger than the size of the relief-valve and the outlet end of the tubing must be fastened in place.

**P2901.1 Potable water required.** Potable water must be supplied to all plumbing fixtures and plumbing appliances unless the water source is an approved auxiliary water source that complies with the Plumbing Code.

**P2903.3.1 Maximum pressure.** The static water pressure should not exceed 65 pounds per square inch. When the static water pressure exceeds 65 pounds per square inch, an approved pressure reducing valve conforming to ASSE 1003 or CSA B356 must be installed on the domestic water branch main or riser at the connection to the water service pipe.

**Exception to P2903.3.1.** The static water pressure for a one-or-two family dwelling or townhome with a multipurpose fire protection system may be 80 pounds per square inch.

**P2903.7.1 Size of water meters for one-and-two family dwellings and townhomes.** The size requirements for water meters must be based on Table 2903.7.1(1)

## **Table 2903.7.1(1) Water Meter Sizing for One-and-Two Family Dwellings and Townhomes**

| <u>Maximum Water Fixture Units<sup>1</sup></u> | <u>Water meter size<sup>2</sup></u> | <u>Typical number of bathrooms</u> |
|--|-------------------------------------|------------------------------------|
| <u>35 fixture units</u>                        | <u>5/8" meter</u>                   | <u>3 bathrooms or less</u>         |
| <u>40 fixture units</u>                        | <u>3/4" meter</u>                   | <u>3 1/2 bathrooms</u>             |
| <u>44 fixture units</u>                        | <u>3/4" meter</u>                   | <u>4 bathrooms</u>                 |
| <u>52 fixture units</u>                        | <u>3/4" meter</u>                   | <u>5 bathrooms</u>                 |
| <u>55.5 fixture units</u>                      | <u>3/4" meter</u>                   | <u>5 1/2 bathrooms</u>             |
| <u>70 fixture units</u>                        | <u>1" meter</u>                     | <u>6 bathrooms</u>                 |
| <u>78 fixture units</u>                        | <u>1" meter</u>                     | <u>7 bathrooms</u>                 |
| <u>84.5 fixture units</u>                      | <u>1" meter</u>                     | <u>8 bathrooms</u>                 |

1 Standard rounding conventions apply when determining Water Supply Fixture Units (WSFU).

2 To be approved for a meter size based on the WSFU, an applicant must provide calculations when the Water and Wastewater Service Plan Verification consultation with Austin Water Utility occurs. The calculations must be based on static water pressure at the meter, distance to furthest fixture, elevation differential to highest fixture, and total WSFU count for the property.

**P2904.1 General.** A residential fire sprinkler system must be installed and designed consistent with NFPA 13D or Section P2904. When a building is not required to install a residential fire sprinkler system, a partial fire sprinkler system is allowed. Section P2904

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1 applies to a stand-alone or multipurpose wet-pipe sprinkler that does not use antifreeze. A  
2 multipurpose fire sprinkler system must be provided domestic water for fire sprinklers  
3 and plumbing fixtures. A stand-alone sprinkler system must be separate and independent  
4 from the water distribution system. As required by the Plumbing Code, a stand-alone  
5 sprinkler system must be separated from a water distribution system using a backflow  
6 prevention device.

7 **P3301.1 Where Required.** Roofs and courtyards must drain into a separate storm sewer  
8 system or to some other place of disposal, satisfactory to the authority having  
9 jurisdiction. For one-and-two family dwellings, storm water may be discharged on flat  
10 areas such as streets or lawns so long as the storm water flows away from the building  
11 and to an approved location. For new construction or additions, the post construction site  
12 discharge may not to exceed the discharge rate prior to construction.

13 **PART 4.** City Code Chapter 25-12 amended to repeal Article 6 (*Plumbing Code*) and to  
14 replace it with a new Article 6 (*Plumbing Code*) to read as follows:

## ARTICLE 6. PLUMBING CODE

### § 25-12-151 UNIFORM PLUMBING CODE.

17 (A) The Uniform Plumbing Code, 2015 Edition, published by the International  
18 Association of Plumbing and Mechanical Officials (“2015 Uniform  
19 Plumbing Code”) and all appendices are adopted and incorporated by  
20 reference into this section with the deletions in Subsection (B) and  
21 amendments in Section 25-12-153 (*Local Amendments to the Uniform*  
22 *Plumbing Code*).

23 (B) The following provisions and appendices are deleted. All subsections  
24 contained within a deleted section or subsection are also deleted, even if not  
25 specifically listed below:

|         |          |        |           |          |                |
|---------|----------|--------|-----------|----------|----------------|
| 104.2   | 603.5.6  | 909.0  | 1101.2    | 1501.5.2 | Table 104.5    |
| 104.3.2 | 603.5.7  | 1007.0 | 1101.15   | 1501.7   | Table 422.1    |
| 104.4.3 | 603.5.12 | 1009.2 | 1101.16.2 | 1501.11  | Table 603.2    |
| 104.5   | 608.2    | 1010.0 | 1103.3    | 1502.1   | Table 1014.2.1 |

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|         |       |          |            |          |                |
|---------|-------|----------|------------|----------|----------------|
| 107.0   | 612.0 | 1011.0   | 1106.2     | 1502.2.1 | Table 1014.3.6 |
| 319.0   | 704.3 | 1012.0   | 1203.3.1   | 1502.6   | Table 1103.3   |
| 407.4   | 710.2 | 1013.0   | 1203.3.2   | 1502.7   | Table 1502.4   |
| 411.2   | 710.3 | 1014.1   | 1204.2     | 1503.5   | Table 1601.5   |
| 412.1   | 711.0 | 1014.2   | 1212.10    | 1504.1   | Appendix F     |
| 420.3   | 712.0 | 1014.3.3 | 1213.1.2   | 1504.5   | Appendix H     |
| 422.2   | 713.4 | 1014.3.6 | 1213.1.3   | 1505.6   |                |
| 601.3   | 723.0 | 1015.0   | 1213.3     | 1602.5   |                |
| 603.2   | 804.1 | 1016.0   | Chapter 13 | 1602.11  |                |
| 603.4.2 | 807.3 | 1017.0   | 1501.2     | K 101.7  |                |

1 (C) The city clerk shall file a copy of the 2015 Plumbing Code with the official  
2 ordinances of the City.

## 3 § 25-12-152 CITATIONS TO THE PLUMBING CODE.

4 In the City Code, “Plumbing Code” means the 2015 Plumbing adopted by Section  
5 25-12-151 (*Uniform Plumbing Code*), as amended by Section 25-12-153 (*Local*  
6 *Amendments to the Uniform Plumbing Code*).

## 7 § 25-12-153 LOCAL AMENDMENTS TO THE UNIFORM PLUMBING CODE.

8 The following provisions are local amendments to the 2015 Plumbing Code. Each  
9 provision in this section is a substitute for the identically numbered provision deleted by  
10 Section 25-12-151(B) (*Plumbing Code*) or is an addition to the 2015 Plumbing Code.

11 **104.1.1 Persons authorized to obtain permits.** A responsible master plumber licensed  
12 by the State of Texas and registered with the City may obtain a permit required by the  
13 Plumbing Code. Only a responsible master plumber with a master medical gas  
14 endorsement may obtain a plumbing permit related to medical gas installations. Only a  
15 responsible master plumber with a master water supply protection specialist endorsement

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1 may obtain a plumbing permit for an auxiliary water system that supplies plumbing  
2 fixtures.

3 **Exception.** An individual who is not licensed as a plumber may obtain a plumbing  
4 permit for plumbing work that may, under state law, be completed by an  
5 unlicensed individual.

6 **104.1.3 Licensing.** A person who enters into a contract to install or repair a plumbing  
7 system subject to the Plumbing Code for which a permit is required must be licensed by  
8 the State of Texas.

9 **104.1.3.1 Registration.** A licensed plumber must register with the City before  
10 performing any work regulated by the Plumbing Code.

11 **104.1.4 Landscape irrigation.** A person licensed by the Texas Commission on  
12 Environmental Quality (TCEQ) to install irrigation systems must register with the City  
13 before performing any work required by the Plumbing Code. A person must pay a  
14 registration fee at the initial registration with the City or after a license is suspended or  
15 expired. A plumbing permit must be obtained before installing a landscape irrigation or  
16 yard sprinkler system.

17 **104.1.5 Special inspections program for timed inspections.** The building official may  
18 establish by rule an inspection program of commercial plumbing components identified  
19 in this section in buildings not covered under the International Residential Code or the  
20 Special Inspections Programs included in other technical or building codes. The buildings  
21 must be located within the zoning jurisdiction of the City and, subject to agreement with  
22 a municipal utility district or a premises where the City provides water, reclaimed water,  
23 or wastewater service, may be located outside of the zoning jurisdiction. This program  
24 applies to replacing existing a water heater and backflow device or assembly, and to  
25 repairing or replacing a sewer line.

26 **104.2 Exempt work.** A permit is not required for the following activities:

- 27 1. work required to stop a leak in a drain, soil, waste, or vent pipe if it is not  
28 necessary to remove and replace a defective concealed trap, drain, pipe, solid,  
29 waste, or vent pipe with new device;

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- 1           2. work required to clear a stoppage, including removing and reinstalling a water  
2           closet or to repair a leak in a pipe, valve, or fixture if the repair does not involve or  
3           require the valves, pipes, or drains be replaced or rearranged;
  
- 4           3. work required to repair or replace fixtures and to replace exposed traps, continuous  
5           waste piping, fixture supply valves, or faucets if the work does not involve other  
6           city departments or inspections from other trades.

7           All work exempt from a permit must comply with the requirements of the Plumbing Code  
8           and all other laws or ordinances.

9           **104.3.4 Application.** The person applying for a plumbing permit must be a responsible  
10          master plumber licensed by the State of Texas. The responsible master plumber must also  
11          be registered with the City.

12          **104.4.3 Permit expiration and reactivation.** A plumbing permit is subject to the  
13          requirements for permit expiration and reactivation, including an enhanced fee for  
14          expired permits, are set forth in Chapter 25-12, Article 13 (*Administration of Technical*  
15          *Codes*).

16          **104.5 Fees.** The City will only issue permits and approve plans if the fees are paid. Fees  
17          are set by separate ordinance.

18          **104.6 Continuance of work inspection.** A permit holder may schedule a continuance of  
19          work inspection if structural or other conditions exist at the site that do not allow for an  
20          inspection to be performed at an interval of less than 180 days. If the inspector  
21          determines that work has been performed, the expiration date for the permit will  
22          automatically extend another 180 days. If the inspector determines that work has not been  
23          started, or continued, the permit will expire, and no work can continue until the permit  
24          holder applies for and receives a new permit.

25          **104.7 Offense.** A person who violates Section 104.1 (*Permits Required*) commits an  
26          offense, which is a class C misdemeanor. Each day a person violates this section or  
27          remains in violation of Section 104.1 (*Permits Required*) is a separate occurrence. A  
28          culpable mental state is not required for the commission of an offense under this section,  
29          and need not be proved.

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1 **107.0 Mechanical and Plumbing Board.** The Mechanical and Plumbing Board is  
2 governed by the requirements in Chapter 2-1 (*City Boards*) of the City Code.

3 **108.0 Private sewage systems.** On-site sewage systems and private sewage disposal  
4 systems must comply with Chapter 15-5 (*Private Sewage Facilities*) of the City Code and  
5 any regulations or requirements promulgated by the Austin Water Utility or the Texas  
6 Commission on Environmental Quality's (TCEQ) authorized agent.

7 **203.1 ALTERNATE WATER SOURCE** means water from a supply that is not the  
8 City's potable water supply and is also referred to as "Auxiliary Water". This definition  
9 supersedes the definition used in the 2015 Plumbing Code.

10 **214.1 LAUNDRY TO LANDSCAPE SYSTEM** means an auxiliary water system that  
11 utilizes the collection of gray water discharged from clothes washing machines located at  
12 private one-and two-family dwellings for landscape irrigation. This definition  
13 supplements the definitions in Section 214 of the 2015 Plumbing Code.

14 **218.1 PLUMBING SYSTEM** means all potable water, building supply, and distribution  
15 pipes; all plumbing fixtures and traps; all drainage and vent pipes; and all building drains  
16 and building sewers, including their respective joints and connections, devices, receptors,  
17 and appurtenances within the property lines of the premises and includes potable water  
18 piping, alternate or auxiliary water source systems, irrigation systems, portable water  
19 treating or using equipment, medical gas and medical vacuum systems, liquid and fuel  
20 gas piping, and water heaters and vents for same. This definition supersedes the  
21 definition included in Section 218 of the 2015 Plumbing Code.

22 **218.2 PROPERTY OWNER CUT-OFF** means a full open or full port valve located on  
23 the discharge side of a water service from the public water supply. This definition  
24 supplements the definitions in Section 218 of the Plumbing Code.

25 **218.3 POTABLE RAINWATER SYSTEM** means a plumbing system that utilizes the  
26 principle of collecting, storing, using, and treating rainwater from a rooftop or other man-  
27 made, above-ground collection surface for the delivery of water that is satisfactory for  
28 drinking, culinary, or domestic purposes. This definition supplements the definitions in  
29 Section 218 of the 2015 Plumbing Code.

30 **222.1 TRAP, DEEP SEAL P-TRAP** means a fixture trap having a water seal of at least  
31 four inches but is not more than twice the diameter of the trap arm, and does not exceed

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1 12 inches. This definition supplements the definitions in Section 222.0 of the 2015  
2 Plumbing Code.

3 **222.1.1** A trap must set true with respect to its water seal and, where necessary, be  
4 protected from freezing.

5 **304.2 Sewage system connection required.** If any part of a lot or tract that contains a  
6 house or building is located within 100 feet in horizontal distance (measured based on the  
7 closest practicable access route) of a public sewage disposal system, the drainage system  
8 of the house or building must be separately and independently connected to the public  
9 sewage disposal system. The drainage system is not required to be connected if:

- 10 1. the property owner received a denial of service in writing from the owner or  
11 governing body of the public sewage disposal system;
- 12 2. the property owner received a written determination from Austin Water Utility that  
13 it is not feasible for the building to be connected to the public sewage disposal  
14 system;
- 15 3. the property is served by an existing private sewage facility and Austin Water  
16 Utility determined the private sewage facility may continue to be used based on  
17 factors such as the type of building served; the age, condition, and capacity of the  
18 private sewage facility; and the availability of records related to the system,  
19 changes to the system, or the generating unit; or
- 20 4. a composting toilet serves the property and Austin Water Utility approved the  
21 disposal of liquid wastes in a private on-site sewage facility.

22 **312.6.1 Freeze protection.** Plumbing must be installed with freeze protection.  
23 Acceptable methods to provide freeze protection include:

- 24 1. if the exterior wall member is at least six inches in nominal width, the piping may  
25 be placed on the conditioned side of the wall insulation and no additional pipe  
26 insulation is required;

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- 1           2. if the exterior wall member is less than six inches nominal width, the piping shall  
2           be insulated with material with an R-value of at least four and the piping and pipe  
3           installation must be placed on the conditioned side of the wall; or
- 4           3. if the exterior wall member is uninsulated or the crawl space is unconditioned, an  
5           installed water pipe must be protected by pipe insulation with a minimum R-value  
6           of four;
- 7           4. if a water pipe is installed in an unconditioned attic above the building insulation,  
8           the water pipe must be protected by pipe insulation having an R-value of at least  
9           four.

