

## Sec. 28-441. - Definitions.

The following words and terms, when used in this ~~ordinance~~article, have the following meanings, unless the context clearly indicates otherwise.

~~Air gap means a complete physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel.~~

~~Atmospheric Vacuum Breaker means an assembly containing an air inlet valve, a check seat, and an air inlet port. The flow of water into the body causes the air inlet valve to close the air inlet port. When the flow of water stops the air inlet valve falls and forms a check against back-siphonage. At the same time it opens the air inlet port allowing air to enter and satisfy the vacuum. Also known as an Atmospheric Vacuum Breaker Back-Siphonage Prevention Assembly.~~

~~Backflow prevention means the mechanical prevention of reverse flow, or back siphonage, of nonpotable water from an irrigation system into the potable water source.~~

~~Backflow prevention assembly means any assembly used to prevent backflow into a potable water system. The type of assembly used is based on the existing or potential degree of health hazard and backflow condition.~~

Backflow means an undesirable reversal of flow of water or a mixture of water and other liquids, gases, or other substances, from any source or sources, into distribution pipes containing Potable Water supply.

Backflow Prevention Assembly means a mechanical plumbing device that, when properly installed and maintained, prevents Backflow from a private water system into the Public Water System. Backflow prevention is necessary to stop potentially contaminated or polluted water from entering the public water supply due to either a backpressure or backsiphonage event.

City means the City of Denton, Texas.

Completion of Irrigation System Installation means when the Landscape Irrigation System has been installed, all ~~minimum~~ standards under this Article XI and state law have been met, all tests have been performed, and the Irrigator is satisfied that the ~~system~~Landscape Irrigation System is operating correctly.

Consulting means the act of providing advice, guidance, review, or recommendations related to ~~landscape irrigation systems.~~Landscape Irrigation Systems.

Cross-Connection means ~~any~~ actual or potential connection or structural arrangement between ~~a potable water~~the PWS and any other source ~~and an irrigation or system that may contain~~ contaminates or pollutants or any source of water that has been treatedthrough which it is possible to ~~a lesser degree in the treatment process.~~introduce to the PWS any used water, industrial fluid, gas, or substance other than Potable Water. The term "Cross-Connection" includes, but is not

limited to, bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and any other temporary or permanent devices.

*Design* means the act of determining the various elements of a ~~landscape irrigation system that will include~~ Landscape Irrigation System. The term includes, but ~~is not be~~ limited to, ~~elements such as~~ collecting site specific information, defining the scope of the project, defining plant watering needs, selecting and laying out Emission Devices, locating system components, conducting Hydraulics calculations, identifying any local regulatory requirements, ~~or~~ and scheduling irrigation work at a site. ~~Completion of the various components will result in an irrigation plan.~~

*Design Pressure* means the pressure ~~that is required~~ needed for an Emission Device to operate ~~properly~~ correctly and with the Head-To-Head Spacing required under this Article XI. Design Pressure is ~~calculated by adding the~~ sum of the minimum operating pressure ~~necessary at~~ of an Emission Device and the total of all pressure losses accumulated from the Emission Device to the water source.

~~Double Check Valve means an assembly that is composed of two independently acting, approved check valves, including tightly closed resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test coeks. Also known as a Double Check Valve Backflow Prevention Assembly.~~

*Emission Device* means any device that is contained within an Irrigation System and ~~that is~~ used to apply water. Common Emission Devices in an Irrigation System include, but are not limited to, spray ~~and~~ sprinkler heads, rotary sprinkler heads, and drip irrigation emitters.

~~Employed means engaged or hired to provide consulting services or perform any activity relating to the sale, design, installation, maintenance, alteration, repair, or service to irrigation systems. A person is employed if that person is in an employer-employee relationship as defined by Internal Revenue Code, 26 United States Code Service, 53212(d) based on the behavioral control, financial control, and the type of relationship involved in performing employment related tasks.~~

*Head-To-Head Spacing* means the spacing means of Emission Devices such that the spacing of spray or rotary heads equal to distance between them is within the manufacturer's published radius ~~of the head~~.

~~Health hazard means a cross-connection or potential cross-connection with an irrigation system that involves any substance that may, if introduced into range and the water spray reaches from Emission Device to Emission Device. Deviation from the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects. manufacturer's published radius range shall not be more than ten (10) percent.~~

*Hydraulics* means the science of dynamic and Static Water and the mathematical computation of determining pressure losses and pressure requirements of an Irrigation System.

*Impervious Surface* means a surface that has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water.

*Irrigation Inspector* means ~~a licensed plumbing inspector, (a) a~~ water district operator, ~~other~~ governmental entity, or ~~irrigation inspector~~ licensed Irrigation Inspector who inspects Irrigation Systems and performs other enforcement duties for a municipality or water district ~~as an employee or as a contractor.~~

~~Installer means a person who actually connects an irrigation system to a private or public raw or potable water supply system or any water supply, and~~ who is licensed ~~according to~~ under Title 30, Chapter 30 of the Texas Administrative Code, ~~Chapter 30 (relating to Occupational Licenses and Registrations).~~ or (b) a licensed plumbing inspector.

~~Irrigation inspector means a person who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor and is required to be licensed under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).~~

*Irrigation Plan* means a scaled drawing of a ~~landscape irrigation system which lists required information, the scope of the project, and represents the changes made in the new~~ Irrigation System submitted in accordance with this Article XI prior to installation of the irrigation system. Landscape Irrigation System. An Irrigation Plan shall (i) meet all the requirements in 30 TEX. ADMIN. CODE §§ 344.60 - 344.65 (relating to Water Conservation; Minimum Standards for the Design of the Irrigation services Plan; Minimum Design and Installation Requirements; Completion of Irrigation System Installation; Maintenance, Alteration, Repair, or Service of Irrigation Systems; and Reclaimed Water) and (ii) be provided as an as-built drawing to the owner or owner's representative upon completion of the Irrigation System.

