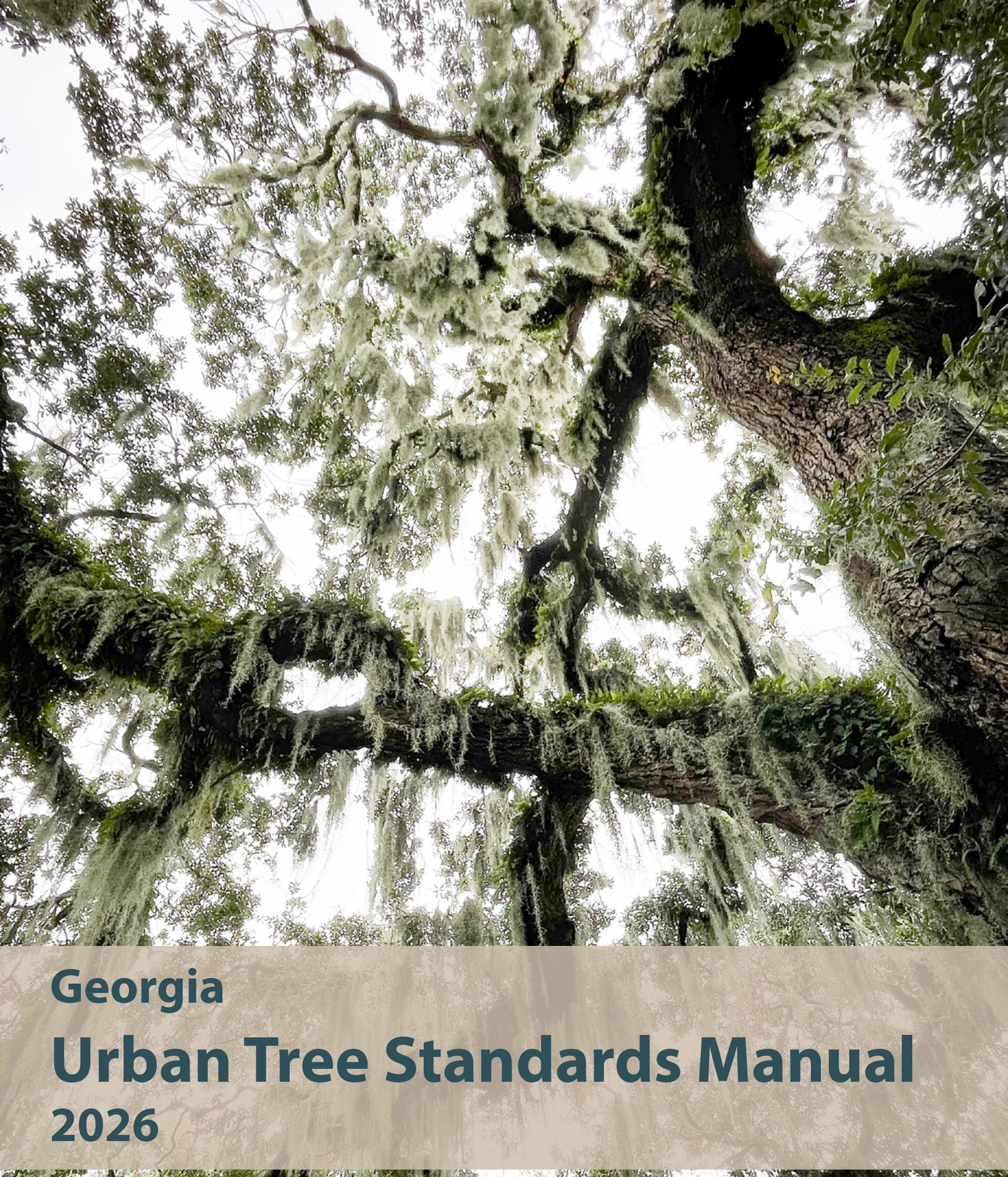


Georgia
Urban Tree Standards Manual
2026

Acknowledgments

This manual was prepared for (Municipality) by the consultants at the nonprofit company Green Infrastructure Center Inc. All images and graphics produced by the Green Infrastructure Center Inc. and (Municipality), unless otherwise credited.

Funding provided by the USDA Forest Service, Urban and Community Forestry Program, in partnership with the Georgia Forestry Commission. These institutions are equal opportunity providers.

GEORGIA FORESTRY COMMISSION

Green Infrastructure Center

Georgia

Urban Tree Standards Manual

2026

Table of Contents

Introduction

The Urban Tree Standards Manual provides standard urban forestry best practices for tree planting, tree care, and tree protection across (Municipality) to ensure tree survival in the urban environment.

This document should be used by contractors and other (Municipality) departments involved with projects that may impact trees. This manual will be updated as needed by the (Municipality Department of Urban Forestry) to provide the most accurate and current information to its users.

This manual's overarching goal is to reduce infrastructure conflicts involving trees and to help create a healthier, more resilient urban forest. This manual provides standards that must be followed as indicated in existing (Municipality) ordinances, specifications for tree installation and conflict avoidance and, lists the trees allowed to be planted in (Municipality) on public lands and some new developments

Purpose

(Municipality) places a high value on having a healthy, resilient urban forest. Urban trees provide shade, uptake stormwater, cleanse air , increase natural beauty, and provide habitat that adds to a high quality of life for (Municipality) residents and businesses. Trees are (Municipality)'s "green infrastructure" and must be managed and maintained to ensure that all the values trees provide can continue. (Municipality) regulates and protects public trees through its (Municipal Tree Ordinance) and also supports conservation and installation of trees on applicable development sites through its (Zoning Ordinance).

The urban tree standards in this manual apply to both public trees and trees in development projects per (Municipality)'s Zoning Ordinance. Trees on (Municipality) property and within (Municipality) right-of-way (ROW) are managed by the (Municipal) Arborist, under the supervision of the (relevant party overseeing the Arborist). For (Municipality) right-of-ways (ROW) managed by the (State) Department of Transportation, standards and guidelines set by the agency must be followed.

Public Trees

(Municipality's) commitment to growing the urban forest necessitates proactive management of public trees for health and safety. All trees in the (Municipality) right-of-way (ROW) and on public property are regulated by the Municipal Tree Ordinance, which is enforced by the (Municipal) Arborist. Trees in the urban environment experience stresses such as heat, soil compaction, air pollution, polluted stormwater runoff, and drought. In addition, trees in the ROW may be impacted by the replacement and construction of utilities, the installation of new sidewalks, and limited soil volume. These standards provide correct tree locations, establishment and care practices, and construction protection practices that will give trees the best chance to survive and thrive.

Trees on Development Sites

Tree saving, protection, mitigation, and planting requirements for development projects are specified in the (Municipality's) Zoning Ordinance. Development projects may include trees to be saved, street tree planting, parking lot plantings, and open space plantings. The standards for tree protection and construction near trees are designed to avoid damage to tree branches, trunks, and roots- all of which can harm or kill trees. This manual's tree location and planting standards ensure that new trees on development sites have space to develop a strong root system to support their health and vitality.

Tree Design Standards

One of the best ways to ensure healthy trees and avoid conflicts is to plant trees correctly and in the appropriate spaces. Adherence to accepted industry standards for tree placement and spacing, soil volume, and species selection will lead to the best tree selection for a particular location.

Placement and Spacing Standards

In the urban environment, locating trees appropriately is best for the longevity of both trees and built infrastructure. The following are minimum standards for offset distances to avoid conflicts. These are *minimum* requirements; additional site-specific changes to tree spacing, tree selection, or planting designs may be needed depending on local site conditions or obstacles.

Trees and Infrastructure: Minimum Offset Distances		
	Small Trees (Under 30')	Large Trees (Over 30')
Sidewalks	2'	4'
Curbs	2'	4'
Driveways	10'	15'
Buildings, Structural Walls	15'	25'
Underground Main Utility Lines (Sewer, Water, Gas, Electric, Cable)	10'	15'
Underground Service Lines (Main Utility Lines to house/ buisness)	6'	6'
Utility Poles	10'	10'
Utility Service Wires (Pole to house/buisness)	6'	6'
Overhead Electric Wires	10', Only Approved Species	30'
Fire Hydrants	10'	15'
Streetlights	15'	15'
Minor Collector Intersections	35'	35'
Major Collector Intersections	50'	50'
Major Road Intersections	100'	100'

The minimum requirement for tree planting in the (Municipality) ROW is one large canopy tree per 35' of street frontage. Large canopy trees shall be planted unless site restrictions prevent it; small or medium trees can be substituted where the space is smaller, following the minimum spacings listed below.

Spacing Between Newly Planted Trees		
Small/Understory Trees	20' Minimum	30' Ideal
Medium/Midstory Trees	25' Minimum	40' Ideal
Large/Overstory Trees	35' Minimum	50' Ideal

Minimum and ideal spacing distances between trees in linear plantings, such as streets and parking lots based on mature tree size. Distance is from center of trunk to center of trunk.

Along the ROW, trees are often planted in planting strips between the curb and sidewalk. The minimum size for a planting strip to support a small tree is 4' wide. Follow these guidelines for choosing trees to plant in planting strips:

- 4' wide planting strips: support small/understory trees
- 5-6' wide planting strips: support medium/midstory trees
- >6' wide planting strips: support large/overstory trees

Where ROW space and conditions allow, street trees may be planted in adjacent ROW land, on the non-street side of the sidewalk.

Large canopy trees provide greater benefits than smaller trees.

A large tree is worth $7,411 in annual benefits while a small tree is worth just $450 (Center for Urban Forest Research and Southern Center for Urban Forestry Research & Information 2006).

Trees for Visual and Sound Buffers

Vegetative buffers are used for mitigating noise, screening undesirable views, and creating separation between land uses. Buffer performance is influenced by factors such as plant height and density, as well as width of the planting area and distance from the source.

When selecting plant species, evergreen trees and shrubs are most effective. Ideal characteristics include low branching patterns, fast-growing habits, upright form, and dense foliage, all of which contribute to improved screening and noise reduction. For buffer species recommendations, see Appendix A: Recommended Tree Species List.

Site constraints, including overhead utilities and nearby hardscape elements, should be carefully considered during the design process.

Follow these design principles for creating successful buffers:

- Determine buffer size and location based on zoning requirements, site constraints, site conditions and performance goals.
- Prioritize plant diversity to improve ecological health, enhance visual interest, and reduce the risk of widespread damage from pests or disease. Avoid single-species hedge plantings.
- Use a multi-row, layered planting approach that incorporates trees and shrubs of varying heights to create a dense and effective buffer.
- Position taller plantings closer to the source of noise or visual impact, with shorter plantings arranged further away.
- Design plant spacing so that individual plants will overlap at maturity, forming a continuous and uninterrupted buffer. For multi-row plantings stagger plants in a zig-zag pattern.

Figure 1: Vegetative buffer example. Trees and woody shrubs are spaced in a "zig-zag" pattern to overlap and create a continuous, uninterrupted visual buffer.

