

Article 8

LANDSCAPE AND SCREENING

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ARTICLE 8: LANDSCAPE AND SCREENING

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SECTION 1 - PURPOSE

- 8.1.1. It is the purpose of this article to preserve the existing natural environment, minimize the amount of irrigation whenever possible, and provide landscape amenities, setbacks and screening that promote a positive urban image, quality development and enhanced property values. It is also the intent of this article and the City of Grand Prairie to preserve existing trees whenever possible and discourage clear cutting of lots for development. Landscaping shall also be used to promote safety and foster a pedestrian environment as appropriate. All landscaping shall have the characteristics of an organism, in the manner of a living plant.

SECTION 2 - DEFINITIONS

- 8.2.1. For the purpose of this article, the following definitions shall supersede all previous interpretations in the Unified Development Code.

Agricultural Use: The use of land to produce plant or animal products, such as growing crops, raising and pasturing of livestock, or farming. It does not include the processing of plant or animal products after harvesting or the production of timber or forest products.

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

Artificial Lot: Portion of a one acre or larger tract that contains the area to be developed as an individual project and that encompasses all improvements, including parking related to the project, or as further defined in [Section 8.5.1.B](#).

Atmospheric Vacuum Breaker: 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: The mechanical prevention of reverse flow, or back siphonage, of non-potable water from an irrigation system into the potable water source.

Backflow Prevention Assembly: 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.

Buffer Yard: A buffer yard is a strip of land, together with a specified amount of planting, that may be required between land uses to eliminate or minimize impact between the uses. Only those structures used for buffering and/or screening purposes shall be located

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within a buffer yard. The buffer yard shall not include any paved area except for pedestrian sidewalks or vehicular drives that may intersect the buffer yard and which shall be the minimum width necessary to provide pedestrian or vehicular access.

Building Area: That portion of a building site exclusive of the required yard areas on which a structure or building improvements may be erected and including the actual structure, driveway, parking lot, pool and other construction as shown on a site plan.

Building Pad: The actual foundation area of a building and a reasonable area around the foundation necessary for construction and grade transitions.

Clear Cutting: The removal of all of the trees or a significant majority of the trees within an area of land.

Completion of Irrigation System Installation: When the landscape irrigation system has been installed, all minimum standards *have been* met, all tests *have been* performed, and the irrigator is satisfied that the system is operating correctly.

Consulting: The act of providing advice, guidance, review or recommendations related to landscape irrigation systems or other professional services.

Crime Prevention Through Environmental Design (CPTED): An urban design concept that emphasizes natural surveillance, territorial reinforcement, control of natural access and the use of design features that prohibit entry or access to targeted areas.

Critical Root Zone (CRZ): The area of undisturbed natural soil around a tree defined by a concentric circle with a radius equal to the distance from the trunk to the outermost portion of the drip line (see [Exhibit 3](#)).

Cross-Connection: An actual or potential connection between a potable water source and an irrigation system that may contain contaminants or pollutants or any source of water that has been treated to a lesser degree in the treatment process.

Cut/Fill: Areas where the natural ground level has been excavated (cut) or fill brought in.

Design: The act of determining the various elements of a landscape irrigation system that will include, but 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 scheduling irrigation work at a site. Completion of the various components will result in an irrigation plan.

Design Pressure: The pressure that is required for an emission device to operate properly. Design pressure is calculated by adding the operating pressure necessary at an

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emission device to the total of all pressure losses accumulated from an emission device to the water source.

Director: The Development Review Committee, or his or her designated agent.

Double Check Valve: 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 cocks. Also known as a Double Check Valve Backflow Prevention Assembly.

Drip Line: A vertical line running through the outermost portion of the canopy of a tree and extending to the ground. (see [Exhibit 3](#))

Electrified fence: A fence energized with an electrical current.

Emission Device: 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 rotary sprinkler heads, and drip irrigation emitters.

Employed: Engaged or hired to provide consulting services or perform any activity relating to the sale, design, installation, maintenance, alteration, repair, or service to a professional service such as 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, §3212(d) based on the behavioral control, financial control, and the type of relationship involved in performing employment related tasks.

Gross Site Area: Area used to calculate landscape requirements. This area is calculated as follows:

For Undeveloped Sites: All areas of a site, except required buffer yards.

For Developed Sites: All areas of the expanded site, except required buffer yards and requirements of [Section 8.3.1.2](#).

Head-to-Head Spacing: The spacing of spray or rotary heads equal to the manufacturer's published radius of the head.

Health Hazard: A cross-connection or potential cross-connection with an irrigation system that involves any substance that may, if introduced into the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.

Hydraulics: The science of dynamic and static water; the mathematical computation of determining pressure losses and pressure requirements of an irrigation system.

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Inspector: A licensed plumbing inspector, water district operator, other governmental entity, or 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: A person who actually connects an irrigation system to a private or public raw or potable water supply system or any water supply, who is licensed according to Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

Irrigation Inspector: 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: A scaled drawing of a landscape irrigation system, which lists required information, the scope of the project, and represents the changes made in the installation of the irrigation system.

Irrigation Program: Pursuant to House Bill (HB) 1656, HB 4, and Senate Bill (SB) 3, of the 80th Legislative Session, the Texas Commission on Environmental Quality (TCEQ) adopted Rule #2007-027-344-CE, effective on January 1, 2009 Chapter 344 of the Texas Commission on Environmental Quality requires municipalities with a population of 20,000 or more to adopt a landscape irrigation program.

Irrigation Services: Selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.

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

Irrigation Technician: A person who works under the supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an irrigation system, including the connection of such system in or to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

Irrigation Zone: 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 conditions (such as sand, loam, clay, or combination) or for hydrological control.

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Irrigator: A person who sells, designs, offers consultations regarding, installs, maintains, alters, repairs, services or supervises the installation of an irrigation system, including the connection of such system to a private or public, raw or potable water supply system or to any water supply and who is required to be licensed under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations).

Irrigator-in-Charge: The irrigator responsible for all irrigation work performed 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.

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

License: An occupational license that is issued by the Texas Commission on Environmental Quality under Title 30, Texas Administrative Code, Chapter 30 to an individual that authorizes the individual to engage in an activity that is covered by Title 30, Texas Administrative Code, Chapter 30.

Mainline: A pipe within an irrigation system that delivers water from the water source to the individual zone valves.

Maintenance Checklist: 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: 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: A remote control valve located after the backflow prevention device that controls the flow of water to the irrigation system mainline.

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Matched Precipitation Rate: The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.

Municipal/Public Domain Property: Examples of this would include City Hall, City R.O.W., public parks, Corps of Engineers property, State of Texas R.O.W., library, fire stations, water tower sites or similar properties.

New Development: New development shall include any new construction on a vacant lot, or any new construction that expands or enlarges an existing lawful nonconforming use. Any expansion or enlargement of a lawful nonconforming use shall upgrade landscaping and screening on the site to meet all applicable regulations of Article 8 of the Unified Development Code.

New Installation: With reference to irrigation systems, is an irrigation system installed at a location where one did not previously exist.

Parkway: The area of public right-of-way located between the curb or edge of pavement and the property line.

Pass-Through Contract: A written contract between a contractor or builder and a licensed service provider such as an irrigator or exempt business owner to perform part or all of a professional service such as the irrigation services relating to an irrigation system.

Permeable Pavement: A paving material that permits water penetration to a soil depth of 18 inches or more. Permeable pavement may consist of nonporous surface materials poured or laid in sections not exceeding one square foot in area and collectively comprising less than two-thirds of the total surface area.

Potable Water: Water that is suitable for human consumption.

Pressure Vacuum Breaker: 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. It is also known as a Pressure Vacuum Breaker Back-siphonage Prevention Assembly.

Protective Barrier: Permanent fence or wall that restricts direct access to the energized portions of an electrified fence. Permanent shall mean not being able to be removed, lifted or relocated without the use of a tool or equipment.

Protective Fencing: Snow fencing, chain link fence, orange vinyl construction fencing or similar fencing with a minimum four-foot approximate height.

Reclaimed Water: Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.

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Records of Landscape Irrigation Activities: The irrigation plans, contracts, warranty information, invoices, copies of permits, and other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system.

Reduced Pressure Principle Backflow Prevention Assembly: 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.

Replacement Tree: A tree that is selected and planted in accordance with [Section 8.6.2](#).

Secure area: The area bounded by the electrified fence.

Static Water Pressure: The pressure of water when it is not moving.

Stormwater Facilities: Structures designed to manage stormwater runoff: storm water ponds and wetlands, bio-retention areas, infiltration trench and surface sand filters, enhanced swales and grass channels, filter strips and stream buffers, and green roofs.

Supervision: As applied to irrigation systems, means the on-the-job oversight and direction by a licensed irrigator who is fulfilling his or her professional responsibility to the client and/or employer in compliance with local or state requirements. Also a licensed installer working under the direction of a licensed irrigator or, beginning January 1, 2009, an irrigation technician who is working under the direction of a licensed irrigator to install, maintain, alter, repair or service an irrigation system.

Target Hardening: The use of landscape features, such as planters, foliage, trees, CPTED fences, or artwork, to make a designated site impenetrable.

Temporary Landscaping: Stabilization of raw soil when seasonal conditions do not permit establishment of required landscaping. Erosion control blankets/mats, mulch, straw anchoring, compost blankets, straw rolls, curlex blankets, straw erosion mats, spun bonded fabrics, may be used to hold the soil in place. During winter, temporary grass or turf (such as rye, fescue, etc.) may be planted until the required permanent turf is installed.

Territorial Reinforcement: The use of landscape plantings, pavement designs, gateway treatments and CPTED fences to define property lines and distinguish private spaces from public spaces.

Tree: Any self-supporting woody perennial plant which will attain a trunk diameter of three inches or more when measured at a point four and one-half feet above ground level and normally an overall height of at least 15 feet at maturity, usually with one main stem or trunk and many branches.

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Tree, Specimen: A tree, other than an understory tree, which has a diameter of six inches or greater measured four and one-half feet above the ground; and an understory tree that has a diameter of two inches or greater measured four and one-half feet above the ground. The diameter of a multi-trunk tree shall be determined by adding the total diameter of the largest trunk to one-half the diameter of each additional trunk.

Tree, Street: Trees, on land lying between property lines on either side of all streets, avenues, or ways within the City.

Tree, Understory: A tree *that* has significant positive characteristics worthy of preservation and that does not typically attain great size.

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

Xeriscape: Landscaping characterized by the use of vegetation that is drought-tolerant or a low water use in character and that sets landscape maintenance principles that promote good horticultural practices and efficient use of water.

Zone Flow: A measurement, in gallons per minute or gallons per hour, of the actual flow of water through a zone valve in an irrigation system, 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: An automatic valve that controls a single zone of a landscape irrigation system.

SECTION 3 - APPLICABILITY

- 8.3.1. The provisions of this Article apply to all development within the corporate limits of the City, subject to the exemptions in [Section 8.3.1.5.B](#). Existing landscaping and screening that was lawfully in place on or before December 1, 2006, but which does not conform to amended regulations of this revised article shall be lawful non-conforming in regards to landscaping and screening requirements.

8.3.1.1. Residential Landscaping

- A. Construction of new structures for which a building permit is required except construction or expansion of one-family and two-family dwellings. Landscape requirements do not apply to structures that do not create or expand building square footage or to temporary structures such as job shacks associated with construction activities.

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- B. Single-family detached, single-family attached and single-family townhome residential uses shall conform to the requirements prescribed in this section.
- C. Residential developers and property owners may select a native/adaptive vegetation, traditional vegetation or combination landscaping option at the time of development. Non-potable and/or grey water may be used in a landscaping plan designed by a licensed landscape architect using a drip irrigation (zoned) system with separate flows for turf and plant areas. Controls shall be weather-based with moisture, wind, and freeze sensors. The underground irrigation system shall be a minimum of 12 inches below grade level and designed by a licensed professional Irrigator, a registered Landscape Architect, Architect, or Engineer. **(refer to Article 8751; Texas Revised Civil Statutes and the Texas Board of Irrigators)**
- D. Where possible single-family neighborhoods adjacent residential development will be buffered through the use of landscaping, berms, fences, walls or open space to mitigate adverse effects.
- E. Residential lots with front or side yards adjoining a designated collector or arterial thoroughfare shall have a rain, wind, and freeze sensor installed with every new irrigation system.

8.3.1.2. *Non-Residential Landscaping*

- A. A minimum of 75% of all required landscape areas shall be located in the front yard between the building line and the front property line. For lots with multiple street frontages, a minimum of 75% of all required landscape areas shall be located in the yards abutting the street with the greatest pavement width, unless the Development Review Committee approves a modification to this requirement. When an artificial lot or a building expansion is separated from a property abutting a street frontage, the required landscape areas may be located anywhere on the site subject to this section.
- B. Expansion of structures used for non-residential uses that increase the footprint of existing structures by less than 30%, and that add less than 3,000 square feet to existing structures are not subject to additional landscaping requirements.
- C. Expansions that exceed either the 30% or the 3,000 square foot criteria are subject to the landscape requirements stipulated in this Article.

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- D. Parking lot construction and or expansion by more than 30% of the parking area will be required to meet the same landscaping standards as the district in which they are located or the use associated with the parking.
- E. All landscape materials shall be installed prior to the issuance of a certificate of occupancy. Upon completion of installation of all plant materials, the owner or agent shall notify the Department of Planning and Development of the completion of the installation and shall request an inspection. Verification by the Building Inspection Division of the installation being in compliance with this article and/or the approved landscape plan shall be required prior to obtaining a certificate of occupancy unless otherwise authorized.
- F. Modification of Landscape Requirements: The Development Review Committee or their designee may approve minor changes of this section due to unusual topographic constraints, sight restrictions, sitting requirements, preservation of existing stands of native trees or similar conditions. These minor changes may vary the location of required landscape materials, but may not reduce the amount of required landscape area or the required amount of landscape materials. The landscape plan shall be submitted and shall specify the modifications requested and present a justification for such modifications.

8.3.1.3. *Landscaping Adjacent to Public Right-of-Way*

- A. **Street Trees:** Street trees shall be provided in all districts, excluding Single Family and Two Family Districts (except where indicated by this Section), and along designated arterials and collectors as identified on the Thoroughfare Plan.
- B. **Visibility:** Trees shall not be planted within the visibility triangle areas of any street, valley and/or driveway intersections (subject to transportation's current ordinance). At the time of building permit review, the Director of Transportation or a designee may extend the visibility triangle areas adjacent to street, alley, and/or driveway intersections accessing or near a curvilinear street section in which sight easement and visibility demands are greater than for a straight street section. All trees and landscaping must also comply with any sight easement restrictions established on the property.
- C. **Crime Prevention Through Environmental Design (CPTED):** The City will reduce the probability of crime by requiring lighting, maintaining sightlines, reducing fence height, and any other means deemed necessary by the Development Review Committee on a case-by-case basis.

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- D. **Screening:** Landscaping, berms, fencing, walls, and open space will be the primary method for screening public spaces from private land uses.

8.3.1.4. *Revitalization of Older Developed Areas*

To revitalize an area, landscaping shall be provided that is compatible with the zoning district and urban design standards to which the area is being revitalized. Landscaping shall also include environmental design elements for crime prevention.

8.3.1.5. *Exceptions, Exemptions and Appeals*

A. *Exceptions*

1. An application for an exception to the landscaping and screening standards and the tree requirements for an existing developments may be granted by the Zoning Board of Adjustments and Appeals if one of the two following circumstances exist:
 - a. The existing development does not have adequate permeable area to support the required landscaping.
 - b. The existing on-site landscaping, and/or the proposed landscaping meets the intent of the City's landscaping requirements.

- B. *Exemptions.* The following situations are not subject to the landscaping and screening requirements stipulated in this Article:

1. Expansion of existing one-family and two-family dwellings;
2. Structures that do not create or expand building square footage or to temporary structures such as job shacks associated with construction activities.
3. Expansion of structures used for non-residential uses that increase the footprint of existing structures by less than 30%, or that add less than 3,000 square feet to existing structures. Expansions that exceed either the 30% or the 3,000 square foot criteria are subject to these landscape requirements.
4. Change in use of an existing structure, unless the structure is expanded in accordance with Section 8.3.1.5.C.

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5. Except as stated elsewhere, all properties zoned for single-family, single-family attached and single-family townhome uses in which a preliminary or final plat has been approved before June 1, 2006 shall be exempt from the requirements of Article 8. This exemption does not apply to schools, churches or government facilities on residentially zoned properties.
6. **Stormwater Facilities:** Structures designed to manage stormwater runoff (e.g. storm water ponds and wetlands, bio-retention areas, infiltration trench and surface sand filters, enhanced swales and grass channels, filter strips and stream buffers, and green roofs). Stormwater facilities will be landscaped as outlined in **Article 17** of the iSWM Design Manual for Site Development (see current version of Drainage Design Manual).

C. Appeals

1. A hearing before the Planning and Zoning Commission shall be set for the next meeting following the filing of an appeal by the applicant with the Director.
2. The City Council shall hear all appeals of decisions made by the Planning and Zoning Commission. All decisions of the Council in this regard shall be final.
3. The Planning Director shall have the discretion to modify landscaping requirements in the CPTED area(s) to promote natural access control and surveillance, territorial reinforcement and target hardening.

SECTION 4 – LANDSCAPE IRRIGATION PROGRAM

- 8.4.1. The provisions of this article are to be in compliance with TCEQ Landscape Irrigation Rule 2007-027-344-CE, effective January 1, 2009, as established by the 80th Legislative Session in consultation with the Irrigator Advisory Council. The rule sets standards for irrigation system design, installation, operation, water conservation, and duties and responsibilities of licensed irrigators and irrigator inspectors. It also exempts certain irrigation systems from permitting requirements.

8.4.1.1. 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

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as defined by Chapter 365, Title 22 of the Texas Administrative Code and required by Chapter 1301 of the Texas Occupations Code.

8.4.1.2. *Exemptions:*

A property owner is not required to be licensed in accordance with Texas Occupations Code, Title 12, §1903.002C(1) if he or she is performing irrigation work in a building or on a premises owned or occupied by the person as the person's home. A home or property owner who installs an irrigation system must meet the standards contained in Title 30, Texas Administrative Code, Chapter 344 regarding spacing, water pressure, spraying water over impervious materials, rain or moisture shut-off devices or other technology, backflow prevention and isolation valves.

8.4.1.3. *Permit Required:*

Any person installing an irrigation system within the territorial limits or extraterritorial jurisdiction (ETJ) of the city is required to obtain a permit from the Planning and Development Department of the City of Grand Prairie. Any plan approved for a permit must be in compliance with the requirements of this article of the Unified Development Code.

Exemptions:

1. An irrigation system that is of an on-site sewage disposal system, as defined by Section 355.002, Health and Safety Code; or
2. An irrigation system used on or by an agricultural operation as defined by Section 251.002, Agriculture Code; or
3. An irrigation system connected to a groundwater well used by the property owner for domestic use.

8.4.1.4. *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 Uniform 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.

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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.

2. *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.

3. *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.

4. *Atmospheric vacuum breakers may be used if:*

- a. No back-pressure will be present;
- b. There are no shutoff valves downstream from the atmospheric vacuum breaker;
- c. The device is installed at a minimum of six 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;
- d. There is no continuous pressure on the supply side of the atmospheric vacuum breaker for more than 12 hours in any 24-hour period; and
- e. A separate atmospheric vacuum breaker is installed on the discharge side of each irrigation control valve, between the valve and all the emission devices that the valve controls.

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

[If the city chooses to permit the use of double check valves:]

D. If there are no conditions that present a health hazard, double check valve backflow prevention assemblies may be used to prevent backflow if the device is tested upon installation and test cocks are used for testing only.

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- E. If a double check valve is installed below ground:
 - 1. Test cocks must be plugged, except when the double check valve is being tested;
 - 2. Test cock plugs must be threaded, water-tight, and made of non-ferrous material;
 - 3. A y-type strainer is installed on the inlet side of the double check valve;
 - 4. There must be a clearance between any fill material and the bottom of the double check valve to allow space for testing and repair; and
 - 5. There must be space on the side of the double check valve to test and repair the double check valve.
- F. If an existing irrigation system without a backflow-prevention assembly requires 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.
- G. If an irrigation system is connected to a potable water supply through a double check valve, 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.
- H. 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.

8.4.1.5. *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.

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- 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 on-site 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.

8.4.1.6. *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.

8.4.1.7. *Irrigation Plan Design: Minimum Standards*

- A. An irrigator shall prepare an irrigation plan for each site where a new irrigation system will be installed. A paper or electronic copy of the 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, variances from the original plan may be authorized by the licensed irrigator if the variance from the plan does not:
 - 1. Diminish the operational integrity of the irrigation system;
 - 2. Violate any requirements of this ordinance; and
 - 3. Go unnoted in red on the irrigation plan.
- B. The irrigation plan must include complete coverage of the area to be irrigated. If a system does not provide complete coverage of the area to be irrigated, it must be noted on the irrigation plan.