*Irrigation Services* means any activities involving an Irrigation System including, without limitation, selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting ~~Consulting~~ services regarding, or connecting an irrigation system Irrigation System to a water supply.

*Irrigation System* means a system means an assembly of component parts that is permanently installed on a site and composed of an assembly of component parts for the controlled distribution and conservation of water to irrigate ~~any type of landscape vegetation in any location, and/or to, reduce dust or, and control erosion. in any type of landscape in any location.~~ This term does not include a system that is used on or by an Agricultural Operation, as defined by ~~Texas Agricultural Code, 5251~~ TEX. AGRIC. CODE § 251.002.

*Irrigation Technician* means a Person who works under the ~~supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an irrigation system~~ Supervision of an Irrigator licensed under 30 TEX. ADMIN CODE § 30.120(b) to perform Irrigation Services, including the connection of such system in or an Irrigation System to a private or public, raw or ~~potable water~~ Potable, Water supply system or any other water supply, and who is required to be

licensed under Title 30, Chapter 30 of the Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

*Irrigation Zone* means a subdivision of an Irrigation System with a Matched Precipitation Rate based on plant ~~material~~ type (such as turf, shrubs, or trees), microclimate ~~factors~~ (such as sun/shade ratio), topographic features (such as slope) ~~and~~, soil ~~condition~~ type (such as sand, loam, clay, or a combination) ~~or for of any type~~, and hydrological control.

*Irrigator* means a Person who ~~sells, designs, offers consultations regarding, installs, maintains, alters, repairs, services performs Irrigation Services and/or supervises~~ engages in the Supervision of the installation of an Irrigation System, including the connection of such system to a private or public, raw or Potable, Water supply system or any water supply, and who is ~~required to be~~ licensed under Title 30, Chapter 30 of the Texas Administrative Code, Chapter 30.

~~Irrigator in Charge means the irrigator responsible for all irrigation work performed or exempted from licensing requirements by an exempt business owner, including, but not limited to obtaining permits, developing design plans, supervising the work of other irrigators or irrigation technicians, and installing, selling, maintaining, altering, repairing, or servicing a landscape irrigation system the same.~~

*Landscape Irrigation* means the science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf.

*License* means an occupational license that:

(a) is required by Chapter 1903 of the Texas Occupations Code, is issued by ~~the Texas Commission on Environmental Quality~~ TCEQ under Title 30, Chapter 30 of the Texas Administrative Code, ~~Chapter 30 to and authorizes~~ an individual ~~that authorizes the individual~~ to engage in an activity ~~that is covered by this Article XI; or~~

(b) is required by Chapter 1301 of the Texas Occupations Code and governed by Title 30, 22, Chapter 365 of the Texas Administrative Code, Chapter 30.

*Licensed Irrigator* means an Irrigator who possesses a License.

*Mainline* means a pipe within an ~~irrigation system~~ Irrigation System that delivers water from the water source to the individual ~~zone valves~~ Zone Valves.

~~Maintenance checklist means a document made available to the irrigation system's~~ Maintenance, Alteration, Repair, or Service means any activity that involves opening to the atmosphere the irrigation Mainline at any point prior to the discharge side of any Irrigation Zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve, or repairing a zone control valve in a manner that opens the system to the atmosphere.

*Maintenance Checklist* means a document made available to the Irrigation System's owner or owner's representative that contains information regarding the operation and maintenance of the

Irrigation System including, but not limited to, checking and repairing the Irrigation System, setting the automatic controller, checking the rain or moisture sensor, cleaning filters, pruning grass and plants away from irrigation emitters, using and operating the Irrigation System, the precipitation rates of each Irrigation Zone within the system, any Water Conservation measures currently in effect from the water purveyor, the name of the water purveyor, a suggested seasonal or monthly watering schedule based on current evapotranspiration data for the geographic region, and the minimum water requirements for the plant material in each zone based on the soil type and plant material where the system is installed.

~~Major maintenance, alteration, repair, or service means any activity that involves opening to the atmosphere the irrigation main line at any point prior to the discharge side of any irrigation zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve, or repairing a zone control valve in a manner that opens the system to the atmosphere.~~

*Master Valve* means a remote control valve located after the Backflow Prevention Assembly that controls the flow of water to the Irrigation System Mainline.

*Matched Precipitation Rate* means the condition in which all sprinkler heads within an Irrigation Zone apply water at the same rate.

~~New installation means an irrigation system installed at a location where one did not previously exist.~~

~~Pass-through contract means a written contract between a contractor or builder and a licensed irrigator or exempt business owner to perform part or all of the irrigation services relating to an irrigation system.~~

~~Pervious surface means a surface that is existing or covered with a layer of material so that it will admit the passage, entrance, or infiltration by water.~~

Person means any individual, firm, partnership, joint venture, association, club, fraternal organization, joint stock company, corporation, cooperative, estate, trust, receiver, trustee, syndicate, or any other group or combination acting as a unit.

Plumbing Code or IPC means the International Plumbing Code adopted in the Code of the City of Denton Texas, Chapter 28, Article VII, as amended.

*Potable Water* means water that is suitable for human consumption: and meets the definition of Drinking water in 30 TEX. ADMIN. CODE § 290.38(25).

~~Pressure Vacuum Breaker means an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. Also known as a Pressure Vacuum Breaker Backsiphonage Prevention Assembly.~~

~~Reclaimed water~~ Public Water System or System or PWS means the City of Denton's publicly owned water system and the Potable Water supply contained therein. This term includes all services, reservoirs, facilities, lines, and equipment associated with the production, treatment, storage, or conveyance of water for public consumption.

PVC means ~~domestic or municipal~~ polyvinyl chloride.