10       **319.0 Medical gas and vacuum systems.** Any medical gas and vacuum system used in  
11       conjunction with human health care purposes must be installed consistent with the  
12       requirements in the most current edition at the effective date of this article of the National  
13       Fire Protection Association (NFPA) 99 entitled “Health Care Facilities Code” and the  
14       latest edition of the ANSI/ASSA Series 6000 titled “Professional Qualification Standards  
15       for Medical Gas System Installers, Inspectors, Verifiers, Maintenance Personnel and  
16       Instructors” to the extent the requirements conflict with the Texas State Board of  
17       Plumbing Examiners Plumbing License Law requirements. A medical gas system for  
18       non-human use must be installed consistent with Section 1305.0 in its entirety.

### 19       **321.0 REQUIREMENTS FOR FLOOD PLAIN AREAS.**

#### 20       **321.1 Definitions.**

- 21           1. **REGULATORY FLOOD DATUM (RFD)** means an established plane of  
22           reference from which elevations and depth of flooding may be determined for a  
23           specific location of the flood plain. It is the water level of the design flood plus a  
24           freeboard factor of one foot. Design flood plus freeboard equals regulatory flood  
25           datum.
- 26           2. **W-1 SPACE** means a space that must remain completely dry during flooding to  
27           the RFD, with walls that are impermeable to water and water vapor consistent with  
28           the Building Code.

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- 1           3. **W-2 SPACE** means a space that remains essentially dry during flooding to the  
2           RFD, with walls that are impermeable to water but may pass some water vapor or  
3           seep slightly consistent with the Building Code.

4           **321.2** In this section, plumbing system includes sanitary and storm drainage, sanitary  
5           facilities, water supply, and storm water disposal systems.

6           **321.3** A sanitary sewer or storm drainage system with an opening below the RFD must be  
7           provided with automatic backwater valves or other automatic backflow devices installed  
8           in each discharge line passing through an exterior wall. In a W-1 space, a manually  
9           operated shut-off valve that can be operated from a location above the RFD must be  
10          installed on the lines to serve as supplementary safety provisions for preventing backflow  
11          if the automatic backflow device fails.

12          **321.4** If the dryness of a space depends on a sump pump system, all interior storm water  
13          drainage or seepage, appliance drainage, and under-slab drain tile systems must be  
14          directly connected to a sump pump and discharged at an elevation of five feet above the  
15          RFD.

16          **321.5** A septic tank or disposal bed is not allowed in a 25-year flood hazard area. In other  
17          flood hazard areas, the use of a septic tank or disposal bed must be approved by Austin  
18          Water Utility.

19          **321.6** A potable water supply system that is located in the flood hazard area must be  
20          designed and installed in a manner that prevents contamination from floodwaters up to  
21          the RFD.

22          **321.7** An approved backflow preventer or device must be installed on main water service  
23          lines to a building entry location to protect the system from backflow or back siphonage  
24          of waters or other contaminants in the event of a line break. A device must be installed at  
25          an accessible location and must be maintained consistent with the Plumbing Code.

26          **321.8 Establishment of flood hazard areas.** The City establishes a flood hazard area  
27          that includes the following:

- 28               1. Flood hazard areas identified by the Federal Emergency Management Agency in a  
29               scientific and engineering report entitled “The Flood Insurance Study for Austin,

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1 Texas” dated September 26, 2008, with accompanying Flood Insurance Rate Maps  
2 and Flood Boundary-Floodway Maps (FIRM and FBFM) and related supporting  
3 data along with any amendments or revisions are adopted by reference and  
4 declared to be part of this section.

- 5 2. The 100-year and 25-year floodplains based on projected full developments as  
6 specified in the City Code and Drainage Criteria Manual are adopted by reference  
7 and declared to be part of this section.

8 **322.0 Elevator sump pumps.** If a pump and associated piping and materials required for  
9 elevators is installed under the rules of the Texas Administrative Code, Title 16, Part 4,  
10 Chapter 74, the pump and associated piping and materials must also comply with  
11 Sections 322.1 through 322.4.

12 **322.1 Acceptable discharge location.** In a new elevator shaft, an elevator sump pump  
13 must discharge to the storm system outside of the building, detention pond, or other  
14 location approved for each project by the authority having jurisdiction. A hydraulic  
15 elevator must be equipped with a hydraulic oil alarm and a secondary containment must  
16 be installed and approved for each project by the authority having jurisdiction. See also  
17 City Code Section 15-10-12 (*General Prohibition Against Discharge*) and Section 6-5-51  
18 (*Discharge Restrictions*).

19 **322.2 Discharge piping.** Piping must be at least one and a half inch (1 ½ inch) NPS.  
20 Piping must be independent and cannot connect to the storm or sub-soil piping within the  
21 building. Discharge piping must comply with Section 710.4 of the Plumbing Code. If an  
22 elevator sump pump is located below the 100-year floodplain its piping must rise above  
23 the 100-year floodplain elevation before connecting to a gravity drainage system. Piping  
24 must be labeled as required in Section 601.2 of the Plumbing Code.

25 **322.3 Materials.** Piping materials for an elevator sump pump must be galvanized steel,  
26 galvanized wrought iron, copper, or other material approved by the authority having  
27 jurisdiction. Piping that is located within a shaft must be made of non-combustible  
28 materials. A transition to another approved material must be made outside of the elevator  
29 shaft using an approved transition fitting as required in Chapter 7 of the Plumbing Code.

30 **322.4 Sample port.** A sample port must be installed outside of the building on private  
31 property or another location approved by the authority having jurisdiction. Open grate

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1 catch basins, single riser two way cleanouts, or other approved fittings or receptors with  
2 the ability to visually see the flow line and retrieve samples are acceptable sample ports.

3 **407.4 Public lavatories.** A lavatory that is intended to serve the public, like those in  
4 Group A, B, and M type occupancies as defined in the Building Code, must be equipped  
5 with self-closing or metering faucets.

6 **408.5.1 Accessible shower stalls.** In a Group I (Institutional) occupancy, as defined by  
7 the Building Code, a room that contains an accessible shower with a threshold or curb  
8 that is less than ½ inch in height or a roll-in accessible shower must be equipped with a  
9 Plumbing Code-approved emergency floor drain that is installed outside of the shower  
10 stall.

11 **411.2 Water closets.** The average water consumption of a water closet that is flush tank,  
12 flushometer tank, or flushometer valve operated may not exceed 1.28 gallons of water per  
13 flush.

14 **412.1 Urinals.** A urinal must comply with ASME A112.19.2/CSA B45.1, ASME  
15 A112.19.19, or CSA B45.5/IAPMO Z124. The average water consumption of a urinal  
16 may not exceed one half gallon of water per flush.

17 **412.1.1 Non-water urinals.** A urinal without water must have a barrier liquid sealant to  
18 maintain a trap seal; must allow the uninhibited flow of waste through the urinal to the  
19 sanitary drainage system; and must be cleaned and maintained consistent with the  
20 manufacturer's instructions after installation. When a urinal without water is installed, at  
21 least one water supplied fixture (WSFU) must be installed upstream on the same drain  
22 line to facilitate drain line flow and rinsing; and must have a water distribution line  
23 rough-in to the urinal location to allow for the installation of an approved backflow  
24 prevention device in the event of a retrofit. If the authority having jurisdiction determines  
25 that a urinal without water is not maintained consistent with the manufacturer's  
26 instructions and that the urinal is a health hazard or detrimental to public health and  
27 safety, it must be retrofitted with a flushometer type urinal that complies with Section  
28 412.1. If public health is compromised, the Building Official may to establish a timeline  
29 to retrofit the urinal.

30 **412.3 Substitution for water closets.** In a bathroom or toilet room of an assembly or  
31 educational occupancy, as defined by the Building Code, up to 67 percent of the required

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1 water closets may be urinals. In a bathroom or toilet room of all other occupancies, up to  
 2 50 percent of the required water closets may be urinals.

3 **420.3 Pre-rinse spray valve.** The maximum flow rate for a commercial food service pre-  
 4 rinse spray valve is 1.28 gallons per minute (gpm) at 60 pounds force per square inch  
 5 (psi) consistent with ASME A112.18.1/CSA B125.1. A commercial food service valve  
 6 must be equipped with an integral automatic shutoff.

7 **Table 422.1 Minimum Plumbing Facilities.**

8 Each building must be provided with sanitary facilities, including facilities designed for a  
 9 person with a disability as determined by the Development Services Department. This  
 10 table applies to new buildings, additions to buildings, and changes of occupancy, use, or  
 11 type in an existing building that results in an increased occupant load.

| NO. | CLASSIFICATION | OCCUPANCY | DESCRIPTION  | WATER CLOSETS (URNIALS SEE SECTION 412.3) |          | LAVATORIES |           | BATH TUBS / SHOWERS | DRINKING FOUNTAINS (SEE SECTION 415) | OTHER          |
|-----|----------------|-----------|--|---|----------|------------|-----------|---------------------|--------------------------------------|----------------|
|     |                |           |  | MALE                                      | FEMALE   | MALE       | FEMALE    |                     |                                      |                |
| 1   | Assembly       | A-1       | Theater and buildings for the performing arts and motion pictures          | 1 per 125                                 | 1 per 65 | 1 per 200  | 1 per 200 | ---                 | 1 per 500                            | 1 service sink |
|     |                | A-2       | Nightclubs, bars, taverns, dance halls, and buildings for similar purposes | 1 per 40                                  | 1 per 40 | 1 per 75   | 1 per 75  | ---                 | 1 per 500                            | 1 service sink |
|     |                |           | Banquet halls, food courts, and restaurants                                | 1 per 75                                  | 1 per 75 | 1 per 200  | 1 per 200 | ----                | 1 per 500                            | 1 service sink |
|     |                | A-3       | Auditoriums without permanent seating, art galleries,                      | 1 per 125                                 | 1 per 65 | 1 per 200  | 1 per 200 | --                  | 1 per 500                            | 1 service sink |

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|   |          |  |  |   |   |   |    |             |                    |
|---|----------|--|--|---|---|---|----|-------------|--------------------|
|   |          | exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums  |  |   |   |   |    |             |                    |
|   |          | Passenger terminals and transportation facilities  | 1 per 500  | 1 per 500   | 1 per 750   | 1 per 750   | -- | 1 per 1,000 | 1 service sink     |
|   |          | Places of worship and other religious services   | 1 per 150  | 1 per 75  | 1 per 200   | 1 per 200   | -- | 1 per 1,000 | 1 service sink     |
|   | A-4      | Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities                                  | 1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500 | 1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520 | 1 per 200   | 1 per 150   | -- | 1 per 1,000 | 1 service sink     |
|   | A-5      | Stadiums, amusement parks, bleachers, and grandstands for outdoor sporting events and activities                                     | 1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500 | 1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520 | 1 per 200   | 1 per 150   | -- | 1 per 1,000 | 1 service sink     |
| 2 | Business | Buildings for the transactions of business, professional services, office buildings, banks, services involving merchandise and light | 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50        | 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50       | 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80 | 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80 | -- | 1 per 100   | 1 service sink (e) |

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|   |                        |            |  |                |           |                |           |                   |             |                |
|---|------------------------|------------|--|----------------|-----------|----------------|-----------|-------------------|-------------|----------------|
|   |                        |            | industrial and similar uses  |                |           |                |           |                   |             |                |
| 3 | Educational            | E          | Facilities for education   | 1 per 50       | 1 per 50  | 1 per 50       | 1 per 50  | --                | 1 per 100   | 1 service sink |
| 4 | Factory and Industrial | F-1<br>F-2 | Structures in which occupants are engaged in fabricating, assembly, or processing of products or materials | 1 per 100      | 1 per 100 | 1 per 100      | 1 per 100 | See Section 416.0 | 1 per 400   | 1 service sink |
| 5 | Institutional          | I-1        | Residential care   | 1 per 10       | 1 per 10  | 1 per 10       | 1 per 10  | 1 per 8           | 1 per 100   | 1 service sink |
|   |                        | I-2        | Hospitals, ambulatory nursing home care recipient (b)  | 1 per room (c) |           | 1 per room (c) |           | 1 per 15          | 1 per 100   | 1 service sink |
|   |                        |            | Employees, other than residential care (b)   | 1 per 25       | 1 per 25  | 1 per 35       | 1 per 35  | --                | 1 per 100   | --             |
|   |                        |            | Visitors, other than residential care  | 1 per 75       | 1 per 75  | 1 per 100      | 1 per 100 | --                | 1 per 100   | --             |
|   |                        | I-3        | Prisons  | 1 per cell     |           |                |           | 1 per 15          | 1 per 100   | 1 service sink |
|   |                        |            | Reformatories, detention centers, and correctional centers   | 1 per 15       | 1 per 15  | 1 per 15       | 1 per 15  | 1 per 15          | 1 per 100   | 1 service sink |
|   |                        |            | Employees  | 1 per 25       | 1 per 25  | 1 per 35       | 1 per 35  | ---               | 1 per 100   | --             |
|   |                        | I-4        | Adult day care and child day care  | 1 per 15       | 1 per 15  | 1 per 15       | 1 per 15  | 1                 | 1 per 100   | 1 service sink |
| 6 | Mercantile             | M          | Retail stores, service stations, shops,  | 1 per 500      | 1 per 500 | 1 per 750      | 1 per 750 | --                | 1 per 1,000 | 1 service sink |

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|   |             |             |  |                      |           |                     |           |                     |             |   |  |
|---|-------------|-------------|--|----------------------|-----------|---------------------|-----------|---------------------|-------------|---|--|
|   |             |             | salesrooms, markets, and shopping centers  |                      |           |                     |           |                     |             |   |  |
| 7 | Residential | R-1         | Hotels, motels, boarding homes (transient)                                       | 1 per sleeping unit  |           | 1 per sleeping unit |           | 1 per sleeping unit | --          | 1 service sink  |  |
|   |             | R-2         | Dormitory<br>Fraternity<br>Sorority<br>Boarding homes (not transient)            | 1 per 10             | 1 per 10  | 1 per 10            | 1 per 10  | 1 per 8             | 1 per 100   | 1 service sink  |  |
|   |             |             | Apartment house  | 1 per dwelling unit  |           | 1 per dwelling unit |           | 1 per dwelling unit | --          | 1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units |  |
|   |             | R-3         | One- and two- family dwellings and lodging houses with five or fewer guest rooms | See Residential Code |           |                     |           |                     |             |   |  |
|   |             |             | Congregate living facilities with 16 or fewer persons                            | 1 per 10             | 1 per 10  | 1 per 10            | 1 per 10  | 1 per 8             | 1 per 100   | 1 service sink  |  |
|   |             | R-4         | Congregate living facilities with more than 16 persons                           | 1 per 10             | 1 per 10  | 1 per 10            | 1 per 10  | 1 per 8             | 1 per 100   | 1 service sink  |  |
| 8 | Storage     | S-1 and S-2 | Structures for the storage of goods, warehouses storehouses and freight          | 1 per 100            | 1 per 100 | 1 per 100           | 1 per 100 | See Section 416.0   | 1 per 1,000 | 1 service sink  |  |

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|  |  |  |                                 |  |  |  |  |  |  |  |
|--|--|--|---------------------------------|--|--|--|--|--|--|--|
|  |  |  | depots, low and moderate hazard |  |  |  |  |  |  |  |
|--|--|--|---------------------------------|--|--|--|--|--|--|--|

- (a) The fixtures shown are based on fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants is determined by the International Building Code.
- (b) Toilet facilities for employees must be separate from facilities for inmates and care recipients.
- (c) A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units is allowed, provided that each patient sleeping unit has direct access to the toilet room and a provision for privacy for the toilet room user is provided.
- (d) The occupant load for seasonal outdoor seating and entertainment areas must be included when determining the minimum number of facilities required.
- (e) For business and mercantile occupancies with an occupant load of 30 or fewer, a service sink is not required.