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- C. All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:
1. The irrigator's seal, signature, and date of signing;
 2. All major physical features and the boundaries of the areas to be watered;
 3. A North arrow;
 4. A legend;
 5. The zone flow measurement for each zone;
 6. Location and type of each:
 - a. Controller; and
 - b. Sensor (for example, but not limited to, rain, moisture, wind, flow, or freeze);
 7. Location, type, and size of each:
 - a. Water source, such as, but not limited to a water meter and point(s) of connection;
 - b. Backflow prevention device;
 - c. Water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays;
 - d. Valve, including but not limited to, zone valves, master valves, and isolation valves;
 - e. Pressure regulation component; and
 - f. Main line and lateral piping;
 8. The scale used; and
 9. The design pressure.

8.4.1.8. *Design and Installation: Minimum Requirements*

- A. No irrigation design or installation shall require the use of any component, including the water meter, in a way, which exceeds the manufacturer's published performance limitations for the component.
- B. *Spacing*

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1. The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure.
2. New irrigation systems shall not utilize aboveground spray emission devices in landscapes that are less than 48 inches not including the impervious surfaces in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. If pop-up sprays or rotary sprinkler heads are used in a new irrigation system, the sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.
3. Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement if the runoff drains into a landscaped area.

C. *Water pressure*

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

D. *Piping*

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.

E. *Irrigation Zones*

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

F. *Matched precipitation rate*

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

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- G. Irrigation systems shall not spray water over surfaces made of concrete, asphalt, brick, wood, stones set with mortar, or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.

- H. *Master valve*

When provided, a master valve shall be installed on the discharge side of the backflow prevention device on all new installations.

- I. *PVC pipe primer solvent*

All new irrigation systems that are installed using PVC pipe and fittings shall be primed with a colored primer prior to applying the PVC cement in accordance with the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).

- J. *Rain or moisture shut-off devices or other technology*

All new automatically controlled irrigation systems must include sensors or other technology designed to inhibit or interrupt operation of the 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 that require replacement of an existing controller must include a sensor or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall.

- K. *Isolation valve*

All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.

- L. *Depth coverage of piping*

Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.

1. If the manufacturer has not published specifications for depth coverage of piping, the piping must be installed to provide minimum depth coverage of six inches of select backfill, between the top of the pipe and the natural grade of the topsoil. All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan. If the area being irrigated has rock at

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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 or roots create an unavoidable obstacle, which makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two inches of select backfill between the top of the pipe and the natural grade of the topsoil.
3. All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.

M. *Wiring irrigation systems*

1. Underground electrical wiring used to connect an automatic controller to any electrical component of the irrigation system must be listed by Underwriters Laboratories as acceptable for burial underground.
 2. Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation.
 3. Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.
 4. Underground electrical wiring that connects an automatic controller to any electrical component of the irrigation system must be buried with a minimum of six inches of select backfill.
- N. Water contained within the piping of an irrigation system is deemed to be non-potable. No drinking or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, shall be connected to an irrigation system. 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 hose bib and any hoses connected to the bib 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.
- O. Beginning January 1, 2010, either a licensed irrigator or a licensed irrigation technician shall be on-site at all times while the landscape irrigation system

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is being installed. When an irrigator is not onsite, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

8.4.1.9. *Completion of Irrigation System Installation*

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:

- A. A final “walk through” with the irrigation system's owner or the owner's representative to explain the operation of the system;
- B. The maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative, 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:
 1. The manufacturer's manual for the automatic controller, if the system is automatic;
 2. A seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical reference evapotranspiration (historical ET) data, monthly effective rainfall estimates, plant landscape coefficient factors, and site factors;
 3. A list of components, such as the nozzle, or pump filters, and other such components; that require maintenance and the recommended frequency for the service; and
 4. The statement, “This irrigation system has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or orders. I have tested the system and determined that it has been installed according to the Irrigation Plan and is properly adjusted for the most efficient application of water at this time.”

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- C. A permanent sticker which contains the irrigator'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;
- D. The irrigation plan indicating the actual installation of the system must be provided to the irrigation system's owner or owner representative.

8.4.1.10. *Maintenance, Alteration, Repair, or Service of Irrigation Systems*

- A. The licensed 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.
- C. 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 Uniform Plumbing Code (*Section 316*) or the International Plumbing Code (*Section 605*).
- 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.

8.4.1.11. *Reclaimed Water*

Reclaimed water may be utilized in landscape irrigation systems if:

1. There is no direct contact with edible crops, unless the crop is pasteurized before consumption;
2. The irrigation system does not spray water across property lines that do not belong to the irrigation system's owner;
3. The irrigation system is installed using purple components;

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4. The domestic potable water line is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with Title 30, Texas Administrative Code, Section 290.47(i) (relating to Appendices);
5. 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"; and
6. Backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the city's water provider.

8.4.1.12. *Advertisement Requirements*

- A. All vehicles used in the performance of irrigation installation, maintenance, alteration, repair, or service must display the irrigator's license number in the form of "LI _____" in a contrasting color of block letters at least two inches high, on both sides of the vehicle.
- B. All forms of written and electronic advertisements for irrigation services must display the irrigator's license number in the form of "LI _____." Any form of advertisement, including business cards, and estimates which displays an entity's or individual's name other than that of the licensed irrigator must also display the name of the licensed irrigator and the licensed irrigator's license number. Trailers that advertise irrigation services must display the irrigator's license number.
- C. The name, mailing address, and telephone number of the commission 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.

8.4.1.13. *Contracts*

- A. All contracts to install an irrigation system must be in writing and signed by each party and must specify the irrigator's name, license number, business address, current business telephone numbers, the date that each party signed the agreement, the total agreed price, and must contain the statement, "Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ), MC-178, P.O. Box 13087, Austin, Texas 78711-3087. TCEQ's website is: www.tceq.state.tx.us." All contracts must include the irrigator's seal, signature, and date.
- B. All written estimates, proposals, bids, and invoices relating to the installation or repair of an irrigation system(s) must include the irrigator's name, license number, business address, current business telephone number(s), and the statement: "Irrigation in Texas is regulated by the Texas Commission On Environmental

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Quality (TCEQ) (MC-178), P.O. Box 13087, Austin, Texas 78711-3087. TCEQ's web site is: www.tceq.state.tx.us."

- C. An individual who agrees by contract to provide irrigation services as defined in Title 30, Texas Administrative Code, Section 344.30 (relating to License Required) shall hold an irrigator license issued under Title 30, Texas Administrative Code, Chapter 30 (relating to Occupational Licenses and Registrations) unless the contract is a pass-through contract as defined in Title 30, Texas Administrative Code, Section 344.1(36) (relating to Definitions). If a pass-through contract includes irrigation services, then the irrigation portion of the contract can only be performed by a licensed irrigator. If an irrigator installs a system pursuant to a pass-through contract, the irrigator shall still be responsible for providing the irrigation system's owner or through contract, the irrigator shall still be responsible for providing the irrigation system's owner or owner's representative a copy of the warranty and all other documents required under this chapter. A pass-through contract must identify by name and license number the irrigator that will perform the work and must provide a mechanism for contacting the irrigator for irrigation system warranty work.
- D. The contract must include the dates that the warranty is valid.

8.4.1.14. *Warranties for Systems*

- A. On all installations of new irrigation systems, an irrigator shall present the irrigation system's owner or owner's representative with a written warranty covering materials and labor furnished in the new installation of the irrigation system. The irrigator shall be responsible for adhering to terms of the warranty. If the irrigator's warranty is less than the manufacturer's warranty for the system components, then the irrigator shall provide the irrigation system's owner or the owner's representative with applicable information regarding the manufacturer's warranty period. The warranty must include the irrigator's seal, signature, and date. If the warranty is part of an irrigator's contract, a separate warranty document is not required.
- B. An irrigator's written warranty on new irrigation systems must specify the irrigator's name, business address, and business telephone number(s), must contain the signature of the irrigation system's owner or owner's representative confirming receipt of the warranty and must include the statement: "Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ), MC-178, P.O. Box 130897, Austin, Texas 78711-3087. TCEQ's website is: www.tceq.state.tx.us."
- C. On all maintenance, alterations, repairs, or service to existing irrigation systems, an irrigator shall present the irrigation system's owner or owner's representative a written document that identifies the materials furnished in the maintenance, alteration, repair, or service. If a warranty is provided, the irrigator shall abide by the terms. The warranty document must include the irrigator's name and business contact information.

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8.4.1.15. *Duties and Responsibilities of City Irrigation Inspectors*

A licensed irrigation inspector shall enforce the ordinance of the city, and shall be responsible for:

1. Verifying that the appropriate permits have been obtained for an irrigation system and that the irrigator and installer or irrigation technician, if applicable, are licensed;
2. Inspecting the irrigation system;
3. Determining that the irrigation system complies with the requirements of this chapter;
4. Determining that the appropriate backflow prevention device was installed, tested, and test results provided to the city;
5. Investigating complaints related to irrigation system installation, maintenance, alteration, repairs, or service of an irrigation system and advertisement of irrigation services; and
6. Maintaining records according to this chapter.

8.4.1.16. *Items not covered by this ordinance*

Any item not covered by this ordinance 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.

8.4.1.17. *Fees*

The city council may create a schedule of fees for obtaining and renewing an irrigation permit. These fees will be in amounts sufficient to cover the city's costs in issuing and renewing the permits, including, but not limited to, staff time and other overhead costs as stated in [Article 22, "Fee Schedule,"](#) of the Unified Development Code.

8.4.1.18. *Enforcement*

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

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- B. Any person violating 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 a separate offense. An offense under this chapter is a Class C misdemeanor, punishable by a fine of up to \$2000.00.
- C. Nothing in this chapter shall be construed as a waiver of the city's right to bring a civil action to enforce the provisions of this chapter and to seek remedies as allowed by law, 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.

SECTION 5 – LANDSCAPE ENHANCEMENTS

8.5.1. A landscape plan that complies with the provisions of this article and stipulates whether native/adaptive (or combination) landscaping will be used shall be submitted to the Building Official prior to the issuance of a building permit for any development for which building permits are required and to which this article applies. The landscape plan will be one component of the Site Plan and will be certified by a certified landscape architect. It is recommended that developers also develop a general outdoor annual water budget as a guideline for irrigation design and long-term landscape management. (*see National Association of Home Builders Model Green Home Building Guidelines, December 13, 2004*)

- A. Irrigation requirements may also be met/supplemented by the harvesting of rainwater using an approved rainwater collection system.
- B. Artificial Lot: If a developer wishes to develop a portion of a one-acre or larger tract, the developer may request that the Development Review Committee delineate the portion of the tract to be developed as an artificial lot, for purposes of calculating landscape requirements for the development. Artificial lots may be delineated in any type of development, including schools and churches. All artificial lots shall meet the following requirements:
 - 1. Contain the entire area on which the development is to occur, including all paved areas; and
 - 2. Contain a land area of less than 50% of the entire tract, or, if the proposed artificial lot contains more than 50% of the entire tract, the Development Review Committee must determine that a

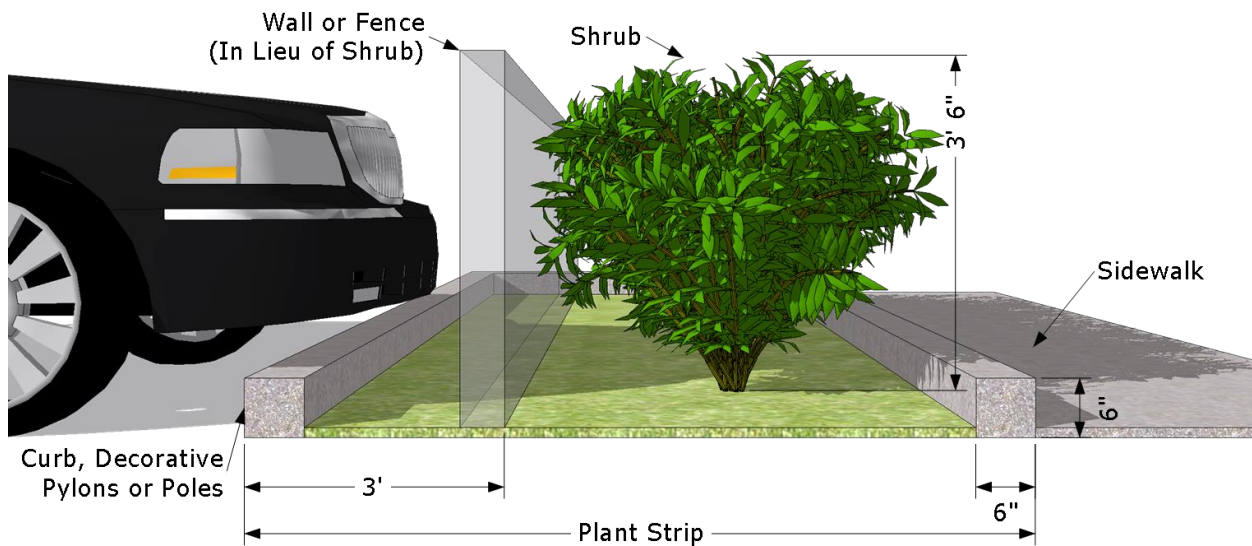
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substantial amount of the tract is not affected by the proposed development; and

3. Be delineated on the landscape plan.

- C. **Vehicle Protection:** All required landscape areas, planters, walls, and/or fences adjacent to vehicle use areas shall be protected by wheel stops, curbs, or other physical barriers (see Figure 1).

Figure 1: Vehicle Protection



- D. The Development Review Committee, upon receipt of a landscape plan may approve types of landscaping, other than those listed in Exhibit 5.
- E. In no case shall man-made landscape plant material be submitted for the required landscape vegetation.
- F. Due to seasonal considerations, if the developer cannot establish permanent turf, they shall be required to stabilize the landscape areas to prevent erosion with temporary grasses or turf (rye, fescue, etc.), until permanent landscaping is installed as stated in [Section 8.5.1](#).

- 8.5.2. **Landscaping Required by Zoning Districts:** Construction projects subject to this section shall provide landscape areas from 4% to 15% of the total site plan as specified by the Concept Plan, Planned Development and/or Site Plan. (See *Chart A below*)

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Chart A: Landscape Requirement by Zoning District

Zoning District	Landscaping Percentage
Neighborhood Services (NS)	10%
Office (O)	10%
General Retail (GR)	5%
General Retail-One (GR-1)	10%
Commercial (C)	5%
Commercial-One (C-1)	10%
Central Area (CA) & CBD¹	5%
Heavy Commercial (HC)²	10%
Light Industrial (LI)²	10%
Heavy Industrial (HI)²	10%
Hospital District (HC)	10%
Institutional Uses	10% in Single Family (SF) and Two Family (2F) Districts; Same % of the Zoning District in the Non-Residential Districts
Multi-Family-One (MF-1)³	15%
Multi-Family-Two (MF-2)³	15%
Multi-Family-Three (MF-3)³	15%
Planned Development (PD)	[Use Closest Related Zoning District]
Agricultural (A)⁴	4%

Notes:

1. Percentage of undeveloped area.
2. See Appendix X.
3. Where not being used for agricultural purposes.
4. Institutional Uses are considered to be Churches, Schools, and Governmental Facilities.

SECTION 6 – LANDSCAPING FOR RESIDENTIAL DEVELOPMENT

8.6.1. Landscaping requirements for single-family detached, single family attached, and single-family townhome residential uses.

A. Each residence at the time of occupancy shall have the following minimum landscaping:

1. Tree planting requirement.

- a. For lots containing 5,000 square feet or less: One three-inch caliper tree planted in front of each residence. Tree species shall be in accordance with the City of Grand Prairie approved tree list (See Exhibit 5). Large and medium trees may NOT be planted beneath utility lines.
- b. For lots greater than 5,000 square feet in area: One three-inch caliper tree shall be planted in front of each house with a second three-inch caliper tree to be located per Developer/Owner preference. Tree species shall be in

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accordance with the City of Grand Prairie approved tree list (See Exhibit 5). Large and medium trees may NOT be planted beneath utility lines.

2. Front yard shrubs shall be provided for each residence in any size increment totaling a minimum of 30-gallons per residential lot. Shrub species to be in accordance with the City of Grand Prairie approved shrub list (**see Exhibit 5**).
 3. Residential lots may contain up to 40% of landscape area in groundcover.
- B. The Developer/Owner shall receive credit towards the single-family residential tree planting requirement for utilizing existing trees in accordance with criteria prescribed in **Section 8.7.2.2** paragraphs (a) through (h), except that existing trees that die shall be replaced if the remaining trees are less than the amounts prescribed in **Section 8.7.2.1**.
- C. City staff shall administratively approve building setback variances for the purpose of preserving existing trees.

8.6.2. Landscaping requirements for Multi-Family Landscaping

The minimum amount of required landscaping shall include 15% of the total site plan area as specified by the Concept Plan, Planned Development and/or Site Plan.

SECTION 7 – SUBMITTAL REQUIREMENTS

8.7.1 Submittals and Requirements.

Landscaping shall consist of two or more of the following types of planting materials including but not limited to planted grass, trees, shrubs, ground cover (up to 40% of landscape area), and/or other forms of plant material and may include the use of berms. The use of native or adapted plant material is encouraged to reduce irrigation requirements.

- A. A landscape plan submission must consist of two copies of blue line or black line prints. The plan shall be drawn at a scale of 1-inch equals 50 feet or larger (e.g., 1 inch equals 40 feet, 1 inch equals 30 feet, etc.) and be on a standard drawing sheet of a size not to exceed 24 inches by 36 inches. A plan, which cannot be drawn in its entirety on a 24 inches by 36 inches sheet, must be drawn with appropriate match lines on two or more sheets.
- B. The following information shall ALSO be shown on the required landscape plan:
1. Date, scale, north point, and the names, addresses and telephone numbers of both the property owner and the person preparing the plan;

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2. Location of existing boundary lines and dimensions of the lot;
3. Approximate centerlines of existing water courses, the location of the floodway and floodplain, and the location of existing and proposed streets and alleys, utility easements, driveways, and sidewalks on or adjacent to the lot;
4. Project name, street address, and lot and block description;
5. Calculation of gross site area showing all existing and proposed structures, parking and access, other paved areas, and all required buffer yard areas;
6. Calculation of required landscape area and percentages of ground cover and turf;
7. Location and dimensions of areas to be landscaped and total amount of landscaped area;
8. Location, number, species and planting size of all trees, shrubs;
9. Groundcover including both required and actual materials provided;
10. Location and coverage of required irrigation system per [Section 8.4.1](#);
11. Delineation of artificial lot, if applicable, including depiction of all proposed and existing structures, access drives, appurtenant parking and other paved areas proposed for expansion or new construction; and
12. The location of overhead utility lines.
13. Any additional requirements as promulgated by the Director.

8.7.2 Planting Materials.

8.7.2.1 Trees

All new trees required to meet the landscaping requirement shall be a minimum three-inch caliper measured at a height of 6 inches above the ground. If a trunk tree splits into multiple trunks below the 6-inch level, then the multiple trunk trees are measured:

1. Measure largest trunk circumference;
2. Remaining trunks, measure circumference divided by two;

Sum of (1) and (2) for the total circumference, divide total by 3.14 for caliper.

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For every 500 square feet of required landscape area, or fraction thereof, of required landscape area, one tree of three-inch caliper or larger is required. Trees shall be located on the site in the following sequence:

1. Street trees shall be planted a minimum of 25 linear feet apart and a maximum of 50 linear feet apart along collectors and arterials (the Director of Planning or his designee can permit the clustering of street trees);
2. Parking lot trees shall be located in the parking area (one tree for each 20 parking spaces);
3. The remaining required trees may be located throughout the site. Street trees and parking lot trees are included in the total tree requirements and are not in addition to that requirement.

Trees may NOT be planted beneath utility lines.

Up to 50% of the required number of parking lot trees may be replaced by five-gallon shrubs at the rate of one-tree equals ten (10) shrubs. Shrubs cannot be substituted for street trees.

Existing trees of three-inch caliper (measured at a height of 4.6 feet above the ground) or larger may be substituted for required landscaping trees of equal size. (see Exhibit 6 for planting detail).