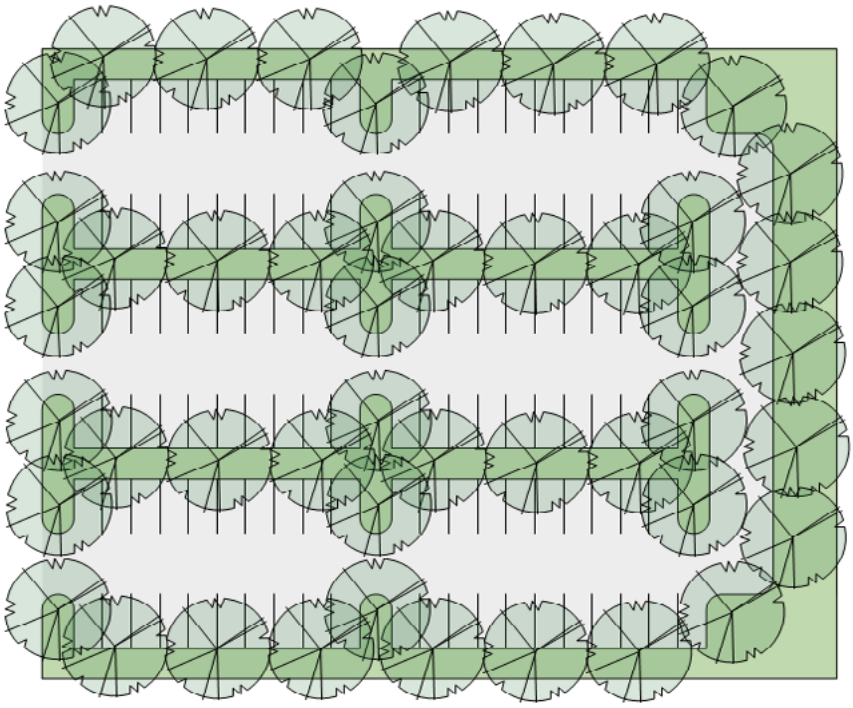


Figure 2: Example parking lot layout with linear planting strips and perimeter planting strips.

Trees in Parking Lots

Parking lot trees enhance shopping environments, provide shade that reduces surface temperatures, and help absorb stormwater. However, these trees often struggle or die due to undersized planting areas and insufficient watering. Parking lots are harsh environments for tree growth, but with adequate soil volume, proper establishment watering, and appropriate species selection, they can support healthy long-lived trees.

Successful parking lot tree planting depends on thoughtful site design. A common approach to meeting parking lot tree requirements is to install small tree islands at the ends of parking rows. While meeting minimum requirements, this approach limits soil volume and tree health. A more effective approach includes:

- Using continuous linear planting strips between parking rows
- Incorporating perimeter planting strips with bump outs
- Designing planting strips with a minimum width of 10 ft.

Linear planting strips also locate trees near parking spaces providing shade where it is desired. In small parking lots, perimeter planting strips are often more effective than isolated islands because they provide greater continuous soil volume.

Tree species selected for parking lots should be fast growing and heat tolerant. Species with columnar form should be avoided. For species specific tree recommendations, see Appendix A: Recommended Tree Species List.

Parking lot planting areas can also function as bioretention, capturing and filtering stormwater runoff. Storm water is directed into these systems through curb cutouts, pervious pavement, piping systems etc. and it filters through soil and plantings before being infiltrated or released into local waterways. Trees used in bioretention systems must tolerate both periodic flooding and drought conditions.

Parking lot with bioretention basin in continuous linear parking strip between parking rows.

Soil Volume Standards

In an unconstrained setting, a tree's root system extends far beyond the width of its crown, anchoring the tree into the earth and allowing it access to oxygen, water, and nutrients. Trees need adequate soil volume to grow to their full potential size. Trees in the urban environment often do not reach mature size due to underground constraints on their root systems. Compacted soils and planting spaces that are too small limit root growth. Once a tree's roots fill the available space, the tree will begin to decline and die. Providing urban trees with adequate soil volume is one of the best ways to ensure the full growth of large, healthy trees.

Ideal soil volumes are 600 cubic feet for a small tree, 1000 cubic feet for a medium tree and 1500 cubic feet for a large tree. While ideal soil volumes are desired where space allows, in an already built urban environment, these numbers are often not achievable. In such cases, the minimum soil volume requirements are broken into four conditions- urban tree pits, planting strips, parking lots, and open space. Requiring minimum soil volumes by site condition allows for improving soil volume, while acknowledging existing space constraints. Minimum soil volumes required for street trees necessitate the inclusion of areas under the sidewalk. (Municipality) is committed to incorporating strategies to provide pathways to support healthy root growth, such as continuous soil zones, structural soils, and structural cells for tree planting in restricted environments. Structural soil can be a cost effective addition adjacent to planting soil that provides stability needed under sidewalks and pavement while preventing soil compaction and creating space for root development.

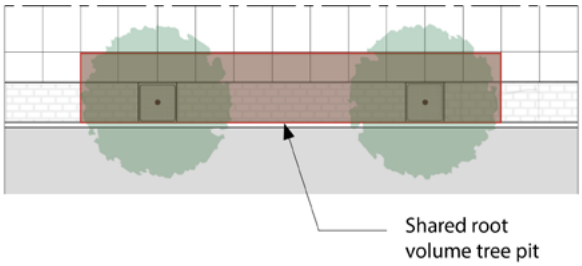


Figure 3: Shared root volume tree pits have contiguous soil volume between adjacent trees to allow roots to grow in greater areas of soil.

Soil volume runs underneath paved surfaces, providing adequate soil volume for large mature trees in restricted environments.

In constrained urban spaces, structural cells can create healthy uncompacted soil volume for urban trees allowing them to grow to their full potential. Image credit: GreenBlue Urban

Soil Volume Requirements for Large/Overstory Trees				
	Minimum	Typical Dimensions	2 Tree Continuous Soil Zone	Typical dimensions
Urban Tree Pit	600 ft^3	20′ length x 10′ width x 3′ depth	1000 ft^3	33′ length x 10′ width x 3′ depth
Planting Strip	900 ft^3	30′ length x 10′ width x 3′ depth	1200 ft^3	40′ length x 10′ width x 3′ depth
Parking Lot	900 ft^3	18′ length x 17′ width x 3′ depth	1600 ft^3	30′ length x 18′ width x 3′ depth
Open Space	1500 ft^3 total; 900 ft^3 amended	25′ length x 20′ width x 3′ depth, 18′ length x 17′ width x 3′ depth	N/A	N/A

Note: These soil volumes are MINIMUMS for large trees in various site conditions due to having to work within the existing hardscape.

Figure 4: Downtown Soil Volume.

Total Soil Volume = A+B
A. Planting Mix
B. Structural Soil or other amended soil

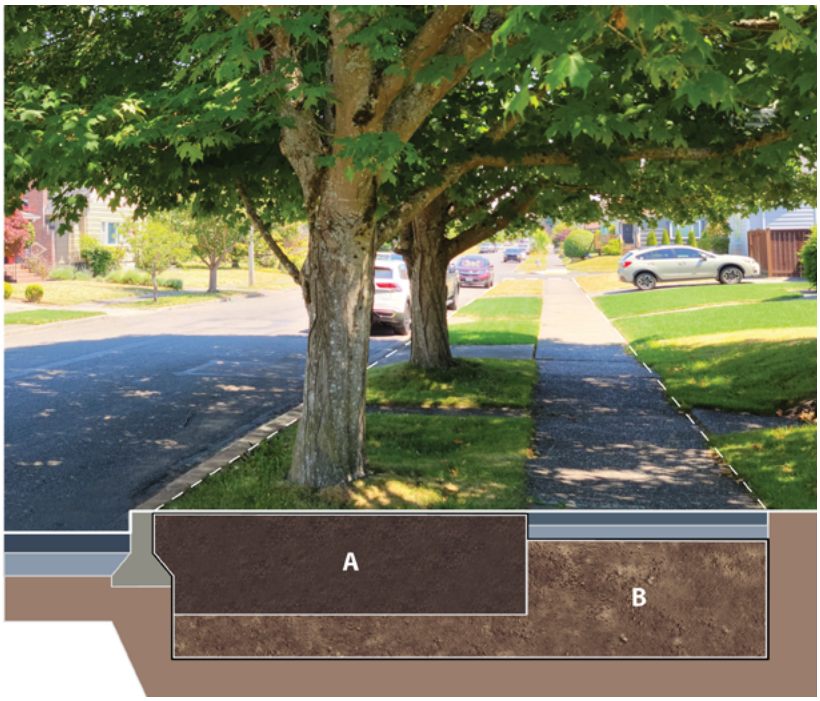


Figure 5: Residential Soil Volume.

Total Soil Volume = A+B
A. Planting Mix
B. Structural Soil or other amended soil

Species Selection

Right Tree, Right Place

Site conditions such as soil, microclimate, and space constraints vary across the (Municipality) and tree species selection should consider local conditions, site design goals, and diversity requirements. In choosing a species, the mature height and spread shall be considered, to ensure that it will not interfere with existing or proposed structures and overhead utilities. In keeping with (Municipality's) goal of increasing the tree canopy, the largest tree species appropriate for the planting location should be selected.

List of Approved Trees

The (Municipality) has a list of approved trees (Appendix A) for planting in various conditions, such as in the right-of-way/ tree lawns, urban tree pits, parking lots, parks/open space, bioretention facilities, and under utility lines. When possible, the (Municipality) encourages the use of native tree species. Alternate species not found on the (municipality's) approved list may be considered on a case-by-case basis. The (Municipal) Arborist will make the determination to accept or reject new or substitute species.

Species Diversity Improves Resilience

Ensuring a diverse urban forest is critical for resilience. Urban trees face threats from pests and diseases, increased storm frequency and intensity, thermal stress from pavement and a changing climate. A diverse urban forest is better able to withstand these threats. For example, streets planted with a diversity of trees will not all be wiped out by a singular pest or disease. Diversity requirements must be taken into consideration for all public tree planting projects, tree mitigation planting projects, or development projects where more than 5 trees will be planted.

Various tree species planted at a commercial development.

Species diversity is prioritized in Georgia, along with selection of native species.

Tree Diversity Requirement:

Where more than 5 trees are installed, no more than 20% of the trees may be of the same genus.

Common Tree Genera	
Scientific Name	**Common Name**
Acer	Maple
Betula	Birch
Cornus	Dogwood
Pinus	Pine
Quercus	Oak
Ulmus	Elm

Tree Planting Standards

Tree Planting Execution

Tree planting must occur within the designated planting seasons. Trees may be planted from the end of October to the end of February.

Proper tree planting ensures the best chance for tree survival. Tree planting varies based on local site conditions. Tree planting involves the following actions:

- **Excavation**- Dig a planting hole in accordance with the dimensions and specifications shown in the detail drawings.
- **Tree Placement**- Position the tree so that the root flare is level with the surrounding grade and to minimize settling as shown in the detail drawings.
- **Backfill Soil**- Backfill the planting hole with suitable soil. Where native soil is of poor quality, provide amendments as necessary to support healthy tree growth.
- **Mulching**- Apply mulch at the time of planting in accordance with the detail drawings.
- **Staking**- Stake trees as required based on site conditions (e.g., wind exposure, soil stability, etc.) in accordance with the detail drawings. Remove stakes after one year.
- **Watering**- At the time of planting, thoroughly saturate the soil around each tree with a minimum of 20 gallons of water.

Tree Planting Standard Detail drawings can be found in Appendix C.

Mature trees in parking lot with pine straw mulch application.

Field crew members install trees in downtown tree pit.

Tree Planting Materials

Ensuring that planting projects are completed with high quality plant materials, soil, and mulch will provide new trees with the best conditions for optimal growth and survival. All planting material shall conform to the American Standard for Nursery Stock (ANSI Z60.1), unless otherwise specified. All trees shall be nursery grown in a USDA hardiness zone of (local hardiness zone) or lower. Street tree planting material shall be balled and burlapped or container grown trees of at least 1.5-inch and no greater than 2.5-inch caliper measured at 6 inches from the ground.