1 **422.2 Separate facilities.** Where plumbing fixtures are required, separate facilities must  
2 be provided for each sex.

3 **Exceptions.** Separate facilities are not required:

- 4 1. for dwelling units or sleeping units;
- 5 2. in structures or tenant spaces with a total occupant load, inclusive of  
6 employees and customers, of 15 or less;
- 7 3. in mercantile occupancies when the maximum occupant load is 100 or less;  
8 and
- 9 4. in a business occupancies when the maximum occupant load is 50 or less.

10 **422.2.1 Family or assisted-use toilet facilities serving as separate facilities.** If a  
11 building or tenant space requires a separate toilet facility for each sex but is only required  
12 to have one water closet, two family or assisted use toilets facilities may be allowed to  
13 serve as the required separate facilities. A family or assisted use facility may not be  
14 identified for exclusive use by either sex.

15 **422.4 Required public toilet facilities.** A structure or tenant space intended to be used  
16 by the public must have public toilet facilities for customers, patrons, and visitors to use.  
17 The number of plumbing fixtures within a required toilet facility must comply with  
18 **Section 422.0 for all users.** All occupancies must provide toilet facilities for employees  
19 and may be separate or combined with public toilet facilities.

20 **Exception.** A public toilet facility is not required in

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1. an open or enclosed parking garage without parking attendants; or
2. a structure or tenant space intended for quick transactions, including takeout, pick up and drop off, with a 300 square feet or less public access area.

**422.4.1 Access.** The route to a public toilet facility required in Section 403.3 may not pass through kitchens, storage rooms, or closets and must be accessible as required by the International Building Code. The public must have access to a required public toilet facility when the building is occupied and access must be from within the building or the exterior of the building.

**422.4.2 Toilet room location.** A toilet room may not open directly into a room used to prepare food that will be served to the public.

**422.4.3 Location.** In a shopping mall or center, the required toilet facilities for employees and customers may be provided in a centrally located toilet facility that is accessible to several stores and the travel distance from the entry of the store and the toilet facility must be 300 feet or less. In other occupancies, the travel distance required toilet facilities for employees and customers must be 500 feet or less.

**422.4.4 Access to toilet facilities.** In a multi-story building, the route for toilet facilities cannot exceed one vertical story. The route for customers cannot pass through areas designated for employee use only such as kitchens, food preparation areas, storage rooms, closets, or similar spaces. A toilet facility that may be accessed only from a private office may not be counted to determine compliance with this section.

**501.2 Service water heating systems.** A water heater that is installed after the effective date of the Plumbing Code and served by Austin Energy must comply with the Energy Code. Any replacement electrical equipment must comply with the Energy Code.

**601.1.1 Water system connection required.** If any part of a lot or tract that contains a house or building is located within 100 feet in horizontal distance (measured based on the closest practicable access route) of a state-licensed public potable water system, the water system of the house or building must be separately and independently connected to the public water system. The water system is not required to be connected if:

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- 1 1. the property owner received a denial of service in writing from the owner or  
2 governing body of the public water system;
- 3 2. the property owner received a written determination from Austin Water Utility that  
4 it is not feasible for the building to be connected to a potable water system; or
- 5 3. the property is served by an existing private potable water system and Austin  
6 Water Utility determined the private potable water system may continue to be used  
7 based on factors such as the type of building served; the age, condition, and  
8 capacity of the private potable water system; the quality of the water; and the  
9 availability of records related to the system, changes to the system, or the system  
10 demand.

11 **601.1.2** If a state-licensed public potable water system is not available within the full  
12 purpose jurisdiction of the City, then an alternative system for potable water must be  
13 installed consistent with the Plumbing Code.

14 **601.3 Identification of a potable and non-potable water system.** If potable water and  
15 non-potable water systems are installed on the same site, then each system must be  
16 labeled and identified consistent with the requirements in Section 601.2.1 through  
17 Section 601.2.4.

18 **601.3.1 Potable water.** The system must be identified using a green background and  
19 white lettering.

20 **601.3.2 Color and information.** A water system must be identified with a colored pipe  
21 or sleeve and coated with paints, wraps, and materials that are compatible with the  
22 piping. Except as required in Section 601.3.3, a non-potable water system must have a  
23 yellow background with black uppercase lettering and labeled “CAUTION:  
24 NONPOTABLE WATER, DO NOT DRINK”. A non-potable water system must be  
25 identified in a manner that designates the liquid being conveyed and shows the direction  
26 of normal flow. The size of letters and length of the color field must comply with Table  
27 601.3.3. For piping above grade, the background color and the required information must  
28 be indicated every 20 feet (6096 mm) but not less than once per room, on both sides of  
29 the wall or partition penetrated by the piping, and at least once in every story height  
30 traversed by risers. For piping below grade, the background color and the required  
31 information must be indicated every five feet.

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1       **Exception.** The pipe and components of an existing irrigation system that is  
2 converted to an auxiliary water source located below grade may remain unmarked  
3 until disturbed. Any repair, additions, or alterations must be identified consistent  
4 with Section 601.3.2. All pipe and components located above grade or accessible  
5 within a subsurface vault must be identified consistent with Section 601.3.2.

6       **601.3.3 Alternate (auxiliary) water source.** An alternate water source system must have  
7 a purple (Pantone color no. 512, 522C, or equivalent) background with uppercase  
8 lettering and must be field or factor marked as follows:

- 9       1. a gray water system must be marked with “CAUTION: NONPOTABLE GRAY  
10       WATER, DO NOT DRINK” in uppercase yellow (Pantone No. 108 or equivalent)  
11       letters;
- 12       2. a reclaimed (recycled) water system must be marked with “CAUTION:  
13       NONPOTABLE RECLAIMED (RECYCLED) WATER, DO NOT DRINK” in  
14       uppercase black letters;
- 15       3. an on-site treated water system must be marked with “CAUTION: ON-SITE  
16       TREATED NONPOTABLE WATER, DO NOT DRINK” in uppercase yellow  
17       (Pantone No. 108 or equivalent) letters;
- 18       4. a rainwater catchment system must be marked with “CAUTION: NONPOTABLE  
19       RAINWATER WATER, DO NOT DRINK” in uppercase yellow (Pantone No.  
20       108 or equivalent) letters; and
- 21       5. other on-site non-potable water systems must be marked with “CAUTION:  
22       NONPOTABLE WATER, DO NOT DRINK” in uppercase yellow (Pantone No.  
23       108 or equivalent) letters.

24       **601.3.4 Fixtures.** When vacuum breakers or backflow preventers are installed with a  
25 fixture listed in Table 1701.1, the discharge side is not required to be identified.

26       **601.3.5 Outlets.** An outlet on a non-potable water line used for special purposes must be  
27 marked with “CAUTION: NONPOTABLE WATER, DO NOT DRINK” in uppercase  
28 black letters.

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1 **Table 603.2 Backflow Prevention Devices, Assemblies, and Methods**

| Device, Assembly, or Method <sup>1</sup>   | Applicable Standards        | Degree of Hazard       |               |                             |               | Installation <sup>2,3</sup>   |
|--|-----------------------------|------------------------|---------------|-----------------------------|---------------|---|
|  |                             | Pollution (Low Hazard) |               | Contamination (High Hazard) |               |   |
|  |                             | Back-Siphonage         | Back-Pressure | Back-Siphonage              | Back-Pressure |   |
| Air gap  | ASME A112.1.2               | X                      | --            | X                           | --            | See Table 603.3   |
| Air gap fittings for use with plumbing fixtures, appliances, and appurtenances   | ASME A112.1.3               | X                      | --            | X                           | --            | Air gap fitting is a device with an internal air gap and typical installation includes plumbing fixtures, appliances, and appurtenances. The critical level shall not be installed below the flood level rim.   |
| Atmospheric vacuum breaker (consists of a body, checking member, and atmospheric port)   | ASSE 1001 or CSA B 64.1.1   | X                      | --            | X                           | --            | Upright position. No valve downstream. Minimum of six inches or listed distance above all downstream piping and flood level rim of receptor. <sup>4,5</sup>   |
| Anti-siphon fill valve (ballcocks) for gravity water closet flush tanks and urinal tanks   | ASSE 1002 or CAS B 125.3    | X                      | --            | X                           | --            | Installation on gravity water closet flush tank and urinal tank with the fill valve installed with the critical level not less than one inch above the opening of the overflow pipe. <sup>4,5</sup>   |
| Vacuum breaker wall hydrants, hose bibs, frost resistant, automatic draining type  | ASSE 1019 or CSA B 64.2.1.1 | X                      | --            | X                           | --            | Installation includes wall hydrants and hose bibs. Such devices are not to be used under continuous pressure conditions (means of shutoff downstream of device is prohibited). <sup>4,5</sup>   |
| Spill-resistant pressure vacuum breaker (single check valve with an air inlet vent and means of field testing)                       | USC FCCCHR <sup>6</sup>     | X                      | --            | X                           | --            | Upright position. Minimum of 12 inches or listed distance above all downstream piping and flood-level rim of receptor. <sup>5</sup>   |
| Double check valve backflow prevention assembly (two independent check valves and means of field testing)                            | USC FCCCHR <sup>6</sup>     | X                      | X             | --                          | --            | Horizontal unless otherwise listed. Access and clearance shall be consistent with the manufacturer's instructions but not less than 12 inches of clearance at the bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water. |
| Double check detector fire protection assembly (two independent check valves with a parallel detector assembly consisting of a water | USC FCCCHR <sup>6</sup>     | X                      | X             | --                          | --            | Horizontal unless otherwise listed. Access and clearance shall be consistent with the manufacturer's instructions but not less than 12 inches of clearance at the bottom for maintenance. May need platform/ladder for test and repair.                           |

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|  |                         |   |    |   |    |  |
|--|-------------------------|---|----|---|----|--|
| meter and a double check valve backflow prevention assembly and means of field testing)  |                         |   |    |   |    | Does not discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.  |
| Pressure vacuum breaker backflow prevention assembly (loaded air inlet valve, internally located check valve and means of field testing)   | USC FCCCHR <sup>6</sup> | X | -- | X | -- | Upright position. May have valves downstream. Minimum 12 inches above all downstream piping and flood-level rim of receptor. May discharge water.  |
| Reduced pressure principle backflow prevention assembly (two independently acting loaded check valves, a pressure relief valve, and means of field testing)  | USC FCCCHR <sup>6</sup> | X | X  | X | X  | Horizontal unless otherwise listed. Access and clearance must be consistent with the manufacturer's instructions but not less 12 inches of clearance at bottom for maintenance. May need platform/ladder for test and repair. May discharge water  |
| Reduced pressure detector fire protection backflow prevention assembly (two independently acting loaded check valves, a differential pressure relieve valve, with a parallel detector assembly consisting of a water meter and a reduced-pressure principle backflow prevention assembly and means of field testing) | USC FCCCHR <sup>6</sup> | X | X  | X | X  | Horizontal unless otherwise listed. Access and clearance must be consistent with the manufacturer's instructions but not less than 12 inches at bottom for maintenance. May need platform/ladder for test and repair. May discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions. |

1 See description of devices and assemblies in this chapter.  
 2 Installation in pit or vault requires previous approval by the authority having jurisdiction.  
 3 Refer to general and specific requirements for installation.  
 4 Not to be subjected to operating pressure for more than 12 hours in any 24-hour period.  
 5 For deck-mounted and equipment-mounted vacuum breaker, see Section 603.4.15.  
 6 Current list of approved backflow prevention assemblies, University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

1     **603.2 Approval of devices or assemblies.** A device or an assembly may be installed for  
 2 the prevention of backflow if it is approved by the authority having jurisdiction before it  
 3 is installed. A device or an assembly must be tested consistent with recognized standards  
 4 or another standard, if acceptable to the authority having jurisdiction. A backflow  
 5 prevention device or assembly must comply with Table 603.2 and Chapter 15-1 (*Cross-*  
 6 *Connection Regulations*) of the City Code, except for a specific application or provision  
 7 included in Sections 603.5.1 through 603.5.20. A device or assembly installed in a

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1 potable water supply system for protection against backflow must be maintained in good  
2 working condition by the person or persons with control of the device or assembly. A  
3 device or an assembly must be tested at the time of installation, repair, or relocation and  
4 when required by the authority having jurisdiction. If the device or assembly is  
5 determined to be defective or inoperative, the device or assembly must be repaired or  
6 replaced. Before a device or assembly may be removed from use, relocated, or substituted  
7 with another device or assembly, the authority having jurisdiction must approve of the  
8 action. A backflow assembly tester, licensed by the State of Texas and registered with the  
9 City, must conduct testing consistent with the requirements in Chapter 15-1(*Cross-*  
10 *Connection Regulations*) of the City Code.

11 **603.4.2 Testing.** The owner or other responsible person for a premises must have the  
12 backflow prevention assembly tested by a backflow assembly tester, licensed by the State  
13 of Texas and registered by the City, at the time of installation, repair, or relocation and  
14 when otherwise required by the authority having jurisdiction. Periodic testing must be  
15 performed consistent with the requirements in Chapter 15-1 (*Cross-Connection*  
16 *Regulations*) of the City Code.

17 **603.4.10 Hazard isolation.** A separate backflow prevention assembly or device must be  
18 installed on a high hazard appurtenance or fixture in high hazard situations when water or  
19 product is intended for contact with humans either directly (consumption, bathing,  
20 medical uses, dental chairs, pharmaceuticals, etc.) or indirectly (sterilization, autoclaves,  
21 washing dishes or bottles, canning, etc.).

22 **Exception.** Potable water supplied to carbonators must be protected with a listed  
23 reduced pressure principal backflow preventer that is approved by the authority  
24 having jurisdiction for that specific use. A single reduced pressure principal  
25 backflow prevent device (RPZ) may be installed for multiple carbonators that are  
26 located in the same immediate physical area if all water piping from the backflow  
27 preventer to the carbonator is exposed. Piping downstream of backflow protection  
28 for carbonators cannot be affected by carbon dioxide gas.

29 **603.4.10.1 Multiple high hazards.** If no human contact is intended, then a single  
30 backflow prevention assembly or device may be installed for multiple high hazard  
31 appurtenances or fixtures. Each water line downstream of the backflow protection must  
32 be labeled consistent with requirements for non-potable water labeling.

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1 **603.4.10.2 Multiple low hazards.** In low hazard situations that service multiple low  
2 hazards of the same type and are located in the same immediate physical area, a single  
3 backflow prevention assembly or device may be installed if all piping downstream of the  
4 backflow protection is exposed.

5 **603.5.6 Protection from lawn sprinklers and irrigation systems.** Potable water that is  
6 supplied to a system that lacks pumps or connections for pumping equipment and lacks  
7 chemical injection or the provisions for chemical injection must be protected from  
8 backflow using one of the following devices:

- 9 1. atmospheric vacuum breaker (AVB);
- 10 2. pressure vacuum breaker backflow prevention assembly (PVB);
- 11 3. spill-resistant pressure breaker vacuum breaker (SVB);
- 12 4. reduced-pressure principle backflow prevention assembly (RP); or
- 13 5. double check valve assembly (DCVA).

14 **603.5.6.1 Systems with pumps.** When a sprinkler or irrigation system has pumps,  
15 connections for pumping equipment, auxiliary air tanks, or otherwise capable of creating  
16 backpressure and the backflow device is located upstream from the source of  
17 backpressure, the potable water supply must be protected using one of the following  
18 devices:

- 19 1. reduced-pressure principle backflow prevention assembly (RP); or
- 20 2. double check valve assembly (DCVA).