8.7.3 Tree Credits.

- A. Existing trees may be used to fulfill tree-planting requirements pertaining to screening and landscaping if such trees are in a healthy and growing condition. When existing trees are used to fulfill screening and landscape requirements, their locations shall be accepted, and the formal spacing requirements of the screening and landscape standards may be waived. Protected Tree species can be used for tree credit according to Section 16: Tree Protection Standards. If existing trees are used for credit, the developer shall submit a tree protection plan according to Section 8.16.6.A and protect trees during construction according to Section 8.16.7.
- B. Residential property owners shall maintain and preserve all minimum required trees on their property that were required by ordinance at the time the residential lot was initially developed. Waivers to this requirement shall be granted under the following conditions:
 1. Where the existence of such trees poses a threat to the health and/or safety of the general public, or
 2. To trees that expire naturally due to no negligence of the property owner.
- C. If a single-family residential development preserves an average of 30 or more trees per acre, the minimum lot size within the development or subdivision may be reduced by ten (10)

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percent below base zoning district requirements. Use of preserved areas for this provision is subject to the following:

1. Area of preservation may be dedicated to the City, including land required by the City's Park Department, or to be maintained by a Homeowner's Association or Public Improvement District,
2. The City reserves the right to require maintenance by a Homeowner's Association, PID, trust, or other entity if acceptance of the open space dedication is not in the best interests of the City.
3. A tree survey is required to be approved with the Final Plat when utilizing this provision for credit (see Tree survey, Section 8.16.6.B).

D. View Obstruction

Trees shall not be planted within the visibility triangle areas of any street, alley and/or driveway intersections (subject to transportation's current ordinance). At time of building permit review, the Director of Transportation or designee may extend the visibility triangle areas adjacent to street, alley, and/or driveway intersections accessing or near a curvilinear street section in which sight easement and visibility demands are greater than for a straight street section. (see [Article 23, "Master Transportation Plan,"](#) of the Unified Development Code) All trees and landscaping must also comply with any sight easement restrictions established on the property.

E. Additional Trees

For every 3-inch caliper tree planted in addition to those required by this article, the required landscape area may be reduced by 200 square feet, provided however, the minimum required landscape area may not be reduced to less than 50 % of the original requirement.

F. Shrubs

In order to meet the landscaping requirement, shrubs shall be a minimum five-gallon container size and meet the standards of the American Association of Nurserymen. (See Exhibit 7 for planting detail). For every 50 square feet, or fraction thereof, of required landscape area, one shrub a minimum of five gallons in size is required. Up to 50% of the required number of shrubs may be replaced by three-inch caliper trees at the rate of 10 shrubs equals one tree.

1. In addition to required trees and shrubs, all of the required landscape area must be covered with grass, organic mulch, or live groundcover (up to 40% of landscape area). A native/adaptive materials landscape plan that reflects a variety of native or adapted plant materials having low maintenance and water requirements is encouraged.

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2. All plant materials, including replacement trees, shall be specified and planted with plants using the standards of most recently published version of the American Standards for Nursery Stock, by the American Association of Nurserymen. All plants shall be clearly tagged by the providing nursery for easy inspection with the Botanical Name. All landscaping shall be installed according to sound horticultural practices, in a manner designed to encourage quick establishment and healthy growth (see Exhibits 6 and 7).
3. All required landscape areas shall be located outside the exterior perimeter of the footprint of a building or structure.
4. Whenever practical, topsoil that is removed during construction shall be stored onsite and conserved for later use in required planting areas or topsoil of native type may be imported and placed to a depth of six inches in all landscaped areas while also maintain a level of no more than three inches within the critical root zone.

8.7.4 Maintenance.

All required landscaping shall be kept neat, healthy, and free of weeds and debris. Upon written notification, any dead or deteriorated plants shall be removed and replaced within 30 days from date of notification. Replacement plants may be selected from Exhibit 5 for fulfilling the requirements of the article. In the event the developer uses trees not identified in Exhibit 5, the requested tree must be submitted to the Director for approval. The owner shall maintain all landscape materials in good condition in accordance with the terms of this article.

When an automatic, underground irrigation system has been required, it must be maintained as required by the manufacturer's specification, in an operable condition and used on a regular basis. Regular use of such system will be verified by water utility records.

8.7.5 Temporary Landscaping.

If a developer cannot establish the required landscaping on a site due to seasonal considerations, a delay of up to six months in the installation of such landscaping may be allowed by the Director of Planning and Development. Stabilization of raw soil when seasonal conditions do not permit establishment of required landscaping. Erosion control blankets/mats, mulch, straw anchoring, compost blankets, straw rolls, curlex blankets, straw erosion mats, spun bonded fabrics, may be used to hold the soil in place. During winter, temporary grass or turf (such as rye, fescue, etc.) may be planted until the required permanent turf is installed. No final Letter of Compliance or Certificate of Occupancy shall be issued for a development until either the permanent, required

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landscaping is installed or the temporary landscaping is replaced by permanent landscaping within six months.

8.7.6 Lighting.

Reference [Article 10, "Parking and Loading Standards," Section 15, "Glare and Lighting Standards."](#)

SECTION 8 – PUBLIC IMPROVEMENT DISTRICTS

8.8.1 The City of Grand Prairie encourages and may require the creation of Public Improvement Districts (PIDs) under Chapter 372 of the Texas Local Government Code. A PID is a defined geographical area established to provide specific types of improvements or maintenance within the area, which are financed by assessments against the property owners within the area. The following improvements may be included within a PID:

- A. Landscaping and irrigation;
- B. Erection of fountains, distinctive lighting and signs;
- C. Construction/improvement of perimeter fencing;
- D. Construction/improvement of sidewalks;
- E. Acquiring/installing pieces of art or decorations;
- F. Acquiring/constructing or improving entry features; and
- G. Establishing or improving parks

SECTION 9 – SCREENING

It is the intent of the screening and fencing provisions of the UDC that applicants for all required screening and non-required fencing, both public and private, shall obtain a permit prior to beginning construction. A site plan of an acceptable scale shall be submitted for review prior to issuance of a fence permit, which clearly indicates the location of the fence with reference to the property line, the height of the fence, and the materials to be used in its construction.

8.9.1 Public Right-Of-Way.

Landscaping located in the right-of-way shall not be counted toward the on-site landscaping requirement, unless otherwise provided for in this article.

- A. All plantings within the parkways and medians shall be reviewed and approved by the Public Works Department, Transportation Services Department, and the Parks and Recreation Department.
- B. The Directors of Transportation, Public Works and Parks and Recreation may modify these requirements based on site conditions.

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- C. The Directors of Transportation, Public Works and Parks and Recreation may disallow any landscape materials to be placed in the parkway when a street widening is proposed.

8.9.1.1 **Parkways.**

A. A permit is required for irrigation system within the parkway or median. Such encroachment application shall be made to the Director or designated representative by submittal of a site plan. Landscape materials, irrigation systems and the Departments of Transportation, Public Works, and Parks and Recreation shall approve their placement subject to the following requirements:

1. All plant material, except grass, located within the parkway shall be no closer than eight feet laterally from the face of curb and no more than 24" in height. The plant material shall be located so that pedestrians can walk parallel to the street within the parkway whether a paved sidewalk is or is not provided.
2. Public visibility easement of seven feet by 60 feet is required, by ordinance, at the intersection of two streets and eight feet by 70 feet at all driveways. (see [Article 23, "Master Transportation Plan,"](#) of the Unified Development Code)

8.9.1.2 **Mow Strip for Landscaping Within Center Median of Thoroughfares.**

Reinforced concrete mow curbs 18 inches wide x 5 inches deep should be provided to separate all planted areas from turf areas. All mow curbs shall have true radii and be tangent to adjacent segments. A minimum radius of 100 feet is recommended to allow for ease of maintenance with large equipment.

8.9.1.3 **Sidewalks.**

Specifications for the construction of sidewalks are given in [Article 10, "Platting," Section 26](#), and in [Appendix H, "Sidewalk Matrix"](#) of the Unified Development Code. Where sidewalks abut a perimeter fence or wall, the pavement shall fill the gap between the column and the fence or mow strips the width of the pilaster may be used.

8.9.2 **Adjacent Public Right-of-Way.**

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8.9.2.1 **Street Trees.**

Street trees shall be provided in all districts, excluding Single Family and Two-Family Districts except where indicated by this Section, along designated

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arterials and collectors as identified on the Thoroughfare Plan. Where street trees front a property, they may be credited toward the total number of trees required by the Landscape Plan. Large or medium street trees may NOT be planted beneath overhead utility lines.

- A. Landscape materials, irrigation systems and their placement shall be approved by the Departments of Transportation, Public Works and Parks and Recreation subject to the following requirements:
 - 5. Plant materials 24 inches or greater in height and located within the parkway shall be no closer than eight feet, laterally, from the back of the curb and four feet, laterally, from the sidewalk.
 - 6. All landscaping shall be located so that pedestrians can walk parallel to the street within the parkway whether a paved sidewalk is or is not provided.
- B. Street trees shall not be located within eight feet of back of curb and shall NOT be planted between the curb and sidewalk. Trees must be spaced a minimum of 25 linear feet apart, and a maximum of 50 linear feet apart measured along the property line and/or linear frontage. The Development Review Committee may allow the clustering of trees due to topographic or physical conditions.
- C. Be of the species listed in *Exhibit 5*.
- D. Have one type of fence treatment a minimum of six feet from said tree to allow access for maintenance on major thoroughfares behind the street tree buffer.
- E. Street trees are not required in Single Family and Two Family Districts, in accordance with this Section except where property backs up to a designated arterial or collector.
 - 1. Such street trees shall be installed at the time of construction of the arterial or collector, or at the time of development of the subdivision adjacent to such roadway by the developer and shall be accepted as part of the road improvements by the Director of Public Works.
 - 2. The two-year maintenance bond for the road improvements shall also cover the street trees, and the developer shall be responsible for maintenance and replacement of such trees.
 - 3. Issuance of building permits within the subdivision may be subject to compliance with this requirement.

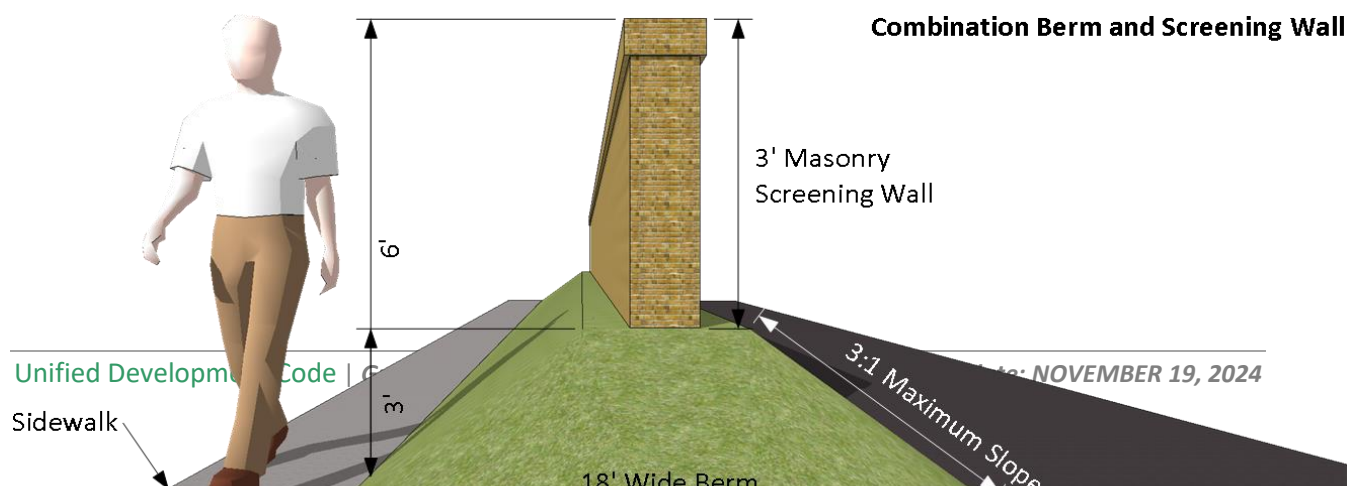
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- F. No structure, object, or plant of any type may obstruct vision from a height of 24 inches to a height of 12 feet above the street grade and eight feet above the sidewalk, including, but not limited to, trees, shrubs, buildings, fences, walks, signs, cars, trucks, etc.
- G. The Directors of Transportation, Public Works and Parks and Recreation may modify these requirements based on site conditions.
- H. The Directors of Transportation, Public Works and Parks and Recreation may disallow any landscape materials to be placed in the parkway when a street widening is proposed.
- I. No trees, except under story trees, shall be planted within 25 feet of a street light or where they significantly inhibit the projection of illumination on the street surface to a point midway between the light in question and the adjacent street light.
- J. Plants that are thorny, such as Pyracantha, or bear non-edible fruit that may cause illness, such as Pyracantha or China Berry, and other landscape features, which may pose an unusual health or safety problem, are prohibited.

8.9.2.2 *Parking Areas Adjacent to Public Right-of-Way.*

Loading docks and trucks berths: See Appendix X for buildings greater than **20,000 square feet**. For buildings less than 20,000 square feet or property under 5 net acres, a combination of opaque walls, screening fences, trees, shrubs, which are a minimum of eight feet in height, landscaped berms, or landscape areas that must be used to screen loading dock areas from view from the public street right-of-way adjacent to residential and/or retail areas; or from adjacent collectors and/or arterial streets that are defined in the Master Transportation Plan (*defined as a major street in figures below*). Screening shall be eight feet in height and of sufficient length to screen the maximum size trailer that can be accommodated on site.

Figure 2: Berm Screening Options



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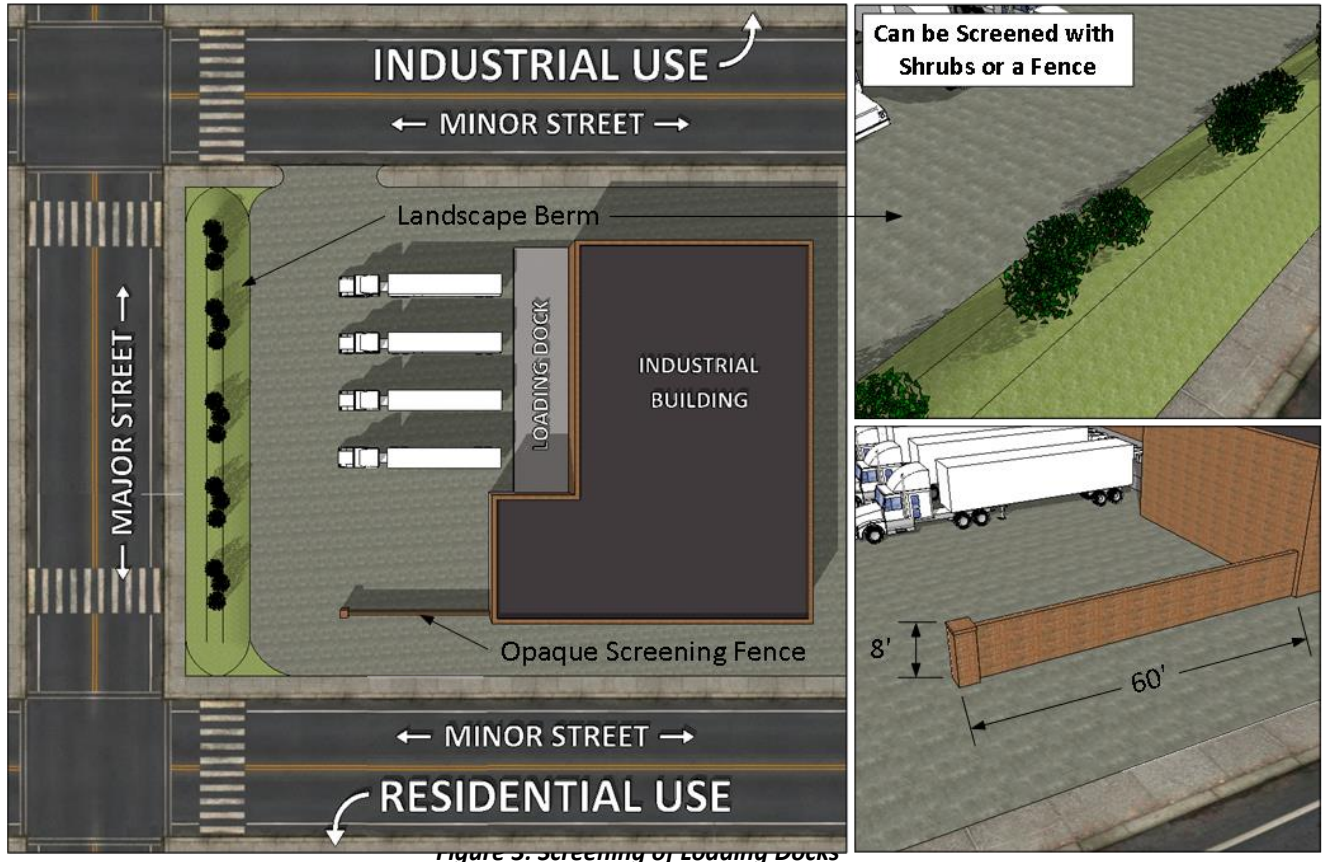


Figure 9: Screening of Loading Docks

Example: Docks and berths that accommodate a sixty (60) foot trailer shall be screened with a sixty (60) foot wall parallel to the berth. A minor street, with residential uses located across the street, will require the parallel screening. A major street will require the parallel screening regardless of the type of land uses located across the street.

8.9.2.3 Designated Easements.

A. Water and Sewer Lines:

1. Landscaping within all designated easements on site shall be restricted to grasses, ground covers, or decorative rock or gravel.
2. The City of Grand Prairie shall not be responsible for any tree damaged by work on water or sewer lines in an easement. If required trees are damaged or destroyed by such work, those requirements may be waived at the discretion of the Director.

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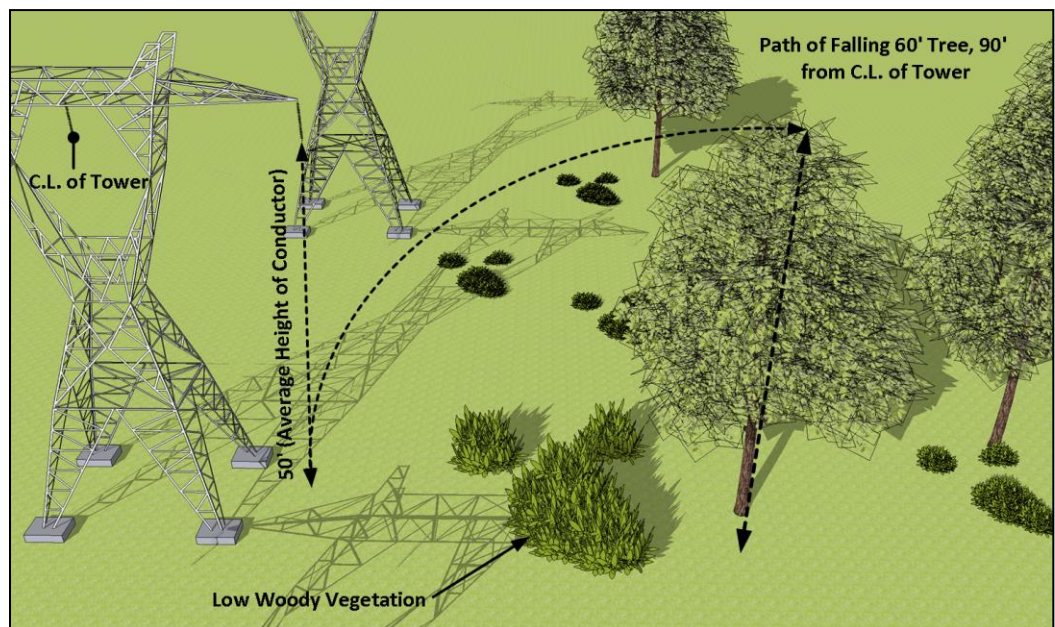
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3. No trees shall be planted over water and/or sewer lines.
4. Rainwater harvesting devices may not be placed within utility easements or required setbacks.

B. Overhead Electrical Transmission Lines and Fiber Optic Lines:

1. Plant material within the parkway shall be restricted to grasses, ground cover, or aggregate rock and/or gravel, (not to include climbing ground covers such as ivy, honeysuckle, etc.) and medium size shrubs (six to ten feet) keeping a minimum of one mature spread from each tower and/or three feet from each pole.
2. If a transmission line is located within a subdivision or a public or private Recreational area, no tree shall be planted which obtains a matured height that will pass within five feet of a transmission line conductor if it fell directly toward the line.

Figure 4: Trees Planted Near a Transmission Line Tower



C. Transmission Line Tower Within a Subdivision:

If a transmission line is located within a subdivision or a public or private recreational area, no tree shall be planted which obtains a matured height that will pass within five feet of a transmission line conductor if it fell directly toward the line.