Tree material selected for planting shall meet the following requirements:

- Typical growth and form for their species or cultivar
- Normal, well-developed branches and a fibrous root system
- Sound, healthy, vigorous trees, free from defects, disfiguring knots, sunscald, injuries, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestations
- Single, straight trunk, with leader intact (if characteristic of species)
- Branched at least five feet from the ground (for street trees)
- Visible root flare
- Roots/root ball intact
- Free of girdling roots above primary roots

Planting soil shall meet the following requirements:

- Native soil free of refuse, roots larger than 1 inch diameter, heavy, sticky, or stiff clay, stones larger than 2 inches in diameter, noxious weeds, sticks, brush, litter, or any substances deleterious to plant growth.
- pH value shall be between 5.5 and 7.4
- Percent organic matter (OM): 2.0-5.0%, by dry weight
- Soluble salt level: Less than 2 mmho/cm
- Soil chemistry suitable for growing specified plants

Tree species should be selected based on the native soil. Soil tests of existing soil will indicate what amendments may be required.

Tree Planting Standard Detail Drawings in Appendix C:

- Tree Planting
- Tree Planting on Slope
- Tree Staking
- Tree Planting in Downtown Tree Pit
- Bioretention Basin Tree Planting

Mulch quality shall meet the following requirements.

- Shredded bark or wood of uniform grade not exceeding 3 inches in length and 1-inch width or pine straw
- Derived from tree material, not from wood waste or by-products like sawdust, shredded palettes, or other debris
- Free of dyes, additives, and debris

For more minor encircling roots, detangling and pruning should be done prior to planting.

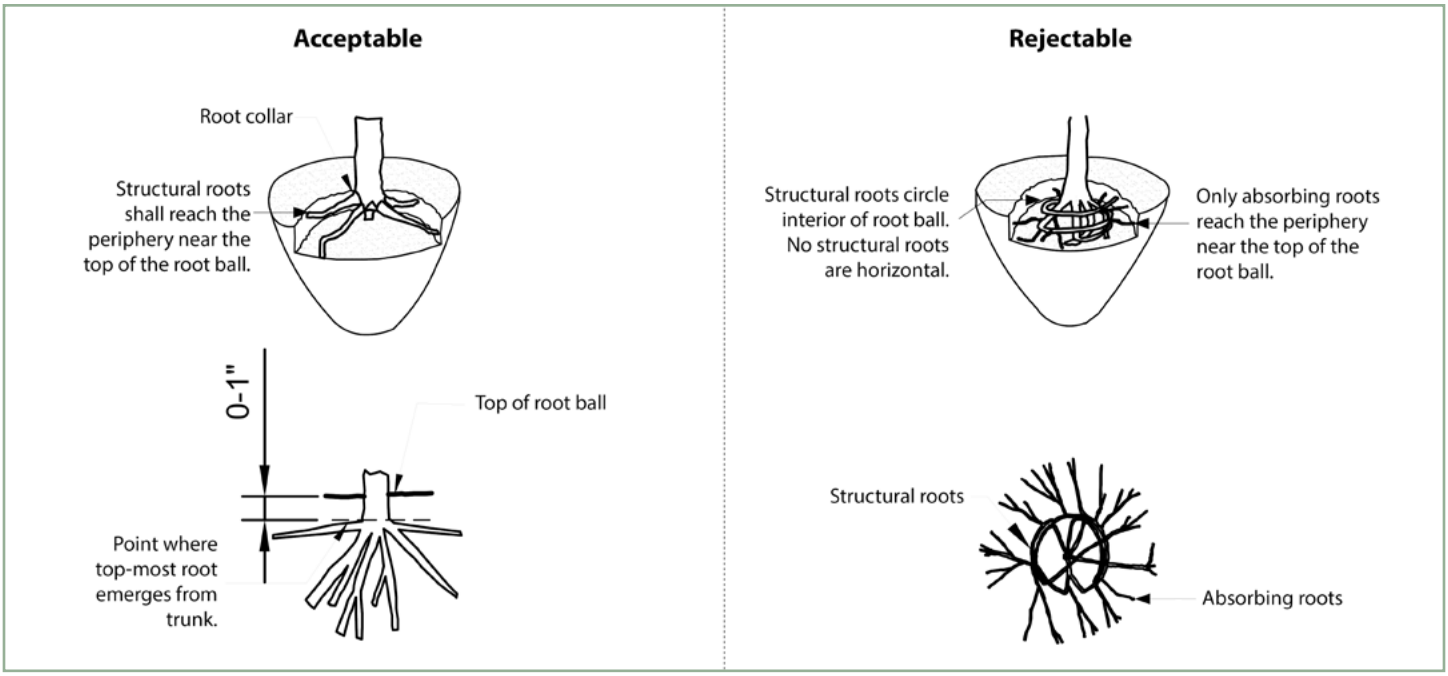


Figure 6: Root inspection for balled and burllaped tree stock: identifying stem girdling roots.

A. Acceptable: The root collar and root ball interior should be free of defects including circling, kinked, ascending, and stem girdling roots.
B. Rejectable: Significant defects are present including circling, kinked, ascending, and stem girdling roots.

Tree Establishment Maintenance Standards

Tree care for newly planted trees is essential for their health and survival. With sufficient watering, mulching, and structural pruning early on, trees will grow faster and supply benefits sooner for air cleansing, stormwater uptake, and shade. Tree care is required for public trees and recommended for trees on development sites for the first two years of establishment with additional care recommendations for long term tree health. All tree care must follow the ANSI A300 Tree Care Standards. Tree establishment involves the following actions:

Watering

Watering must take place throughout the first two years of tree establishment at an approximate rate of 20 gallons every week from leaf out through fall. Actual frequency will be based on weather conditions. Watering bags or watering mats may be used to assist with watering.

Watering bags should be checked or refilled once a week.

Tree watering mats recharge with rain and snow.
Photo credit: TreeDiaper

Mulching

Mulch shall be applied at the time of planting and replenished at the one-year mark. After that first year, mulch shall be replenished annually each spring. Mulch depths shall not exceed 4 inches and shall be kept a minimum of 3 inches away from the trunk of young trees and 8 inches away from the trunk of mature trees, keeping the root flare exposed to ensure roots get oxygen and to deter rot and girdling roots.
Mulch volcanoes (see graphic below) suffocate trees and lead to moisture build-up at the trunk that can cause rot and lead to susceptibility to insects and other pests.

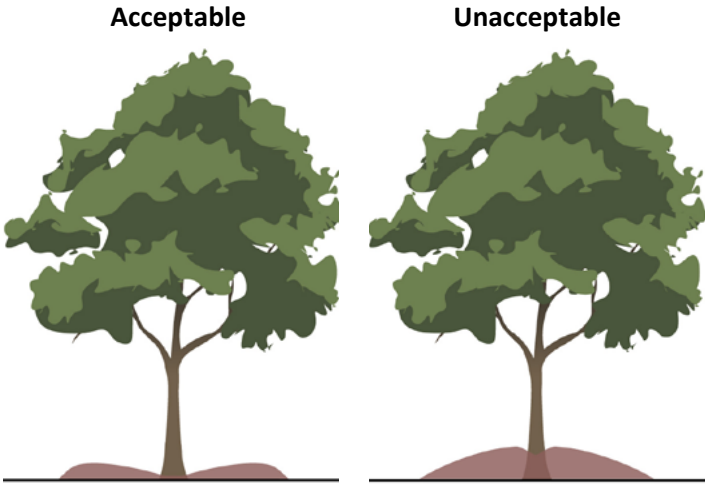


Figure 7: Proper mulch application.

A. Acceptable: Mulch with gentle slope, applied 3 inches away from trunk and root flare.
B. Unacceptable: Volcano style mulching with steep slopes covering the root flare.

Pruning

Pruning shall be done in accordance with ANSI A300 Part 1 Standard Practices For Structural Pruning. Structural pruning shall be done as needed on young trees to ensure good form. Newly planted trees shall be assessed for structural pruning at the two-year mark. Correcting structural issues when trees are young ensures healthy growth and better form as trees mature.

Tree Replacement

All newly planted public trees must be guaranteed for two years by a contractor or nursery warranty. Trees the (Municipal) Arborist identifies as dead, unhealthy, or unsightly shall be replaced in the next planting season. Trees planted on development sites to fulfill landscape requirements on a landscape plan approved by the Zoning Administrator must be continuously replaced if they die.

Tree Construction Standards

Tree Protection During Construction

Construction projects pose direct and indirect harm to trees. Trees in the path of a building or sidewalk may need to be removed. See (Municipality's) ordinances for permits required for tree removals and for mitigation requirements to replace trees.

Trees designated to remain on a site during and after a construction project face potential harm from construction impacts, including branch and trunk damage, soil compaction, and root damage, all of which can cause tree decline and death. To avoid damage to the trunk, branches, and critical roots of trees, (Municipality) contractors or developers must follow tree protection standards. These standards apply to all public trees and to trees designated to be retained on a landscape plan approved by the Zoning Administrator. These standards establish a tree protection zone (TPZ), as well as fencing and signage requirements for the TPZ to keep construction vehicles and equipment out of the most critical area of the root zone during all phases of construction. Any construction activity within the TPZ of a public tree must be approved by the (Municipal) Arborist. Development sites requiring a landscape plan must indicate trees to be retained, the tree's TPZ, and the location and type of tree protection fencing and signage.

Figure 8: Example Tree Protection Fence signage.

Tree protection fencing is constrained in planting strips where protecting trees during construction is balanced with leaving sidewalks and streets unobstructed. Support blocks can be used to stabilize fencing and minimize damage to roots in the TPZ. Photo credit: Arboriculture Victoria

Tree Protection Standard Detail Drawings in Appendix C:

- Tree Protection Zone
- Tree Protection Zone Exceptions
- Tree Protection Fencing- Open Space
- Tree Protection Fencing- Tree Lawn

Trees and Infrastructure

Trees in the urban environment, especially in the ROW, share spaces with other infrastructure, such as sidewalks, underground utilities, and overhead utilities. When infrastructure work must be done within the TPZ of a public tree, it must be approved by the (Municipal) Arborist as specified in the Municipal Tree Ordinance. When conflicts arise between trees and other infrastructure, additional methods may be required to protect trees. Where possible, the utility line or sidewalk should be moved away from the tree to avoid root disturbance.

In some cases, techniques such as tunneling or air spading may be used to place utility lines underneath the critical roots in the TPZ so as to avoid unnecessary disturbance. For most tree species, the majority of roots (85-90%) are located within the top 3 feet of the soil. In other cases, disturbance is unavoidable and root pruning should be done ahead of any excavation or grading. Roots greater than 3" in diameter are not recommended to be cut to maintain structural integrity of the root system.