21 **603.5.6.2 Systems with backflow devices.** The backflow device installed downstream  
22 from a potable water supply pump or a potable water supply pump connection must be:

- 23 1. atmospheric vacuum breaker (AVB);
- 24 2. pressure vacuum breaker backflow prevention assembly (PVB);

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- 1 3. spill-resistant pressure vacuum breaker (SVB);
- 2 4. reduced-pressure principle backflow prevention assembly (RP); or
- 3 5. double check valve assembly (DCVA).

4 **603.5.6.3 Systems with chemical injectors.** The potable water supply must be protected  
5 by a RP in a system with a chemical injector or provisions for chemical injection.

6 **603.5.7 Outlets with hose attachments.** A potable water outlet with a hose attachment,  
7 other than a water heater drain, boiler drain, or clothes washer connection, must be  
8 protected by a non-removable hose bib type backflow preventer, a non-removal hose bib  
9 type vacuum breaker, or by an atmospheric vacuum breaker installed at least 6 inches  
10 (152 mm) above the highest point of usage located on the discharge side of the last valve.  
11 In a climate that experiences freezing temperatures, a listed self-draining frost-proof hose  
12 bib with an integral backflow preventer or vacuum breaker must be used. A standard hose  
13 bib is allowed if protected by additional pipe insulation with an R-value of at least four  
14 up to the edge or wall flange of the hose bib.

15 **603.5.12 Beverage dispensers.** The potable water supply to a beverage dispenser or  
16 coffee machine must be protected by an air gap or vented backflow preventer consistent  
17 with ASSE 1022.

18 **603.5.12.1 Carbonated beverage dispenser.** The potable water supply to a carbonated  
19 beverage dispenser must be protected by an air gap or a RP. The piping material installed  
20 downstream of the backflow preventer cannot be affected by carbon dioxide gas.

21 **603.5.12.2 Beverage dispenser in healthcare facilities.** The potable water supply to a  
22 beverage dispenser or coffee machine that is located within a healthcare facility and  
23 subject to NFPA 99 must be protected by a testable backflow prevention assembly as  
24 defined in Chapter 15-1 (*Cross-Connection Regulations*) of the City Code.

25 **603.5.21 Site containment backflow prevention requirements.** A site that utilizes an  
26 alternate water source (auxiliary water) must provide an air gap or a mechanical backflow  
27 protection device located immediately downstream of all potable City water meters and  
28 City service lines to private fire lines consistent with Table 603.5.

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**Exception.** A non-potable rainwater catchment or non-potable condensate collection system of 500 gallons or less does not require backflow prevention at the potable water meter.

**603.5.22 Cooling tower reservoirs.** A water supply inlet that terminates inside the envelope of a cooling tower must be protected with a reduced air pressure principle backflow prevention assembly. A water supply inlet that terminates outside the envelope of a cooling tower must be protected by an air gap or reduced air pressure principle backflow prevention assembly.

**Table 603.5**

| List of Auxiliary Water Sources and Uses (1) | Backflow prevention required at potable water connection |                            |   | Backflow protection required at point of interconnection with potable water |
|--|--|----------------------------|---|---|
|  | Domestic water meter (2)                                 | Irrigation Water meter (2) | City service to private fire mains (2), (3), (4), (5) |   |
| Lake/River water                             | RP   | RP                         | DC  | RP  |
| Well water                                   | RP   | RP                         | DC  | RP  |
| Condensate water                             | Gravity  | -                          | DC (5)  | DC  |
|  | Pumped   | RP                         | RP  | DC  |
| Rain water                                   | Gravity  | -                          | DC (5)  | DC  |
|  | Pumped   | RP                         | RP  | DC  |
| Gray water                                   | Gravity  | -                          | DC (5)  | DC  |
|  | Pumped   | RP                         | RP  | DC  |
| Reclaim water (6)                            | RP   | RP                         | DC  | DC  |
| Other water supply (7)                       | RP   | RP                         | DC  | DC  |

**Table Notes**  
 RP = reduced pressure zone backflow prevention assembly  
 DC = double check backflow prevention assembly  
 AG = air gap  
 (1) If multiple sources of auxiliary water are used, all backflow protection must meet the most stringent requirements of the sources used.  
 (2) A backflow prevention assembly installed at the potable service connection of a site served by an auxiliary water source must have an annual operational test.  
 (3) A new backflow prevention assembly installed in an existing fire system may result in the need to re-calculate fire system design specifications due to backflow preventer pressure losses.  
 (4) A backflow prevention assembly installed in an un-metered fire system is required to be a detector assembly.  
 (5) These backflow prevention assemblies are required regardless of the presence of auxiliary water.  
 (6) When a chemical addition system is used (e.g. fertigation) a DC will be required on the reclaimed water service connection.  
 (7) Other water supply includes any and all other auxiliary waters not listed in the table.

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1 **606.2.1 Property owner cut off (POCO).** A customer or property owner is required to  
2 install, on the side where the water services enters the property, a customer or property  
3 owner cut-off valve and to maintain the valve. The valve may not be located inside of a  
4 City meter box or vault. A “POCO” valve installed on a meter extension must be ball  
5 valves, full port, with stainless steel handles, threaded and conform to MSS-SP-110. The  
6 threads must comply with ASME B1.20.1.

7 **608.2 Excessive water pressure.** If local static water pressure exceeds 65 pounds per  
8 square inch, an approved pressure regulator preceded by an adequate strainer must be  
9 installed to reduce the static pressure to 65 pound per square inch or less. A pressure  
10 regulator that is equal to or exceeds one and one-half inches does not require a strainer.  
11 The regulator must control the pressure to all water outlets in the building unless  
12 otherwise approved by the authority having jurisdiction. The regulator and, if required,  
13 strainer must be accessible, located above ground or in a vault, and protected from  
14 freezing. The strainer must be readily accessible for cleaning without removing the  
15 regulator the strainer body or disconnected the supply piping. Pipe size determinations  
16 are based on 80 percent of the reduced pressure when using Table 6-6 (Fixture Unit Table  
17 for Determining Water Pipe and Meter Sizes). An approved expansion tank must be  
18 installed in the cold water distribution piping downstream of the regulator to prevent  
19 excessive pressure from developing because of thermal expansion and to maintain the  
20 pressure setting of the regulator. An expansion tank used in a potable water system  
21 intended to supply drinking water must comply with NSF 61. An expansion tank must be  
22 properly sized and installed consistent with the manufacturer’s installation instructions  
23 and listing. A system designed by a registered design professional may use approved  
24 pressure relief valves in lieu of expansion tanks provided the relief valve has a maximum  
25 pressure relief setting of 100 pounds per square inch (698 kPa) or less.

26 **609.11.3 Conflicts between codes.** If the requirements of the Plumbing Code conflict  
27 with the requirements of the International Energy Conservation Code, the most restrictive  
28 requirement applies.

29 **609.12 Private Fire Lanes.** A private fire line must be installed consistent with the latest  
30 version of the National Fire Protection Association (NFPA) 24 Standard for the  
31 Installation of Private Fire Service Mains and their Appurtenances, as adopted by the  
32 Austin Fire Department Fire Protection Criteria Manual. A private fire line must comply  
33 with the NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based  
34 Fire Protection Systems as required by the Austin Fire Department.

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1 **612.2 Types of systems.** This section applies to a stand-alone or multipurpose wet-pipe  
2 sprinkler system that does not use antifreeze. A multipurpose fire sprinkler system must  
3 provide potable water to both fire sprinklers and plumbing fixtures. A stand-alone  
4 sprinkler system must be separate and independent from the potable water system. A  
5 backflow prevention assembly must separate a stand-alone sprinkler system from the  
6 potable water supply.

7 **613.0 Plumbing for multi-family sub-meters.** A newly constructed multi-family  
8 housing unit or a residential unit in a mixed-use facility must have a single cold water  
9 stub out that supplies all fixtures within each dwelling unit that is supplied by the master  
10 meter. A City meter or privately-owned water meter must be installed for each newly  
11 constructed unit at the time of construction. Each stub out must have a shut off valve  
12 immediately ahead of the private meter location. The meter must have a clearance of at  
13 least four inches on each side. The private meter must be installed in a location that is  
14 accessible for reading, testing, replacement, and inspection.

15 **Exception.** A development with a centralized hot water system is not required to  
16 comply with this section.

17 **614.0 Cooling towers.** A cooling tower must include a makeup and blowdown meter,  
18 conductivity controllers, overflow alarms, drift eliminators, and a minimum of 5 cycles of  
19 concentration when potable water is utilized. A cooling tower must comply with the  
20 Mechanical Code.

21 **615.0 Landscape irrigation.** Irrigation for landscape must comply with the requirements  
22 in Chapter 344, Title 30 of the Texas Administrative Code; Texas Commission on  
23 Environmental Quality; and Sections 615.1 through 615.3 of the Plumbing Code.

24 **Definitions.** In Sections 615.1 through 615.1:

25 **HYDROZONING** means the practice of grouping sprinkler heads into zones with  
26 similar vegetation, soil types, slopes, and sunlight availability.

27 **ISOLATION VALVE** means the valve used to isolate all or part of the irrigation system  
28 for repairs, maintenance, winter, or emergency shut-down.

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1 **615.1 Requirements for new commercial and multi-family landscape irrigation**  
2 **installation.** A new commercial or multi-family irrigation system must be designed and  
3 installed to include:

- 4 1. spray irrigation that is limited to areas that are more than six feet wide (medians,  
5 buffer strips, and parking lots islands should not be spray irrigated);
- 6 2. above-ground irrigation emission devices that are located at least six inches from  
7 impervious cover surfaces;
- 8 3. master valve for the system;
- 9 4. circuit remote control valves that have adjustable flow controls;
- 10 5. serviceable in-head check valves that are adjacent to paved areas where the  
11 elevation differences may cause low head drainage;
- 12 6. a rain shut-off device that shuts off the irrigation system automatically at or before  
13 ½ inch rainfall;
- 14 7. zone valves and circuits that are separated based on hydrozoning; and
- 15 8. an isolation valve that is located between the meter and the backflow prevention  
16 device.

17 **615.2 Requirements for one-and-two family dwelling landscape irrigation**  
18 **installation.** A new irrigation system for a one-or-two family dwelling must be designed  
19 and installed to include:

- 20 1. spray irrigation is that limited to areas that are more than six feet wide (medians,  
21 buffer strips, and parking lots islands should not be spray irrigated);
- 22 2. above-ground irrigation emission devices that are located at least six inches from  
23 impervious surfaces;
- 24 3. a master valve that is installed on the discharge side of the backflow prevention  
25 device;

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- 1 4. a working soil moisture sensor or an rain shut-off device that shuts-off the  
2 irrigation system automatically at or before ½ inch of rainfall;
- 3 5. zone valves and circuits that are separated based on hydrozoning; and
- 4 6. an isolation valve that is located between the meter and the backflow prevention  
5 device.

6 **615.3 Inspection.** During the final plumbing inspection, the irrigation installer must  
7 provide the Building Official:

- 8 1. a water budget that includes a chart containing zone numbers, precipitation rate,  
9 and gallons per minute and the location of the isolation valve;
- 10 2. a report on the form provided by Austin Water Utility that certifies compliance  
11 with the requirements in Section 615.1 or 615.2; and
- 12 3. proof that a laminated copy of the water budget is permanently installed inside the  
13 irrigation controller door.

14 **616.0 Commercial garbage and food waste disposal.** A food waste and garbage  
15 disposal unit may not be installed in a restaurant, cafeteria, other commercial and  
16 institutional kitchen, or food preparation facility unless the installation is approved under  
17 Section 301.3.

18 **617.0 Once through cooling.** Potable water may not be used for once through cooling of  
19 commercial equipment including, but not limited to, ice machines, ice cream machines,  
20 refrigerators, coolers, freezers, air conditioning equipment and condensers for dry  
21 cleaning equipment unless 100 percent of the potable water used is returned for non-  
22 potable uses such as cooling tower make up or other approved uses in a new installation.

23 **618.0 Car wash equipment.** Except for self-service (spray wand) type systems, newly  
24 installed car wash equipment must be sleeved or piped under the slab to accommodate  
25 future reuse equipment that can be easily installed underground and run to an area where  
26 a water reclaim system would be anticipated to be installed. The sleeve or piping must  
27 extend approximately 24 inches past the exterior wall from the car wash equipment room

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1 and 18 inches from the interior wall. Both ends of the sleeve or piping must be equipped  
2 with a cleanout extended to grade.

3 **704.3 Commercial sinks.** A pot sink, scullery sink, dishwashing sink or machine,  
4 silverware sink or machine, commercial dishwashing machines, and other similar fixtures  
5 must be connected to the drainage system indirectly.

6 **707.2.1 Two way cleanout tees.** A single rise two way cleanout tee may be installed with  
7 a maximum 18 inch extension to grade on 4 inch piping.

8 **710.1.1 Back water valves installed on single building drains.** If the building drains  
9 are not split, or if all building drains go through a backwater valve, the building sewer  
10 must be provided with a vent downstream from the backwater valve. The aggregate cross  
11 sectional of the vent may not be less than the largest required building sewer, as  
12 determined in Table 703.2. The vent must extend through the roof or, when permitted, be  
13 combined with other vent pipes not less than six inches above the next upstream manhole  
14 cover. A drainage fittings must be used on all parts of the vent below the lowest floor  
15 level. An accessible cleanout is required in the vertical portion of the vent.

16 **710.2 Sewer discharge.** Drainage piping that serves fixtures located below the crown  
17 level of the main sewer must discharge into an approved watertight sump or receiving  
18 tank that is located to receive the sewage or waste by gravity. The sewage or other liquid  
19 waste must be lifted and discharged from the sump or tank into the building drain or  
20 building sewer by approved ejectors, pumps, or other equally-efficient-approved  
21 mechanical devices. In a one-or-two family dwelling or townhome, discharge piping may  
22 not run within or under the building and may not be tied back into the building drain  
23 unless the piping is accessible.

24 **710.3 Sewage ejector and pumps.** A sewage ejector or sewage pump that receives the  
25 discharge of water closets or urinals:

- 26 1. must have a discharge capacity of at least 20 gallons per minute (gpm) (1.26 L/s);  
27 and
- 28 2. in single dwelling units, the ejector or pump must be capable of passing a 1 ½ inch  
29 (40 mm) diameter solid ball; or

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- 1 3. in a building that is not a single dwelling unit, the ejector or pump must be capable  
2 of passing a 1 ½ inch (40 mm) diameter solid ball; and
- 3 4. the discharge piping of each ejector or pump must have a backwater valve and  
4 valve gate and be at least 2 inches (50 mm) in diameter.

5 **710.9.1 Simplex sumps.** A single 1.0 or 2.0 DFU fixture that is not a required plumbing  
6 fixture under the Plumbing Code may be served by a single pump or ejector system.

### 7 **Exceptions.**

- 8 1. A single pump ejector system that serves an accessible break room sink with  
9 1 ½ inch outlet and a 1 ½ inch inlet is allowed.
- 10 2. A 1 ½ inch outlet service sink may be drained by a single pump ejector  
11 system.

### 12 **711.0 SUDS RELIEF.**

13 **711.1 General.** A drainage connection may not be made into a drainage piping system  
14 within eight feet (2438 mm) of a vertical to horizontal change of direction of a stack that  
15 contains suds-producing fixtures. For purposes of this section, bathtubs, laundries,  
16 washing machines standpipes, kitchen sinks, and dishwashers may be considered suds-  
17 producing fixtures. If a parallel vent stack is required, it shall connect to the drainage  
18 stack at a point that is eight feet (2438 mm) above the lowest point of the drainage stack.