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8.9.2.4 ***Parking Areas.***

- A. One tree shall be provided for each 20 parking spaces in all non-residential developments; however, no car parking space shall be located greater than 100 feet from the center of a tree. Trees shall be a minimum of three-inch caliper measured four and one-half feet from the ground and planted within a planting island with a minimum dimension of five feet in width. The tree-planting island must be further planted with a ground cover, grass, or shrubs and may be counted toward the total required square footage of required landscaping.
- B. Parking areas shall be screened along all streets by a minimum three-foot high solid shrub hedges when mature, berm, fence, or combination of these. The height shall be measured from the finished grade of the parking lot at the front property line. In no case shall the slope of a berm exceed 3:1 unless it is retained on the private property side of the berm by usage of Millsap stone or similar non-porous material.
- C. In CPTED areas/neighborhoods, shrubbery shall be no more than three feet high for clear visibility.
- D. Runs of parking spaces within multi-family developments shall be limited to a maximum of 10 spaces without a landscaped island. However, up to 20 spaces may be permitted in situations where it is required to save existing trees.

8.9.3 **Residential Screening.**

8.9.3.1. ***Thoroughfare Screening Fences at Subdivision Entrance.***

Required screening fences fronting along designated arterial or collector streets shall extend (or turn) into and along the side or rear lots lines, where such conditions exist, of residential lots that abut the local residential entry street(s) extending into the subdivision from the arterial or collector street. The extended (or turned) portion of said screen fence shall not encroach into the required front yard setback for any residential lot. Thoroughfare screening for residential development shall conform to the requirements found in Appendix W.

8.9.3.2. ***Required Fences.***

All single family detached, single-family attached and two-family residential lots which back up to a collector and/or an arterial shall require a continuous screening fence in accordance with the following provisions.

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- A. The developer of lots platted after May 1, 1998 shall be required to construct a continuous screening fence along all lots which back up to a collector and/or an arterial as follows.
1. For lots where City Council has approved an ordinance requiring a specific fence or a fence was required by a note on the plat, a fence shall be constructed in accordance with the requirements of that ordinance or plat.
 2. For all other lots, the screening fence shall meet the requirements for a "Type 1" screening fence as defined in [Section 8.9.1](#) of this ordinance or, where the view beyond the fence is of a landscaped front or side yard, a "Type 2" fence as defined in [Section 8.9.2](#) of this ordinance.
- B. The developer of lots platted between November 20, 1990 (the date the Unified Development Code was adopted) and May 1, 1998 shall be required to construct a continuous screening fence along all lots which back up to a collector and/or an arterial as follows:
1. For lots where City Council has approved an ordinance requiring a specific fence or a fence was required by a note on the plat, a fence shall be constructed in accordance with the requirements of that ordinance or plat.
 2. For lots where a uniform fence has been constructed, as determined by the Development Review Committee as a uniform fence of consistent design and materials on more than 80% of the lots in a subdivision adjacent to a street, a fence shall be constructed which is built to the same standards and materials as the established uniform fence.
 3. For all other lots a fence shall be constructed which meets the requirements for a "Type 3" screening fence as defined in [Section 8.9.3](#) of this ordinance.
- C. For lots platted prior to November 20, 1990, a continuous screening fence shall be required along all lots which back up to a collector and/or an arterial as follows:
1. For lots where City Council has approved an ordinance requiring a specific fence or a fence was required by a note on the plat, a fence shall be constructed in accordance with the requirements of that ordinance or plat.
 2. Where a specific type of fence has been established adjacent to an arterial or collector in a development where no fence has been formally required by an ordinance or plat, the existing fence must be replaced or

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repaired with a fence built to the same standards as the established fence. An established fence shall be a fence determined by the Development Review Committee as a uniform fence of consistent design and materials, which is in place on more than 80% of the lots in that subdivision on that block adjacent to a collector or arterial. Chain link or other fence types more than 50% transparent shall not be considered a solid screening fence.

- D. If a required screening fence was not installed at the time of development, the screening fence shall be installed by the builder at the time of construction of the house on the subject lot.
- E. Detention Ponds: The perimeter boundary of a detention/retention pond, or a portion thereof, that is situated within 120 feet of a street right-of-way designated on the Master Transportation Plan as a Collector or Arterial thoroughfare shall be fenced with a four-foot high wrought iron type fence, equal in design to a Type 2 screening fence as specified in [Section 8.9.2](#) of the Grand Prairie Unified Development Code. Any portion of said fence for pond that either directly adjoins or is situated within 15 feet of the designated street right-of-way shall contain brick columns. Said brick columns shall equal or exceed the height of the fence and be spaced a maximum of 24 feet apart on center along the designated street right-of-way. Otherwise, no brick columns shall be required for fences that do not adjoin, or are situated more than 15 feet from the designated street right-of-way.
- F. The use of a chain link type fence as a substitute to the above requirement shall be considered by City staff if there are intervening structures or mature landscaping (existing or proposed) that would effectively screen the fence from view along the designated street right-of-way.

8.9.3.3. ***Common Lot to be established for Thoroughfare Screening Fences.***

New residential subdivisions platted after May 20, 2003 with required thoroughfare screening fences shall require the establishment of a separate common lot for the placement of required fences along designated arterial or collector streets. Said common lot (s) shall be dedicated to the mandatory homeowners association or public improvement district at time of final platting and shall measure no less than 10 feet in depth.

8.9.3.4. ***Upgraded Residential Fencing across the Street from Front Yards.***

Side or rear yard residential fences constructed after May 20, 2003 and not subject to the requirements of Appendix W that are located across a street from a front yard condition shall be constructed as a uniform fence to Type 3 standards with cement fiberboard panels or planks, or with an approved

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equivalent material, as described in [Section 8.9.3](#). Such fences shall be constructed such that stringers are not visible along the public street and shall be maintained by a mandatory property-owners association and/or a public improvement district ("PID") as required by [Section 8.7.1](#).

8.9.4 Required Screening Regulations for Multi-Family Development.

All multi-family development shall provide a screening fence in accordance with the following provisions.

- A. All multi-family development shall be required to erect a "Type 1" fence on property lines adjacent to any property which is zoned for single-family detached, single family attached or single-family townhome residential uses.
- B. All multi-family development shall be required to erect a "Type 3" fence on property lines adjacent to any other use except as provided in paragraph "A" above.
- C. All multi-family development shall be required to erect a "Type 2" fence adjacent to street right-of-way.

8.9.5 Non-Residential Screening.

All non-residential development shall provide a screening fence in accordance with the following provisions.

- A. All non-residential development, except for schools and day care centers, shall be required to erect a "Type 1" fence on property lines adjacent to any property which is zoned for single family detached, single family attached, two-family, and multi-family residential uses.
- B. All schools and day care centers shall be required to erect a "Type 3" fence on property lines adjacent to any property, which is zoned for single-family detached, single-family attached or two-family residential uses.
- C. Religious institutions shall be required to erect a "Type 2" fence along all property lines adjacent to any property, which is zoned for single-family detached, single-family attached or two-family residential uses.

8.9.6 Required Screening Regulations for Outside Storage.

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All outside storage shall require a screening fence in accordance with the following provisions.

- A. All outside storage shall be required to be screened with a "Type 1" fence on any property line adjacent to any property which is zoned for single family detached,

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single family attached, two-family, and multi-family residential uses or for any outside storage area within 40 feet of street right-of-way line. All screening fences for outside storage must be setback a minimum of 25 feet from any street right-of-way line.

- B. All outside storage shall be required to be screened with a "Type 3" fence on property lines adjacent to any other use except as provided in paragraph "A" above.

8.9.7 Other Screening Requirements.

8.9.7.1. *Mechanical and Electrical Equipment.*

All non-residential building mechanical and electrical equipment other than utility service and equipment, located adjacent to the building, thoroughfare or a residentially zoned area shall be screened from view. Rooftop equipment shall be concealed from eye-level public view from all areas of a public street right-of-way and from eye level public view of any residentially zoned property. Roof mounted equipment shall be screened with a 36 inch parapet of architecturally compatible material similar to that used on the main building. Sufficient clearance shall be provided and maintained between the equipment and the screening to provide adequate access for maintenance and ventilation. No roof-mounted equipment shall be within three feet of the roof perimeter.

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8.9.7.2. *Refuse*

Areas reserved for refuse storage shall be screened by a solid non-transparent masonry wall similar in material to the main structure and shall have a screening gate, which shall remain closed except when being serviced. Recycling and dumpster areas shall be located no closer than 20 feet to an adjacent residentially zoned property and shall not be located within any required building setback along a street right-of-way. The screening gate side shall be concealed from eye-level public view from all areas of a public street right-of-way and from eye level public view of any residentially zoned property. Said screening fence shall be a minimum of six feet in height (see [Appendix C](#) for more detail).

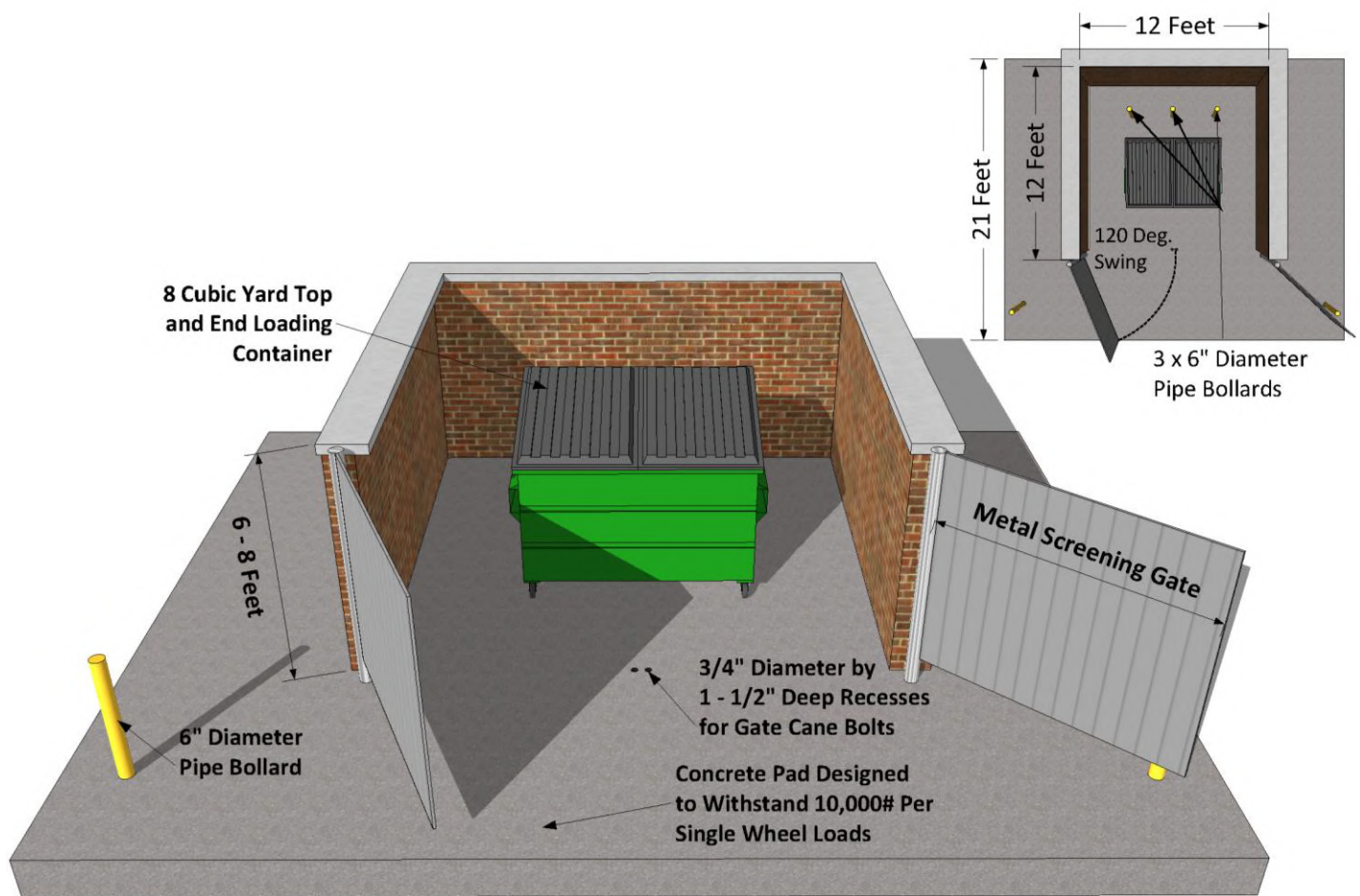


Figure 5: Dumpster Screening Enclosure Detail

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SECTION 10 – FENCING

8.10 Fencing.



Type 1: Masonry Construction



Type 2: Wrought Iron with Masonry Columns

8.10.1 Type 1 Screening Fence Materials and Construction (Masonry).

Where a "Type 1" screening fence is required, the screening fence shall be a solid masonry wall, a minimum six feet high, unless an alternate design is authorized in accordance with the exception procedures of [Section 8.9.6](#) detailed below. Such screening shall be located on private property, adjacent to the common property line. The standard "Type 1" screening fence shall be constructed with the following standards:

- A. Said fence shall be a minimum of six feet in height, and shall have concrete mowing strips installed under the entire length of the wall with a minimum of six inches of the strip exposed on the side of the wall adjacent to a public right-of-way. The mowing strips shall be constructed with a minimum four-inch thick reinforced concrete. The mowing strip shall be flush with finished grade and not interfere with natural drainage.
- B. All masonry construction shall be kiln-fired brick of natural colors, either double wall brick or thin wall brick, with a mortar bond finish on both sides, in earth tone colors achieved through color additives. A reinforced concrete wall shall be allowed as a private screening wall fence, but shall not be allowed to face on a collector or arterial thoroughfare.
- C. Decorative stone or masonry columns or pilasters are required at an approximate maximum distance of 50-foot centers situated on lot corners.
- D. The use of a rowlock brick, cast stone or similar features shall be utilized as a cap at all walls, columns and pilasters along with other design elements to articulate the top of the wall.

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- E. Bottom of masonry wall panels suspended above the grade footing between columns or pilasters are to be supported by hot dipped galvanized continuous steel angle of sufficient dimension to support the wall panel. Tension cables or straps are not allowed as a supporting member.
- F. The required fence for non-residential uses shall be constructed of brick masonry, concrete panels, or architectural concrete masonry units for any portion of a fence adjacent to a residential zoning, adjacent to a street, or visible from and within 200 feet of a public street. The minimum height of a required screening fence shall be six feet. All other required screening fences must be of like materials or be the "standard screening fence." Standard fencing materials include masonry, wood, wrought iron type, vinyl-PVC, split rail, brick, and stone.

8.10.2 Type 2 Screening Fence Materials and Construction (Wrought iron type with masonry columns).

Where a "Type 2" screening fence is allowed, the screening fence shall be a wrought iron fence with masonry columns a maximum of 24 feet on center, unless an alternate design is authorized in accordance with the exception procedures of [Section 8.9.6](#) detailed below. Such screening shall be located on private property, adjacent to the common property line. The standard "Type 2" screening fence shall be constructed with the following standards:

- A. Said fence shall be a minimum of six feet in height, and shall have concrete mowing strips installed under the entire length of the wall with a minimum of six inches of the strip exposed on the side of the wall adjacent to a public right-of-way. The mowing strips shall be constructed with a minimum four-inch thick reinforced concrete. The mowing strip shall be flush with finished grade and not interfere with natural drainage.
- B. All masonry construction shall be kiln-fired brick of natural colors, or split face concrete masonry units (CMUs), or other CMU of appropriate texture, in earth tone color achieved through color additives.

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Type 3: Cement Fiberboard or Wood



Type 4: Wood without a Mowing Strip

8.10.3 Type 3 Screening Fence Materials and Construction (Cement fiberboard or wood).

Where a "Type 3" screening fence is required, the screening shall be a solid cement fiberboard wall or a wood screening fence, a minimum six feet high, unless an alternate design is authorized in accordance with the exception procedures of [Section 8.9.6](#) detailed below. Such screening shall be located on the subject property, adjacent to the common property line. The standard "Type 3" screening fence shall be constructed with the following standards (*reference [Appendix C](#) for exhibit of Standard Screening Fence*):

- A. Said fence shall be a minimum of six feet in height, and shall have a minimum of six-inch wide concrete mowing strips installed under the entire length. The mowing strips shall be constructed with a minimum four-inch thick reinforced concrete. The mowing strip shall be flush with finished grade and not interfere with natural drainage.
- B. All vertical posts shall be two and three eighths (2-3/8) inch minimum outside diameter standard pipe gauge, or two and one half (2-1/2) inch square by one-eighth (1/8) inch wall gauge galvanized steel.
- C. All wood materials shall be decay resistant, such as redwood, cedar or wolmanized pine exterior grade.
- D. Nail the vertical slats to three horizontal bracing stringers (bottom), middle, and top nailer boards) running from vertical post to post. The size of the stringers shall be no less than two inch by three inch.
- E. All nails or fasteners shall be of non-rusting, non-corrosive metal such as hot dipped galvanized steel. All nails or fasteners shall be of the type (such as screw shank, ring shank, or divergent point staples) that when properly driven, will not work free due to wind, vibration, or shrinkage of members.

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- F. All materials shall be securely fastened, vertical boards to horizontal stringers, stringers to vertical posts, top rail, to ensure an ongoing attractive appearance and safe condition, free from rust, rot, vandalism, and other sources of decay.
- G. The attached sketch indicates basic dimensional requirements and types of materials to be used. Standard and customary fence construction practices are required. (see [Appendix C](#))
- H. When a "Type 3" screening fence runs parallel and adjacent to an alley, two additional stringers (bottom and middle) shall be required to be placed on the opposite side of the three required stringers to stabilize and add rigidity.
- I. All "Type 3" fences shall be constructed such that the stringers are not visible along public right-of-way or public park facility (stringers will be on the inside, facing inward to the private lots, of all required fences).
- J. All "Type 3" fences running perpendicular to and being visible from a public street, and that face a vacant lot greater than one acre in size that has frontage on same public street, shall be constructed such that stringers are not visible along the public street or vacant lot (stringers will be on the inside, facing inward to the private lots, of all required fences).

8.10.4 Type 4 Screening Fence Materials and Construction (Wood without mowing strip).

Where a "Type 4" screening fence is required, the screening shall be a wood screening fence, a minimum six feet high, unless an alternate design is authorized in accordance with the exception procedures of [Section 8.9.6](#) detailed below. Such screening shall be located on the subject property, adjacent to the common property line. The standard "Type 4" screening fence shall be constructed with the following standards:

- A. Said fence shall be a minimum of six feet in height.
- B. All vertical posts shall be two and three eighths (2-3/8) inch minimum outside diameter standard pipe gauge, or two and one half (2-1/2) inch square by one-eighth (1/8) inch wall gauge galvanized steel.
- C. All wood materials shall be decay resistant, such as redwood, cedar or wolmanized pine exterior grade.
- D. Nail the vertical slats to three horizontal bracing stringers (bottom), middle, and top nailer boards) running from vertical post to post. The size of the stringers shall be no less than two inch by three inch.

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- E. All nails or fasteners shall be of non-rusting, non-corrosive metal such as hot dipped galvanized steel. All nails or fasteners shall be of the type (such as screw shank, ring shank, or divergent point staples) that when properly driven, will not work free due to wind, vibration, or shrinkage of members.
- F. All materials shall be securely fastened, vertical boards to horizontal stringers, stringers to vertical posts, top rail, to ensure an ongoing attractive appearance and safe condition, free from rust, rot, vandalism, and other sources of decay.
- G. The attached sketch indicates basic dimensional requirements and types of materials to be used. Standard and customary fence construction practices are required. (see [Appendix C](#))
- H. All "Type 4" fences shall be constructed such that the stringers are not visible along public street or public park facility (stringers will be on the inside, facing inward to the private lots, of all required fences).
- I. All "Type 4" fences running perpendicular to and being visible from a public street, and that face a vacant lot greater than one-acre in size that has frontage on same public street, shall be constructed such that stringers are not visible along the public street or vacant lot (stringers will be on the inside, facing inward to the private lots, of all required fences).

8.10.5 Nonconforming Fences.

In the event of casualty, in which no more than 60% of the length of a fence is damaged or destroyed, the structure(s) may be rebuilt. Non-conforming fences must be rebuilt to current standards if more than 60% of the fence's length is damaged.

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Chart B: Required Fencing by Use

Fence Type	Materials	Where Required
Type 1	Brick, Stone, or Masonry with Mortar Bond Finish on Both Sides	SF: Rear lots adjacent to arterials and collectors. MF: Adjacent to a SF residential property line. NR: Adjacent to a residential property line and for outside storage adjacent to, and within 40 ft. of a street right-of-way. Industrial: Adjacent to any use not zoned LI or HI or a Planned Development not intended for LI or HI uses (see Appendix X).
Type 2	Wrought Iron with Brick Columns	SF: May be used adjacent to collectors and arterials where the view beyond the fence is of a landscaped front or side yard and there is no view of a rear yard. MF: Adjacent to a street right-of-way line.
Type 3	Cement Fiberboard, Wood with Mow Strip, Vinyl PVC	NR: All Outside storage areas except as otherwise required above. SF: Residential Fences across the street from front yards.
Type 4	Wood Fence, Metal Posts Vinyl PVC	SF: For existing residential lots which back up to arterials or collectors and no existing standard fence has been established.