Trees and Construction Standard Detail Drawings in Appendix C:

- Trench Root Pruning for Disturbance

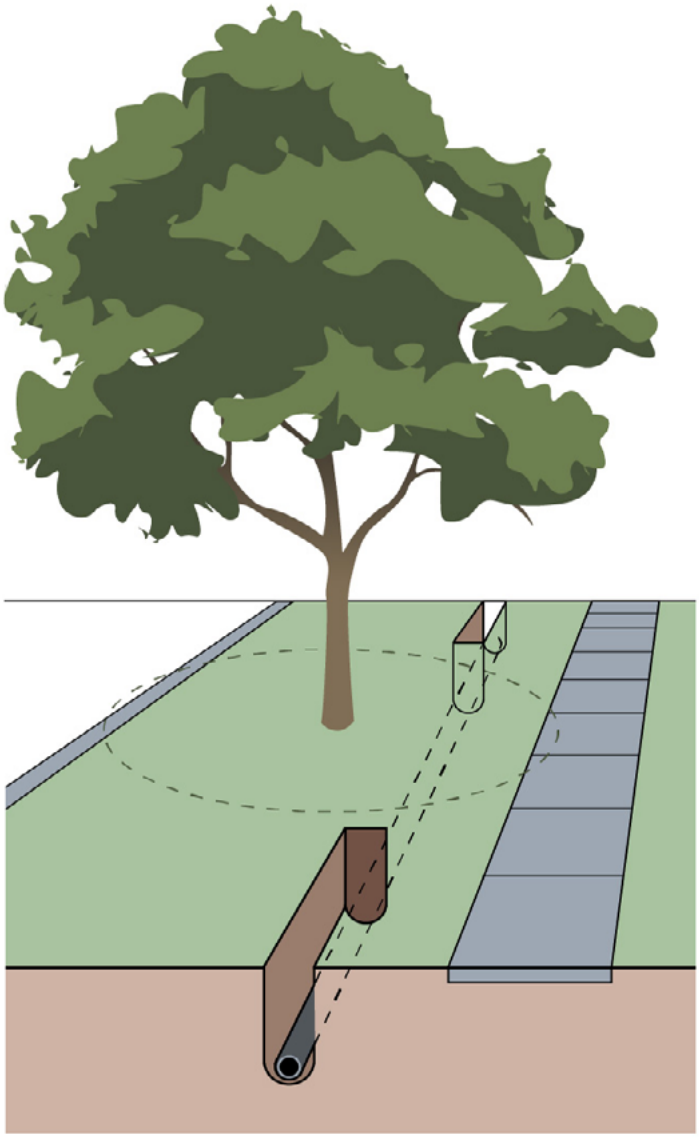
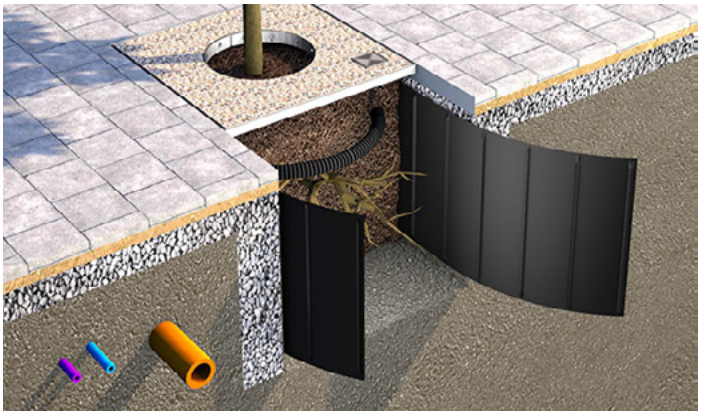


Figure 9: When utility installation cannot be moved out of the TPZ, tunneling instead of open trenching should be used to install utilities. To avoid damage to critical roots, tunnelling should begin and end outside of the TPZ and be dug to a depth of 2'-3' below the surface.

Reducing Root Conflicts

Tree roots may cause damage to sidewalks, curbs, roads, utilities and building foundations. These conflicts can be minimized by providing trees with adequate soil volume and selecting appropriate species for the site.

In some cases, root barriers can effectively deter root growth toward infrastructure. There are three main types of root barriers: inhibitors, traps, and deflectors. Inhibitors limit root growth through chemical intervention. They often consist of fabric treated with an herbicide that stops root growth as it approaches the barrier. Traps restrict the size of roots that can pass through them. These permeable screens have small openings that allow fine roots to pass while preventing the development of larger roots. Deflectors are solid barriers that redirect root growth away from infrastructure. Typically made of impermeable materials such as plastic, they guide roots downward or away from sensitive areas. Concrete cutoff walls are a common type of deflector used to protect building foundations. Effective use of root barriers requires careful consideration of site-specific conditions.



Solid root barriers redirecting tree roots away from nearby underground infrastructure. Image Credit: GreenBlue Urban

Sidewalks

The (Municipality)'s standard for sidewalks is a width of 5'. Conflicts can arise between existing trees and new or replacement sidewalks in the ROW. To avoid loss of tree canopy along streets and sidewalks, efforts should be made to retain trees in good condition where possible.

Methods for accommodating trees with alternative sidewalk design include:

Bridging the sidewalk with a wood or metal boardwalk

Modifying the sidewalk with alternative permeable or flexible pavement material around the critical roots.

Curving sidewalks away from trees. In some cases, this may require obtaining an easement.

Narrowing the sidewalk to 4' around trees.

Appendix A: Approved Tree Species List

(Municipality) approved tree species are listed below grouped into small, medium and large trees. Approved locations for each tree are also included. (Municipality) Arborist's approval is required for use of tree species not listed and approved for a particular location. The principle of "Right Tree, Right Place" should guide planting decisions, taking into consideration available growing space, soil conditions, moisture, sunlight, and infrastructure conflicts.

Small/Understory: Trees under 20' in height. Small trees require a 4' wide tree lawn, 30' spacing for optimal growth and a recommeded ideal soil volume of 600 cu ft. Small trees are suitable for planting under overhead utility lines.

Name		Approved Locations									Attributes		
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Alder, Hazel	Alnus serrulata	■						■	■	■	■		
Crapemyrtle, Common	Lagerstroemia indica		■	■	■	■			■	■			
Fig	Ficus carica		■	■	■	■	■		■	■			■
Holly, American	Ilex opaca			■	■		■	■		■	■		
Smoke Tree	Cotinus obovatus			■					■				
Chastetree (Vitex)	Vitex agnus-castus	■			■								
Crabapple, Japanese Flowering	Malus floribunda		■	■	■								
Cryptomeria	Cryptomeria japonica	■			■	■	■	■			■		
Dogwood, Flowering	Cornus florida	■			■	■	■	■			■		
Dogwood, Kousa	Cornus kousa	■	■		■			■			■		
Filbert Hazelnut, American	Corylus americana												■
Flametree, Chinese (Bougainvillea)	Chionanthus retusus	■	■		■	■	■	■			■		
Fringetree (Grancy Gray Beard)	Chionanthus virginicus	■	■		■			■			■		
Hawthorn, Washington	Crataegus phaenopyrum	■		■	■								
Loquat	Eriobotrya japonica		■	■	■	■	■		■	■			■

Small/Understory: Trees under 20' in height. Small trees require a 4' wide tree lawn, 30' spacing for optimal growth and a recommeded ideal soil volume of 600 cu ft. Small trees are suitable for planting under overhead utility lines.														
Name		Approved Locations									Attributes			
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Maple, Japanese	Acer palmatum	■		■						■			
Mayhaw	Crataegus aestivales			■					■		■		
Persimmon, Japanese	Diospyros kaki			■					■				■
Plum, Chickasaw	Prunus angustifolia			■			■		■		■		
Plum, Purpleleaf	Prunus cerasifera						■		■				
Redbud, Eastern	Cercis canadensis	■	■	■	■		■		■		■		
Serviceberry	Amelancheir arborea		■	■	■	■	■		■	■			■
Serviceberry, Downey	Amelanchier arborea	■	■	■			■	■	■	■			

Medium/Midstory: Trees 20'-30' in height. Midstory trees require a 5'-6' wide tree lawn, 40' spacing for optimal growth and a recommeded ideal soil volume of 1000 cu ft.														
Name		Approved Locations									Attributes			
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Birch, River (std.)	Betula nigra	■	■	■			■	■			■		
Blackgum (Tupelo)	Nyssa sylvatica	■	■	■	■			■		■			
Buckthorn, Carolina	Rhamnus caroliniana	■	■	■		■		■					
Cedar, Deodar	Cedrus deodara	■		■			■	■					
Hemlock, Canadian	Tsuga canadensis	■											
Hophornbeam, American	Ostrya virginiana	■			■			■			■		■
Hornbeam, American	Carpinus caroliniana	■		■	■	■	■				■		■
Hornbeam, European	Carpinus betulus		■	■	■	■	■						
Ironwood, Persian	Parrotia persica		■	■	■	■	■		■	■			
Katsura Tree	Cercidiphyllym japonicum	■		■	■	■							■
Locust, Black (seedless)	Robinia pseudoacacia	■	■					■		■	■		
Magnolia, Japanese (Saucer)	Magnolia x soulangiana	■		■									
Magnolia, Southern "Little Gem"	Magnolia grandiflora 'Little Gem'		■	■	■		■		■		■		■
Magnolia, Sweetbay	Magnolia virginiana	■		■			■	■		■	■		
Maple, Hedge	Acer campestre	■	■	■	■			■					
Maple, Red (var.Florida Flame)	Acer rubrum	■	■	■	■		■	■			■		
Maple, Southern Sugar	Acer barbatum	■	■	■	■	■	■	■			■		
Maple, Trident	Acer buergeranum		■	■	■	■	■		■	■			
Paw Paw	Asiminia triloba						■	■			■		■
Pine, Virginia	Pinus virginiana						■				■		
Pistache, Chinese	Pistacia chinensis		■	■	■	■				■			

Medium/Midstory: Trees 20'-30' in height. Midstory trees require a 5'-6' wide tree lawn, 40' spacing for optimal growth and a recommeded ideal soil volume of 1000 cu ft.														
Name		Approved Locations									Attributes			
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Redcedar, Eastern	Juniperus virginiana	■		■			■				■		
Redwood, Dawn	Metasequoia glyptostroboides	■		■			■						
Red Mulberry	Morus rubra						■	■			■		■
Sassafras	Sassafras albidum	■		■							■		
Silverbell, Carolina	Halesia carolina	■								■	■		
Sourwood	Oxydendrum arboreum	■		■						■	■		
Yellowwood, American	Cladrastis kentukea	■		■									

Large/Overstory: Trees over 30' in height. Overstory trees require a 6' wide tree lawn, 50' spacing for optimal growth and a recommeded ideal soil volume of 1500 cu ft.														
Name		Approved Locations									Attributes			
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Baldcypress	Taxodium distichum	■						■			■		
Basswood, American (Linden)	Tilia americana	■						■		■	■		
Beech, American	Fagus grandifolia	■			■	■	■	■					
Black Walnut	Julgans nigra	■						■			■		■
Catalpa	Catalpa speciosa	■					■	■			■		
Chestnut, Chinese	Castanea mollissima	■		■									
Elm, Winged	Ulmas alata	■	■	■	■						■		
Ginkgo (male)	Ginkgo biloba	■	■		■	■	■	■					
Hickory (spp.)	Carya spp.	■									■		
Honeylocust (seedless)	Gleditsia triacanthos	■									■		
London Planetree	Platanus x acerifolia	■	■	■	■			■	■				
Magnolia, Southern	Magnolia grandiflora	■					■	■			■		
Oak, Black	Quercus velutina	■	■	■							■		
Oak, Chestnut	Quercus prinus	■	■	■	■						■		■
Oak, Laurel	Quercus hemisphaerica	■	■	■	■						■		
Oak, Northern Red	Quercus rubra	■	■	■							■		
Oak, Nuttal	Quercus nuttalli	■	■	■	■			■		■	■		■
Oak, Overcup	Quercus lyrata	■	■	■	■						■		
Oak, Scarlet	Quercus coccinea	■	■	■	■						■		
Oak, Shumard	Quercus shumardii	■	■	■	■						■		■
Oak, Swamp White	Quercus bicolor	■	■	■	■								
Oak, Water	Quercus nigra	■	■	■							■		
Oak, White	Quercus alba	■	■	■	■						■		

Large/Overstory: Trees over 30' in height. Overstory trees require a 6' wide tree lawn, 50' spacing for optimal growth and a recommeded ideal soil volume of 1500 cu ft.														
Name		Approved Locations									Attributes			
Common Name	Scientific Name	Overstory Landscape Areas	Road Frontage- Street	Road Frontage- Yard	Parking Lot Tree Island 400-600 sq ft	Parking Lot Tree Island 100-400 sq ft	Buffers	Riparian/Drainage Area	Utility Corridors	Urban Container	Native	Evergreen	Fruiting
Oak, Willow	Quercus phellos	■	■	■	■						■		
Pecan	Carya illinoensis	■	■	■							■		■
Persimmon, American	Diospyros virginiana	■						■			■		■
Planetree, London	Platanus x acerifolia		■	■	■								
Popular, Tulip	Liriodendron tulipifera	■						■			■		
Sweetgum (fruitless)	Liquidambar styraciflua 'Rotundiloba'	■			■						■		
Sycamore, American	Platanus occidentalis	■									■		
Tupelo, Swamp	Nyssa ogeeche							■			■		
Walnut, Black	Juglans nigra	■						■			■		■

Appendix B: Glossary

(Insert municipality's glossary from tree ordinance)

Appendix C: Standard Details

This manual provides urban tree standards and detail drawings that must be followed as indicated in existing (Municipality) ordinances. Detail drawings will be updated as needed by the (Municipality Department of Urban Forestry) to provide the most accurate and current information to its users. The following detail drawings should be used by contractors and other (Municipality) departments involved with projects that may impact trees.

