



Regulations and Policy Review and Recommendations Report

Town of Easton, Maryland

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Prepared for:
Town of Easton, Maryland
Planning and Zoning Office
14 South Harrison Street
Easton, Maryland 21601

Prepared by:
Davey Resource Group
A Division of The Davey Tree Expert Company
1500 North Mantua Street
Kent, Ohio 44240
800-828-8312



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It is the Town of Easton's mission to provide high-quality municipal services at a reasonable cost.

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Introduction

The Town of Easton is a highly progressive community that is home to nearly 16,000 residents who value the benefits of the area's rich natural resources, including the Town's urban forest and its tributaries of the Chesapeake Bay—one of the world's most productive estuaries. Town officials and community leaders clearly understand and appreciate the influence of Easton's tree canopy on water quality impacts in the Chesapeake Bay. In an effort to remain a good steward of these important natural resources, the Department of Public Works and City Planning Department recognize the need to identify and implement public policies, regulations, and community initiatives that provide for the protection and enhancement of the Town's tree canopy.

One of the primary components in the development of a comprehensive forestry program is the creation of a uniform set of regulations and policies that will help the Town of Easton advance and support its community forestry goals. Town officials tasked Davey Resource Group, a division of The Davey Tree Expert Company, with evaluating current Town regulations and policies that relate to trees to identify any inconsistencies with the current Maryland Forest Conservation Law. Davey Resource Group identified opportunities and made specific regulatory and policy programmatic recommendations for consideration and adoption in support of the desired resource protection outcomes and canopy creation goals.

Proper and proactive urban forest management regulations can have a positive impact on achieving Town and regional goals, such as water quality and townwide canopy cover. Easton's current tree canopy cover, based on the recently completed urban tree canopy study, is 27%, while the Maryland Forest Preservation Act of 2013 recommends a statewide goal of 40%. The Town is extremely concerned about the quality of water within the community and the overall health of the Chesapeake Bay. One of the primary sources of pollution into the Bay is non-point stormwater runoff that originates from agricultural fields, lawns, and the impervious surfaces in developed areas. It is clear to Easton, based on empirical evidence, that trees provide tremendous water quality benefits by reducing pollutants and erosion, and thoughtful, reasonable tree policies and regulations can help improve water quality and stormwater management.

Scope of Work

Davey Resource Group completed a comprehensive review of existing regulations (Town and State ordinances) and policies related to the preservation, replacement, and addition of trees during development activities for compliance in context of the stated goals to increase tree canopy in Easton to 40%. Projects recently completed by Davey Resource Group to inventory and assess urban tree canopy coverage and benefits in Easton, as well as applicable policies, regulations, and programs in other progressive municipalities, were referenced to identify and recommend specific options for consideration and adoption.

Achieving 40% urban tree canopy coverage in 40 years is unattainable through tree preservation regulations alone and will require a unified community afforestation effort to achieve. The greatest opportunities to increase Easton's tree canopy exist on private property. Canopy increase will occur through the preservation and growth of existing trees and through the planting of thousands of new shade trees.

Policy and programmatic recommendations contained herein are intentionally broad and seek to achieve long-term canopy goals with minimal regulatory action and municipal administration through the development and adoption of creative partnerships, innovative marketing and educational strategies, and voluntary resident compliance.

More specifically, the scope of work performed by Davey Resource Group included:

- Conducting a thorough review of existing documents that currently impact the management, protection, and growth of tree canopy cover
- Providing recommendations for ordinance amendments to maintain compliance with Maryland law and support long-term forest protection goals and objectives
- Identifying regulations, policies, and incentive programs that could be implemented in order to encourage the planting of additional trees and discourage the removal of healthy trees on private properties, and protect existing trees during construction
- Providing a broad range of alternatives with specific actionable recommendations for Easton supported by examples, specific language, and/or resources to aid in implementation

Review of Existing Town Regulations and Policies

Davey Resource Group performed a review of existing documents that currently impact the management, protection, and enhancement of tree canopy cover in the Town of Easton. The review included the following documents provided by the Town of Easton:

- 1) Maryland Forest Conservation Law (Natural Resources Article Title 5, Subtitle 16; 2013)
- 2) Maryland Department of Natural Resources Regulations (COMAR Title 8, Subtitle 19; 2013)
- 3) Maryland Forest Preservation Act of 2013
- 4) Town of Easton Forest Conservation Ordinance (Article I through Article XVIII)
- 5) Town of Easton Tree Ordinance (Article III–Section 24-47 through Section 24-56)
- 6) Proposed Addition of Two Items to Town of Easton Tree Ordinance
- 7) Town of Easton Zoning Ordinance–Landscaping and Buffering (Article X–Section 1015)
- 8) Town of Easton Comprehensive Plan (2010) “Parks Recreation and Open Space”
- 9) Draft Tree Removal Permit Application
- 10) Draft Tree Preservation Plan Permit Application

The above documents were reviewed to gain a broad perspective on the plans, policies, and regulations in the Town. However, at the direction of Town staff, the suggestions and comments presented in this report are only made for the *Town of Easton Tree Ordinance*, the *Town of Easton Forest Conservation Ordinance*, and the *Town of Easton Zoning Ordinance (Landscaping and Buffering)*. The rationale was to emphasize compliance with current governing Maryland state statutes and applicable regulations pertaining to the *Maryland Forest Conservation Law*; specifically Natural Resources Article Title 5, Subtitle 16, and *Maryland Department of Natural Resources Regulations* (COMAR Title 8, Subtitle 19) and the attainment of tree canopy coverage goals.