Reclaimed Water means wastewater ~~which has been collected and~~ treated at a wastewater treatment plant to a quality ~~suitable for beneficial use, such as landscape irrigation that meets or exceeds the requirements of 30 TEX. ADMIN. CODE CH. 210, as amended, and the City of Denton's authorization pursuant to that chapter.~~ Reclaimed Water is not Potable Water.

~~Records of landscape irrigation activities means the irrigation plans~~ means Irrigation Plans, contracts, warranty information, invoices, copies of permits, and all other documents that relate to the ~~installation, maintenance, alteration, repair, or service of a landscape inigation system.~~ Irrigation Services.

~~Reduced Pressure Principle Backflow Prevention Assembly means an assembly containing two independently acting approved check valves together with a hydraulically operating mechanically independent pressure differential relief valve located between the two check valves and below the first check valve.~~

~~Static water pressure~~ Water means ~~the pressure of water when it~~ that is not moving.

Supervision means ~~the~~ on-the-job oversight and direction by a Licensed Irrigator who is fulfilling ~~his or her~~ their professional responsibility to the client and/or employer in compliance with local ~~and~~ state requirements. ~~Also a licensed installer working under the direction of a licensed irrigator or beginning January 1, 2009, an irrigation technician~~ Supervision may also be performed by an Irrigation Technician who is working under the direction of ~~a licensed irrigator to install, maintain, alter, repair or service an irrigation system.~~ an Irrigator licensed under 30 TEX. ADMIN CODE § 30.120(b) to perform Irrigation Services. Irrigators that do not possess a license shall not engage in Supervision.

~~Water conservation means the design~~ Supervisor means a Person who engages in Supervision in accordance with this Article XI.

TCEQ means the Texas Commission on Environmental Quality or its successor agency with jurisdiction over matters covered by this Article XI.

Water Conservation means the Design, installation, service, and operation of an Irrigation System in a manner that prevents the waste of water, promotes the most efficient use of water, and applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust, and control erosion.

Zone Flow means a measurement, in gallons per minute or gallons per hour, of the actual flow of water through a Zone Valve, calculated by individually opening each Zone Valve and obtaining a

valid reading after the pressure has stabilized. For Design purposes, the Zone Flow is the total flow of all nozzles in the zone at a specific pressure.

*Zone Valve* means an automatic valve that controls a single zone of a Landscape Irrigation System.

If a word or term related to the regulation of Backflow or Cross-Connections is not defined in this Article XI, unless the context clearly indicates otherwise, it shall have the definition provided in the Code of the City of Denton, Texas, Chapter 26, Article XIII, as amended. All definitions that are singular also include the plural form of the term being defined. Named City positions include any applicable successor position.

#### **Sec. 28-442. - Valid License required.**

~~Any person who connects an irrigation system to the water supply within the City or the City's extraterritorial jurisdiction, commonly referred to as the ETJ, must hold a valid license, as defined by Title 30, Texas Administrative Code, Chapter 30 and required by Chapter 1903 of the Texas Occupations Code, or as defined by Chapter 365, Title 22 of the Texas Administrative Code and required by Chapter 1301 of the Texas Occupations Code.~~

Any Person who connects an Irrigation System to a water supply must hold a valid License.

#### *Exemptions:*

A property owner is not required to ~~be licensed in accordance with Texas Occupations Code, Title 12, §1903.002(c)(1)~~ hold a valid License if ~~he or she is~~ they are performing irrigation work in a building or on a ~~premises~~ premise owned or occupied by the person as the person's home. A home or property owner who installs an ~~irrigation system~~ Irrigation System pursuant to an exemption must meet the standards contained in Title 30, ~~Chapter 344, of the~~ Texas Administrative Code, ~~Chapter 344~~ regarding spacing, water pressure, spraying water over Impervious Surfaces, rain or moisture shut-off devices or other technology, Backflow prevention, and isolation valves. The City may, at any point, adopt more stringent requirements for ~~a~~ exempt home or property owner~~s~~ who ~~installs an irrigation system. See Texas Occupations Code § 1903.002 for other~~ install their own Irrigation Systems. Other exemptions to the licensing ~~requirement~~ requirements of this Article XI are in TEX. OCC. CODE § 1903.002(b)(2) and (c). A Person who is exempt from the licensing requirements of this Article XI shall comply with the rules and standards established by this Article XI and any other applicable provisions of the Code of the City of Denton, Texas, unless otherwise exempted.

#### **Sec. 28-443. - Permit required.**

Any Person installing an Irrigation System within the territorial limits or extraterritorial jurisdiction of the City ~~is required to~~ must obtain a permit from the City Building Safety Department. ~~Any plan~~ All Irrigation Plans approved for a permit must ~~be in compliance~~ comply with the requirements of ~~this chapter.~~ Chapter 28 of the Code of the City of Denton, Texas and all other applicable provisions of the Code of the City of Denton, Texas.

*Exemptions:*

- (1) An Irrigation System that is part of an on-site sewage disposal system, as defined by ~~Section 355~~ TEX. HEALTH & SAFETY CODE § 366.002, ~~Health and safety code~~; or
- ~~(1)~~ Section An Irrigation System used on or by an Agricultural Operation, as defined by Section
  - ~~(2)~~ TEX. AGRIC. CODE § 251.002, ~~Agriculture Code~~; or
  - ~~(2)~~(3) An Irrigation System connected to a groundwater well used by the property owner for domestic use.