### 19 **712.0 TESTING**

20 **712.1 Media.** Plumbing, drainage, and venting systems piping must be tested with water  
21 or air. The level of water must be filled to the top and be visible so that an inspector may  
22 mark the level of the water. The authority having jurisdiction may require the removal of  
23 any cleanouts or similar items to ascertain whether the pressure reached all parts of the  
24 system.

### 25 **712.2 Testing procedures for drain, waste, and vent piping.**

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- 1 1. Except as otherwise provided, a waste and drainage system may be tested with  
2 water or air.
- 3 2. If moisture conditions make it impractical to verify tightness of joints in a drainage  
4 system with a water test, the system must be tested with air using a Class IA  
5 diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent of the span.  
6 See Section 318.0 (*Test Gauges*) of the Plumbing Code for gauge requirements.
- 7 3. A water or air test must be maintained for a minimum of 15 minutes prior to the  
8 start of the inspection.
- 9 4. The entire portion of the system tested must be subjected to a three pound per  
10 square inch air test for 15 minutes.
- 11 5. If a leak is detected by either test, the leak must be corrected and the system re-  
12 tested and inspected until the work is found to be tight and that it conforms to the  
13 requirements of the Plumbing Code.
- 14 6. In a water test for single story building, the soil and waste stacks must be plugged  
15 and filled with water to provide a minimum of five foot head-pressure at the point  
16 where the house sewer connects to the house drain. A riser may not be capped until  
17 the entire system is full.
- 18 7. In a water test for a multi-story building, sanitary drainage and vent stacks must be  
19 plugged and filled to a point that is at least six inches above the re-vent of the  
20 uppermost floor. Provisions must be made for the plumbing inspector to see the  
21 water level. Each floor may be tested individually or combined as deemed  
22 necessary by the authority having jurisdiction.
- 23 8. A person may not use cement, sealing wax, resin, paint, tallow, or other material  
24 that may prevent the detection of cracks, holes, or other imperfections on any  
25 material used in the plumbing system.
- 26 9. When a floor drain, floor sink, or other indirect waste receptor has a piping  
27 connection below ground floor level that was not tested during the initial rough-in  
28 test, the following requirements apply:

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- a. a water test must be re-administered for the portion of the drain waste and vent system below ground floor level;
- b. the drain must be filled to a point of overflow; and
- c. sinks must be tested by filling the drain the point of overflow at the plumbing copper inspection but before the slab is poured.

10. Drain waste and vent piping may be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

**712.3 Trench drains.** A pre-manufactured trench drain must be tested in place to assure the tightness of the drain by plugging the drain and filling the drain with water to the overflow of the trench drain. This test must be performed before concrete is poured into place.

**713.4 Availability.** Austin Water Utility will determine the availability of the public sewer for any proposed building or exterior drainage facility on any lot or premises, which abuts and is served by the public sewer.

**713.8** Austin Water Utility regulates both existing and new on-site sewage facilities and private sewage disposal systems.

**723.0 Building sewer test.** A building sewer must be tested by plugging the end of the building sewer at its point of connection with the public sewer or private sewage disposal system and completely filling the building sewer with water from the lowest to the highest point, or by an approved equivalent low-pressure air test. A building sewer must be water tight at all points. A building sewer may be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

**723.1 Manhole test.** A manhole tested with water must be tested by plugging all outlets and filling the manhole to the overflow. The water test must be performed when the manhole is fully exposed with no visible leakage. A manhole may also be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

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1 **804.1 Standpipe receptors.** A plumbing fixture or other receptor that receives the  
2 discharge of indirect waste pipes must be approved for the proposed use; must be the  
3 appropriate shape and capacity to prevent splashing or flooding; and must be located  
4 where it can be readily accessed for inspection and cleaning. A standpipe receptor for a  
5 clothes washer may not extend more than 30 inches (762 mm) or be less than 18 inches  
6 (457 mm) above its trap. The trap for a clothes washer standpipe must be roughed in at  
7 least six inches (152 mm) but no more than 18 inches (457 mm) above the floor. The trap  
8 may not be installed below the floor. Except for a standpipe for a clothes washer that is  
9 co-located in a toilet or bathroom area, an indirect waste receptor may not be installed in  
10 a toilet room, closet, cupboard, storeroom, or other portion of the building that is not  
11 generally used by the occupants.

12 **Exception.** A hub drain that receives discharge from water heater temperature,  
13 pressure valve drain, pan drain, condensation drain, and other similar clear water  
14 waste drains may be located under the kitchen sink cabinet, water heater closet,  
15 walk-in storage room, and other similar accessible locations.

16 **807.3 Domestic dishwashing machines.** The discharge from a domestic dishwashing  
17 machine is indirect waste and may not be directly connected to a drainage system or food  
18 waste disposer unless one of the following applies:

- 19 1. an approved dishwashing air-gap fitting is used on the discharge side of the  
20 dishwashing machine; or
- 21 2. the discharge line from the dishwasher is looped up and securely fastened to the  
22 underside of the counter and the discharge is connected to the chamber of the food  
23 waste grinder or to a wye fitting between the food waste grinder outlet and the trap  
24 inlet or to a branch tailpiece fitting above the trap inlet.

25 **905.3.1 Horizontal Vent.** A horizontal vent that is less than six inches in height above  
26 the flood level rim of the fixture being served must be served with a cleanout.

27 **908.3 Horizontal wet venting for public use fixtures.** Water closets, floor drains, and  
28 indirect waste receptors may be horizontally wet vented with fixtures that are not more  
29 than one or two fixture units in size. This does not apply to kitchen sinks or urinals.  
30 Horizontal wet venting must be shown on approved plans. No more than two fixtures  
31 may be located on the horizontal wet vented section of the water closet, floor drain, or  
32 indirect waste receptor. A two inch cleanout is required for the dry vent.

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1 **909.0 Special venting for island fixtures.** A trap for an island sink and similar  
2 equipment must be roughed in above the floor and may be vented by extending the vent  
3 above the height of the drain board and then returning it downward and connecting it to  
4 the horizontal sink drain immediately downstream from the vertical fixture drain. The  
5 return vent must be connected to the horizontal drain through a wye branch fitting and  
6 must, in addition, be provided with a foot vent taken off the vertical fixture vent by  
7 means of a wye branch immediately below the floor and extending to the nearest partition  
8 and then through the roof to the open air or it may be connected to other vents at a point  
9 not less than six inches (152 mm) above the flood-level rim of the fixtures served. A  
10 drainage fitting must be used on all parts of the vent below the floor level and a slope of  
11 at least ¼ inch per foot (20.8 mm/m) must be maintained back to the drain. The return  
12 bend used under the drain board must be one piece fitting or an assembly of a 45 degree  
13 (0.79 rad), a 90 degree (1.6 rad), and a 45 degree (0.79 rad) elbow in the order named.  
14 Pipe sizing must comply as otherwise required by the Plumbing Code. A cleanout that is  
15 accessible must be installed in the vertical portion of the foot vent.

16 **Exception.** A deep seal P-trap may be installed under the floor of the island  
17 fixtures if the trap and trap vent are at least two inches in diameter and the trap  
18 vent is located in the nearest partition wall. The vent riser must contain a cleanout  
19 and the vent must continue through the roof to open air. The vent must take off no  
20 more than three feet downstream from the trap being served. Pipe sizing must  
21 comply as otherwise required by the Plumbing Code.

22 **1007.0 Trap seal protection.** Except when the authority having jurisdiction determines it  
23 is not necessary for safety or sanitation, a floor drain or similar trap directly connected to  
24 the drainage system and subject to infrequent use must be protected with a trap seal  
25 primer. When structurally feasible, a trap for a floor drain or similar fixture must be  
26 primed by methods that utilize gravity flow wastewater from acceptable plumbing  
27 fixtures. A fixture used for grease or food particle wasting may not be used for trap seal  
28 priming. The trap seal primer must be accessible for maintenance.

29 **1009.2 Approval.** Austin Water Utility approves the size, design, type, and location of  
30 each interceptor or separator. Except as otherwise specifically allowed by the City Code,  
31 wastes that do not require treatment or separation may not be discharged into any  
32 interceptor. A grease, sand, or other gravity interceptor must be field tested by applying a  
33 minimum of a one inch water column above the lid seal of the interceptor.

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1           **Exception.** An interceptor or separator on a septic system must meet the  
2 requirements established by Austin Public Health.

3           **1010.0 Slaughterhouses, packing establishments, and other similar establishments.**

4 An establishment that slaughters fish, fowl, or other animals; a meat packing or curing  
5 establishment; an establishment that renders tallow or fat; a soap factory; or an  
6 establishment that cures hides must connect to and drain or discharge into an approved  
7 grease interceptor (also referred to as a clarifier) or other pre-treatment system as  
8 necessary to comply with Chapter 15-10 (*Wastewater Regulations*) of the City and as  
9 authorized by Austin Water Utility.

10           **1012.0 Commercial and industrial laundries.** Laundry equipment in a commercial or  
11 industrial building must discharge into a pre-treatment system as necessary to comply  
12 with Chapter 15-10 (*Wastewater Regulations*) of the City Code and as authorized by  
13 Austin Water Utility.

14           **1013.0 Bottling establishments.** Before discharging into the drainage system, a bottling  
15 plant or establishment must discharge process waste into an interceptor or other pre-  
16 treatment system as necessary to separate broken glass or other solids from liquid waste,  
17 to comply with Chapter 15-10 (*Wastewater Regulations*), and as authorized by Austin  
18 Water Utility.

19           **1014.1** If pre-treatment is required, an approved type of grease interceptor that complies  
20 with Austin Water Utility requirements must be installed in the waste discharge leading  
21 from sinks, drains, and other fixtures or equipment. A grease interceptor is required in a  
22 facility that may introduce fats, oils, or grease into the drainage or sewage system in  
23 quantities that can affect line stoppage or hinder sewage treatment or private sewage  
24 disposal. This type of facility includes, without limitation, commercial or institutional  
25 food preparation facilities such as food processors, bakeries, restaurants, cafeterias,  
26 schools, hospitals, retirement homes, assisted living facilities, and grocery stores. A  
27 combination of hydro-mechanical, gravity grease interceptors, and engineered systems  
28 may be approved by Austin Water Utility if space or existing physical constraints of an  
29 existing building requires such an installation to meet the Plumbing Code. A grease  
30 interceptor is not required for a one-or-two family dwelling or townhome. A water closet,  
31 urinal, or other plumbing fixture that conveys human waste may not drain into or through  
32 the grease interceptor.

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1 **1014.1.1** Each fixture discharging into a grease interceptor must be individually trapped  
2 and vented in an approved manner.

3 **1014.1.2** Accumulated grease and latent material must be periodically removed from a  
4 grease interceptor to maintain efficient operating conditions. Removal of accumulated  
5 grease or latent materials must comply with Chapter 15-10 (*Wastewater Regulations*) of  
6 the City Code. Accumulated grease or latent materials may not be introduced into any  
7 drainage piping or public or private sewer. If the authority having jurisdiction determines  
8 that a grease interceptor is not being properly maintained or cleaned, the authority having  
9 jurisdiction may require additional equipment or devices be installed and may mandate a  
10 maintenance program.

11 **1014.1.3 Food waste disposal units and dishwashers.** If a food waste or garbage  
12 disposal unit was installed in a restaurant, cafeteria, and other commercial and  
13 institutional kitchen or food preparation facility prior to the prohibition in Section 616.0  
14 of the Plumbing Code, the disposal unit must be connected to or discharge into a grease  
15 interceptor. Unless specifically exempted by Austin Water Utility, a dishwasher in a  
16 commercial or institutional food preparation facility must be connected to or discharge  
17 into a grease interceptor.

18 **1014.2 Hydro-mechanical grease interceptors.** A hydro-mechanical grease interceptor  
19 or separator must be a size, standard, design, and type approved by Austin Water Utility;  
20 and must be installed in a location approved by Austin Water Utility.

### 21 **1014.3.3 Design.**

22 **1014.3.3.1** A gravity interceptor must be constructed consistent with a design  
23 approved by Austin Water Utility.

### 24 **1014.3.6 Sizing criteria.**

25 **1014.3.6.1 Sizing.** The size and volume of an interceptor must be based on and  
26 comply with criteria established by Austin Water Utility.

## 27 **1015.0 FATS, OILS, AND GREASES (FOG) PRE-TREATMENT AND DISPOSAL** 28 **SYSTEMS.**

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1 **1015.1 Purpose.** The purpose of this section is to provide the necessary criteria for the  
2 sizing, application, and installation of FOG pre-treatment and disposal systems  
3 designated as a pre-treatment or discharge water quality compliance strategy consistent  
4 with the Plumbing Code and Chapter 15-10 (*Wastewater Regulations*) of the City Code.

5 **1015.2 Scope.** A FOG pre-treatment or disposal system is considered an engineered  
6 system and must comply with Section 301.4 of the Plumbing Code and Chapter 15-10  
7 (*Wastewater Regulations*) of the City Code.

8 **1015.3 Components, materials, and equipment.** A FOG pre-treatment or disposal  
9 system, including all components, materials, and equipment necessary for the system to  
10 function properly, must comply with Section 301.1.2 or Section 301.2 of the Plumbing  
11 Code and Chapter 15-10 (*Wastewater Regulations*) of the City Code.

12 **1015.4 Sizing application and installation.** A FOG pre-treatment or disposal system  
13 must be engineered, sized, and installed consistent with manufacturer's specifications, as  
14 specified in ASME A112.14.6 (as listed in Table 1401.1 of the Plumbing Code), and  
15 Chapter 15-10 (*Wastewater Regulations*) of the City Code.

16 **1015.5 Performance.** A FOG pre-treatment or disposal system must be tested and  
17 certified as listed in Table 1401.1 of the Plumbing Code and other national consensus  
18 standards applicable to a fat oil grease (FOG) disposal system as discharging effluent that  
19 is compliant with the standards and requirements in Chapter 15-10 (*Wastewater*  
20 *Regulations*) of the City Code.

### 21 **1016.0 SAND INTERCEPTORS.**

#### 22 **1016.1 Where required.**

23 **1016.1.1** If pre-treatment is required, an approved type of sand interceptor that  
24 complies with Austin Water Utility regulations must be installed in the waste  
25 discharge leading from a fixture or drain that contains solids or semi-solids heavier  
26 than water that would be harmful to the drainage system, cause a stoppage within  
27 the system, or as otherwise required by Chapter 15-10 (*Wastewater Regulations*) of  
28 the City Code. Multiple floor drains may be discharged into one sand interceptor.  
29 If effluent quality does not meet City standards, additional pre-treatment may be  
30 required.

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1           **1016.1.2** A sand interceptor is required when Austin Water Utility determines it is  
2           necessary to protect the drainage system.

3           **1016.3 Construction and Size.** A sand interceptor must be constructed and sized  
4           consistent with the Austin Water Utility design standards.

5           **1017.0 Petroleum-based oil and flammable liquid interceptors and pre-treatment.**

6           An operation that generates a discharge that contains petroleum-based oily, flammable, or  
7           both types of waste must install and maintain an interceptor, hold haul tank, or other pre-  
8           treatment system that complies with Chapter 15-10 (*Wastewater Regulations*) of the City  
9           Code and as authorized by Austin Water Utility. An interceptor or other pre-treatment  
10          system, tank, or pump installed must be accessible and by event to the atmosphere in a  
11          manner approved by the City Code.