Standard Details:

Tree Planting Standards Detail Drawings:

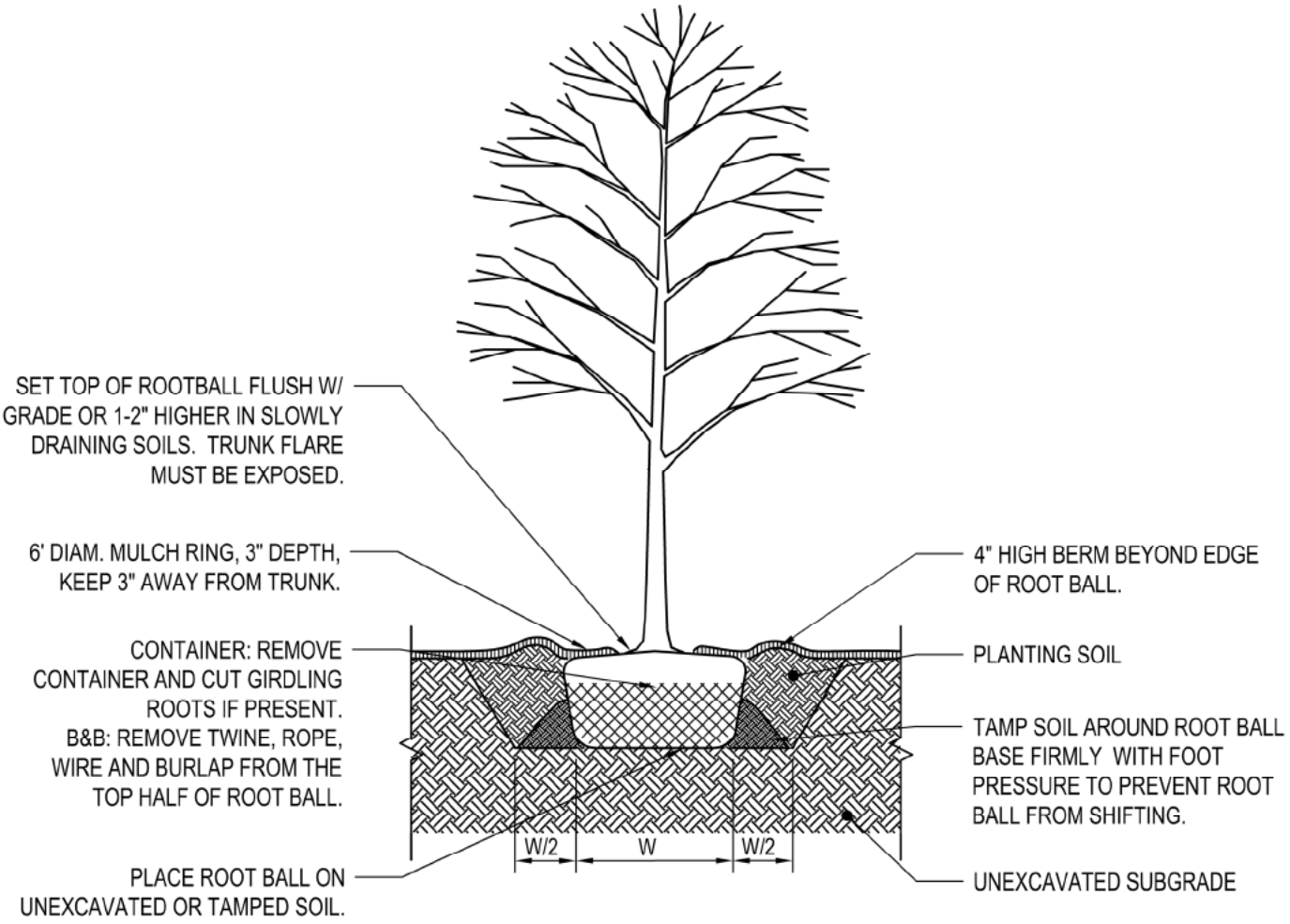
- Tree Planting
- Tree Planting on Slope
- Tree Staking
- Tree Planting in Downtown Tree Pit
- Bioretention Basin Tree Planting

Tree Protection Standards Detail Drawings:

- Tree Protection Zone
- Tree Protection Zone Exceptions
- Tree Protection Fencing- Open Space
- Tree Protection Fencing- Tree Lawn

Trees and Construction Standards Detail Drawings:

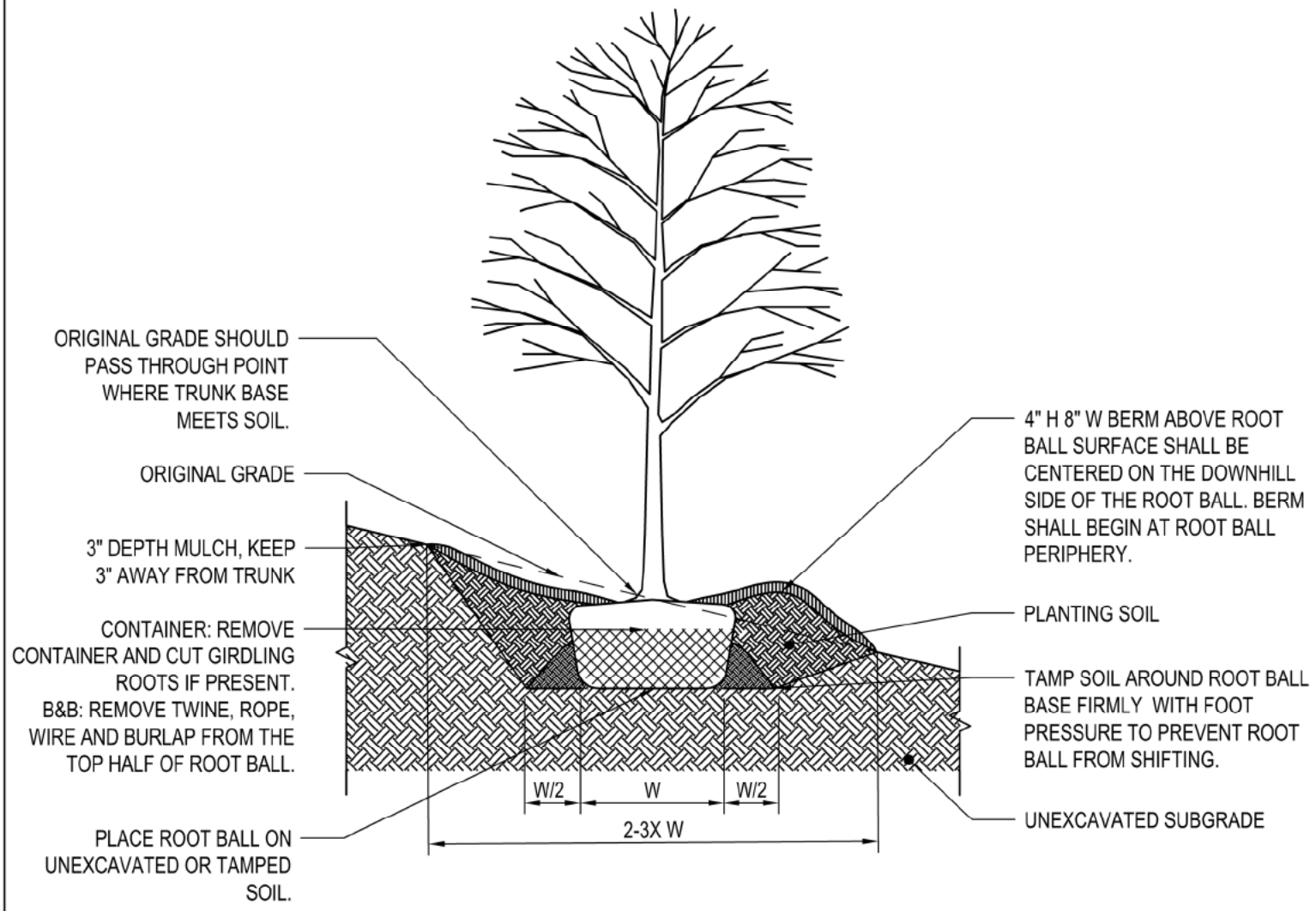
- Trench Root Pruning for Disturbance



NOTES:

1. PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES.
2. STAKING WILL BE REQUIRED ONLY WHEN ROOT BALLS ARE VERY SANDY OR WET CLAY, WHEN SOIL IS VERY SOFT, OR WHEN PLANTING LOCATIONS ARE WINDY.

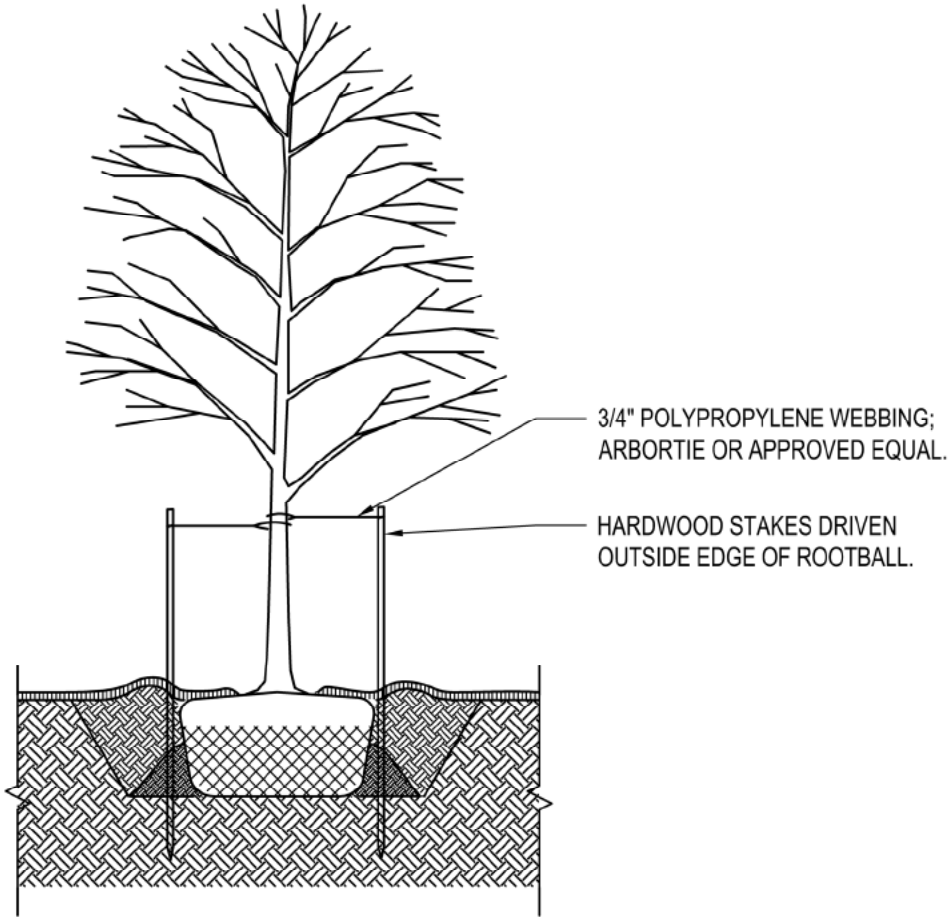
(INSERT MUNICIPALITY NAME) (INSERT DEPARTMENT NAME)	
TREE PLANTING	
Scale: Not to Scale	*Drawn by:* R. Freeman *Checked by:* L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



NOTES:

1. PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES.
2. STAKING WILL BE REQUIRED ONLY WHEN ROOT BALLS ARE VERY SANDY OR WET CLAY, WHEN SOIL IS VERY SOFT, OR WHEN PLANTING LOCATIONS ARE WINDY.