**Sec. 28-444. - Backflow prevention methods and devices.**

~~(a) Any irrigation system that is connected to the potable water supply must be connected through a backflow prevention method approved by the Texas Commission on Environmental Quality (TCEQ). The backflow prevention device must be approved by the American Society of Sanitary Engineers; or the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California; or the International Plumbing Code; or any other laboratory that has equivalent capabilities for both the laboratory and field evaluation of backflow prevention assemblies. The backflow prevention device must be installed in accordance with the laboratory approval standards or if the approval does not include specific installation information, the manufacturer's current published recommendations.~~

~~(b) If conditions that present a health hazard exist, one of the following methods must be used to prevent backflow;~~

~~(1) An air gap may be used if:~~

~~(A) there is an unobstructed physical separation; and~~

~~(B) the distance from the lowest point of the water supply outlet to the flood rim of the fixture or assembly into which the outlet discharges is at least one inch or twice the diameter of the water supply outlet, whichever is greater.~~

~~(3) Reduced pressure principle backflow prevention assemblies may be used if:~~

~~(A) the device is installed at a minimum of 12 inches above ground in a location that will ensure that the assembly will not be submerged; and~~

~~(B) drainage is provided for any water that may be discharged through the assembly relief valve.~~

~~(4) Pressure vacuum breakers may be used if:~~

~~(A) no back pressure condition will occur; and~~

~~(B) — the device is installed at a minimum of 12 inches above any downstream piping and the highest downstream opening. Pop-up sprinklers are measured from the retracted position from the top of the sprinkler.~~

~~(C) — Backflow prevention devices used in applications designated as health hazards must be tested upon installation and annually thereafter.~~

~~(D) — If an existing irrigation system without a backflow prevention assembly requires major maintenance, alteration, repair, or service, the system must be connected to the potable water supply through an approved, properly installed backflow prevention method before any major maintenance, alteration, repair, or service is performed.~~

~~(E) — If an irrigation system is connected to a potable water supply through a pressure vacuum breaker, or reduced pressure principle backflow assembly and includes an automatic master valve on the system, the automatic master valve must be installed on the discharge side of the backflow prevention assembly.~~

~~(F) — The irrigator shall ensure the backflow prevention device is tested by a~~

~~licensed Backflow Prevention Assembly Tester prior to being placed in service and the test results provided to the local water purveyor and the irrigation system's owner or owner's representative within ten business days of testing of the backflow prevention device.~~

Any Irrigation System that is connected to the PWS or any Potable Water supply must be connected through a Backflow Prevention Assembly and comply with all the requirements of the Code of the City of Denton, Texas, Chapter 26, Article XIII, as amended.

~~Sec. 28445. Specific Conditions and Cross-Connection Control.~~

~~(a) — Before any chemical is added to an irrigation system connected to the potable water supply, the irrigation system must be connected through a reduced pressure principle backflow prevention assembly or air gap.~~

~~(b) — Connection of any additional water source to an irrigation system that is connected to the potable water supply can only be done if the irrigation system is connected to the potable water supply through a reduced pressure principle backflow prevention assembly or an air gap.~~

~~(c) — Irrigation system components with chemical additives induced by aspiration, injection, or emission system connected to any potable water supply must be connected through a reduced pressure principle backflow device.~~

~~(d) — If an irrigation system is designed or installed on a property that is served by an onsite sewage facility, as defined in Title 30, Texas Administrative Code, Chapter 285, then:~~

~~(1) — all irrigation piping and valves must meet the separation distances from the On-Site Sewage Facilities system as required for a private water line in Title 30, Texas Administrative Code, Section 285.91 (10);~~

~~(2) — any connections using a private or public potable water source that is not the city's potable water system must be connected to the water source through a reduced pressure principle backflow prevention assembly as defined in Title 30, Texas Administrative Code, Section 344.50; and~~

~~(3) — any water from the irrigation system that is applied to the surface of the area utilized by the On-Site Sewage Facility system must be controlled on a separate irrigation zone or zones so as to allow complete control of any irrigation to that area so that there will not be excess water that would prevent the On-Site Sewage Facilities system from operating effectively.~~

#### **Sec. 28-~~446~~.445. - Water Conservation.**

All Irrigation Systems shall be designed, installed, maintained, altered, repaired, serviced, and operated in a manner that ~~will promote water conservation as defined in the Definitions section of this ordinance,~~promotes Water Conservation and adheres to Sections 26-233 and 26234 of the Code of the City of Denton, Texas and the City of Denton Water Conservation and Drought Contingency Plan, as amended, including, without limitation, those portions of the City of Denton Water Conservation and Drought Contingency Plan relating to Denton's mandatory twice-weekly irrigation schedule and Landscape Management Ordinance.

#### **Sec. 28-~~447~~.446. - Irrigation Plan Design: minimum standards.**

~~(a) All Irrigation Plans must be prepared by an Irrigator licensed under 30 TEX. ADMIN CODE § 30.120(b). An Irrigator shall prepare an irrigation plan or arrange for the preparation of an Irrigation Plan for each site where a new irrigation system~~Irrigation System will be installed. The Irrigator shall present the plan with ~~ana permit~~ application ~~for permit~~ to the City Building Safety Department for ~~a plan review and a permit. A paper copy of the city approved irrigation plan must be on the job site at all times during the installation of the irrigation system. A drawing showing the actual installation of the system is due to each irrigation system owner after all new irrigation system installations.~~ During the installation of the ~~irrigation system~~Irrigation System, variances from the original ~~plan~~Irrigation Plan may be authorized by the ~~licensed irrigator~~Irrigator if the ~~variance from the plan does~~variances do not:

(1) Diminish the operational integrity of the Irrigation System;

(2) Violate any requirements of this ~~ordinance; and~~Article XI; or

(3) ~~go~~Go unnoted in red on the Irrigation Plan.

(b) The Irrigation Plan must include complete coverage of the area to be irrigated. If an Irrigation System does not provide complete coverage of the area to be irrigated, it must be noted ~~on~~in the Irrigation Plan.