Where, SF: Single Family; MF: Multi Family; NR: Non Residential

Note: Where a specific type of fence has been established (a standard fence on more than 80% of the lots in that subdivision adjacent to that street) any fence must be replaced or repaired with a fence built to the same standards as the established fence.

[Required Fences]

8.10.6 Exceptions to Required Fences.

- 8.10.6.1. An exception to the screening fence requirement may be granted by the City Council based on a recommendation from the Planning and Zoning Commission. One or more of the following conditions must be present or apply for consideration of an exception:
 - A. Topographical variations that would preclude a normal installation, or act as a screening mechanism. A topographical variation may serve as a screening device if the zoning district requiring the screening fence is separated from the adjoining use by a 30% slope or greater; as long as the elevation between the two uses is at least six feet, (*property requiring the screening fence is at the higher elevation*).
 - B. The land is located in the flood plain.
 - C. An existing fence is in place on the applicant's property that is determined as sufficient and is structurally sound.

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- D. Vegetation exists which is at least six feet high and non-transparent year-round.
- E. An exception for chain link fences or wood fences may be granted upon notification to property owners, which are adjacent to, or directly across the street from said fence.
- F. An exception to the screening fence requirements for single-family development adjacent to designated arterials and collectors may be granted for an alternative fence upon submittal of an approved plan for maintenance of said fence.
- G. An exception to the screening fence requirements for public recreation facilities or public schools may be granted upon notification to property owners, which are adjacent to the fence.
- H. An exception to the screening fence requirements for churches, private recreation facilities, schools or day care centers may be granted upon notification to property owners which are adjacent to the fence and upon submittal of a petition signed by greater than 50% of the owners of the linear footage of adjacent land and signed by greater than 50% of the owners of parcels of adjacent land.

8.10.6.2. Screening fence requirements may be waived by the Development Review Committee, or his/her designee, for public schools for portions of a school site, which are not within 50 feet of a building or parking area.

8.10.7 Non-Required Residential Fences.

No fence in a single family detached, single family attached and single family townhome residential zoned area that is erected along the front street property line or between a required front yard setback of the main building and the front street property, line shall be erected higher than 36 inches. On corner lots no fence in a residential zoned area that is erected along the side street property line shall be erected higher than 36 inches for a distance of 50 feet as measured from the front street curb line. This requirement does not apply in the following situations:

- A. When the fence is transparent, it may be 48 inches in height. Transparent fencing materials include wrought iron, chain link, rail, and picket fences where at least 50% of the fence profile is transparent, but subject to the prohibition listed in [Section 8.9.7.3](#) of this Article.

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- B. The City Council may approve solid fences greater than 36 inches in height along street frontages adjacent to Multi-Family developments through submittal and approval of a site plan in accordance with [Article 16, "Site Plan Approval"](#) of this Unified Development Code.

8.10.7.1 No fence in a residential zoned area located in any other area above of the property shall be erected higher than eight feet. The fences located on interior lot lines may be graduated in height along the side lot lines from the maximum height of eight feet, on the highest grade along the property line at the front building line as required by this ordinance, to the maximum height of 36 inches along the front street property line. This requirement does not apply in the following situations:

- A. When the fence is erected to enclose property that is in acreage and used for enclosing animals or agriculture. No fence, however, shall be erected higher than eight feet.
- B. Fences erected by the City or utility companies to enclose an allowable non-residential use.

8.10.7.2 Residential fences shall be composed of materials recognized as standard, residential grade fencing material unless approval of an exception for use of an alternative fencing material has been obtained under Section 8.11.1 of this Article. However, materials used for fencing, such as corrugated metal, sheet metal, or corrugated fiberglass, are prohibited and shall not be used in the construction of a residential fence.

8.10.8 Non-Required Non-Residential & Multi Family Fences

8.10.8.1 Fences in non-residential or multi-family zoned areas shall be transparent at the minimum required building setback lines adjacent to streets. Transparent fencing materials include wrought iron style fences and chain link fences where at least 50% of the fence profile is transparent.

8.10.8.2 All non-required non-transparent fences must meet the screening fence requirements stipulated in **Section 10** of this Article.

8.10.8.3 Fences in the required building setbacks adjacent to designated arterials and collectors must be of a wrought iron type design style. Fences located in Light Industrial (LI) or Heavy Industrial (HI) zoned districts may install a black vinyl chain link fence in lieu of a wrought iron type fence (see **Appendix V, "Fence Detail,"** of the Unified Development Code for additional requirements for this substitution).

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8.10.8.4 No provision contained herein shall alter any provision, which requires any business to have a screening fence.

8.10.8.5 No fence likely to endanger the health and safety of the public shall be located in or adjacent to a residential area. Public utilities shall be exempted.

8.10.8.6 Non-Residential fences shall be composed of materials recognized as standard, residential grade fencing material and shall not be constructed with corrugated metal, sheet metal, or corrugated fiberglass. R-Panel fences are permitted in the Light Industrial-Limited Standards (LI-LS) District only (standards for a metal fence can be found Appendix V, "Fence Detail" of the Unified Development Code).

8.10.9 Visibility Triangle

On corner lots, no fence shall be constructed within a 30-foot visibility triangle or obstruct a minimum visibility line as established by the Director of Transportation Services for an intersection. The right angle of the visibility triangle shall be established at the point where the curb lines would intersect in the street if the curbs were extended beyond the curb return radius.

8.10.10 Electrified Fences

8.10.10.1 Applicability

Electrified fences are permissible in the Light Industrial (LI) District and Heavy Industrial (HI) Districts only.

8.10.10.2 Exceptions

1. In all other zoning districts, the installation and maintenance of an electrified fence is permissible for fences containing less than two energized strands and having a minimum height of less than twenty four (24) inches measured from grade to the energized strand, provided that the provisions of Section 8.10.10.6 of Article 8 are followed.
2. Electrified fences installed for the keeping of livestock on agriculturally zoned property as defined in the Unified Development Code, provided that the provisions of Section 8.10.10.6 of Article 8 are followed.

8.10.10.3 Permit & Plan Submittal.

A building permit is required prior to the installation, repair, and alteration of electrified fences. A separate permit is required for the installation of a protective barrier. Complete applications for electrified fences shall include the following:

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1. Site plan showing the location of the protective barrier and the electrified fence on the property in relationship to property lines, walkways and exiting buildings.
2. Fence details showing both the electrified fence and protective barrier, including all gates.
3. Electrical details showing the equipment, wiring diagrams, grounding, and other information to ensure compliance with the Electrical Code.
4. Energizer Output Certification Form as prescribed in Section 8.10.10.7. of Article 8.

8.10.10.4 Location Restrictions.

Electrified fences shall not be installed at the following locations:

1. Within five (5) feet of a building exit.
2. Within thirty (30) feet of a hazardous material storage or handling areas.
3. On roof tops or within buildings.
4. All residential uses

8.10.10.5 Electrified Fence Height.

Electrified fences shall be restricted to a maximum height of two (2) feet above the height of the protective barrier.

8.10.10.6 Electrical Equipment Standards.

Electrical equipment, wiring, and grounding shall comply with the provisions of this Code and the following standards:

1. The energizer output shall comply with Section 22.108 of the International Electrotechnical Commission (IEC) 60335-2-76 Standard, as amended.
2. Energizers shall provide pulsed power.
3. AC current shall not be used to energize any electrified fence.
4. The energizer shall be powered by a DC battery not to exceed 12 volts. A trickle charger and solar panels may be used to recharge the battery but shall not directly energize the fence.

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5. All ground system cables shall be properly insulated.
6. The electrified fence grounding system shall not be connected to any plumbing systems.
7. Each energizer shall be connected to its own ground system and shall not be connected to any other grounding system.

8.10.10.7 Energizer Output Certification.

The applicant shall sign a form provided by the City of Grand Prairie certifying that the electrified fence energizer output characteristics comply with Section 22.108 of the IEC 6335- 2-76 International Standard, as amended.

8.10.10.8 Protective Barrier.

The perimeter of the secure area shall be protected by an additional non-electrified fence meeting the following standards:

1. The protective barrier shall be a permanent fence or wall at least six (6) feet in height above the adjacent grade, subject to the limitations of the City of Grand Prairie Zoning Ordinance. A solid wall is required when the protective barrier fence is adjacent to all residential zoning.
2. Openings in the protective barrier shall not allow for the passage of a two (2) inch sphere. The maximum vertical clearance between grade and the bottom of the protective barrier shall be two (2) inches. **Exception:** At rolling gates, the maximum vertical clearance between grade and the bottom of the protective barrier shall be four (4) inches.
3. The protective barrier shall be separated from the electrified fence by a minimum of six (6) inches and a maximum of twelve (12) inches. **Exception:** Conductive stands installed at gates installed in protective barriers shall be separated from the gate by a maximum of twelve (12) inches.

8.10.10.9 Warning Signs.

Electrified fences shall be clearly marked with warning signs. The warning signs shall be placed on the protective barrier at each entrance to the secure area and at intervals not to exceed thirty (30) feet along the entire perimeter of the fence line. Warning signs shall

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be located not less than five (5) feet above the adjacent walking surface.

8.10.10.10 Graphics.

Warning signs shall be printed on both sides in both English and Spanish with the following text: "WARNING ELECTRIC FENCE" and contain the international symbol for electrical shock hazard. Signs shall be reflective with a minimum two (2) inch letter height, minimum stroke of one-half ($\frac{1}{2}$) inch and have a contrasting background.

8.10.10.11 Knox Box or Key Switch.

A Grand Prairie Fire Department permitted and approved key switch shall be installed to provide secure access to the electrical power disconnect switch by public safety personnel. The key switch shall be located at the main entry point to the property in a location approved by the Fire Marshall.

8.10.10.12 Commercial Business Hours of Activation.

An electrified fence shall not be energized during the hours of normal business operation. However, where businesses are operating continuously on a twenty-four (24) hour basis the conductors of an electrified fence shall not be energized unless all authorized persons within or entering the secure area have been informed of the electrified fence location.

8.10.10.13 Alarm Registration.

In accordance with Section 17-63 of the Code of Ordinances, a Fire Alarm permit shall be secured prior to the operation of the security system.

SECTION 11 – FENCING EXCEPTIONS

8.11 Exceptions.

8.11.1 Exceptions for Alternative Fencing Materials in Residential Zoning Districts

- A. An exception to allow for an alternative fencing material in a residential zoning district may be administratively approved by the Chief Building Official or designee upon satisfaction of the following criteria:
 - i. The fence material shall not be one of the materials prohibited for construction of residential fences under Section 8.10.7.2.

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- ii. The material shall be manufactured in a factory. The material must provide above-average lifespan and meet all building code requirements. The submission of a manufacturer specification sheet is required.
- iii. Visual depictions or elevations of construction shall be required for review of appearance prior to approval of the request. Examples of permitted alternative materials are shown in Exhibit 8 of this Article.
 - 1. If metal is proposed, the exterior must provide a durable finish. Material used for metal fences shall be anodized, baked, painted, or powder-coated at the factory.
 - 2. If precast masonry is proposed, the material shall simulate wood, stone, brick, or equivalent.
- iv. An alternative material, design or method of construction shall comply with the intent of the provisions of this code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in this ordinance in quality, strength, effectiveness, fire resistance, durability, and safety.
- v. If the Chief Building Official or designee determines that the proposed alternative fencing material does not meet the criteria of this Section or intent of this Code, the request may be appealed to the Zoning Board of Adjustments and Appeals for final determination.

8.11.2 Other Exceptions

- A. For all other exceptions to the requirements for Non-Required fences not covered in Section 8.11.1, a request may be granted by the Zoning Board of Adjustments and Appeals upon satisfaction of the following criteria:
 - i. Proposed fence is primarily for security purposes, and
 - ii. Proposed fence is composed of materials recognized as normal fencing material including, but not limited to, chain link and wood, and does not include such materials as corrugated metal or fiberglass.

SECTION 12 – DIMENSIONAL GAP BETWEEN ABUTTING RESIDENTIAL FENCES

8.12 Dimensional Gap between Abutting Residential Fences.

Residential fences that abut an existing fence that is situated along the rear or interior side lot line of an adjoining lot shall be constructed within 12 inches of the existing fence.

- A. If a new residential fence is constructed adjacent to an existing fence that is situated along the rear or interior side lot line of an adjoining lot, the new residential fence shall not be constructed farther than six-inches away from the common property line.

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- B. New abutting residential fences shall require a gate providing access into the dimensional gap between abutting fences if said new fence cannot be constructed within six-inches of the rear or interior side lot line of the adjoining lot.

SECTION 13 – FENCE MAINTENANCE

8.13 Fence Maintenance.

- 8.13.1 The area in front of any required screening wall or fence shall be maintained in a clean and orderly condition, free of weeds in excess of 12 inches in height, debris, and trash.
- 8.13.2 Any type of fence treatment shall be a minimum of six feet from said tree to allow access for maintenance on major thoroughfares behind the street tree buffer.
- 8.13.3 Required fence elements shall be maintained in a neat, orderly, and sound manner at all times. Fences shall be in an upright position with all panels, wall brick or other parts in place and firmly attached. Replacement of broken or missing parts shall occur on a prompt and regular basis.
- 8.13.4 All fences shall be maintained by the property owner or a duly established property owners association or Public Improvement District. Ultimately, the property owner shall be responsible for maintenance of the required improvements in a manner consistent with the original installation requirements.
- 8.13.5 For all new residential subdivisions with required fences platted after May 1, 1998, deed restrictions must be filed for lots with a required fence notifying the lot owner of these fence maintenance requirements and authorizing the City to perform the needed maintenance and place a lien against a property to reimburse the City for associated costs, after proper notice has been given to the property owner.
- 8.13.6 Uniform fence maintenance provisions required along collector and arterial thoroughfares.
- A. All new and existing fences along collector and arterial thoroughfares shall be maintained to the minimum quality standards indicated below:
1. Completed fences shall not lean at an angle from the vertical plane any greater than five degrees.

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2. Damaged or destroyed fences must be replaced or repaired with a fence built to exact same design standards, colors and materials as the established fence. An established fence shall be a fence determined by the Development Review Committee as a uniform fence of consistent design and materials, which is in place on more than 80% of the lots in that subdivision on that block adjacent to a collector or arterial. Variations from original design and material standards may be approved by the Development Review Committee or appointed designee in those instances where the original fence materials are no longer available.
- B. New residential subdivisions with required fences platted after May 20, 2003 shall Require the establishment of a mandatory property-owners association and/or a public improvement district (PID) to enforce and fund maintenance requirements contained herein at the expense of the mandatory property-owners association of the development and/or PID for all uniform fences constructed along all single family detached, single family attached and two-family residential lots which back up to a collector and/or an arterial street.

SECTION 14 – GATED ENTRYWAY

8.14 Gated Entryway.

- 8.14.1 Gated entryways for single family detached and single family attached residential drive-ways shall be designed with a minimum gate setback of 20 feet from the current or future (which-ever is greater) street right-of-way line.
- 8.14.2 Gated entryways for multi-family residential developments shall be designed in accordance with [Article 11, “Performance Standards,” Section 11.13.1](#) of this Unified Development Code.
- 8.14.3 Gated entryways for non-residential development shall be designed with a minimum gate setback of 100 feet from the current or future (whichever is greater) street right-of-way line. Additional setback distance may be required by the Director of Transportation Services.

SECTION 15 – EXHIBITS AND RECOMMENDED VARIETIES

The City shall have the right to plant, prune, maintain and remove trees, plants and shrubs within the right-of-way lines of all streets, alleys, avenues, lanes, squares and public grounds, as may be necessary to ensure public safety or to preserve or enhance the symmetry and beauty of such public grounds.

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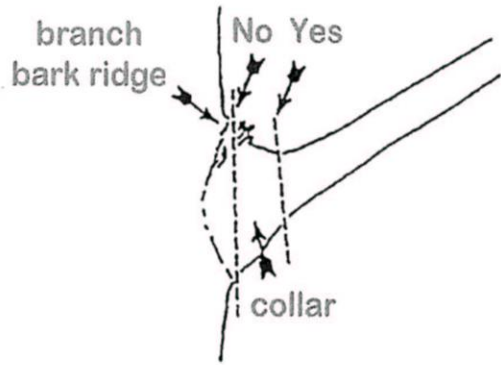
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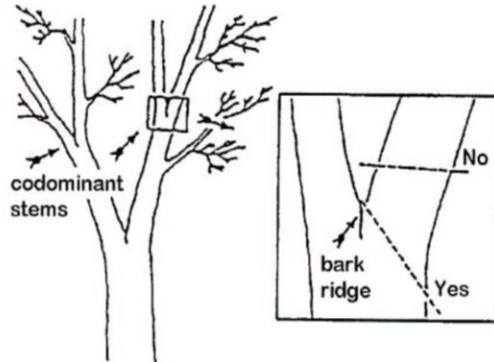
Exhibit 1: Tree Care



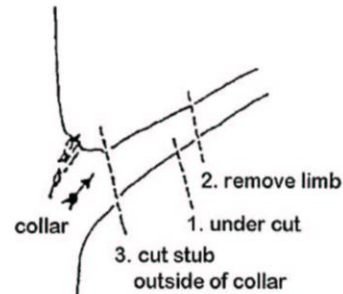
When removing a branch, always cut outside the branch bark ridge and collar. Do not make a flush cut.



Branches that do not have a distinct collar should be cut at a right angle to the branch outside the branch bark ridge.