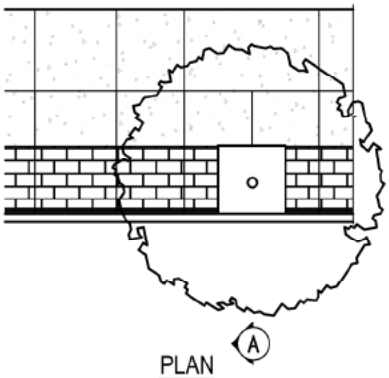
(INSERT MUNICIPALITY NAME) (INSERT DEPARTMENT NAME)	
TREE PLANTING ON SLOPE	
Scale: Not to Scale	*Drawn by:* R. Freeman *Checked by:* L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



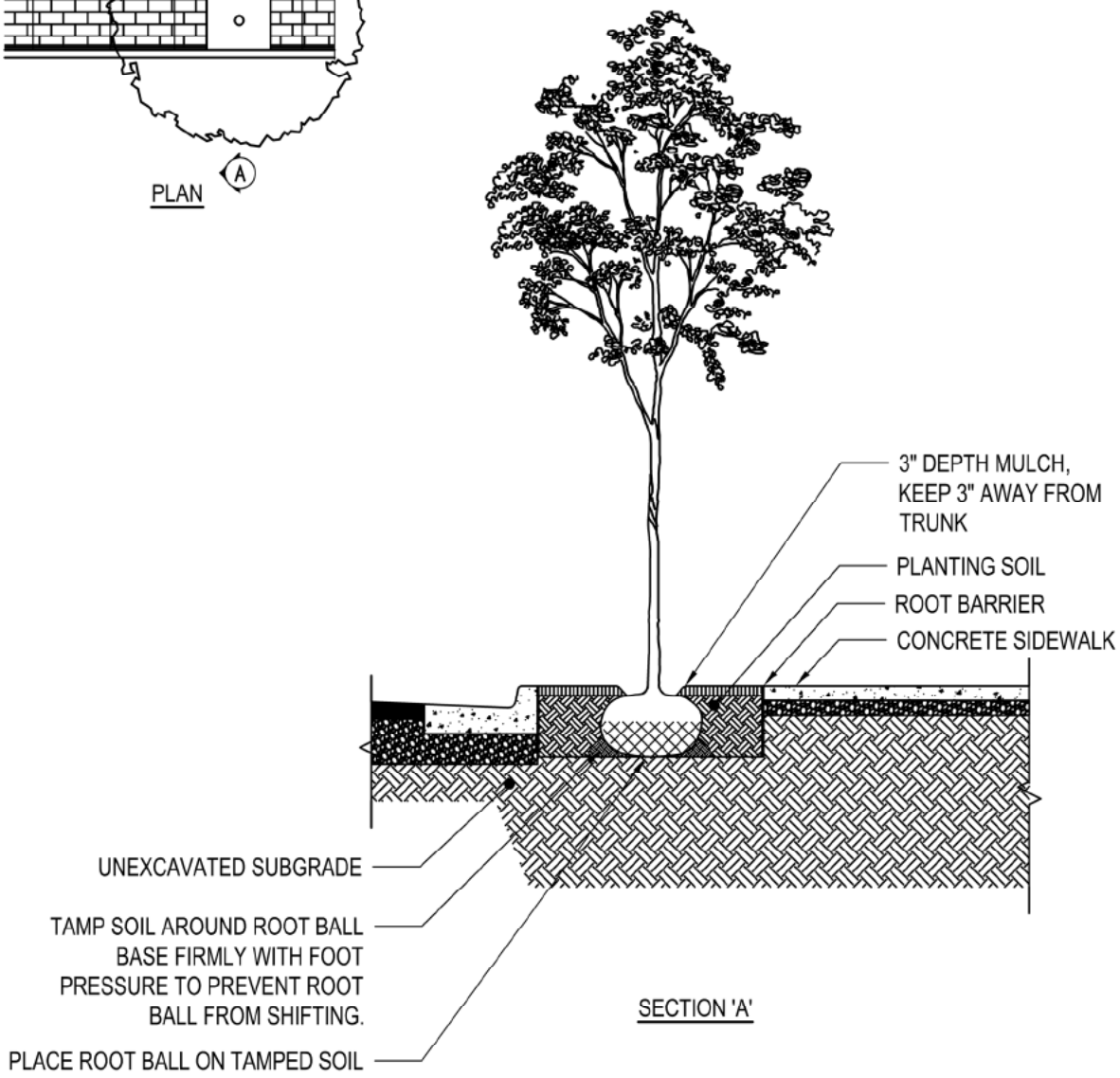
NOTES:

1. STAKE TREES AS DIRECTED BY THE CITY ARBORIST. STAKING WILL BE REQ'D WHEN ROOT BALLS ARE VERY SANDY OR WET CLAY, WHEN SOIL IS VERY SOFT, OR WHEN PLANTING LOCATIONS ARE WINDY.
2. TIGHTEN ARBORTIE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT.

(INSERT MUNICIPALITY NAME) (INSERT DEPARTMENT NAME)	
TREE STAKING	
Scale: Not to Scale	*Drawn by:* R. Freeman *Checked by:* L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



PLAN

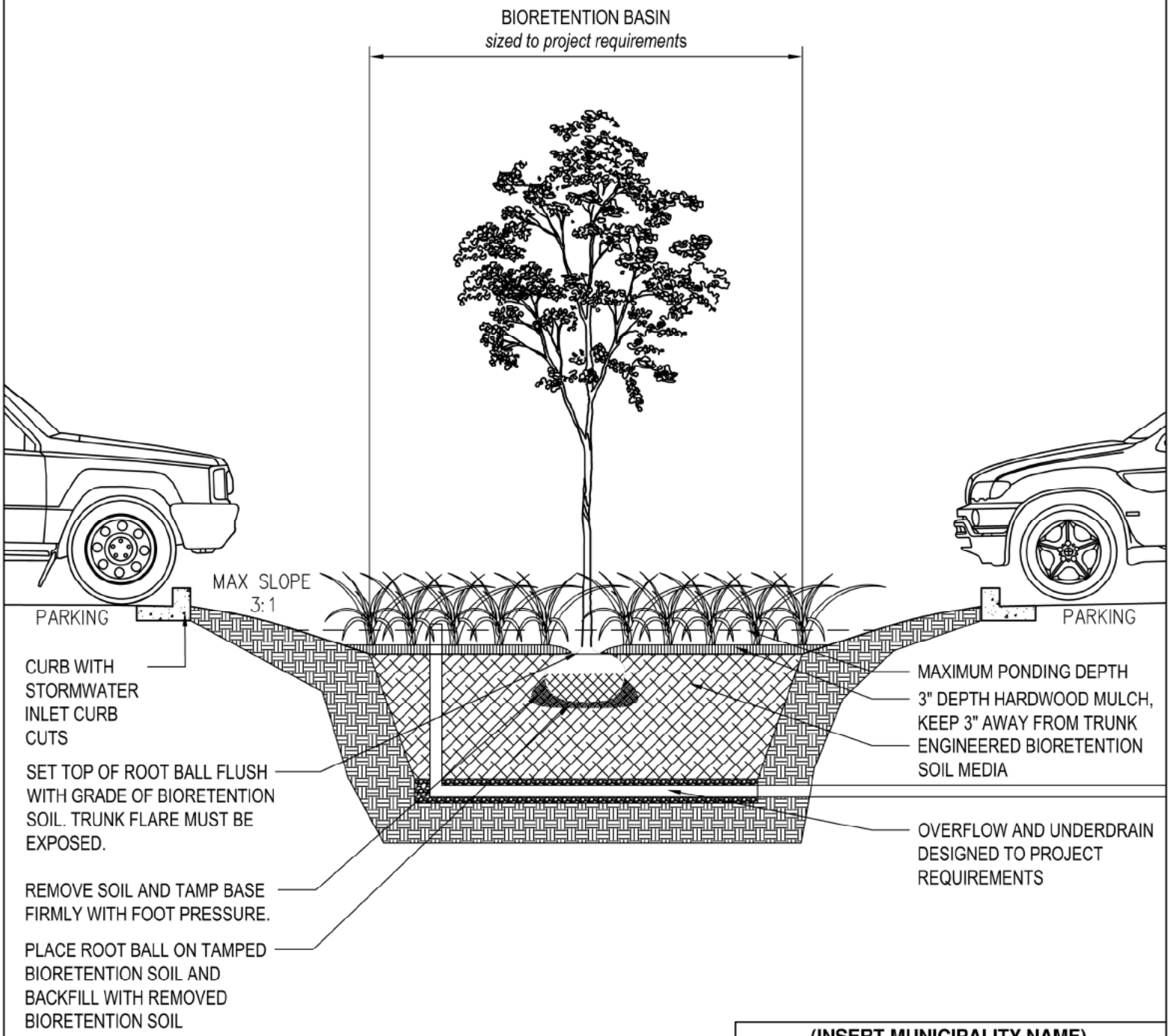


SECTION 'A'

NOTES:

1) EXCAVATE TREE PIT.
2) CONTAINER TREE: REMOVE CONTAINER AND CUT GIRDLING ROOTS IF PRESENT.
3) BALL AND BURLAP TREE: REMOVE TWINE, ROPE, WIRE AND BURLAP FROM THE TOP HALF OF ROOT BALL.
4) PLACE TREE ON TAMPED SOIL AND TOP WITH PLANTING SOIL VOLUME. PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES.
5) STAKING WILL BE REQUIRED ONLY WHEN ROOT BALLS ARE VERY SANDY OR WET CLAY, WHEN SOIL IS VERY SOFT, OR WHEN PLANTING LOCATIONS ARE WINDY.