12          **1101.2 Where Required.** Roofs and courtyards must drain into a separate storm sewer  
13          system or to some other place of disposal, satisfactory to the authority having  
14          jurisdiction. For new construction or additions, the post construction site discharge is not  
15          to exceed the discharge rate prior to construction.

16          **1103.5 Sizing of rain piping.** The required size of rainwater piping is based on a  
17          maximum of five inches of rainfall per hour that falls on a given roof area calculated in  
18          square feet. Five inches per hour must be used to size both primary rainwater systems and  
19          overflow or emergency rainwater systems.

20          **1103.6 Window areaway drains.** A window areaway drain must terminate to a location  
21          that is approved by the authority having jurisdiction. An areaway that does not exceed 10  
22          square feet in an area may discharge to the subsoil drain through a two inch discharge  
23          pipe. An areaway that exceeds 10 or more square feet must drain to an approved storm  
24          drainage system.

25          **1106.2 Methods of testing storm drainage systems.** Except for outside leaders and  
26          perforated or open jointed drain tile, the piping of a storm drain system must be tested  
27          when rough piping installation is complete, by water or air, and proven tight. The  
28          authority having jurisdiction may require cleanout plugs to be removed to determine if  
29          the pressure reached all parts of the system. A test required by this section must be  
30          conducted consistent with Section 1106.2.1 or 1106.2.2.

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1 **1106.2.1 Test procedures for material other than polyvinyl chloride (PVC)**  
2 **drainage piping.** This section applies to piping material that is not PVC.

- 3 1. A storm drainage system may be tested with water or air.
- 4 2. When utilizing a water test, the level of water must be visible so that an  
5 inspector can mark the level of the water unless the system is filled to the  
6 point of overflow.
- 7 3. A water or air test must be maintained for at least 15 minutes prior to the  
8 start of the inspection.
- 9 4. If tested with air, the entire portion of the system tested must be subjected to  
10 a five pound per square inch air test for 15 minutes.
- 11 5. If moisture conditions make it impractical to verify tightness of joints in a  
12 drainage system with a water test, the system must be tested with air using a  
13 Class IA diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent  
14 of the span. See Section 318.0 (*Test Gauges*) of the Plumbing Code for  
15 gauge requirements.
- 16 6. To test with water in a single story building, the storm water system stacks  
17 must be plugged and completely filled with water to provide a minimum of  
18 ten feet head-pressure at the highest portion of the system being tested or to  
19 a point of roof drain overflow.
- 20 7. To test with water in a multi-story building, the storm water system stacks  
21 must be plugged and filled to a point of overflow at the roof drain or in a  
22 sectional test. The roof drainage system must be tested with a minimum of  
23 10 foot of head water.
- 24 8. If a leak is detected from the water or air test, the leak must be corrected and  
25 the system re-tested and inspected until the work is found to be tight and that  
26 it conforms to the requirements of the Plumbing Code.

27 **1106.2.2 Testing procedures for plastic roof drainage piping.**

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1. A PVC drainage system must be tested with water or air.
2. The level of water must be visible so that an inspector can mark the level of the water.
3. To test with water in a single story building, the storm water system stacks must be plugged and completely filled with water to provide a minimum of 10 feet head-pressure at the highest portion of the system being tested or to a point of roof drain overflow.
4. To test a multi-story building, the storm water system stacks must be plugged and filled to a point of overflow at the roof drain or a sectional test of the roof drainage system is allowed when tested with a minimum of 10 foot of head water or a three pound per square inch air test for 15 minutes.
5. If moisture conditions make it impractical to verify tightness of joints in a drainage system with a water test, the system must be tested with air using a Class IA diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent of the span. See Section 318.0 (*Test Gauges*) of the Plumbing Code for gauge requirements.
6. A water or air test must be maintained for a minimum of 15 minutes prior to the start of the inspection.
7. In an air test, the entire portion of the system tested must be subjected to a three pound per square inch air test for 15 minutes.
8. If a leak is detected from the water or air test, the leak must be corrected and the system re-tested and inspected until the work is found to be tight and that it conforms to the requirements of the Plumbing Code.

**1203.3.1 Plumbing gas rough inspection.** A rough inspection is required after all piping authorized by the permit is installed, but before any portions of the piping are covered or concealed, and before any fixture, appliance, or shutoff valve is attached to the pipe.

1. Low Pressure Gas Test. This inspection must include an air, carbon dioxide, or nitrogen pressure test. Test pressure must be at least 15 pounds per square inch gauge pressure and held at least 15 minutes with no perceptible drop in pressure.

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1 The Building Official may extend the test time. A Bourbon tube (“spring”) gauge  
2 may be utilized. See Section 318.0 (*Test Gauge*) for gauge requirements.

- 3 2. Medium Pressure Gas Test. For welded piping and piping that carries gas at  
4 pressures that exceed 14 inches water column pressure, the test pressure must be at  
5 least 60 pounds per square inch and must be continued for at least 30 minutes with  
6 no perceptible drop in pressure. The Building Official may extend the test time.  
7 The test may be made using air, carbon dioxide, or nitrogen pressure and must be  
8 made in the presence of the inspector. The permittee must furnish any necessary  
9 apparatus required to conduct the test. A Bourbon tube (“spring”) gauge may be  
10 utilized. See Section 318.0 (*Test Gauge*) for gauge requirements.

11 **1203.3.2 Final gas inspection.** The final test on gas piping must be made after the water  
12 heater, floor furnace, and gas appliance shutoff valves are installed. If changes or  
13 extensions are made to any existing gas piping from a point when no gas stop valve was  
14 provided in the original gas system, the responsible plumber or person must prepare the  
15 entire system to be inspected and tested. Existing gas piping or portions of the gas piping  
16 must be tested consistent with the standards of this section and are not required to meet  
17 the test pressures set forth in Section 1203.3.1 (*Plumbing Gas Rough Inspection*).

- 18 1. Low pressure final gas test. A low-pressure gas distribution system must be tested  
19 with a minimum of five pound per square inch (psi) of air, carbon dioxide, or  
20 nitrogen pressure for 15 minutes using a Class IA diaphragm test gauge that is  
21 calibrated to an accuracy of  $\pm 1$  percent of the span. See Section 318.0 (*Test*  
22 *Gauges*) of the Plumbing Code for gauge requirements.
- 23 2. Medium pressure final gas test. A medium pressure gas distribution system must  
24 be tested with 10 pounds per square inch for the entire system using a Class IA  
25 diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent of the span.  
26 See Section 318.0 (*Test Gauges*) of the Plumbing Code for gauge requirements.  
27 The test must hold tight for at least 30 minutes. The Building Official may extend  
28 the test time.
- 29 3. The permittee must arrange for access for the inspection.
- 30 4. The permittee must furnish any necessary apparatus and labor required to conduct  
31 the test.

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## 1203.5 PULLED METERS, GAS REPAIRS, AND REMODELING.

**1203.5.1 Definitions.** Pulled Gas Meter means an active gas system that was terminated by the gas supplier due to a City Code violation and, prior to restoring service to the customer, will require a permit and passing inspection by the City to verify the system meets City Code requirements. Inspection criteria and procedures are established in Section 1203.5.2 (*Pulled Natural Gas Meter Inspection Criteria*).

**1203.5.2 Pulled natural gas meter inspection criteria.** Before an inspector may authorize a final inspection on a plumbing permit, the permit holder or responsible plumber must meet the following requirements:

1. Pulled meter testing pressure requirements.

a. Low pressure test. A five pound per square inch test must be made on the entire low-pressure natural gas system using a Class IA diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent of the span. See Section 318.0 (*Test Gauges*) of the Plumbing Code for gauge requirements. The test must hold tight for at least 15 minutes.

b. Medium pressure test. A ten pound per square inch test is required for the entire medium pressure gas system using a Class IA diaphragm test gauge that is calibrated to an accuracy of  $\pm 1$  percent of the span. See Section 318.0 (*Test Gauges*) of the Plumbing Code for gauge requirements. The test must hold tight for at least 30 minutes.

2. All natural gas piping, valves, connectors, and appliances installed under a pulled meter plumbing permit must comply with current Plumbing and Mechanical Code requirements.

3. An existing gas valve must be capped if it is no longer in use, which occurs when an adequate number of outlets are available to provide a temperature of 70 degrees three feet above the floor in a habitable room. If an existing valve leaks, it must be replaced with a listed valve and connector.

4. A rubber hose gas connector must be replaced with a listed connector.

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- 1 5. Existing wall vent piping for a gas appliance or water heater may be retained if the  
2 vent meets the following conditions:
  - 3 a. it is properly sized for the appliances serviced;
  - 4 b. it is properly connected for the appliance;
  - 5 c. it is not rusted or deteriorated;
  - 6 d. it terminates above the roofline; and
  - 7 e. it has a minimum of two-inch clearance from combustibles at all points.
- 8 6. An existing water heater must have operable temperature and pressure relief valves  
9 and, when practical, properly sized relief lines. If the water heater lacks an opening  
10 for a properly sized temperature and pressure relief valve, a pressure relief valve  
11 must be installed on the hot water side of the water heater.
- 12 7. Each natural gas appliance must be provided with combustion air consistent with  
13 the product listing. If an existing gas appliance lacks combustion air, properly  
14 sized louvers in doors or ducts must be placed in proper locations.
- 15 8. An existing or replacement water heater located in a garage must be at least 18  
16 inches above the finished floor level unless the water heater is listed to be located  
17 at finished floor level and is protected from damage as required by the Plumbing  
18 Code.
- 19 9. A battery operated smoke detector must be installed outside of each separate  
20 sleeping area in the immediate vicinity of the bedroom.

21 **1212.10 Liquefied petroleum gas systems.** In addition to being licensed by the State of  
22 Texas Board of Plumbing Examiners, an installer may be required by a regulatory  
23 authority such as the Texas Railroad Commission and the Austin Fire Department to be  
24 certified or licensed to install gas piping and appurtenances. A certification may include  
25 certified welder, certified installer of factory designed gas piping systems, or certified or  
26 licensed LP Gas piping installer. When installation, alteration, repair or testing of the gas  
27 piping system is complete, the installer must identify all piping installations that require

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certified or licensed personnel and must attach to the end of the piping, nearest the service entrance, a decal or tag made of metal or other permanent material that includes the following:

1. the installer's name;
2. the license or certification number; and
3. the date piping was installed, altered, repaired, or tested.

**1212.10.1 Liquefied petroleum approval.** Liquefied petroleum container size, location, and service line are approved by the Austin Fire Department.

**1301.0 Medical gas and vacuum piping systems.** Before the first inspection, a medical gas installer must present a copy of the gas installer's medical gas endorsement to the plumbing inspector.

**1302.0 Medical gas plan review and permits.** An engineer licensed by the State of Texas must design a plan for a medical gas system that is installed for human uses. A plan must be submitted and reviewed prior to installing or revising a medical gas system. If approved, a medical gas permit may be obtained by a responsible master plumber who is licensed by the State of Texas and has a medical gas endorsement. The permit is required to alter or install a medical gas system.

**1303.0 Liquid ring surgical and dental vacuum pump installations.** Liquid ring surgical and dental vacuum pumps cannot be installed within the City.

**1304.0 Category 3 vacuum systems.** A drain must be connected directly to the sanitary waste system consistent with NFPA 99-2015 Figure A.5.3.3.10.1.3(4)(a).

### **1305.0 MEDICAL GAS FOR NON-HUMAN USES.**

**1305.1 Piping materials for field-installed medical gas and vacuum systems for non-human uses.**

1. Hard drawn seamless copper tube:

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- 1 a. ASTM B 88, Standard Specification for Seamless Copper Water Tube,  
2 Copper Tube (K,L,M);
- 3 b. ASTM B 280, Standard Specification for Seamless Copper Tubing for Air  
4 Conditioning and Refrigeration Field Service, Copper ACR Tube;
- 5 c. ASTM B 819, Standard Specification for Seamless Copper Tube for Medical  
6 Gas Systems, Copper Medical Gas Tubing (K or L).

### 7 2. Stainless steel tube

8 **Exception:** Piping for a field installed vacuum system for non-human use may be  
9 installed with schedule 40 polyvinyl chloride (PVC).

### 10 **1305.2 Testing requirements.**

11 **1305.2.1** The test pressure for positive-pressure gas piping installed in medical gas  
12 systems for non-human uses must be 1.5 times the system working pressure, but no less  
13 than a gauge pressure of 1035 kpa (150 psi).

14 **1305.2.2** The test pressure for a copper vacuum system installed for non-human uses  
15 must be a gauge pressure of 105 kpa (15 psi).

16 **1305.2.3** Piping for a field installed vacuum system using PVC pipe and fittings for non-  
17 human uses must be subjected to a vacuum of not less than 485 mm (19 inches) gauge  
18 HgV, using either the vacuum source equipment or a test pump.

19 **1500.0** Unless otherwise required by City Code, installing an alternate or auxiliary water  
20 source system is voluntary and optional. The authority having jurisdiction may not  
21 require a gray-water, reclaimed water, alternate water source, or any other auxiliary water  
22 system be installed unless required by another provision of the City Code. If a gray-  
23 water, reclaimed water, alternate water source, or any other auxiliary water system is  
24 installed, the system must comply with this chapter.

25 **1501.2 System design.** An alternate water source system, as defined in the Plumbing  
26 Code, must be designed by a person registered or licensed to perform plumbing design

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1 work. A component, piping, or fitting used in an alternate water source system must be  
2 listed.

3 **Exceptions.** The following systems may be designed by a person who is not  
4 registered or licensed to perform plumbing design work:

5 1. A rainwater catchment or condensate collection system for irrigating:

6 a. landscaping for a one family dwelling when the system's outlets, piping, and  
7 other components are located on the exterior of the single family dwelling;  
8 or

9 b. landscaping for a site when the system's maximum storage capacity is 500  
10 gallons (1893 L).

11 2. A gravity gray water system with a maximum discharge capacity of 250 gallons  
12 per day (0.011 L/s) under a Section 103.1.3 homestead permit issued for a one-or-  
13 two family dwelling or townhome.

14 3. An on-site treated non-potable water system for a one family dwelling with a  
15 maximum discharge capacity of 250 gallons per day (0.011 L/s).

16 4. A laundry to landscape system.

17 **1501.3 Permit.** It is unlawful for a person to construct, install, alter, or cause to be  
18 constructed, installed, or altered an alternate water source system in a building or on a  
19 premise without first obtaining a permit to do such work from the authority having  
20 jurisdiction.

21 **Exception.** A plumbing permit is not required for non-potable rainwater or condensate  
22 collection systems that are not connected to any water line or fixture that is supplied  
23 by potable water if the:

24 1. gravity type exterior non-potable rainwater catchment system or non-potable  
25 condensate collection system is used only for outdoor applications; or

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2. non-potable rainwater catchment or non-potable condensate collection system is 500 gallons (1893 L) or less and is used only for outdoor applications.

**1501.3.1 Registration required.** An auxiliary water system must be registered with the authority having jurisdiction. Registration includes the:

1. site address of the auxiliary water system;
2. storage capacity of the auxiliary water system;
3. type of auxiliary water; and
4. intended use of the auxiliary water.

**Exception.** A non-potable rainwater catchment or non-potable condensate collection system that is 500 gallons (1893 L) or less is not required to be registered.