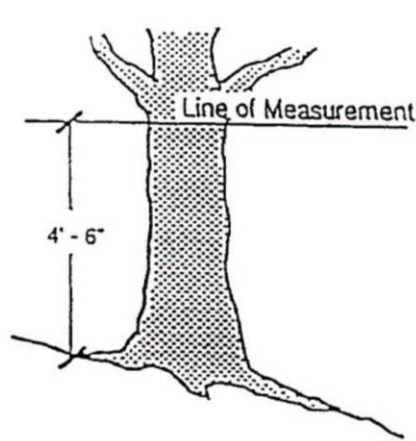
Trees may have codominant stems, as shown on the left. If a codominant stem must be removed, cut at an angle outside of the bark ridge as shown in the



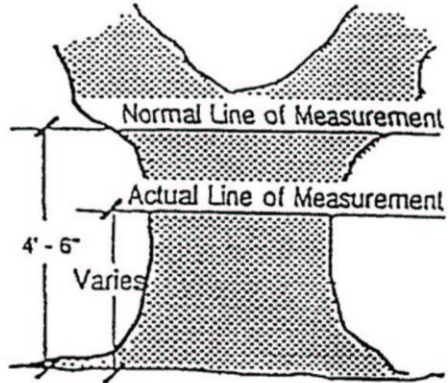
When removing heavy limbs, first make an undercut several inches outside of the collar. Then remove limb by a second cut an inch or so

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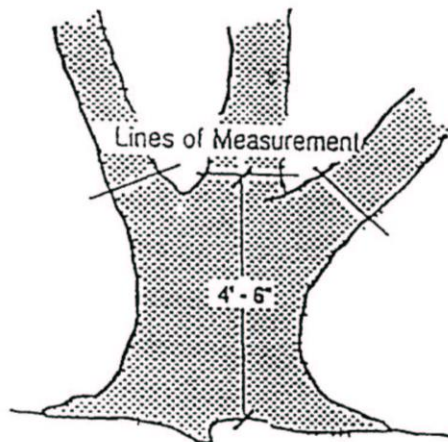
Exhibit 2: Tree Measurement Methods



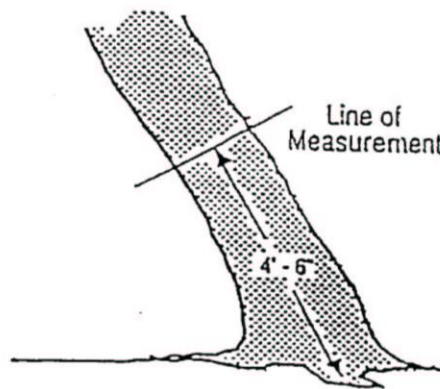
ON A SLOPE



IRREGULAR SWELLING
(requires discretion by
Landscape Administrator)



MULTI-TRUNK TREE



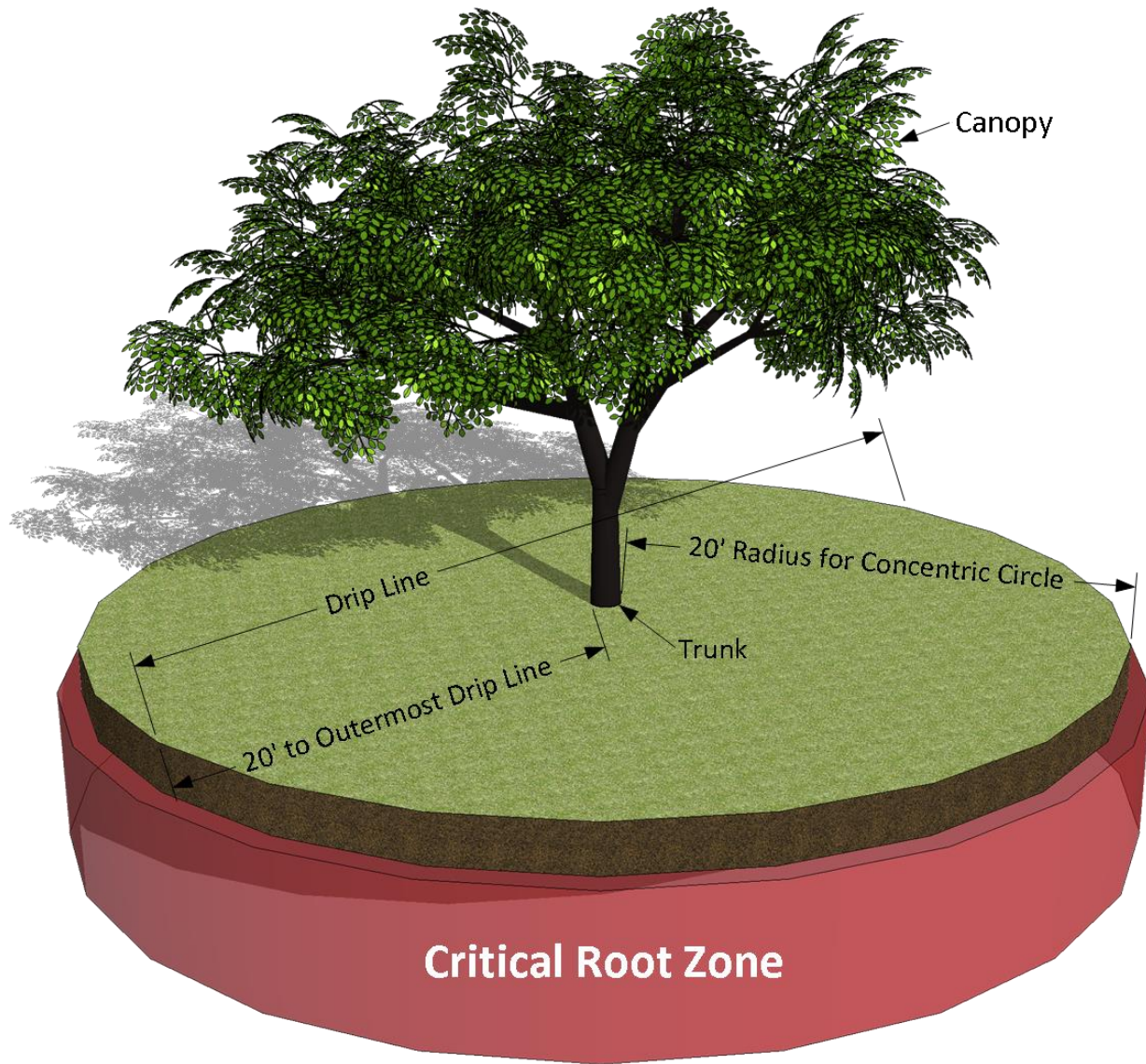
LEANING TREE

Source: COA

Diameter Measurement: The diameter of a tree shall be measured as shown above. The diameter of a multi-trunk tree shall be the total diameter of the largest trunk plus half the diameter of each additional trunk.

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Exhibit 3: Tree Critical Root Zone

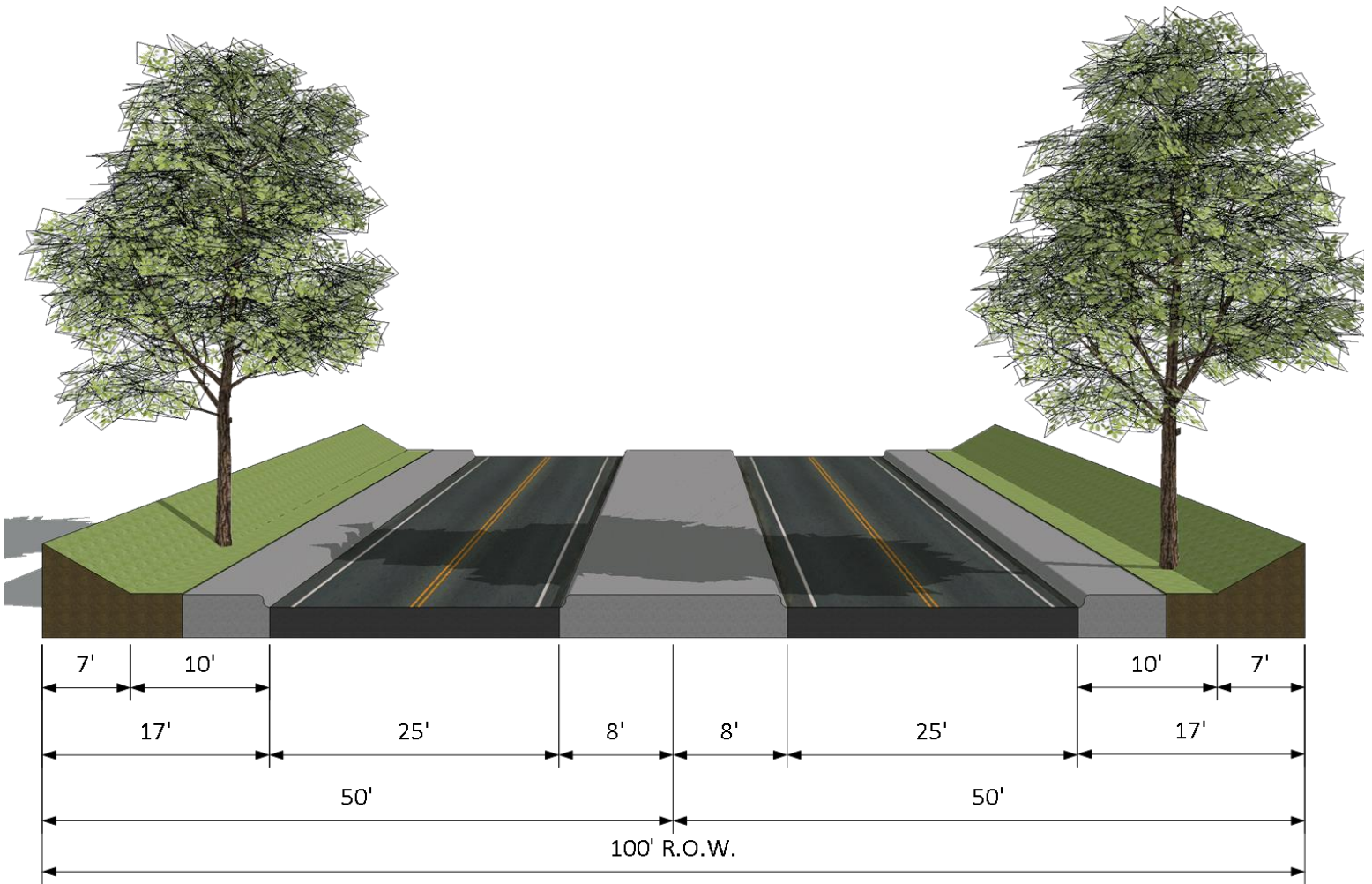


Critical Root Zone (CRZ): The area of undisturbed natural soil around a tree defined by a concentric circle with a radius equal to the distance from the trunk to the outermost portion of the drip line.

Drip Line: A vertical line running through the outermost portion of the canopy of a tree and extending to the ground.

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Exhibit 4: Typical Divided Thoroughfare



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Exhibit 5: Recommended Varieties (Large and Medium Trees)

Common Name	Botanical Name	Height x Width	Drought Tolerant		
Afghan Pine	<i>Pinus eldarica</i>	40'x20'	Yes		
American Smoketree	<i>Cotinus obovatus</i>	30'x20'	No		
Austrian Pine	<i>Pinus Nigra</i>	40'x25'	No		
Bald Cypress	<i>Taxodium distichum</i>	60'x30'	No		
Black Gum	<i>Nyssa sylvatica</i>	50'x25'	Yes		
Black Hickory	<i>Carya texana</i>	60'x50'	No		
Caddo Maple	<i>Acer barbarum</i>	60'x40'	No		
Canaert Juniper	<i>Juniperus virginiana</i>	30'x20'	No		
Chinese Pistache	<i>Pistachia chinensis</i>	40'x30'	Yes		
Deodar Cedar	<i>Cedrus deodara</i>	40'x30'	Yes		
Durand Oak	<i>Quercus durandii</i>		No		
Ky. Coffee Tree	<i>Gymnocladus dioica</i>	75'x35'	Yes		
Lacebark Elm	<i>Ulmus parvifolia</i>	50'x35'	Yes		
Leyland Cypress	<i>Cupressus arizonica</i>	40'x15'	No		
Little-Leaf Linden	<i>Tilia cordata</i>	60'x40'	No		
Live Oaks ¹			Yes		
Sawtooth Oak	<i>Quercus accutissima</i>	60'x50'	No		
Sycamore	<i>Platanus occidentalis</i>	70'x60'	No		
White Ash	<i>Fraxinus americana</i>	30'x30'	No		
Willow Oak	<i>Quercus phellos</i>	60'x30'	No		
Bigtooth Maple	<i>Acer grandidentatum</i>	50'x30'	No		
Black Walnut	<i>Juglans nigra</i>	80'x60'	No		
Bur Oak	<i>Quercus macrocarpa</i>	60'x40'	Yes		
Cedar Elm	<i>Ulmus crassifolia</i>	50'x40'	Yes		
Chinquapin Oak	<i>Quercus muehlenbergii</i>	60'x40'	Yes		
Chittamwood	<i>Bumelia lanuginosa</i>	40'x30'	No		
Coastal Live Oak	<i>Quercus virginiana</i>	50'x50'	No		
Escpment Life Oak	<i>Quercus fusiformis</i>	40'x40'	Yes		
Gum Bumelaa	<i>Bumelia lanuginosa</i>		No		
Lacey Oak	<i>Quercus Laceyii</i>	50'x45'	Yes		
Nogolito	<i>Juglans microcarpa</i>	30'x20'	No		
Pecan	<i>Carya illinocensis</i>	80'x60'	Yes		
Post Oak	<i>Quercus stellata</i>	60'x45'	Yes		
Schumard (Red)Oak ¹	<i>Quercus shumardii</i>	70'x50'	Yes		
Slippery Elm	<i>Ulmus rubra</i>	70'x60'	No		
Sweet Gum	<i>Liquidamber styraciflora</i>	60'x40'	Yes		
Texas Ash	<i>Fraxinus texensis</i>	50'x40'	No		
Texas Buckeye	<i>Aesculus arguta</i>	30'x20'	No		
Texas Persimmon	<i>Diospyrus virginiana</i>	35'x20'	No		
Texas Red Oak	<i>Quercus texana</i>	30'x30'	Yes		
Texas Walnut	<i>Juglandaceae texana</i>		No		
Thornless Honey Locust	<i>Gleditsia triancanthos inermis</i>	80'x60	No		
Water Oak	<i>Quercus nigra</i>	50'x40'	Yes		
Western Soapberry	<i>Sapindus saponaris</i>	30'x20'	No		
Winged Elm	<i>Ulmus alata</i>	35'x40'	No		



Sycamore

Caddo Maple



Black Gum

Lacebark Elm



American Smoke Tree

Live Oak



Western Soapberry

Escarpment Live Oak



Bur Oak









Nogolito

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Prairie

ARTICLE 8: LANDSCAPE AND SCREENING

Exhibit 5: Recommended Varieties (Small Trees and Large Shrubs)

Common Name	Botanical Name	Height x Width	Drought Tolerant		
Buford Holly	<i>Ilex cornuta</i>	20'x15'	Yes		
Carolina Cherry Laurel	<i>Orybys carikubuaba</i>	25'x15'	Yes		
Crape Myrtle ^{1/2}	<i>Lagerstroemia indica</i>	15'x10'	Yes		
Flatwoods Plum	<i>Prunus umbellata</i>	15'x10'	Yes		
Flowering Crabapple	<i>Malus hybrida</i>	20'x20'	Yes		
Forest Pansy Redbud	<i>Cercis canadensis</i>	20'x15'	No		
Foster Holly #2	<i>Ilex x attenuata</i>	25'x15'	No		
Golden Rain Tree	<i>Koelreuteria paniculata</i>	25'x15'	Yes		
Japanese Black Pine	<i>Pinus thunbergii</i>	30'x30'	No		
Japanese Maple	<i>Acer palmatum</i>	15'x10'	No		
Lemon Bottlebrush	<i>Callistemon citrinus</i>	15'x15'	No		
Lettle-leaf Palo Verde	<i>Cercidium microphyllum</i>	12'x15'	No		
Nellie R. Stevens Holly	<i>Ilex aquifolium</i>	20'x15'	No		
Rocky Mtn. Juniper	<i>Juniperus scopulorum</i>	30'x15'	Yes		
Roemer Acacia	<i>Acacia roemeriana</i>	15'x15'	No		
Chaste Tree	<i>Vitex agnuscastus</i>	15'x20'	No		
Weeping Bottlebrush	<i>Callistemon viminalis</i>	20'x15'	No		
Weeping Holly	<i>Ilex vomitoria 'Pendula'</i>	12'x8'	No		
Ashe Juniper	<i>Juniperus ashei</i>	25'x15'	Yes		
Carolina Buckthorn	<i>Rhamnus caroliniana</i>	20'x15'	No		
Desert Willow	<i>Chilopsis linearis</i>	20'x15'	No		
Eve's Necklace Tree	<i>Sophora affinis</i>	20'x15'	Yes		
Flame-leaf Sumac	<i>Rhus lanceolata</i>	20'x15'	Yes		
Fragrant Ash	<i>Fraxinus cuspidata</i>	15'x10'	Yes		
Kidneywood	<i>Eysenhardtia polystachya</i>	20'x12'	Yes		
Mexican Buckeye	<i>Ungnadia speciosa</i>	20'x20'	Yes		
Mexican Plum	<i>Prunus mexicana</i>	25'x25'	Yes		
Nettleaf Hackberry	<i>Celtis reticulata</i>	25'x25'	No		
Possumhaw Holly	<i>Ilex decidua</i>	15'x10'	No		
Redbud	<i>Cercis canadensis</i>	25'x20'	No		
Rusty Blackhaw	<i>Viburnum rufidulum</i>	25'x20'	Yes		
Scarlet Buckeye	<i>Aesculus pavia</i>	25'x20'	No		
Smooth Sumac	<i>Rhus glabra</i>	15'x10'	No		
Southern Wax Myrtle	<i>Myrica cerifera</i>	15'x10'	No		
Texas Madrone	<i>Arbutus xalapensis</i>	25'x20'	No		
TX Mountain Laurel	<i>Sophora secundiflora</i>	15'x10'	Yes		
Texas Persimmon	<i>Diospyros texana</i>	25'x20'	Yes		
Texas Pistache	<i>Pistacia texana</i>	20'x15'	Yes		
Wright Acacia	<i>Acacia wrightii</i>	15'x15'	No		
Yaupon Holly	<i>Ilex vomitoria</i>	VARIES	No		

Flatwoods Plum

Rocky Mountain Juniper

Texas Persimmon

Rusty Blackhaw

Eve's Necklace Tree

Mexican Buckeye

Carolina Cherry Laurel

Crape Myrtle

ARTICLE 8: LANDSCAPE AND SCREENING

Exhibit 5: Recommended Varieties (Shrubs)

Common Name	Botanical Name	Height x Width	Drought Tolerant
Blue Vase Juniper	<i>Juniperus chinensis</i>	5'x4'	No
Bridalwreath Spirea	<i>Spirea prunifolia</i>	7'x5'	Yes
Carissa Holly	<i>Ilex cornuta 'Carissa'</i>	4'x5'	No
Cornpact Nandina	<i>Nandina domestica</i>	5'x3'	Yes
Cotoneaster	<i>Cotoneaster</i>	varies	No
Crimson Pygmy Barberry	<i>Berberis thunbergii</i>	2'x1.5'	Yes
Dwarf Burford Holly	<i>Ilex cornuta</i>	7'x4'	Yes
Dwarf Crape Myrtle	<i>Lagerstroemia indica</i>	6'x4'	Yes
Dwarf Flowering Quince	<i>Chaenomeles japonica</i>	3'x3'	No
Dwarf Horned Holly	<i>Ilex cornuta 'Rotunda'</i>	4'x4'	No
Dwarf Japanese Holly	<i>Ilex crenata 'Compacta'</i>	4'x4'	No
Dwarf Nandina	<i>Nandina domestica</i>	3'x3'	No
Dwarf Pfitzer Juniper	<i>Juniperus chinensis</i>	2'x6'	No
Dwarf Pomegranate	<i>Punica granatum</i>	5'x4'	No
Dwarf Yaupon Holly	<i>Ilex vinutirua 'Nana'</i>	4'x4'	Yes
Ebbing's Silverberry	<i>Eleagnus x ebbengei</i>	10'x5'	No
Edward Goucher Abelia	<i>Abelia grandiflora</i>	5'x5'	No
Firethorn	<i>Pyracantha</i>	varies	No
Flowering Quince	<i>Chaenomeles speciosa</i>	7'x5'	No
Forsythia	<i>Forsythia x intermedia</i>	6'x6'	No
Giant Liriope	<i>Liriope gigantea</i>	3'x3'	No
Glossy Abelia	<i>Abelia grandiflora</i>	6'x5'	Yes
Heller Japanese Holly	<i>Ilex crenata 'Helleri'</i>	3'x4'	No
Hypericum	<i>Hypericum henryi</i>	3'x3'	No
Japanese Acuba	<i>Acuba japonica</i>	4'x4'	No
Japanese Aralia	<i>Fatsia japonica</i>	10'x10'	No
Japanese Boxwood	<i>Buxus microphylla japonica</i>	10'x10'	Yes
Japanese Garden Juniper	<i>Juniperus procumbens</i>	2'x6'	No
Lantana	<i>Lantana</i>	varies	No
Lavender Cotton	<i>Santolina</i>	2'x3'	No
Leatherleaf Mahonia	<i>Mahonia bealei</i>	4'x3'	No
Nandina	<i>Nandina domestica</i>	varies	No
Needlepoint Holly	<i>Ilex cornuta</i>	5'x5'	No
Pfitzer Juniper	<i>Juniperus chinensis</i>	5'x10'	No
Prostrate abelia	<i>Abelia grandiflora</i>	2'x2'	No
Prostrate Crape Myrtle	<i>Lagerstroemia indica</i>	3'x3'	Yes
Purpleleaf Barberry	<i>Berberis thunbergii 'Atropurpurea'</i>	5'x4'	No
Pygmy Barberry	<i>Berberis thunbergii 'Chrimson Pygmy'</i>	2'x3'	No
Rosemary	<i>Rosmarinus officinalis 'Tuscan Blue'</i>	3'x4'	Yes
Salvia			No
Shore Juniper	<i>Juniperus conferta</i>	2'x4'	No
Texas Sage	<i>Leucophyllum frutescens</i>	Varies	Yes
Vanhoutte Spirea	<i>Spirea x vanhouttei</i>	6'x5'	Yes
Variegated Chinese Privet	<i>Ligustrum sinense 'Variegata'</i>	7'x7'	No
Wilson Holly	<i>Ilex cornuta 'Wilsonii'</i>	5'x5'	No
Wood Fern	<i>Thelypteris kunthii</i>	2'x2'	No
Agarita	<i>Mahonia trifoliata</i>	5'x2.5'	Yes
Beautyberry	<i>Callicarpa americana</i>	10'x6'	No
Buttonbush	<i>Cephalanthus occidentalis</i>	8'x6'	No
Coralberry	<i>Symphoricarpos orbiculatus</i>	2'x2'	No
Fragrant Sumac	<i>Rhus aromatica</i>	8'x6'	No
Roughleaf Dogwood	<i>Cornus drummondii</i>	6'x5'	No
White Honeysuckle	<i>Lonicera albiflora</i>	4'x4'	Yes



Wood Fern



Lantana



ARTICLE 8: LANDSCAPE AND SCREENING

Exhibit 5: Recommended Varieties (Ground Cover/Bedding Plants)