~~(a)~~(c) All ~~irrigation plans used~~Irrigation Plans submitted for ~~construction~~review by the City Building Safety Department must be ~~drawn to scale. The plan must legible and include, at a minimum,~~ the following information:

~~(1) (1) the irrigator's~~The seal, and signature, of the Irrigator licensed under 30 TEX. ADMIN CODE § 30.120(b) and the date of signing;~~sealed;~~

~~(2) all major physical~~Physical features ~~(For example, and the without limitation, property lines, trees, streets, sidewalks, driveways, fences, flower bed lines, buildings, and boundaries of the areas to be watered);~~

(3) A North arrow;

~~(4) a legend;~~

~~(4) the zone flow~~The scale used and a legend showing the symbols used in the Irrigation Plan and an accurate description of what each symbol represents;

(5) The Zone Flow measurement for each zone; which includes the zone/controller station number and the Zone Valve size;

~~(6) The~~ location and type of ~~each:~~

~~(A) every~~ controller; and

~~(B) (6)~~ sensor ~~(for~~For example, ~~but not limited to~~and without limitation, rain, moisture, wind, flow, ~~or~~and freeze);

~~(7) (7)~~The Design Pressure; and

~~(8) The~~ location, type, and size of each:::

a. ~~Water source, such as, but not limited to a~~ (For example, and without limitation, each municipal water meter and point(s) of connection; or Reclaimed Water source);

~~(A) —~~ backflow prevention device;

b. ~~water emission device~~Backflow Prevention Assembly;

~~(B)~~c. Emission Device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, ~~or~~and micro-sprays;

~~(C)~~d. valveValve, including, but not limited to, ~~zone valves, master valves~~Zone Valves, Master Valves, and isolation valves;

~~(D)~~e. Pressure regulation component (For example, and without limitation, pressure regulation ~~component; and~~valves and pressure regulating emitters); and

~~(E)~~f. mainMain line and lateral piping.

~~(8) the scale used; and~~

~~(9) the design pressure.~~

**Sec. 28-448.447. - Design and Installationinstallation: Minimum Requirementsrequirements.**

(a) No irrigation ~~design~~Design or installation shall require the use of any component, including the water meter, in a way ~~which~~that exceeds the manufacturer's published performance limitations for the component.

(b) Spacing.

~~(1)~~(1) The maximum spacing between ~~emission devices~~Emission Devices must not exceed the manufacturer's published radius or spacing of the ~~device(s)~~Emission Devices. The proper radius or spacing is determined by referring to the manufacturer's published specifications for a specific ~~emission device~~Emission Device at a specific operating pressure.

~~(2)~~ New irrigation systemsIrrigation Systems shall not utilize above-ground spray ~~emission devices~~Emission Devices in landscapes that are (i) less than forty-eight (48) inches not including the ~~impervious surfaces~~Impervious Surfaces in either length or width ~~and which contain impervious pedestrian or vehicular traffic surfaces along~~(ii) that have sidewalks, driveways, or streets on two or more ~~perimeters~~sides.

~~(2)~~ — If pop-up sprays or rotary sprinkler heads are used in ~~a new irrigation system~~an Irrigation System, the sprinkler heads must direct flow away from ~~any~~ adjacent ~~surfaces~~surfaces and shall not be installed closer than four (4) inches from a hardscape, ~~such as, but not limited to~~ (For example, and without limitation, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.

~~(3)~~ (3) Narrow paved walkways, jogging paths, golf cart paths, or other small areas located in cemeteries, parks, golf courses, or other public areas may beare exempted

from this ~~requirements~~subsection (b)(3) if ~~the runoff~~ from the Irrigation System drains into a landscaped area.

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

~~(e)~~ Piping in irrigation systems must be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second for polyvinyl chloride (PVC) pipe.

(d) Irrigation ~~Zones.~~ Systems shall have separate zones based on plant ~~material~~ type, microclimate factors, (such as shade), topographic features, (such as slope or elevation), type of soil conditions, and the hydrological requirements of plant types.

~~(e)~~ Matched precipitation rate. ~~Zones must be designed and installed so that all of the emission devices~~ All Emission Devices in ~~that a~~ zone irrigates should irrigate at the same precipitation rate.

~~(e)~~ An Irrigator must determine the appropriate length of time to run an Irrigation systems shall not spray System based on head selection and spacing. The Irrigator must also consider the soil's infiltration rate to make sure the Irrigation System is operating efficiently to conserve water.

(f) Water may not be sprayed over surfaces made of Impervious Surfaces including, but not limited to, concrete, asphalt, brick, wood, stones set with mortar, ~~or any other impervious material, such as, but not limited to,~~ walls, fences, sidewalks, and streets, etc.

(g) ~~If a Master valve. When~~ Valve is provided, a master valve shall it must be installed on the discharge side of the ~~backflow prevention device on all new installations.~~ Backflow Prevention Assembly.

(h) ~~PVC pipe primer solvent.~~ All new ~~irrigation systems~~ Irrigation Systems that are installed using PVC pipe and fittings shall be ~~primed with a colored primer prior to applying the PVC cement installed~~ in accordance with the International Plumbing Code (Section 605). IPC.

(i) ~~Rain or moisture shut-off devices or other technology.~~ All new automatically controlled ~~irrigation systems~~ Irrigation Systems must include sensors or other technology designed to inhibit or interrupt operation of the ~~irrigation system~~ Irrigation System during periods of moisture or rainfall. Rain or moisture shut-off technology must be installed according to the manufacturer's published recommendations. Repairs to existing automatic ~~irrigation systems~~ Irrigation Systems that require replacement of an existing

controller must include a sensor or other technology designed to inhibit or interrupt operation of the ~~irrigation system~~Irrigation System during periods of moisture or rainfall.

- (j) ~~Isolation valve.~~ All new ~~irrigation systems~~Irrigation Systems must include an isolation valve between the water meter and the ~~backflow prevention device.~~Backflow Prevention Assembly.