## Table 1501.5 Minimum Alternate Water Source Testing, Inspection, and Maintenance Frequency.

|  |   |
|--|---|
| Inspect and clean filters and screens, a replace (when necessary)  | Every 3 months  |
| Inspect and verify disinfection, filters, and water quality treatment devices and systems are operational and maintaining minimum water quality requirements as determined by the authority having jurisdiction. | As required by manufacturer's instructions and the authority having jurisdiction.                         |
| Inspect and clear debris from rainwater gutters, downspouts, and roof washers.   | Every 6 months  |
| Inspect and clear debris from roof or other aboveground rainwater collection surfaces.   | Every 6 months  |
| Remove tree branches and vegetation overhanging roof or other aboveground rainwater collection surfaces.   | As needed   |
| Inspect pumps and verify operation.  | After installation and every 12 months thereafter.  |
| Inspect valves and verify operation.   | After installation and every 12 months thereafter.  |
| Inspect pressure tanks and verify operation.   | After installation and every 12 months thereafter.  |
| Clear debris from and inspect storage tanks, locking devices, and verify operation.  | After installation and every 12 months thereafter.  |
| Inspect caution labels and markings.   | After installation and every 12 months thereafter.  |
| Inspect and maintain mulch basins for gray water irrigation systems.   | As needed to maintain mulch depth and prevent ponding and runoff.   |
| Cross-connection inspection and test*  | After installation and reoccurring thereafter as deemed appropriate by the authority having jurisdiction. |

\*The cross-connection test must be performed consistent with the requirements of this chapter.

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1 **1501.5.2 Maintenance log.** A maintenance log is required for an alternate water system  
2 that requires a permit under Section 1501.3. The maintenance log must be maintained by  
3 the property owner and be made available for inspection. The property owner or  
4 designated appointee must ensure that the maintenance log includes all records related to  
5 testing, inspection, and maintenance required in Table 1501.5. The purpose of the  
6 maintenance log is to demonstrate the frequency of inspection and maintenance for each  
7 system.

8 **1501.7 Minimum water quality requirements.** An alternate water source system must  
9 comply with applicable water quality requirements established by the authority having  
10 jurisdiction. In the event water quality requirements are not established, a property should  
11 comply with EPA/625/R-04/108, which includes the recommended water reuse  
12 guidelines.

13 **Exceptions.** Water treatment is not required

- 14 1. for rainwater catchment systems that are used for aboveground irrigation;
- 15 2. for gray water used for subsurface irrigation;
- 16 3. for rainwater catchment systems used for subsurface or drip irrigation; and
- 17 4. for alternate water or auxiliary water that originates from a well, river, or lake and  
18 is used only for outdoor irrigation.

19 **1501.11 Inspection and testing.** An alternate water source system must be inspected and  
20 tested consistent with Section 1501.11.1 and Section 1501.11.2.

21 **1501.11.1 Supply system inspection and test.** An alternate water source system  
22 must be inspected and tested consistent with the Plumbing Code's requirements for  
23 testing potable water piping.

24 **1501.11.2 Cross-connection inspection and test.** Initial and subsequent  
25 inspections and tests are required for potable and alternate water source systems.  
26 The systems must be isolated from each other, inspected independently, and  
27 independently tested to ensure cross-connection is not occurring. The inspection

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1 and test required in this section must comply with Sections 1501.11.2.1 through  
2 1501.11.2.4.

3 **1501.11.2.1 Visual system inspection.** Before commencing cross-connection  
4 testing, the applicant must conduct a dual system inspection using a registered  
5 professional authorized by the City and other authorities with jurisdiction that  
6 checks:

- 7 1. the meter locations of alternate water source and potable water lines to  
8 verify that no modifications were made and no cross-connections are  
9 visible;
- 10 2. the pumps and equipment, equipment room signs, and exposed piping  
11 in equipment room;
- 12 3. the valves to ensure that valve lock seals are still in place and intact;  
13 and
- 14 4. the whether the valve control door signs remain in place.

15 **1501.11.2.2 Cross-connection test.** A registered professional authorized by  
16 the authority having jurisdiction and other authorities having jurisdiction  
17 must follow the procedure in this section to determine whether cross-  
18 connection has occurred.

- 19 1. The potable water system is activated and pressurized and the  
20 alternate water source system is shut down, depressurized, and  
21 drained.
- 22 2. The potable water system must remain pressurized for a minimum  
23 period of time as required by the authority having jurisdiction while  
24 the alternate water source system remains empty. The period of time  
25 the alternate water source system must remain depressurized is based  
26 on the size and complexity of the potable and alternate water source  
27 distribution systems. The minimum period of time an alternate water  
28 source system must remain depressurized is one hour.

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- 1           3.     The drain on the alternate water source must be checked for flow  
2           during the test. Fixtures, potable and alternate source, must be tested  
3           and inspected for flow. Flow from an alternate water source system  
4           outlet indicates a cross-connection. No flow from a potable water  
5           system outlet indicates that it is connected to the alternate water  
6           source system.
- 7           4.     The potable water system must depressurized and drained.
- 8           5.     The alternate water source system must be activated and pressurized.
- 9           6.     The alternate water source system must remain pressurized for a  
10          minimum period of time specified by the authority having jurisdiction  
11          while the potable water system is empty. The minimum period the  
12          potable water system will remain depressurized is one hour and is  
13          determined on a case-by-case basis.
- 14          7.     Fixtures, potable and alternate source, must be tested and inspected  
15          for flow. From a potable water system outlet indicates a cross-  
16          connection. No flow from an alternate water source outlet indicates  
17          that it is connected to the potable water system.
- 18          8.     The drain on the potable water system must be checked for flow  
19          during the test and at the end of the test.
- 20          9.     When there is no flow detected in the fixtures that indicate a cross-  
21          connection, the potable water system must be re-pressurized.

22           **1501.11.2.3 Discovery of cross-connection.** In the event a cross-connection  
23           is discovered, the customer must immediately contact Austin Water Utility  
24           and

- 25           1.     shut down, at the meter, alternate water source piping to the building  
26           and drain the alternate water source riser;
- 27           2.     shut down, at the meter, the potable water piping to the building;

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- 1           3.     uncover and disconnect the cross-connection;
- 2           4.     retest the building using the procedures in Sections 1501.11.2.1 and
- 3                 1501.11.2.2;
- 4           5.     chlorinate the potable water system with 50 parts-per-million (ppm)
- 5                 chlorine for 24 hours; and
- 6           6.     flush the potable water system after 24 hours;
- 7           7.     perform a standard bacteriological test; and
- 8           8.     when bacteriological test results are acceptable, recharge the potable
- 9                 water system.

10           **1501.11.2.4 Reoccurring inspection and testing.** A reoccurring inspection  
11 of the alternate water source system that complies with Section 1501.11.2.1  
12 is required. Unless site conditions do not require, reoccurring cross-  
13 connection testing that complies with Section 1501.11.2.2 is required by the  
14 authority having jurisdiction. The test for a multi-family, industrial,  
15 institutional, or commercial site with an alternate water source must occur  
16 once every four years. Cross-connection testing is required at any time the  
17 potable water system or the alternate water source system is altered or when  
18 required by the authority having jurisdiction. Alternate testing requirements  
19 may be authorized by the authority having jurisdiction.

20           **1502.1 General.** This section applies to the construction, alteration, and repair of gray  
21 water systems.

22           **Exception.** A system installed consistent with Section 1502.16 (*Laundry to*  
23 *Landscape Program*).

24           **1502.2.1 Surge capacity.** A gray water system must be designed to accommodate peak  
25 flow rates and distribute the total amount of estimated gray water on a daily basis to a  
26 subsurface irrigation field, subsoil irrigation field, or mulch basin without surfacing,  
27 ponding, or runoff. A surge tank is required to accommodate peak flow rates and to

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1 distribute the total amount of gray water by gravity drainage. The water discharge for a  
2 gray water system must be based on Section 1502.8.1 or Section 1502.8.2.

3 **Table 1502.4 Location of Gray Water Systems<sup>7</sup>**

| MINIMUM HORIZONTAL DISTANCE IN CLEAR<br>REQUIRED FROM | SURGE TANK<br>(FEET) | SUBSURFACE AND SUBSOIL<br>IRRIGATION FIELD AND<br>MULCH BED (FEET) |
|---|----------------------|--|
| Building structures <sup>1</sup>                      | 5 <sup>2,9</sup>     | 2 <sup>3,8</sup>   |
| Property line adjoining private property              | 5                    | 5 <sup>8</sup>   |
| Water supply wells <sup>4</sup>                       | 50                   | 100  |
| Sewage pits or cesspools                              | 5                    | 5  |
| Sewage disposal fields <sup>10</sup>                  | 5                    | 4 <sup>6</sup>   |
| Septic tank   | 0                    | 5  |
| On-site domestic water service line                   | 5                    | 5  |
| Pressurized public water main                         | 10                   | 10   |

For SI units: 1 foot = 304.8 mm

Notes:

- 1 Including porches and steps, whether covered or uncovered; breezeways; roofed carports; roofed patios; carports; covered walks; covered driveways; and similar structures or appurtenances.
- 2 When approved by the authority having jurisdiction, the distance may be reduced to 0 feet for aboveground tanks.
- 3 Reference to a 45 degree (0.79 rad) angle from foundation.
- 4 When special hazards are involved, the distance required must be increased as directed by the authority having jurisdiction.
- 5 Add 2 feet (610 mm) for each additional foot of depth that exceeds 1 foot (305 mm) below the bottom of the drain line.
- 6 Parallel construction or for crossings are not allowed unless approved by the Authority having jurisdiction.
- 7 The distance may be reduced to 1.5 feet (457 mm) for drip and mulch basin irrigation.
- 8 The distance may be reduced to 0 feet for surge tanks of 75 gallons (284 L) or less.
- 9 When irrigation or disposal fields are installed in sloping ground, the minimum horizontal distance between a part of the distribution system and the ground surface must be 15 feet (4572 mm).

4 **1502.6 Prohibited location.** A gray water system is not allowed on a site the authority  
5 having jurisdiction determines has insufficient lot area or has inappropriate soil  
6 conditions that will not adequately absorb the gray water to prevent ponding, surfacing,  
7 or run off. A gray water system is not allowed in the Edwards Aquifer Recharge Zone or  
8 in any other area the authority having jurisdiction determines is geologically sensitive.

9 **1502.7 Drawings and specifications.** Before a permit is issued for a gray water system  
10 or during construction, the following information is required with, or in, a plot plan:

- 11 1. drawn to scale and completely dimensioned and shows lot lines and structures,  
12 direction and approximate slope of the surface, location of present or proposed  
13 retaining walls, drainage channels, water supply lines, wells, paved areas, and  
14 structures on the plot; includes the number of bedrooms and plumbing fixtures in  
15 each structure; shows the location of a private sewage disposal system and

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1 expansion area or building sewer connecting to the public sewer; and shows the  
2 proposed location of the gray water system;

3 2. details of construction necessary to ensure compliance with the requirements of  
4 this chapter and a full description of the complete installation, methods,  
5 construction, and materials as required by the authority having jurisdiction;

6 3. details for holding tanks, including dimensions, structural calculations, bracings,  
7 and other pertinent data as required;

8 4. a log of soil formations and groundwater level based on test holes dug in proximity  
9 to proposed irrigation area, together with a statement of water absorption  
10 characteristics of the soil at the proposed site based on approved percolation tests;  
11 and

12 5. distance between the plot and surface waters such as lakes, ponds, rivers, or  
13 streams, and the slope between the plot and the surface water, when in close  
14 proximity.

## 15 **1502.16 Laundry to landscape system.**

16 **1502.16.1 General.** This section applies when installing, altering, or repairing a laundry  
17 to landscape systems.

18 **1502.16.2 System design.** A laundry to landscape system must be designed

19 1. to divert gray water from a domestic laundry washing-machine located in a private  
20 one-or-two family dwelling only;

21 2. to allow the private residence, using one-inch tubing, to direct the flow of gray  
22 water from the domestic laundry washing-machine to an irrigation field for  
23 landscape irrigation or to divert to the building sewer;

24 3. so that all gray water is contained to the site where it is generated without ponding,  
25 surfacing, or run off;

26 4. to minimize contact with humans and domestic pets; and

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1           5. so that it does not constitute a health nuisance.

2           **1502.16.3 Discharge.** The laundry to landscape system may discharge to a subsurface  
3 irrigation system, a subsoil irrigation system, or mulch basin. Above ground discharge is  
4 prohibited.

5           **1502.16.4 Uses.** The laundry to landscape system may be used to irrigate landscape on  
6 the exterior of the structure but may not be used to irrigate root crops or food crops that  
7 come in contact with soil and are intended for human consumption.

8           **1502.16.5 Prohibited locations.** A laundry to landscape system is not allowed on a site  
9 that exceeds a three to one slope. A laundry to landscape system must comply with  
10 Sections 1502.16.4 and 1502.16.6.

11           **1502.16.6 Connections to plumbing systems.** A laundry to landscape system does not  
12 authorize a person to cut into or make any permanent physical attachment to the  
13 plumbing system. A laundry to landscape system may not include a change to, alteration  
14 of, or repair of any potable water connection; may not include any other pump  
15 installation, other than the pump equipped with, or manufactured as part of the domestic  
16 laundry-washing machine; and may not affect or alter any other building, plumbing,  
17 electrical, or mechanical components such as structural features, egress, fire-life safety,  
18 sanitation, potable water supply piping, or accessibility to the property.

19           **1502.16.7 Permits and inspections.** It is unlawful for a person to construct, install, alter,  
20 or cause to be constructed, installed, or altered a laundry to landscape system in a  
21 building or premise without first obtaining a permit to do such work from the authority  
22 having jurisdiction.

23           **1503.1.1 Cross-connection safeguards.** A site served by reclaimed water must protect  
24 the public drinking water supply consistent with the requirements in Section 603.5.21 of  
25 the Plumbing Code.

26           **1503.5 Initial cross-connection test.** Before a building is occupied or the system is  
27 activated, a cross-connection test that complies with Section 1501.11 is required. Final  
28 approval cannot be granted until the test is deemed successful by the authority having  
29 jurisdiction.

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1 **1504.1 General.** This section applies when installing, constructing, altering, or repairing  
2 an on-site treated non-potable water system intended to supply uses such as water closets,  
3 urinals, trap primers for floor drains and floor sinks, above and below ground irrigation,  
4 and other uses approved by the authority having jurisdiction. A commercial, institutional,  
5 or industrial type occupancy may use treated gray water for indoor non-potable fixtures  
6 and outdoor above grade distribution. Domestic treated gray water may not be used in a  
7 domestic structure or be discharged above grade on a domestic site.

8 **1504.1.1 Cross-connection safeguards.** A site served by an on-site treated non-  
9 potable system water must protect the public drinking water supply consistent with  
10 the requirements in Section 603.5.21 of the Plumbing Code.

11 **1504.5 Initial cross-connection test.** Before a building is occupied or the system is  
12 activated, a cross-connection test that complies with Section 1501.11 is required. Final  
13 approval cannot be granted until the test is deemed successful by the authority having  
14 jurisdiction.

### 15 **1505.0 OTHER ON-SITE NON-POTABLE WATER SYSTEMS.**

16 **1505.1 Applicability.** This chapter applies when installing, constructing, altering, or  
17 repairing an auxiliary or alternate water source system that is not specifically identified in  
18 the Plumbing Code (referred to as “other on-site non-potable water systems”). Well  
19 water, lake water, river water, condensate collection water, and other water sources that  
20 do not originate from sewage are types of other on-site non-potable water systems.