Common Name	Botanical Name	Drought Tolerant
Asiatic Jasmine	<i>Trachelospermum asiaticum</i>	Yes
Cast Iron Plant	<i>Apidistra elatior</i>	No
Creeping Juniper	<i>Juniperus horizontalis</i> (cultivars)	No
Dalia Greggii	<i>Dalea greggii</i>	No
Japanese Garden Juniper	<i>Juniperus procumbens</i> (cultivars)	No
Lilyturf	<i>Liriope</i> (cultivars)	No
Mondo Grass	<i>Ophiopogon japonicus</i> (cultivars)	Yes
Periwinkle	<i>Vinca major & minor</i>	No
Shore Juniper	<i>Juniperus conferta</i>	No
Trailing Lantana	<i>Lantana montevidensis</i>	No
Wintercreeper	<i>Euonymus fortunei</i>	No
Common Name	Botanical Name	No
Coral Berry	<i>Symphoricarpos orbiculatus</i>	Yes
Horse Herb	<i>Calyptocarpus vialis</i>	Yes
Trumpet Creeper	<i>Campsis radicans</i>	Yes
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Yes
Bermuda Grass	<i>Cynodon dactylon</i>	No
Buffalo Grass	<i>Buchloe dactyloides</i>	No
Zoysia Grass	<i>Zoysia</i> spp.	No



Exhibit 5: Recommended Varieties (Ornamental Grasses)

Common Name	Botanical Name
Big Bluestem	<i>Andropogon gerardii</i>
Broomsedge Bluestem	<i>Andropogon virginicus</i>
Canada Wild Rye	<i>Elymus canadensis</i>
Dwarf Fountaingrass	<i>Pennisetum alopecuroides</i> 'Hamelin'
Eulalia	<i>Micanthus</i> spp.
Fountain Grass	<i>Pennisetum</i> spp.
Indian Grass	<i>Sorghastrum nutans</i>
Inland Sea Oats	<i>Chasmanthium latifolium</i>
Lemon Grass	<i>Cymbopogon citratus</i>
Lindheimer's Muhly	<i>Muhlenbergia lindheimeri</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Maiden Grass	<i>Miscanthus sinensis</i> 'Gracillimus'
Pampas Grass	<i>Cortaderia selloana</i>
Purple Fountain Grass	<i>Pennisetum setaceum</i> 'Rhubrum'
Purple Muhly	<i>Muhlenbergia filipes</i>
Reed Grass	<i>Calamagrostis</i> spp.
Seep Muhly	<i>Muhlenbergia reverchoni</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Silver Bluestem	<i>Bothriochloa saccharoides</i>
Splitbeard Bluestem	<i>Andropogon ternarius</i>
Sugarcane Plumegrass	<i>Erianthus giganteus</i>
Switchgrass	<i>Panicum virgatum</i>
Variegated Japanese Silver Grass	<i>Miscanthus sinensis</i> 'Variegatus'
Zebra Grass	<i>Miscanthus sinensis</i> 'Zebrinus'



Indian Grass

Little Bluestem



Switch Grass

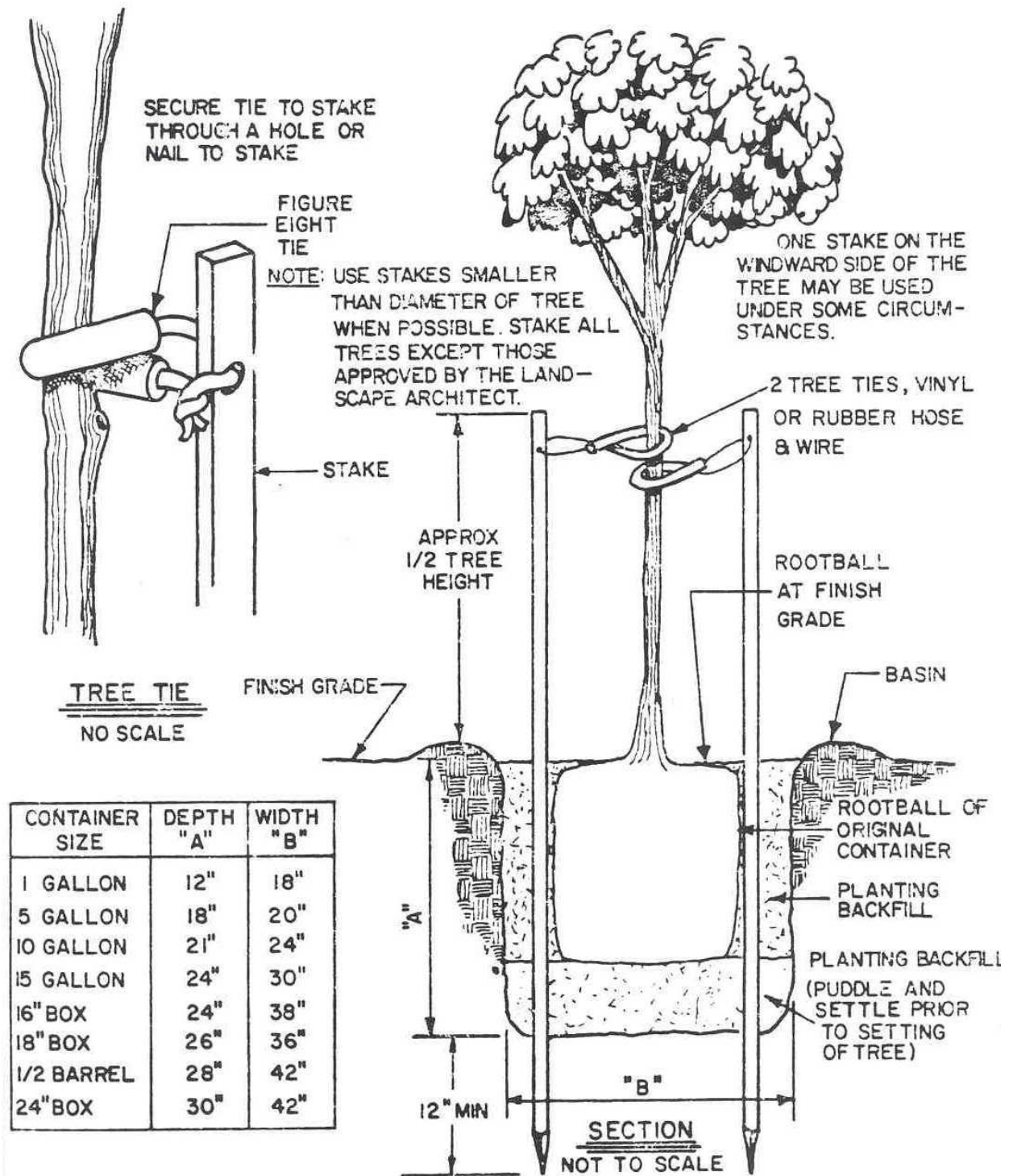
Silver Bluestem

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ARTICLE 8: LANDSCAPE AND SCREENING

Exhibit 6: Tree Planting & Staking

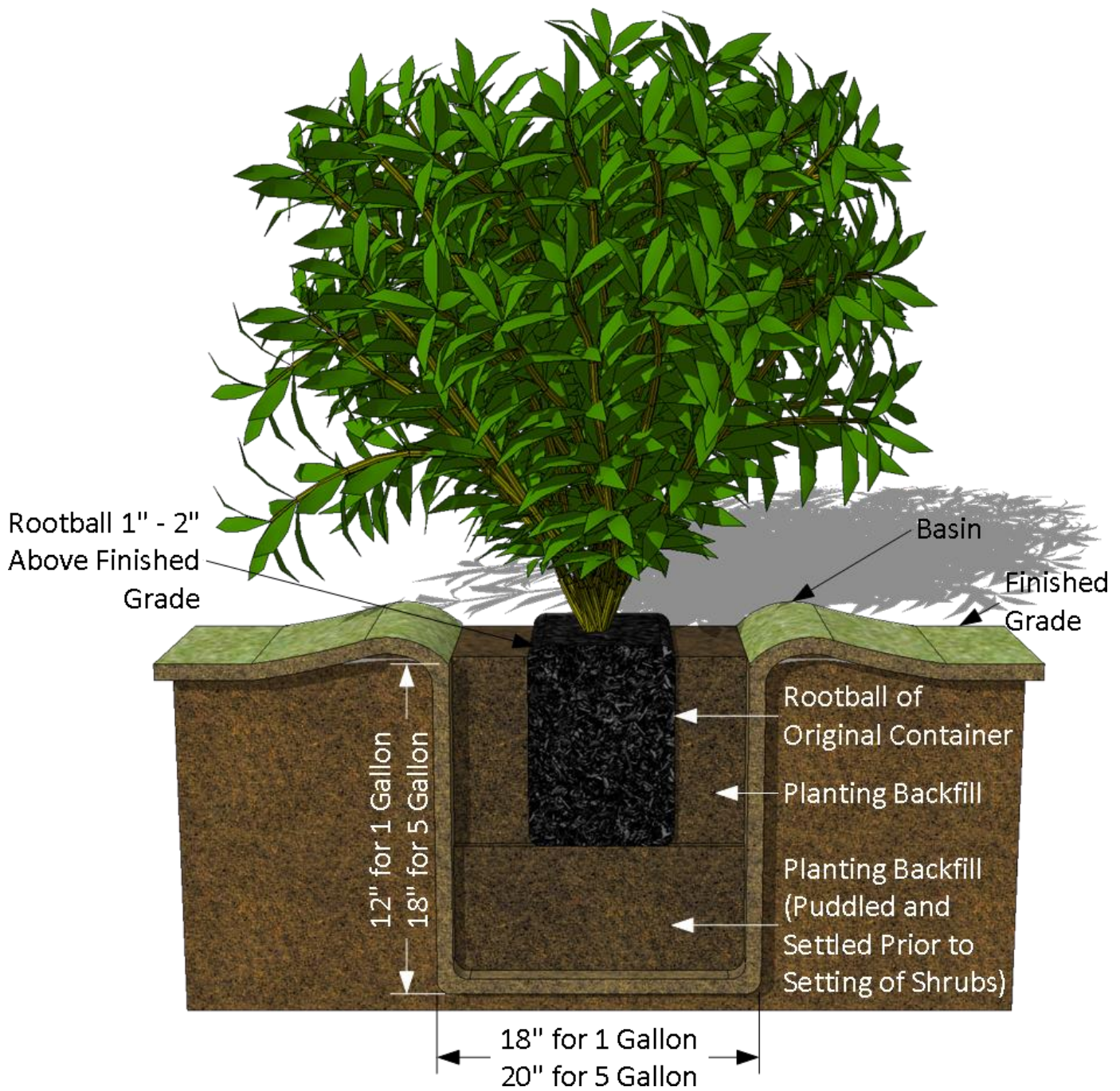


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Exhibit 7: Shrub Planting



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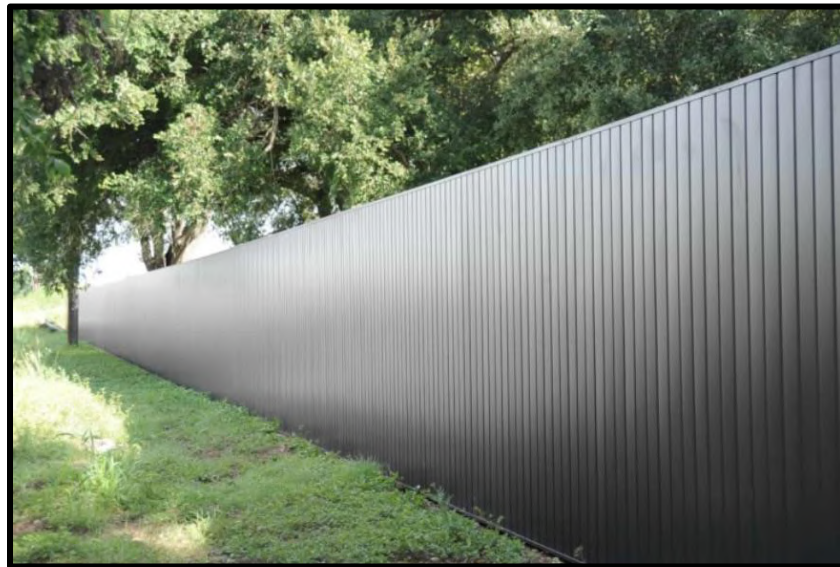
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ARTICLE 8: LANDSCAPE AND SCREENING

Exhibit 8

The following illustrations are intended to provide clarity to the text of Section 8.11. If there is a conflict between these illustrations and the requirements of 8.11, these illustrations shall take precedence.

Metal Fence Materials Allowed in Single-Family Residential Zoning Districts



ARTICLE 8: LANDSCAPE AND SCREENING

Precast Masonry Fence Materials Allowed in Single-Family Residential Zoning Districts



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ARTICLE 8: LANDSCAPE AND SCREENING

SECTION 16 – Tree Protection Standards

8.16 Purpose and Intent

8.16.1 General Standards

8.16.2 General Exemptions

8.16.3 Exempt Development Applications

8.16.4 Tree Removal Associated with Development

8.16.5 Tree Removal Not Associated with Development

8.16.6 Tree Protection Requirements

- A. Tree Protection Plan
- B. Tree Survey
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- D. Implementation of Mitigation Plan
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8.16.7 Tree Protection During Construction

8.16.8 Tree Removal Evaluation and Authorization

- A. Completeness of Application
- B. Decision on Exemption
- C. Decision
- D. Criteria for Approval
- E. Effect
- F. Occupancy Limitations
- G. Plan Verification and Enforcement

8.16.9 Establishment of Urban Forest Fund

- A. Account Established
- B. Fee Established
- C. Collection of Fees
- D. Use of Urban Forest Fund

8.16.10 Administration and Relief Measures

- A. Administration
- B. Relief Measures

8.16.11 Definitions

ARTICLE 8: LANDSCAPE AND SCREENING

8.16 Purpose and Intent

The general purpose of these standards is to preserve and protect a diminishing natural resource, specifically existing native and adapted site trees located in the City of Grand Prairie. Furthermore, these measures are to encourage the planting of trees to replace and supplement the City's urban forest during the development, construction, and redevelopment process.

Primarily, the focus of this Section is to protect mature trees eight (8) Caliper Inches and larger of desirable species which are defined as Protected Trees. Undesirable species are listed in the definitions section and defined as Unprotected Trees. The City Council recognizes that Protected Trees often must be removed during the development process and has defined mitigation measures to aid in the reforestation of the City over time. Specific purposes include the following:

- A. To promote tree and tree canopy preservation through site design standards and by controlling indiscriminate removal of Protected Trees,
- B. To contribute to the long-term viability of existing trees through their protection during land disturbing and land development activities; while balancing the rights of property owners with the overall interests of the community,
- C. To preserve trees as an important resource that enhances the quality of life and the general welfare of the city; by promoting its unique character as well as the physical, historical, and aesthetically pleasing environment,
- D. To enhance the community with the cleansing and cooling of air as well as creating an environment that enhances the physical and mental wellness of the citizens,
- E. To promote environmental elements that increase property values, reduce energy costs, reduce the number of pollutants entering streams, and provide elements that are crucial for a healthy local ecosystem,
- F. To encourage the preservation of environmentally sensitive areas, such as natural areas, floodplains, Riparian Buffers or Erosion Hazard Setbacks, and open spaces that protect the water quality ecosystem, and
- G. To recognize the economic value added to properties with trees when the tree canopy coverage is maintained and supplemented with new trees.

8.16.1 General Standards

A. Applicability.

The provisions of Section 16 – Tree Protection Standards apply as follows:

- 1. To any activity resulting in removal of any Protected Tree on any lot, parcel, or public land that is not exempt under *General exemptions, Section 8.16.2*;
- 2. To any plat application or site plan application that is not exempt under *Exempt development applications, Section 8.16.3*;
- 3. To any building or clearing grubbing/earthwork permit application that is not exempt under *Exempt development applications, Section 8.16.3*; and
- 4. This section applies to city property in the same manner as private property.

B. Prohibitions.

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1. No Protected Tree shall be removed unless:
 - a. The tree is located on property subject to *General exemption, Section 8.16.2* or *Exempt development applications, Section 8.16.3*; or
 - b. Removal of the tree has been authorized under an approved tree protection plan pursuant to *Tree protection requirements, Section 8.16.6*, and authorized by *Tree removal evaluation and authorization, Section 8.16.8*.
 - c. Removal has been authorized by the Tree Preservation Administrator.
2. Clear-cutting of land without City approvals associated with this section is prohibited.
3. Riparian Buffers or Erosion Hazard Setbacks (See Drainage Manual) shall be Non-disturbance areas unless authorized by the floodplain administrator.

8.16.2 General Exemptions

Exempt activities and conditions. The following are exempt from the requirements of Section 16. A Protected Tree may be removed for the following activities without any other obligation imposed by these regulations related to tree protection. The requirements specified in Section 16 shall not be required for and/or in the following circumstances:

A. Single-family and Duplex Units.

Removal of a Protected Tree by the owner or authorized agent of a finally platted lot or parcel occupied by a single-family or duplex dwelling unit, for which the City has authorized occupancy.

B. Pruning.

Pruning Protected Trees solely for the purpose of removing diseased limbs or to shape for aesthetic and safety purposes, according to the applicable provisions of the Texas Association of Nurserymen Grades and Standards. Pruning does not include tree topping a Protected Tree which is prohibited.

C. Homeowners.

An owner-occupied residence located in a residentially zoned district on five (5) acres or less is exempt from the tree protection and replacement requirements of this ordinance.

D. City or School Sports and Recreation Facilities.

Removal of Protected Trees within soccer, baseball, football, or other sports facilities such as golf courses along with hike and bike trails, which are open for public use.

E. Diseased, Damaged, or Dead Trees.

A diseased, damaged, or dead Protected Tree may be removed by the City or the owner of the land on which the tree is located upon contacting the Tree Preservation Administrator.

F. Emergency Conditions.

Trees posing an imminent or immediate threat to persons or property may be removed. However, photographs of the removal shall be submitted to the Tree Preservation Administrator within 72 hours of removal.

G. Public Health and Safety.

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ARTICLE 8: LANDSCAPE AND SCREENING

A Protected Tree that is in danger of falling, creates unsafe vision clearance or otherwise poses a hazard to the public health or safety may be removed by the city or the owner of the land on which the tree is located, when approved by the Tree Preservation Administrator.

H. Agricultural and Ranching Activities.

Removal of a Protected Tree within a vacant parcel of land at least five (5) acres in size in conjunction with farming or ranching activities, except activities conducted within an Erosion Hazard Setback or Riparian Buffer Zone, where the area shall be a Non-disturbance area unless authorized by the floodplain administrator.

I. Utility Service Interruption.

The tree has disrupted a public utility service due to tornado, flood, or another natural act. Removal shall be limited to the part of the tree which is found necessary to re-establish and maintain the utility service.

J. Utility Service Companies and Distribution/Transmission Lines.

Utility companies shall not be subject to the tree protection or replacement in this section when establishing distribution and transmission lines. Right-of-Way, easements, or similar public property maintained by utility companies shall not be subject to this section. The foregoing notwithstanding, new utility service shall be routed in a manner that prevents the removal of Protected Trees.

K. Utility and Drainage Easement Maintenance.

Utility service providers, including the City, or their contractors, agents, successors, and assigns shall have the right to maintain their facilities, through removal or trimming of Protected Trees located within lawfully designated easements or rights-of-way, to prevent any part of such trees from becoming a danger to public health, safety, and welfare by interfering with utility service. Where possible, trimming shall be done in a manner such that the aesthetics and health of the trees are not destroyed.

L. Public and Private Street Dedications.

Newly dedicated Right-of-Way necessary for the orderly and efficient development of property.

M. Plant or Tree Nursery.

Activities within a plant nursery related to trees grown on the premises solely for sale, retail, or wholesale.

N. Public Utilities and Infrastructure.

Removal of a Protected Tree by the City, another governmental entity or a public utility in any right-of-way or easement dedicated to and accepted by the City.

O. Pre-Existing Paved Surfaces.

Replacement or maintenance of any paved surface that existed on or before the effective date of these regulations and is located within the critical root zone of a Protected Tree.

P. Pre-Existing Public Contracts.

Removal of a Protected Tree on property for which a design contract has been awarded by the City Council on or before the effective date of these regulations.

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8.16.3 Exempt Development Applications

ARTICLE 8: LANDSCAPE AND SCREENING

The following development applications are exempt:

A. Zoning applications.

Any application to change the zoning district classification of property or amend the regulations applicable to the district. Subsequent site plans or plat requests for the property may be subject to tree protection requirements.

B. Filed or Vested Plat applications, not including replats.

C. Any plat application approved before or on the effective date of this section; or

1. Any plat application pending for approval on such date, provided the application is subsequently approved; or
2. Any subsequent plat application in the same series as the approved or pending plat application.
3. For plat applications filed after the effective date of this section, the applicant must seek a determination from the Tree Preservation Administrator pursuant to procedures in *Tree removal evaluation and authorization, Section 8.16.8*, that the application is exempt based on prior approvals.