(k) Piping. ~~Depth coverage of piping.~~

Piping in all Irrigation Systems must be installed according to the manufacturer's published specifications for depth of pipe ~~coverage of piping.~~

~~(1)~~(1) . If the manufacturer has not published specifications ~~for depth coverage of piping,~~ the ~~piping~~pipe must be ~~installed to provide minimum depth coverage of buried at least~~ six inches deep and it must be covered with six (6) inches of select backfill, between ~~the its~~ top ~~of the pipe~~ and the natural grade of the topsoil. ~~All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at a depth of six inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan and discussed with the irrigation system owner or owner's representative to address any safety issues.~~

~~(2)~~ If a utility, man-made structure Mounding with select backfill may be employed if the area being irrigated is rock but, if mounding is used, that fact must be noted on the Irrigation Plan and any safety issues must be addressed with the owner.

~~(2)~~(3) If utilities, manmade structures, or roots create an unavoidable obstacle, ~~which that~~ makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two (2) inches of select backfill between the top of the pipe and the natural grade of the topsoil.

~~(3)~~(4) All trenches and holes created during installation of an irrigation systemIrrigation System must be backfilled and compacted to the original grade.

~~(k)~~ Wiring irrigation systems.

~~(5)~~ Underground electrical The velocity of water through PVC pipe in an Irrigation System may not exceed five feet per second.

~~(1)~~ The wiring used to connect an automatic controller to any electrical ~~component of the irrigation system components~~ must be listed by Underwriters Laboratories as acceptable for burial ~~underground.~~

~~(2) — Electrical. The wiring that connects any electrical components of an irrigation system connected to an Irrigation System must be sized according to the manufacturer's recommendation.~~

~~(3) — manufacturer's recommendations. Electrical wire splices which that may be exposed to moisture must be waterproofed as certified by the wire-splice manufacturer.~~

~~(4)(l) — Underground electrical wiring that connects wire used in an automatic controller to any electrical component of the irrigation system Irrigation System must be buried with a minimum of at least six inches of select backfill.~~

~~(4)(m) — Water contained within the piping of an irrigation system is deemed to be nonpotable. No Connections to an Irrigation System for drinking or domestic water usage, such as, but not limited to use (For example, and without limitation, filling a swimming pool or decorative fountains, shall be connected to an irrigation system fountain) are prohibited. If a hose bib (an outdoor water faucet that has hose threads on the spout) is connected to an Irrigation System for the purpose of providing supplemental water to an area, the hose bib must be installed using a quick coupler key on a quick coupler installed in a covered, purple valve box and the. The hose bib and any hoses connected to the bib it must be labeled "non-potable, not safe for drinking." An isolation valve must be installed upstream of a quick coupler connecting a hose bib to an Irrigation System.~~

~~(n) — Either a Licensed Irrigator or an Irrigation Technician must be on-site during the installation of an Irrigation System, unless the Irrigation System is being installed by a Person exempted under Sec. 28-442 of the Code of the City of Denton, Texas.~~

~~(o) — All Irrigation Systems must be designed, installed, and operated in a manner that promotes Water Conservation.~~

#### **Sec. 28-448. - Completion of Irrigation System Installation by a Licensed Irrigator and Final Walkthrough.**

~~Upon completion of the irrigation system, the irrigator or irrigation technician who provided supervision for the on-site installation shall be required to complete four items:~~

~~(1) a final "walk-through" with the irrigation system's owner or the owner's representative to explain the operation of the system;~~

~~(2) The maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative and shall sign, date, and seal the checklist. If the irrigation system's owner or owner's representative is unwilling or unable to sign the maintenance checklist, the irrigator shall note the time and date of the refusal on the irrigation system's owner or owner's representative's signature line. The irrigation system owner or owner's representative will be given the original maintenance~~

~~checklist and a duplicate copy of the maintenance checklist shall be maintained by the irrigator. The items on the maintenance checklist shall include but are not limited to:~~

~~(A) — the manufacturer's manual for the automatic controller, if the system is automatic;~~

~~(B) — a seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical reference evapotranspiration (historical ET) data, monthly effective rainfall estimates, plant landscape coefficient factors, and site factors;~~

a

(a) An Irrigation System is complete when the Irrigation System has been installed, minimum standards for the Irrigation System under this Article XI have been met, and all Irrigation System tests have been performed without failure. When the Irrigation System is complete and it operates correctly, the Licensed Irrigator, or Irrigation Technician, who served as Supervisor on-site must conduct a final walkthrough to show the owner or owner's representative how to operate the Irrigation System correctly to maintain a healthy landscape and conserve water. The owner or owner's representative must receive the following documents during the final walkthrough:

(1) The manufacturer's manual for any automatic controllers;

(2) A seasonal watering schedule;

(3) A list of Irrigation System components, such as the nozzle, or pump filters, and other such, components; that require maintenance and the recommended frequency for the of service;

(4) The Irrigation Plan showing the actual installation of the Irrigation System; and

(5) A Maintenance Checklist, containing:

a. The signature of the Irrigation System owner or the owner's representative;

~~(C)~~b. The Irrigator's seal, signature, and the date; and

~~(D)~~c. the The statement, "This Irrigation System has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or, and orders. I have tested the System and determined that it has been installed according to the Irrigation Plan and is properly adjusted for the most efficient application of water at this time."

(b) (3) A When the Irrigation System is complete and it operates correctly, the Licensed Irrigator or Irrigation Technician, who served as Supervisor on-site must affix a permanent sticker which, printed with waterproof ink, that contains the irrigator's Licensed Irrigator or Irrigation Technician's name, License number, company name, telephone number, and the dates of the warranty period shall be affixed to each

automatic controller installed by the Irrigator or Irrigation Technician. If the Irrigation System is manual, the sticker shall be affixed to the original ~~maintenance checklist. The information contained on the sticker must be printed with waterproof ink and include:~~Maintenance Checklist.