(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
TREE PLANTING IN DOWNTOWN TREE PIT	
Scale: Not to Scale	*Drawn by:* R. Freeman
	Checked by: L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



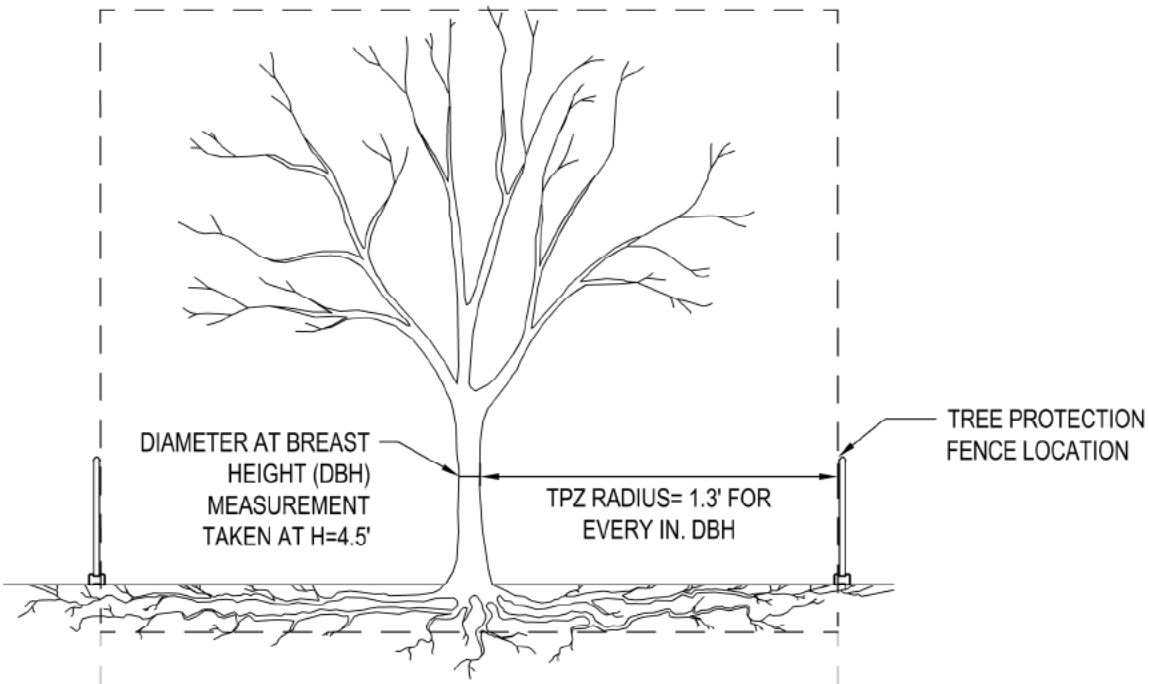
NOTES:

1) SELECT TREE SPECIES FOR BIORETENTION BASINS THAT CAN WITHSTAND FLOOD AND DROUGHT CONDITIONS. CONSIDER INUNDATION LEVELS AT THE PLANTING LOCATION.

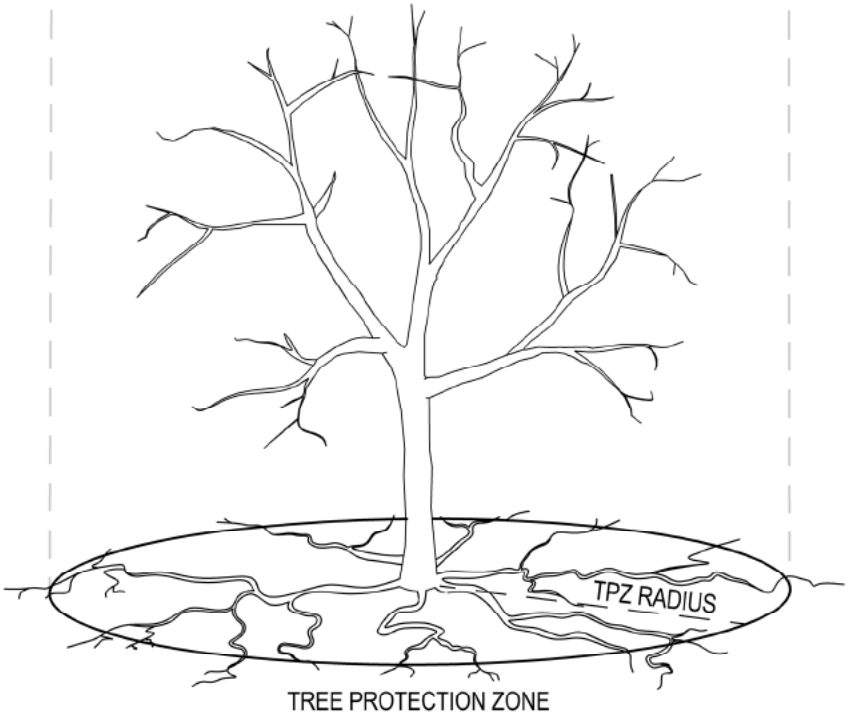
(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
BIORETENTION BASIN TREE PLANTING	
Scale: Not to Scale	*Drawn by:* L. Doran
	Checked by: R. Freeman
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)

TPZ RADIUS= 1.3 FT. FOR EVERY IN. DBH
EXAMPLE: IF TREE DBH= 12 IN.
TPZ RADIUS= 1.3 X 12= 15.6 FT

TREE PROTECTION ZONE



SECTION



TREE PROTECTION ZONE

PERSPECTIVE

TREE PROTECTION ZONE

1) THE TREE PROTECTION ZONE IS THE AREA WITHIN THE TREE PROTECTION ZONE RADIUS EXTENDING 24" UNDERGROUND AND UPWARD TO ENCOMPASS THE TRUNK AND CROWN OF THE TREE.
2) THE TREE PROTECTION FENCE SHALL BE INSTALLED AT THE TPZ PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (SEE TREE PROTECTION FENCING DRAWING).
3) NO DISTURBANCE OR ACCESS IS ALLOWED WITHIN THE TPZ DURING ANY PHASE OF CONSTRUCTION UNLESS PERMISSION IS OBTAINED FROM CITY ARBORIST.

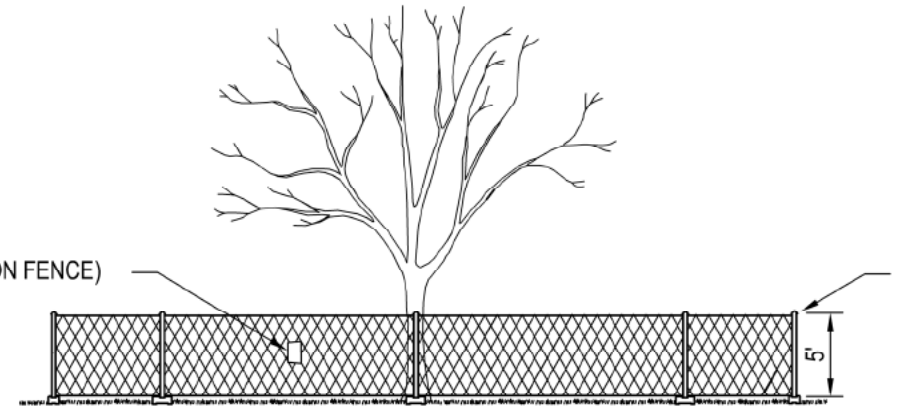
SEE TREE PROTECTION ZONE EXCEPTIONS NOTES FOR ADDITIONAL INFORMATION.

(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
TREE PROTECTION ZONE	
Scale: Not to Scale	*Drawn by:* R. Freeman
	Checked by: L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)

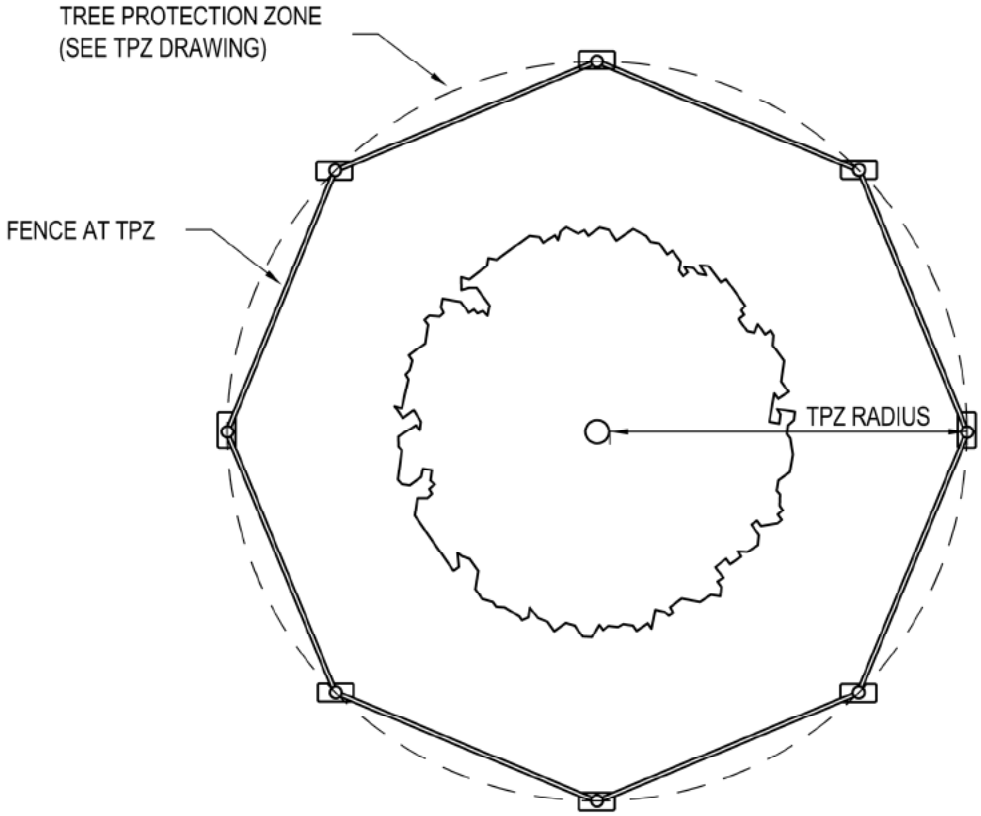
TREE PROTECTION ZONE EXCEPTIONS

1) EXCEPTIONS TO INSTALLING TREE FENCING AT THE TPZ MUST BE SUBMITTED FOR REVIEW AND APPROVAL TO THE CITY ARBORIST.
2) WHERE AN EXCEPTION RESULTS IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, THE TRUNK SHALL BE PROTECTED BY STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
3) WHERE AN EXCEPTION RESULTS IN AREAS OF UNPROTECTED TPZ, THOSE AREAS SHALL BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.
4) ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.
5) TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CROWNS ARE TO BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.
6) WHEN INSTALLING CONCRETE IN THE TPZ OF A TREE, A PLASTIC VAPOR BARRIER SHALL BE PLACED BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE TPZ.
7) PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION.
8) NO TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE TPZ. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.