D. Filed or Vested Site plan applications.

Any application for a site plan required by the Unified Development Code (UDC) and approved before or on the effective date of this section or any site plan application pending approval on such date, provided the application is subsequently approved.

E. Filed, Pending Approval, or Vested Building permit applications.

1. Any application for a building permit approved before or on the effective date of this section; or
2. Any building permit application pending for approval on the effective date, provided the application is subsequently approved;
3. Any building permit application filed after the effective date of this section for a single-family or duplex residential use on a lot or tract in a subdivision subject to an exempt plat application; or
4. Any building permit application filed after the effective date of this section for a nonresidential or apartment use on land subject to an exempt site plan application; or
5. Any building permit application for land on which all Protected Trees have been removed pursuant to an approved Tree protection plan.
6. For building permit applications filed after the effective date of this section, or for applications for land on which all Protected Trees have been removed pursuant to an approved Tree protection plan, the applicant must seek a determination from the Tree Preservation Administrator pursuant to *Tree removal evaluation and authorization, Section 8.16.8*, that the application is exempt based on prior approvals.

F. Vested applications.

Any application for which it is determined that the applicant has a vested right to proceed under prior regulations, provided that the application or a prior approved application upon which the vesting claim is based remains in effect for such land.

8.16.4 Tree Removal Associated with Development

- A. Every development application submitted after the effective date of Section 16 shall include a tree protection plan that includes a tree survey or a certification

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that no trees are present on the lot(s) or parcel(s) being developed unless waived by the Tree Preservation Administrator in accordance with this section. The tree protection plan or certification shall be submitted as part of the landscape plan if required.

- B. If the development application does not require a landscape plan, the Tree Preservation Administrator may waive the requirement to submit a tree protection plan and/or tree survey provided that the applicant submits the location, size (in caliper inches), species of the Protected Trees to be removed, trees used for mitigation, trees used for landscape tree credit; and mitigation fee, if applicable.
- C. For phased development, the submitted tree survey and tree protection plan may be limited to only those areas where development activity will occur during the current phase provided trees are not removed from future phases.

8.16.5 Tree Removal Not Associated with Development

- A. Applicant seeks authorization to remove a Protected Tree for activities not associated with a development application approval. The following information or documents shall be submitted to the Tree Preservation Administrator:
 - B. Name and contact information for the applicant;
 - C. Address and location of the platted lot or tract where the subject tree removal is requested;
 - D. Identification of each Protected Tree to be removed (see *Tree survey, Section 8.16.6.B* for guidelines), description of the methods to be used to mitigate the removal of each Protected Tree (see *Mitigation plan, Section 8.16.6.C*).

8.16.6 Tree Protection Requirements

No plat, site plan or building permit application subject to this Section shall be determined to be complete unless accompanied by a proposed tree protection plan. The tree protection plan shall be submitted with the first application for the development, unless deferred in the following tree protection plan options. Plan shall be reviewed by the Tree Preservation Administrator for processing and decision in accordance with Tree removal evaluation and authorization, Section 8.16.7.

A tree protection plan is required for plats and site plans. A tree protection plan must be prepared and submitted for approval with the submission of the following unless waived:

- Plat applications that are non-exempt;
 - Site Plans that are non-exempt for non-residential, multi-family, and townhome uses; and
 - Building permit applications associated with non-exempt activities for which plat or site plan approval has not been obtained and is not required.
- A. *Tree protection plan shall contain:*
 - 1. *A Tree survey, Section, 8.16.6.B*
 - 2. *A Mitigation plan; Section, 8.16.6.C*
 - 3. *A table summarizing the site inventory of Protected Trees, Unprotected Tree species equal to or greater than eight (8) caliper inches in diameter which are being removed, trees being utilized for mitigation and/or landscaping tree credit, including the key number, determination of mitigation requirement, a*

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notation if mitigation is not applicable due to the location or tree condition (see Sample Tree Survey Table below);

4. The tree protection plan shall be incorporated into the required landscape plans associated with development applications;
5. Name and contact information for the applicant;
6. Name and location of the proposed subdivision or development for which the tree protection plan is being submitted;
7. Clearly indicate Protected Trees “to be removed” with a bold “X,” show proposed Pad sight(s) with 10-foot offset, exemptions such as Rights-of-Way, and easements, as well as property lines. Protected Trees “to remain” shall also be clearly noted on the Tree Survey and incorporated into the landscape plan if required;
8. Location and identification of each tree being used for mitigation or landscape tree credit purposes regardless of location. It shall include the species (common names), diameter, and key number;
9. Boundaries of Non-disturbance areas;
10. Include noted protection measures and/or illustrated details such as fencing for Non-disturbance (see SWPPP Standard Details). These areas shall be

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protected during construction according to *Tree protection during construction, Section 8.16.7*;

11. If applicable, include total Caliper Inches subject to mitigated fee payment into the *Urban forest fund, Section 8.16.9*.

<i>Sample Tree Survey Table</i>						
Tree #	DBH or Caliper Inches	Species	Protected Species Yes/No	Save Or Remove	Mitigation Status	Condition
200	9	Green Ash	No	Remove	N/A-Bldg	Fair
201	10	Cedar Elm	Yes	Remove	N/A-Bldg	Fair
202	7	Hackberry	No	Remove	N/A-Esmt	Good
203	7	Cedar Elm	Yes	Remove	-	Poor-
204	23	Cedar Elm	Yes	Remove	N/A	Dead
205	7	Hackberry	No	Remove	-	Fair
206	8	Bois d'arc	No	Remove	-	Fair
207	18	Cedar Elm	Yes	Save	-	Fair
208	24	Texas	Yes	Save	-	Fair
209	6	Pecan	Yes	Remove	-	Fair
210	3	Oak	Yes	Save	-	Good
211	4	Oak	Yes	Save	-	Good

<i>Sample Mitigation Table</i>				
Lot	Non-exempt Protected Trees to be Removed Caliper Inches	New Trees to be planted Caliper Inches	Existing Tree Credit Caliper Inches (3-8 caliper inches of desirable species)	Required Mitigation Fee Caliper Inches
Lot 1	24	18	6	0
Lot 2	131	90	0	41
Lot 3	50	24	12	14
Lot 4	24	12	12	0
Total	229	144	30	55

B. Tree survey.

1. The tree survey shall be prepared by a Qualified Professional. During the tree survey, each tree eight (8) caliper inches or greater in diameter, shall be tagged and assigned a unique key number. Each tree species shall be identified and noted in the summary tree survey table as illustrated unless located in a Non-disturbance area.

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2. The tree survey shall be drawn at the same scale as the proposed development and identify the following:
 - a. Location and identification of each tree eight (8) Caliper Inches or greater not located in a Non-disturbance Area. It shall include the species (common names), diameter and key number;
 - b. The boundary of each individual Non-disturbance area, where vegetation will not be removed or otherwise disturbed during the development process, shall be clearly delineated and noted on the plan. The individual tree identification and measurements may be omitted in these areas if no landscape tree credit or mitigation is needed. These areas shall be protected during construction according to *Tree protection during construction, Section 8.16.7*;
 - c. Mitigation and landscape tree credit shall be credited in the following manner. Existing Protected Tree species that are three (3) Caliper Inches or greater and less than eight (8) Caliper Inches may be used for mitigation and/or landscape tree credit at a 1 inch to 1 inch ratio. Trees located in the Non-Disturbance Area shall not count;
 - d. Identification of each Protected Tree to be removed by key number; and
 - e. Total Caliper Inches of Protected Trees to be removed that are not exempt by this section and are to be mitigated.

3. Alternative survey method.

The Tree Preservation Administrator may authorize a tree survey method that differs from the one described in tree survey, above provided the method accurately indicates the number of trees, their species, and the total Caliper Inches of Protected Trees within the inventory area.

4. Measurements.

The following methods shall be used to measure the diameter of a tree (see illustration Section 8.15 Exhibit 2):

- a. Single-trunk tree. The diameter of a single-trunk tree shall be calculated by measuring the diameter of the trunk at breast height (four and one-half (4½) feet above grade).
- b. Multi-trunk tree. The diameter of a multi-trunk tree shall be calculated by combining the diameter of the largest stem or trunk with one-half (½) of the diameter of each additional stem or trunk, each measured at breast height (four and one-half (4½) feet above grade).

- C. *Mitigation plan.*

The removal of any Protected Tree, except trees in Rights-of-Way, easements, or pad sites authorized for removal under a tree protection plan, shall be fully mitigated in accordance with one or more of the following methods. The applicant may elect among options one through three, or a combination of such options. Tree Preservation Administrator approval is required for option four. The mitigation plan shall include a detailed description of the methods proposed for mitigating removal of Protected Trees.

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1. Transplanting Protected Trees. This method is reserved for small trees and replacement is required if the tree dies within two years of being transplanted.
2. Planting new trees at approved locations that replace Protected Trees to be removed with equivalent Caliper Inches.
3. Paying the cash equivalent (mitigation fee) of the number of Caliper Inches required to replace the Protected Tree(s) to be removed into the reforestation fund ("urban forest fund"), that will be used by the City to plant trees in public parks or on City-owned property.
4. The preservation of smaller, more desirable trees, as described in the following *Implementation of mitigation plan*, upon approval of the Tree Preservation Administrator.

D. *Implementation of mitigation plan*

1. Planted, Transplanted, and Existing Landscape tree credit. All trees planted to mitigate removal of Protected Trees, including transplanting of a Protected Tree, shall be located on original property, or another location mutually agreed between the developer and Tree Preservation Administrator.
2. Trees that are at least three Caliper Inches and less than eight Caliper Inches may be counted toward mitigation credit at a 1:1 ratio if they are species listed as a "large or medium tree" in *Exhibits and Recommended Varieties, Section 8.15, Exhibit 5*.
3. Protected trees that are preserved shall not count towards mitigation.
4. Required landscaping trees shall count towards mitigation.
5. The species of trees planted shall be varied, with no one (1) species accounting for more than thirty (30) percent of the total trees planted.
6. Ongoing maintenance for the newly planted and replanted trees shall be guaranteed for a period not less than two (2) years following acceptance of improvements or issuance of a building permit. Maintenance typically shall require installation of permanent irrigation unless alternative measures are authorized by the Tree Preservation Administrator.

E. *Preservation of large trees.*

When authorized by the Tree Preservation Administrator, preservation of trees of an Unprotected Tree species may mitigate removal of a Protected Tree. The total Caliper Inches of such preserved trees shall meet or exceed the total Caliper Inches of the Protected Tree to be removed. Trees to be preserved shall be no smaller than three (3) Caliper Inches in diameter, shall be in healthy and thriving condition prior to construction and shall be included in the *Tree protection plan, Section 8.16.6.A*.

8.16.7 Tree Protection During Construction

- A. *The subdivider or developer shall ensure that Protected Trees are preserved throughout the development process.*
- B. *Non-disturbance areas.*

Each Non-disturbance area within the development site shall be fenced to ensure that the area will remain in a natural state. Fencing shall be adequate to prevent entry of vehicles or machinery, storage of materials or goods, or any other type of trespass that could harm the preserved area during the construction period, as

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determined by the Tree Preservation Administrator. Pedestrian access is permitted.

C. *Construction areas.*

The following measures shall be put into effect by the subdivider or developer to assure preservation of Protected Trees that are not to be removed during construction (see Stormwater Pollution Prevention Plan (SWPPP) Standard Details).

1. A four-foot plastic fencing, silt fencing, or other method approved by the Tree Preservation Administrator shall be installed around the drip line of all Protected Tree(s) prior to commencement of construction.
2. A construction entrance that avoids Protected Trees shall be established prior to commencement of construction.
3. Construction, placement of fill, excavation, storage of construction materials, vehicles, or machinery, cleaning of equipment, the disposal of waste materials, or other construction related activity is prohibited under the canopy or within the drip line of any Protected Tree, unless expressly authorized in writing by the Tree Preservation Administrator. Major changes of grade (i.e., six (6) inches or greater) within the canopy or drip line is prohibited. A tree shall be considered protected if a minimum of 75% of the critical root zone is maintained at undisturbed natural grade and no more than 25% of the canopy is removed due to building encroachment. When roots more than two (2) inches in diameter are to be cut off, they shall be cut with a medium tooth saw and covered with pruning compound within two (2) hours of initial exposure.
4. Trenching for utilities shall not be allowed within the critical root zone of existing trees that have been used to receive landscape tree credit, and boring under such trees may be required.
5. Attachments or wires shall not be attached to any Protected Tree. Cables, tree rods, and similar hardware installation that aid structural integrity of a Protected Tree are exempt from this provision, if approved in writing by the Tree Preservation Administrator.
6. Any trees removed shall be chipped and used for mulch on site or hauled off-site.

8.16.8 Tree Removal Evaluation and Authorization

A. *Completeness of application.*

The Tree Preservation Administrator shall review each tree protection plan for completeness in accordance with *Tree protection plan, Section 8.16.6.A*. If the tree protection plan is incomplete, any associated plat, site plan or building permit shall also be deemed incomplete.

B. *Decision on exemption claim.*

Exemptions shall be evaluated prior to submitting an application for a plat, site plan, or building permit application. The Tree Preservation Administrator shall evaluate exemption requests under *General exemptions, Section 8.16.2* or *Exempt development applications, Section 8.16.3*. The applicant shall receive the determination in writing. The applicant may appeal the Tree Preservation Administrator's decision in the manner provided in *Administration and relief measures, Section 8.16.10*.

C. *Decision.*

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The Tree Preservation Administrator shall decide whether to approve, conditionally approve or deny a *Tree protection plan* submitted pursuant to Section 8.16.6.A in accordance with this section.

1. The tree protection plan shall be approved prior to final plat, site plan, building permit, or clearing grubbing/earthwork permit.
2. Denial of the tree protection plan is grounds for denial of the associated plat, site plan, building permit, or clearing grubbing/earthwork permit.

D. *Criteria for Approval.*

The tree protection plan shall be evaluated based on the following:

1. The tree survey correctly identifies each Protected Tree and/or Non-disturbance area on the development site;
2. Each Protected Tree has been appropriately tagged and included on the tree survey table;
3. The mitigation plan for each Protected Tree to be removed meets the mitigation requirements; and
4. The proposed tree protection measures during construction satisfy protection requirements during all phases of construction.

E. *Effect.*

Protected Trees can be removed with building or clearing grubbing/earthwork permits in accordance with the approved tree protection plan. Protected Tree removal not associated with development can be approved with an approved tree protection plan in writing from the Tree Preservation Administrator. No Protected Tree shall be removed until all the following have occurred:

1. All Non-disturbance areas and Protected Trees are demarcated and secured on the ground in accordance with measures set forth in the tree protection plan;
2. All proposed mitigation fees have been paid, if applicable.

F. *Occupancy limitations.*

No building permit for a single-family or duplex residential use, nor a certificate of occupancy for other uses, shall be approved until all mitigation measures in the approved tree protection plan have been completed and fees paid.

G. *Plan verification and enforcement.*

1. Inspection. Approval of a tree protection plan authorizes the Tree Preservation Administrator to inspect the property during or after construction to determine compliance with the plan. If the Tree Preservation Administrator determines that Protected Trees to remain have been removed, or that tree protection during construction is not being implemented, the Tree Preservation Administrator will request a revised tree mitigation plan and seek immediate enforcement of the approved plan, including measures to stop work as follows.

- a. Violation during permitted construction. Violations will be given five (5) days to revise the *Tree protection plan. Section 8.16.6.A.* if no additional tree removal takes place.
- b. If a revision is not submitted, all construction activities will receive a cease-and-desist stop work order. Construction activities will not be

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allowed to continue until a revised tree protection plan has been submitted.

2. Acceptance and/or Permits. Prior to final acceptance of public improvements for the development or issuance of a building permit, the Tree Preservation Administrator shall verify that the developer's obligations under the tree protection plan have been fully satisfied. If obligations have not been fulfilled, measures shall be identified to bring the development into compliance with this section. The tree protection plan shall be updated and shall serve as conditions for final acceptance of public improvements or issuance of a building permit.

8.16.9 Establishment of Urban Forest Fund.

A. Account established.

The City's finance department shall establish an interest-bearing account into which mitigation fees collected under this article are deposited and to which interest is allocated. Interest earned on the account into which the mitigation fees are deposited shall be considered funds of the account.

B. Fee established.

A mitigation fee hereby is established in the amount of Two hundred dollars (\$200.00) per Caliper Inch for each Protected Tree removed and that has not been otherwise mitigated pursuant to this section.

C. Collection of fees.

Mitigation fees shall be collected either at the time of application approval of a tree protection plan required under tree protection requirements, or at the time of building permit application for fees due under tree removal permit.

- D. Use of Urban Forest Fund Mitigation fees deposited in the Urban Forest Fund and interest earned thereon shall be used to plant and care for public trees in public space, parks, or other City-owned property. Expenditure of such funds shall be part of the budget approval process. Funds may be used for planting new trees and support of existing trees along with maintaining the established health and vitality of public trees. Sample activities include the following:

1. Planting and Replacing – Cost of new tree along with bed preparation, installation and staking. Dead tree removal including the stump when associated with new planting
2. Irrigation – Irrigation of new canopy trees along with irrigation repair for existing public trees.
3. Urban Tree Canopy Studies – Periodic updates to the tree canopy data that is part of the city-wide Geographical Information System (GIS) to provide data on the ongoing status of the city-wide tree canopy.

8.16.10 Administration and Relief Measures

A. Administration.

The Tree Preservation Administrator shall be the responsible official for administering the contents of this section.

- B. Relief measures require approval by the City Council upon a recommendation from the Planning and Zoning Commission.

8.16.11 Definitions. The following definitions shall apply to this Section 16:

Caliper Inches. The measurement of the average cross-sectional diameter of the trunk of an existing tree at four and one-half (4½) feet above grade in inches, also

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known as diameter at breast height (DBH). If the tree is on a slope, it shall be measured from the high side of the slope. Newly planted trees shall be measured six (6) inches above grade.

Clear-Cut. The act of cutting down and removing every tree from an area.

Mitigation. The act of reducing the severity of tree removal from a development site by strategically preserving, planting, or paying into the Urban Tree Fund.

Non-Disturbance Area. Any area of a proposed subdivision or site within which no grading or other development activities will take place. These areas shall be protected during construction according to Section 8.16.7.

Qualified Professional. A Qualified Professional is a land surveyor, arborist, horticulturalist, or master gardener.

Pad Site. (Specifically for Tree Ordinance) The footprint of a principal building or addition to a principal building to be placed on a platted lot or tract, as evidenced from an approved building permit application, together with all land lying within ten (10) linear feet of such footprint. Platted lots that are zoned for single-family use and for which a permit for a single-family dwelling has been issued may include driveways, patios, swimming pools and other paved areas normally associated with single-family dwellings.

Protected Tree. Any species of tree eight (8) Caliper Inches or more in size that is **not** an Unprotected Tree.

Public Tree. Any protected tree species regardless of size located in public right of way, parks, or other City-owned property.

Removal of Tree. The act of directly or indirectly cutting down, destroying, taking out, or effectively removing a tree.

Right-of-Way. The area of real property in which the City has a dedicated or acquired right-of-way interest. It shall include the area on, below or above the present and future streets, alleys, avenues, roads, highways, parkways or boulevards dedicated or acquired as right-of-way.

Riparian Buffer Zone. The transitional areas between uplands and adjacent streams, ponds, lakes, and other freshwater bodies, characterized by the presence of moisture tolerant vegetation on banks, edges, or limits of freshwater bodies.

Street Yard. Area defined by a line parallel to the building which extends to the property lines in both directions and public right-of-way. Includes multiple rights-of-way, if applicable.

Tree Preservation Administrator. The person assigned by the City Manager to administer this Tree Preservation Ordinance or his designee.

Unprotected Tree. Any tree of the following species regardless of size:

Silver Maple	Acer saccharinum
Sugar Hackberry	Celtis laevigata
Hackberry	Celtis occidentalis

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Honey Locust	Gleditsia tracanthos
Bois d'arc	Maclura pomifera
Bradford Pear	Pyrus calleryana
Mimosa	Albizia julibrissin
Red Mulberry	Morus rubra
Ashe Juniper	Juniperus ashei
Redberry Juniper	Juniperus pinchotii
White Mulberry	Morus alba
White (Silver) Poplar	Populus alba
Lombardy Poplar	Populus nigra italica
Cottonwood	Populus deltoids
Willow	genus Salix
Green Ash	Fraxinus pennsylvanica
Arizona Ash	Fraxinus velutina
Black Locus	Robinia pseudoacacia
Mesquite	Prosopis glandulosa
China Berry	Melia azedarach
Firethorns	Pyracantha