(c) The Licensed Irrigator must give the original Maintenance Checklist to the owner or owner's representative and maintain a copy of the Maintenance Checklist.

(d) If the owner or owner's representative refuses or is unable to attend the final walkthrough in subsection (a) or refuses or is unable to sign the Maintenance Checklist, the Licensed Irrigator or Irrigation Technician must send the Irrigation System owner or owner's representative the following documents:

(1) The automatic controller manual;

(2) A seasonal watering schedule;

(3) A list of components requiring maintenance and the recommended frequency of service;

(4) The Irrigation Plan; and

(5) The Maintenance Checklist, as defined in this Article XI and described in subsection (a)(5).

The Licensed Irrigator or Irrigation Technician must record in the permit file with the City's Building Safety Division that the owner or owner's representative cannot or would not participate in the final walkthrough or sign the Maintenance Checklist and make note of the date and time they declined or refused to participate in the final walkthrough or sign the Maintenance Checklist on the owner or owner's representative's signature line. The Licensed Irrigator or Irrigation Technician must also record the method of delivery (For example, mail, left at site, etc.) of the documents to the owner or the owner's representative.

#### **Sec. 28-449. - Inspections.**

(a) For residential systems, the Irrigator shall schedule a Backflow Prevention Assembly inspection and irrigation final inspection with the Building Safety Division.

For commercial Systems, the Licensed Irrigator shall schedule an irrigation underground inspection, Backflow Prevention Assembly inspection, and irrigation plan indicating the actual installation of the system must be provided to the final inspection with the Building Safety Division. An irrigation system's owner or owner representative.

(a) —underground inspection shall take place after the installation of the underground irrigation lines, the backflow protection device, the isolation valve, and and devices, but before the system is any trenches are backfilled.

~~(b) The irrigator shall call for a Final Irrigation Inspection. A Backflow Preventions Assembly inspection shall take place after the Backflow Prevention Assembly is installed and tested.~~

~~(b)(c) The irrigation system is completed and ready for service. The final installation final inspection shall include, but not be limited to: the freeze sensor and the rain sensor. The irrigator, with each mounted on permanent structure but not a fence. The Irrigator shall demonstrate each zone of the irrigation system Irrigation System for the inspector. Irrigation Inspector.~~

## **Sec. 28-450. - Maintenance, Alteration, Repair, or Service of Irrigation Systems.**

~~The licensed irrigator~~

~~(a) All trenches and holes created during the Maintenance, Alteration, Repair, or Service of an Irrigation System must be backfilled and returned to the original grade with suitable soil free of any objects that could damage the plumbing of the Irrigation System. The backfill must be compacted such that a depression does not develop.~~

~~(b) If the Maintenance, Alteration, Repair, or Service of an Irrigation System involves excavation at the water meter or at a point upstream of the Backflow Prevention Assembly, an isolation valve must be installed if one is not already installed.~~

~~(c) If an Irrigation System is connected to a Potable Water supply and the main line of the Irrigation System must be opened to the atmosphere at any point prior to the discharge side of the Irrigation Zone control valve, then the Irrigation System must be connected using a Backflow Prevention Assembly installed and approved in accordance with state law and the requirements of the Code of the City of Denton, Texas, Chapter 26, Article XIII.~~

~~(d) If an existing controller is replaced, a rain or moisture sensor or other technology designed to interrupt System operation during periods of rain or moisture must be installed.~~

~~(e) The Irrigator must identify in writing to the Irrigation System's owner or owner's representative the materials furnished in the maintenance of the Irrigation System.~~

~~(f) All Maintenance, Alteration, Repair, or Service of an Irrigation System must comply with the Design and installation requirements provided in this Article XI.~~

~~(g) All Maintenance, Alteration, Repair, or Service must promote Water Conservation.~~

~~(a)(h) The Irrigator is responsible for all work that the Irrigator performed during the Maintenance, Alteration, Repair, or Service of an irrigation system during the warranty period. The Irrigator or business owner is not responsible for the professional negligence of any other Irrigator who subsequently conducts any irrigation service on the same irrigation system.~~

~~(b) All trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system must be returned to the original grade with compacted select backfill.~~

~~(e)(i)~~ Colored PVC pipe primer solvent must be used on all pipes and fittings used in the Maintenance, Alteration, Repair, or Service of an Irrigation System in accordance with the International Plumbing Code (Section 605) IPC.

~~(d)~~ When maintenance, alteration, repair or service of an irrigation system involves excavation work at the water meter or backflow prevention device, an isolation valve shall be installed, if an isolation valve is not present.

#### Sec. 28-451. - Reclaimed Water.

Reclaimed Water may be utilized in Landscape Irrigation Systems if:

~~(1)(a)~~ There is no direct contact with edible crops, unless the crop is pasteurized before consumption;

~~(2)(b)~~ The Irrigation System does not spray water across property lines that do not belong to the Irrigation System's owner;

~~(3)(c)~~ The Irrigation System is installed using purple components;

~~(4)(d)~~ ~~the~~The domestic Potable Water line is connected using ~~an air gap or a reduced pressure principle backflow prevention device~~Backflow Prevention Assembly, in accordance with ~~Title 30state law and the Code of the City of Denton, Texas Administrative Code, Section 290.47(i) (relating to Appendices); Chapter 26, Article XIII; and~~

~~(5)(e)~~ ~~a~~A minimum of an eight-inch by eight-inch sign, in English and Spanish, is prominently posted on/in the area that is being irrigated, that reads, "RECLAIMED WATER - DO NOT DRINK" and "AGUA DE RECUPERACIÓN - NO BEBER".

~~RECUPERACIÓN - NO BEBER", and~~

~~(6)~~ backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the City's water provider.