(INSERT MUNICIPALITY NAME) (INSERT DEPARTMENT NAME)	
TREE PROTECTION ZONE EXCEPTIONS NOTES	
Scale: Not to Scale	*Drawn by:* R. Freeman *Checked by:* L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



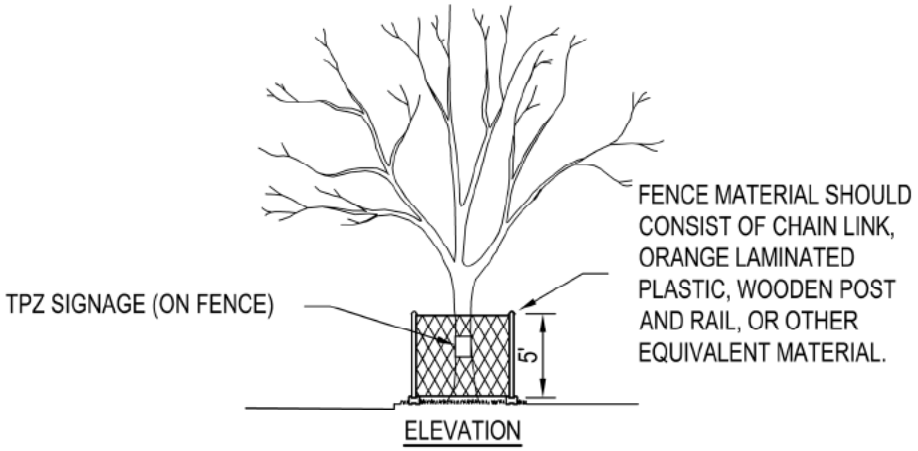
ELEVATION

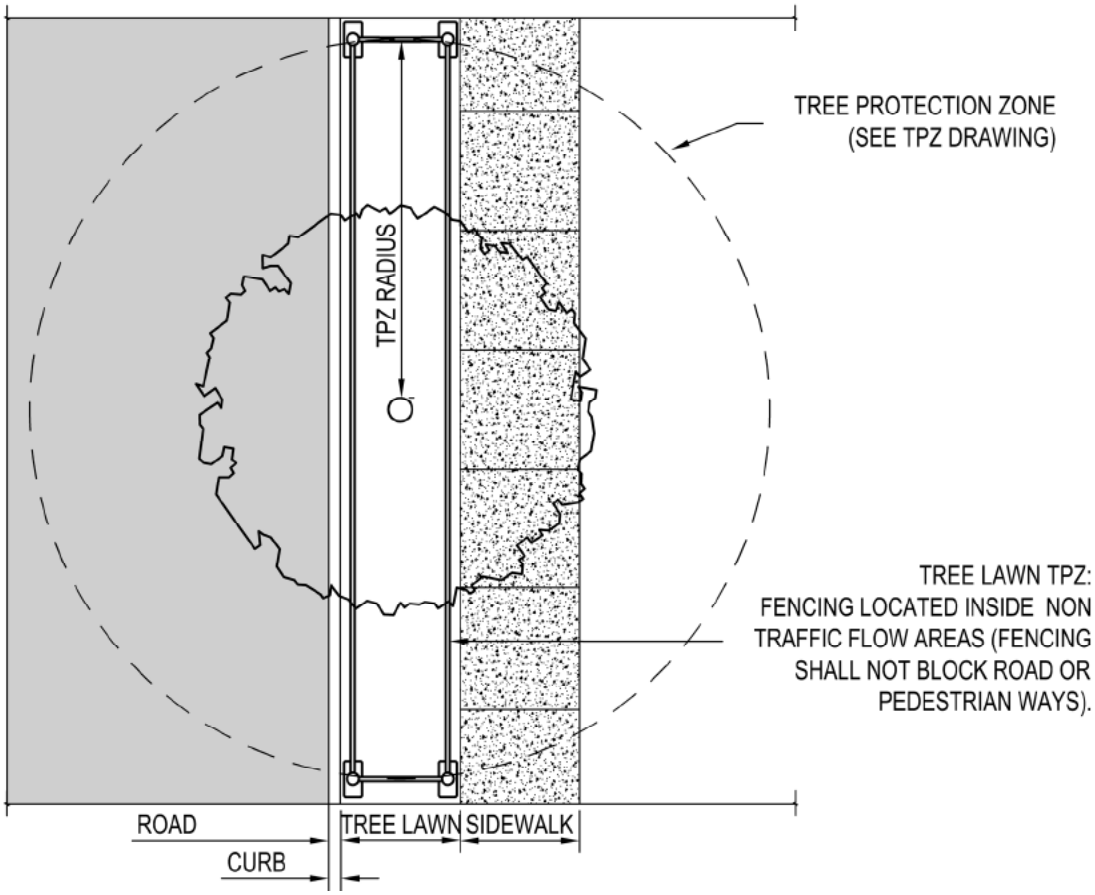


NOTES:

1) ALL TREES TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING.
2) TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
3) MINIMUM 5 FT TALL TEMPORARY FENCE SHALL BE PLACED AT THE TPZ. FENCE SHALL BE CONTINUOUS AND COMPLETELY ENCIRCLE TREE OR CLUSTER OF TREES.
4) IF USING SUPPORT BLOCKS WITH FENCE: INSTALL FENCE POSTS USING SUPPORT BLOCKS OR PLATES SITTING ABOVE THE GRADE. POSTS SHOULD NOT BE SUNK INTO GROUND TO MINIMIZE DAMAGE TO ROOTS IN THE TPZ.
5) TREE PROTECTION FENCE SHALL BE CLEARLY SIGNED IN ENGLISH AND SPANISH (EX. "TREE PROTECTION ZONE- DO NOT ENTER") AND REMAIN INTACT FOR ENTIRE PERIOD OF CONSTRUCTION.
6) EXCEPTIONS TO THE TREE PROTECTION FENCING REQUIRE APPROVAL BY THE CITY ARBORIST.

(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
TREE PROTECTION FENCING- OPEN SPACE	
Scale: Not to Scale	*Drawn by:* R. Freeman
	Checked by: L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)

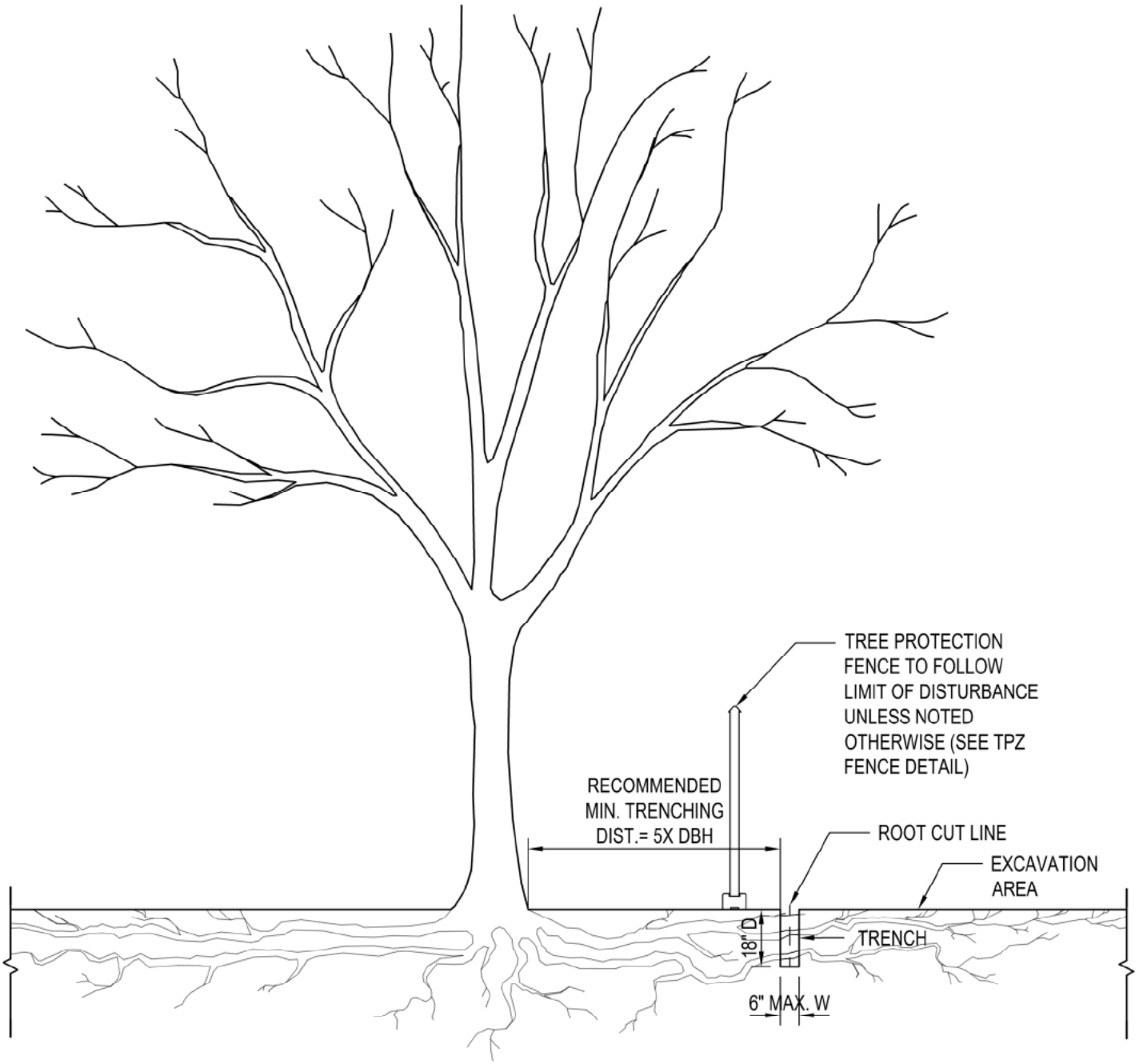




NOTES:

1) ALL TREES TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING.
2) TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
3) MINIMUM 5 FT TALL FENCE SHALL BE PLACED AT THE FURTHEST EXTENT OF THE TPZ THAT DOES NOT BLOCK TRAFFIC FLOW AREAS. FENCE SHALL BE CONTINUOUS AND COMPLETELY ENCIRCLE TREE OR CLUSTER OF TREES.
4) IF USING SUPPORT BLOCKS WITH FENCE: INSTALL FENCE POSTS USING SUPPORT BLOCKS OR PLATES SITTING ABOVE THE GRADE. POSTS SHOULD NOT BE SUNK INTO GROUND TO MINIMIZE DAMAGE TO ROOTS IN THE TPZ.
5) TREE PROTECTION FENCE SHALL BE CLEARLY SIGNED IN ENGLISH AND SPANISH (EX. "TREE PROTECTION ZONE- DO NOT ENTER") AND REMAIN INTACT FOR ENTIRE PERIOD OF CONSTRUCTION.
6) EXCEPTIONS TO THE TREE PROTECTION FENCING REQUIRE APPROVAL BY THE CITY ARBORIST.

(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
TREE PROTECTION FENCING- TREE LAWN	
Scale: Not to Scale	*Drawn by:* R. Freeman
	Checked by: L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)



NOTES:

1) ALL ROOT PRUNING AND DISTURBANCE IN THE TPZ MUST BE APPROVED BY THE CITY ARBORIST.
2) PRIOR DISTURBANCE IN THE TPZ SUCH AS GRADING, EXCAVATION, OR UTILITY INSTALLATION, TRENCH ROOT PRUNING SHALL OCCUR AT THE LIMIT OF DISTURBANCE.
3) TREE PROTECTION FENCING SHALL FOLLOW THIS LIMIT OF DISTURBANCE.
4) TRENCH DISTANCE FROM TRUNK SHALL BE AT MINIMUM 5X DIAMETER AT BREAST HEIGHT (DBH).
5) ROOTS SHALL BE EXPOSED BY HAND DIGGING TRENCH OR AIR SPADE EXCAVATION.
6) ROOTS GREATER THAN 3" IN DIAMETER ARE NOT RECOMMENDED TO BE CUT TO MAINTAIN STRUCTURAL INTEGRITY OF ROOT SYSTEM.
7) SELECTED ROOTS SHALL BE CUT USING A TOOL APPROPRIATE FOR EACH ROOT'S DIA. (EX. HAND TOOLS, MECHANICAL ROOT PRUNER, ETC.) AND SHOULD BE CUT PERPENDICULAR TO THE DIRECTION OF GROWTH LEAVING BARK INTACT.
8) EXPOSED ROOTS SHALL BE SHADED AND KEPT MOIST. TRENCH SHALL BE BACKFILLED IMMEDIATELY WITH TOPSOIL AND WATERED UNTIL SOAKED.

(INSERT MUNICIPALITY NAME)	
(INSERT DEPARTMENT NAME)	
TRENCH ROOT PRUNING IN THE TPZ PRIOR TO DISTURBANCE	
Scale: Not to Scale	*Drawn by:* R. Freeman
	Checked by: L. Doran
Date: 5/11/2026	*Approved by:* (INSERT CITY ARBORIST NAME)