21 **1505.1.1 Cross-connection safeguards.** A site served by other on-site non-potable  
22 water systems must protect the public drinking water supply consistent with the  
23 requirements in Section 603.5.21 of the Plumbing Code

24 **1505.2 General.** Installation, construction, alteration, and repair of other on-site non-  
25 potable water systems intended to supply uses such as water closets, urinals, trap primers  
26 for floor drains and sinks, irrigation, industrial processes, water features, cooling tower  
27 makeup and other uses are subject to approval by the authority having jurisdiction.

28 **1505.3 Plumbing plan submission.** A permit may not be issued until after plumbing  
29 plans that include data satisfactory to the authority having jurisdiction are submitted and  
30 approved. The authority having jurisdiction must approve changes or connections to the

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1 other on-site non-potable water system or to the potable water system within a site that  
2 contains an other on-site non-potable water system.

3 **1505.4 System changes.** The City must approve changes or connections to the other on-  
4 site non-potable water system or to the potable water system within a site that contains an  
5 other on-site non-potable water system are subject to approval by the authority having  
6 jurisdiction.

7 **1505.5 Connections to potable or reclaimed (recycled) water systems.** Other on-site  
8 non-potable water systems may not be connected directly to a potable water supply or an  
9 alternate water source system. If the potable or reclaimed (recycled) water supply  
10 connection is protected by an air gap or reduced-pressure principle backflow preventer  
11 installed consistent with the Plumbing Code, then potable or reclaimed (recycled) water  
12 may be used as makeup water for an other on-site non-potable water system.

13 **Exception.** If well water is the source of the other on-site non-potable water  
14 system, a direction connection to a reclaimed (recycled) water system with or  
15 without backflow protection is prohibited.

16 **1505.6 Initial cross-connection test.** Before a building is occupied or the system is  
17 activated, a cross-connection test that complies with Section 1501.11 is required. Final  
18 approval cannot be granted until the test is deemed successful by the City.

19 **1505.7 Sizing.** Other on-site non-potable water system distribution piping for indoor  
20 applications must be sized based on the sizing for portable water piping that is required  
21 by the Plumbing Code.

22 **1505.8 Other on-site non-potable water system materials.** Other on-site non-potable  
23 water system materials must comply with Sections 1505.8.1 through 1505.8.2.

24 **1505.8.1 Water supply and distribution materials.** Unless otherwise provided  
25 for in this Section, other on-site non-potable water system supply and distribution  
26 materials must comply with the Plumbing Code's requirements for potable water  
27 supply and distribution systems.

28 **1505.8.2 Storage tanks.** Other on-site non-potable water storage tanks must  
29 comply with Section 1505.10.4.

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1 **1505.9 Other on-site non-potable water system color and marking information.** The  
2 requirements in 601.3 apply to other on-site non-potable water systems.

3 **1505.10 Design and installation.**

4 **1505.10.1 Outside hose bibs.** An outside hose bib may be allowed on other on-site  
5 non-potable water systems and, if used, must be marked with the words  
6 “CAUTION: NONPOTABLE WATER, DO NOT DRINK” and the figure:



8 **1505.10.2 Deactivation and drainage for cross-connection test.** The other on-  
9 site non-potable water system and potable water system within the building must  
10 be provided with required appurtenances (e.g. valves or air or vacuum relief  
11 valves) that allow each system to be deactivated or drained as required for a cross-  
12 connection test that complies with Section 1501.11.

13 **1505.10.3 Minimum water quality.** Water quality for other on-site non-potable  
14 water is based on the intended uses and must comply with the standards set by the  
15 authority having jurisdiction. Treatment is not required for other on-site non-  
16 potable water that is used for subsurface or non-sprinkled surface irrigation.

17 **1505.10.4 Storage tanks.** A storage tank must be constructed and installed  
18 consistent with the Sections 1505.10.4.1 through 1505.10.4.7. Storage tanks are  
19 subject to approval by the authority having jurisdiction.

20 **1505.10.4.1 Construction.** Storage tanks must be constructed of solid,  
21 durable materials that are not subject to excessive corrosion or decay, and  
22 must be watertight.

23 **1505.10.4.2 Location.** A storage tank may be installed above or below  
24 grade.

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1 **1505.10.4.3 Above grade.** An above grade storage tank must be constructed  
2 of an opaque material and approved for use in direct sunlight or must be  
3 shielded from direct sunlight. Tanks must be installed in a location that is  
4 accessible for inspections and cleaning. The tank must be installed on a  
5 foundation or platform that is constructed to accommodate loads as required  
6 in the Building Code.

7 **1505.10.4.4 Below grade.** A below grade storage tank must be designed and  
8 constructed to withstand anticipated earth or other loads. A cover of a  
9 storage tank must be capable of supporting an earth load of at least 300  
10 pounds per square foot (lb/ft<sup>2</sup>) (1465 kg/m<sup>2</sup>). The tank must be provided with  
11 a manhole that is located at least four inches (102 mm) above the  
12 surrounding grade. The surrounding grade must be sloped away from the  
13 manhole. The tank must be ballasted, anchored, or otherwise secured to  
14 prevent the tank from floating out of the ground when empty. The combined  
15 weight of the tank and hold down system must meet or exceed the buoyancy  
16 force of the tank.

17 **1505.10.4.5 Drainage and overflow.** A storage tank must be capable of  
18 draining and cleaning. The overflow drain cannot be equipped with a shutoff  
19 valve. The tank must discharge consistent with the Plumbing Code's  
20 requirements for storm drainage systems. If the overflow drain discharges to  
21 the storm drainage system, it must be protected by a backwater valve or  
22 other approved method.

23 **1505.10.4.5(A) Overflow outlet size.** The overflow outlet must be  
24 sized to accommodate the flow of the water entering the tank, but not  
25 less than aggregate cross-sectional area of inflow pipes.

26 **1505.10.4.6 Opening and access protection.**

27 **1505.10.4.6(A) Animals and insects.** The opening for the tank must  
28 be protected to prevent insects, birds, and rodents from entering the  
29 tank.

30 **1505.10.4.6(B) Human access.** If the opening for the tank exceeds 12  
31 inches (305 mm) in diameter, the opening must be secured to prevent

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1 tampering and unintended entry using either a lockable device or other  
2 approved method.

3 **1505.10.4.7 Marking.** A tank must be permanently marked with its capacity  
4 and the words “NONPOTABLE WATER”. If the tank provides an opening  
5 to allow a person to enter the tank, the opening must be marked with the  
6 words “DANGER-CONFINED SPACE.”

7 **1505.10.5 Pumps.** A pump that serves other on-site non-potable water system  
8 must be listed. A pump that supplies water to water closets, urinals, and trap  
9 primers must be capable of delivering at least 15 pounds-force per square inch (psi)  
10 (103 kPa) residual pressure at the highest and most remote outlet served. When the  
11 water pressure in the water supply system within the building exceeds 65 psi (552  
12 kPa), a pressure reducing valve must be installed to reduce the pressure to 65 psi  
13 (552 kPa) or less to water outlets in the building consistent with the requirements  
14 of the Plumbing Code.

15 **1505.10.6 Water quality devices and equipment.** Devices and equipment used to  
16 treat other on-site non-potable water to minimum water quality requirements must  
17 be listed or labeled (third-party certified) by a listing agency (accredited  
18 conformity assessment body) and approved for the intended application.

19 **1505.10.7 Freeze protection.** A tank or piping installed in a location subject to  
20 freezing must be provided with approved freeze protection.

21 **1505.10.8 Required filters.** A filter that allows particulates not larger than 100  
22 microns to pass must be provided for non-potable water supplied to water closets,  
23 urinals, trap primers, and drip irrigation systems.

24 **1505.11 Signs.** Signs must be displayed in a building using other on-site non-potable  
25 water and must comply with Sections 1505.11.1 and 1505.11.2.

26 **1505.11.1 Commercial, industrial, and institutional restroom signs.** A sign must be  
27 installed within a restroom in a commercial, industrial, or institutional occupancy that  
28 uses other on-site non-potable water for water closets, urinals, or both. Each sign must  
29 contain ½ inch (12.7 mm) letters of a highly visible color on a contrasting backboard. The  
30 sign must be posted so that it is visible to users. The number and location of signs must

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1 be approved. A sign must contain the words “TO CONSERVE WATER, THIS  
2 BUILDING USES NONPOTABLE WATER TO FLUSH TOILETS AND URINALS.”

3 **1505.11.2 Equipment room signs.** A room that contains other on-site non-potable water  
4 equipment must display a sign that contains the words “CAUTION NONPOTABLE  
5 WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM.  
6 NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY  
7 WORK ON THIS WATER SYSTEM” in 1 inch (25.4 mm) letters. The sign must be  
8 displayed in a location that is visible to anyone working on or near the equipment.

9 **1505.12 Inspection and testing.** Other on-site non-potable water systems must be  
10 inspected and tested consistent with the requirements in Section 1505.12.1 and Section  
11 1505.12.2.

12 **1505.12.1 Supply system inspection and test.** Other on-site non-potable water  
13 systems must be inspected and tested consistent with the requirements in the  
14 Plumbing Code for testing potable water systems.

15 **1505.12.2 Cross-connection inspection and test.** Initial and subsequent  
16 inspections and tests are required for potable and other on-site non-potable water  
17 systems. The systems must be isolated from each other, inspected independently,  
18 and independently tested to ensure cross-connection is not occurring. The  
19 inspection and test required in this section must comply with Section 1501.11.

20 **1505.12.3 Reoccurring inspection and test.** A reoccurring inspection of the other  
21 on-site non-potable water system that complies with Section 1501.11.2.1 is  
22 required. Unless site conditions do not require, reoccurring cross-connection  
23 testing that complies with Section 1501.11.2.2 is required by the authority having  
24 jurisdiction. The test for a multi-family, industrial, institutional, or commercial site  
25 with an other on-site non-potable water system must occur once every four years.  
26 Cross-connection testing is required at any time the potable water system or the  
27 other on-site non-potable water system is altered or when required by the authority  
28 having jurisdiction. Alternate testing requirements may be authorized by the  
29 authority having jurisdiction.

30 **Table 1601.5 Minimum Alternate Water Source, Testing, Inspection, and**  
31 **Maintenance Frequency**

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|  |   |
|--|---|
| Inspect and clean filters and screens, a replace (when necessary)  | Every 3 months  |
| Inspect and verify disinfection, filters, and water quality treatment devices and systems are operational and maintaining minimum water quality requirements as determined by the authority having jurisdiction. | As required by manufacturer's instructions and the authority having jurisdiction.                         |
| Inspect and clear debris from rainwater gutters, downspouts, and roof washers.   | Every 6 months  |
| Inspect and clear debris from roof or other aboveground rainwater collection surfaces.   | Every 6 months  |
| Remove tree branches and vegetation overhanging roof or other aboveground rainwater collection surfaces.   | As needed   |
| Inspect pumps and verify operation.  | After installation and every 12 months thereafter.  |
| Inspect valves and verify operation.   | After installation and every 12 months thereafter.  |
| Inspect pressure tanks and verify operation.   | After installation and every 12 months thereafter.  |
| Clear debris from and inspect storage tanks, locking devices, and verify operation.  | After installation and every 12 months thereafter.  |
| Inspect caution labels and markings.   | After installation and every 12 months thereafter.  |
| Inspect and maintain mulch basins for gray water irrigation systems.   | As needed to maintain mulch depth and prevent ponding and runoff.   |
| Cross-connection inspection and test*  | After installation and reoccurring thereafter as deemed appropriate by the authority having jurisdiction. |
| Test water quality of rainwater catchment system required by Section 1602.9.4  | Every 12 months and after system renovation or repair.  |
| *The cross-connection test must be performed consistent with the requirements of this chapter.   |   |

1 **1602.1.1 Cross-connection safeguards.** A site served by a non-potable rainwater  
 2 catchment system must protect the public drinking water supply consistent with the  
 3 requirements in Section 603.5.21 of the Plumbing Code.

4 **1602.5 Initial cross-connection test.** Before a building is occupied or the system is  
 5 activated, a cross-connection test that complies with Section 1602.11 is required. Final  
 6 approval cannot be granted until the test is deemed successful by the authority having  
 7 jurisdiction.

8 **1602.11 Inspection and testing.** A rainwater catchment system must be inspected and  
 9 tested consistent with Section 1602.11.1 and Section 1602.11.2.

10 **1602.11.1 Supply system inspection and test.** A rainwater catchment system must  
 11 be inspected and tested consistent with the Plumbing Code's requirements for  
 12 testing potable water piping.

13 **1602.11.2 Cross-connection inspection and test.** Initial and subsequent  
 14 inspections and tests are required for potable and a rainwater catchment systems.  
 15 The systems must be isolated from each other, inspected independently, and  
 16 independently tested to ensure cross-connection is not occurring. The inspection

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1 and test required in this section must comply with Sections 1602.11.2.1 through  
2 1602.11.2.4.

3 **1602.11.2.1 Visual system inspection.** Before commencing cross-  
4 connection testing, the applicant must conduct a dual system inspection  
5 using a registered professional authorized by the City and other authorities  
6 with jurisdiction that checks the pumps and equipment, equipment room  
7 signs, and exposed piping in equipment room.

8 **1602.11.2.2 Cross-connection test.** A registered professional authorized by  
9 the authority having jurisdiction and other authorities having jurisdiction  
10 must follow the procedure in this section to determine whether cross-  
11 connection has occurred.

- 12 1. The potable water system is activated and pressurized and the  
13 rainwater catchment system is shut down, depressurized, and drained.
- 14 2. The potable water system must remain pressurized for a minimum  
15 period of time as required by the authority having jurisdiction while  
16 the rainwater catchment system remains empty. The period of time the  
17 rainwater catchment system must remain depressurized is based on  
18 the size and complexity of the potable and rainwater catchment  
19 distribution systems. The minimum period of time a rainwater  
20 catchment system must remain depressurized is one hour.
- 21 3. The drain on the rainwater catchment system must be checked for  
22 flow during the test. Fixtures, potable and rainwater catchment, must  
23 be tested and inspected for flow. Flow from a rainwater catchment  
24 system outlet indicates a cross-connection. No flow from a potable  
25 water system outlet indicates that it is connected to the rainwater  
26 catchment system.
- 27 4. The potable water system must depressurized and drained.
- 28 5. The rainwater catchment system must be activated and pressurized.

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- 1 6. The rainwater catchment system must remain pressurized for a  
2 minimum period of time specified by the authority having jurisdiction  
3 while the potable water system is empty. The minimum period the  
4 potable water system will remain depressurized is one hour and is  
5 determined on a case-by-case basis.
- 6 7. Fixtures, potable and alternate source, must be tested and inspected  
7 for flow. From a potable water system outlet indicates a cross-  
8 connection. No flow from an rainwater catchment outlet indicates that  
9 it is connected to the potable water system.
- 10 8. The drain on the potable water system must be checked for flow  
11 during the test and at the end of the test.
- 12 9. When there is no flow detected in the fixtures that indicate a cross-  
13 connection, the potable water system must be re-pressurized.

14 **1602.11.2.3 Discovery of cross-connection.** In the event a cross-connection  
15 is discovered, the customer must immediately contact Austin Water Utility  
16 and:

- 17 1. shut down, at the meter, alternate water source piping to the building  
18 and drain the rainwater catchment riser;
- 19 2. shut down, at the meter, the potable water piping to the building;
- 20 3. uncover and disconnect the cross-connection;
- 21 4. retest the building using the procedures in Sections 1602.11.2.1 and  
22 1602.11.2.2;
- 23 5. chlorinate the potable water system with 50 parts-per-million (ppm)  
24 chlorine for 24 hours; and
- 25 6. flush the potable water system after 24 hours;
- 26 7. perform a standard bacteriological test; and