#### Sec. 28-452. - Advertisement requirements for Licensed Irrigators.

~~(a)~~ A Licensed Irrigator's License number in the form of "LI \_\_\_\_\_" must be displayed on:

(1) All vehicles used in the ~~performance of irrigation~~ installation, Maintenance, Alteration, Repair, or Service of Irrigation Systems;

(2) Trailers that advertise Irrigation Services;

(3) All forms of advertisement for Irrigation Services, regardless of the type of media, including, without limitation, business cards and estimates; and

(4) All Contracts, proposals, bids, and invoices.

~~(a)~~(b) All vehicles and trailers must display the License number required in ~~the form of~~ "LI ~~\_\_\_\_\_~~" subsection (a) in a contrasting color ~~of and in~~ block letters at least two inches high. License numbers must be visible on both outward sides of ~~the~~ vehicle. Magnetic signs are acceptable.

~~(c)~~ ~~All forms of written and electronic advertisements for irrigation services must display the irrigator's license~~In addition to the License number required in the form of "LI ~~\_\_\_\_\_~~." Any form~~subsection (a), all forms~~ of advertisement for Irrigation Services, regardless of the type of media, including, without limitation, business cards, and estimates which displays an entity's or individual's~~must display the Licensed Irrigator's name other than that of the licensed irrigator must also display the name.~~

~~(b)~~ ~~At the location of the licensed irrigator and permanent structure where the licensed irrigator's license number. Trailers that advertise irrigation business is primarily conducted and irrigation services must display~~records are kept, the irrigator's license number.

~~(e)~~(d) ~~The name, mailing address, and telephone number of the commission~~TCEQ must be prominently displayed on a legible sign ~~and displayed~~ in plain view for the purpose of addressing complaints ~~at the permanent structure where irrigation business is primarily conducted and irrigation records are kept.~~

#### **Sec. 28-453. - Duties and responsibilities of City Irrigation Inspectors.**

~~A licensed irrigation inspector~~An Irrigation Inspector employed by the City shall enforce the ~~ordinance of the City;~~this Article XI and shall be responsible for:

~~(a)~~ Verifying that the appropriate permits have been obtained for an ~~irrigation system and~~Irrigation System;

~~(a)~~(b) Verifying that the ~~irrigator and installer~~Irrigator or ~~irrigation technician, if~~Irrigation Technician, as applicable, are Licensed;

~~(b)~~(c) Inspecting the Irrigation System;

~~(e)~~(d) Determining that the Irrigation System complies with the requirements of this ~~chapter;~~Article XI and applicable state laws and regulations;

~~(d)~~(e) Determining that the appropriate Backflow Prevention Assembly was installed, tested, and the test results were provided to the City;

~~(e)~~(f) Investigating complaints related to ~~irrigation system~~the installation, ~~maintenance, alteration, repairs, or service of an irrigation system and advertisement of irrigation services;~~Maintenance, Alteration, Repairs, or Service of an Irrigation System and the advertisement of Irrigation Services; and

~~(f)(g)~~ Maintaining Records according to ~~this chapter~~ Article XI and applicable state laws and regulations.

**Sec. 28-454. - Items not covered by this article.**

~~Any item~~ Any matter involving Irrigation Systems not covered by ~~their ordinance~~ the Code of the City of Denton, Texas and required by law shall be governed by the Texas Occupations Code, the Texas Water Code, Title 30 of the Texas Administrative Code, and any other applicable state statute or ~~Texas Commission on Environmental Quality rule.~~ rule.

**Sec. 28-455. - Fees.**

Prior to the issuance of any ~~building~~ permit required by this Article XI, a fee ~~as~~ established by the City Council and on file in the office of the City Secretary shall accompany the application for such permit, payable to the City, for the issuance of the permit and any inspections to be made.

**Sec. 28-456. - Enforcement.**

(a) The City shall have the power to administer and enforce the provisions of this Article XI as may be required by governing law. Any ~~person, firm, corporation or agent~~ Person who shall violate a provision of this ~~code, or fails to comply therewith, or with any of the requirements thereof,~~ Article XI is subject to suit for injunctive relief as well as prosecution for criminal violations. Any violation of ~~the ordinance codified in this chapter~~ Article XI is declared to be a nuisance.

~~(b) Any person violating~~ A Person who violates any provision of ~~chapter shall, upon conviction, be fined a sum not exceeding \$2000.00. Each day that a provision of this chapter is violated shall constitute~~ Article XI commits an offense and is guilty of a class C misdemeanor. Each day a violation continues shall be considered a separate offense.  
~~An~~

~~(b)(c)~~ If the definition of an offense under this ~~chapter~~ Article XI does not prescribe a culpable mental state, then a culpable mental state is a Class C misdemeanor, not required, and the offense is one of strict liability. A strict liability offense shall be punishable by a fine of up to \$2000.00, not to exceed Five Hundred Dollars and No Cents (\$500.00). Although not required, if a culpable mental state is in fact alleged in the charge of the offense, such offense shall be punishable by a fine not to exceed Two Thousand Dollars and No Cents (\$2,000.00).

~~(d) Nothing in this chapter~~ If the definition of an offense under this Article XI prescribes a culpable mental state, then a culpable mental state is required and the offense shall be construed as a waiver of the City's right to bring a civil action punishable by a fine not to exceed Two Thousand Dollars and No Cents (\$2,000.00).

~~(e)~~ All penalties in this Article XI are in addition to enforce the provisions and cumulative of this chapter and to seek any other remedies as allowed by that may be available to the City at law and in equity, including, but not limited to the following:

~~(1) Injunctive relief to prevent specific conduct that violates the ordinance or to require specific conduct that is necessary for compliance with the ordinance; and~~

~~(2) Other available relief.~~

(e) without limitation, injunctive relief.