Maryland Forest Conservation Act—Discussion

The Maryland Forest Conservation Act was first enacted in 1991. The most recent revisions were adopted by the Maryland General Assembly in 2013. The *Forest Preservation Act*, which recommends 40% canopy coverage for Maryland’s urban forests, was also adopted in 2013. Attaining tree canopy coverage goals requires an increase in the current tree canopy. While one obvious solution is to plant more trees in more places, future tree canopy can also be increased by taking better care of existing trees so their canopies continue to grow and provide maximum benefits.

Additionally, tree canopy can be increased by reducing the number of trees lost to development and infrastructure improvements. Creating incentives to protect trees during development on private property, or construction of new public infrastructure, can increase tree canopy over time. If the incentives to protect trees are not strong enough, additional tree canopy enhancements can be made by requiring replacement of trees lost during development and construction.

However, there are often legitimate planting constraints for requiring replacement trees on development sites. If site or project constraints make tree replacement too difficult, many communities authorize and accept payments made in lieu of planting. This requires the establishment of a “tree bank” or municipally controlled, use-specific account that can accept funds from developers or other town departments. The planting-in-lieu payments required are calculated using a tree replacement fee structure, and generated funds can be used to plant more trees or can be directed to management activities that promote better tree care and protection within municipal limits.

Town Ordinances—Discussion

Generally speaking, the *Forest Conservation Ordinance* was primarily developed to meet requirements of state law, while the Tree Ordinance was developed to establish a policy for Easton’s trees located on public property. The *Easton Zoning Ordinance—Landscape and Buffering* provides guidelines for new plantings. The following sections offer suggestions and alternatives for improving the three primary ordinances that affect tree canopy and management in Easton.

Town of Easton Forest Conservation Ordinance

The Forest Conservation Ordinance applies primarily to site development activities on agricultural land and subdivision projects on tracts greater than 40,000 square feet and residential construction activities on existing single lots greater than 20,000 square feet. Activities that impact smaller tracts are not regulated by this ordinance. While the ordinance seems to address tree canopy on sites over 20,000 square feet, there is a lack of control on tracts that are 20,000 square feet or less. Additionally, the ordinance’s guidance on tree canopy retention or replanting may not be aggressive enough to actually increase tree canopy. While data exist to indicate that the language was effective to improve statewide tree canopy cover from 1991 to 2006, the Town of Easton may want to begin assessing the effectiveness of current regulations for actually increasing tree canopy within the town. Keeping data on tracts submitted for development or tree removal is one means to conduct this assessment. The current urban tree canopy assessment and future assessments can also be used to measure effectiveness.

Appendix A provides a spreadsheet with suggested changes relevant to sections of the *Town of Easton Forest Conservation Ordinance*. Changes aim to clarify its compliance with the *Maryland Forest Conservation Law*. Numerous discrepancies exist between Easton’s current ordinance and subsequent amendments to state statutes since 1993. In addition to compliance revisions, Appendix A provides suggestions that can make the document more effective for the Town of Easton.

Town of Easton Tree Ordinance and Proposed Addition of Two Items Documents

The current Easton Tree Ordinance provides language that primarily addresses trees on public property. Recommended changes include three primary topics: 1) adding language that specifically addresses the goals of the Maryland Forest Preservation Act of 2013; 2) describing a relationship between the two tree related ordinances in the Town of Easton; and 3) addressing tree protection on private land tracts that are less than 20,000 square feet.

Appendix B contains a spreadsheet that provides a review of the *Easton Tree Ordinance* and the *Proposed Addition of Two Items to the Town of Easton Tree Ordinance*. The spreadsheet also provides examples of other towns and cities that have similar provisions in their tree ordinances.

The *Proposed Addition of Two Items to the Town of Easton Tree Ordinance* that was provided by the Town includes language that begins to address the protection of trees on private lands and includes requirements for tree removal permits, tree replacement, and tree preservation permits. It includes suggested changes to existing sections of the ordinance and language for two new sections that address tree removal on private property and required permits.

While the *Proposed Addition of Two Items to the Town of Easton Tree Ordinance* appears to address tree removal and protection, Davey Resource Group's suggested changes have been used by other communities and accomplish the goal of protecting trees on tracts less than 20,000 square feet. Appendix C includes suggested changes to the existing tree ordinance and also includes a suggested *Section 24–57* that addresses the protection of trees on private property. Appendix G includes recommended tree protection plan components and practices. A new set of definitions (*Section 24–49*) is included in Appendix D.

Town of Easton Zoning Ordinance—Landscape and Buffering

Suggested changes to the *Easton Zoning Ordinance—Landscape and Buffering* (Article X–Section 1015) are summarized in Appendix E. These changes should include language about the concept of promoting quality plantings so the Town can reach the 40% tree canopy goal. Easton should update planting recommendations to include language about proper planting depth. Add *Fraxinus* spp. (ash) to the list of species to be excluded from landscape plans.

Suggested Regulations, Policies, and Planting Initiatives

To put the following recommendations in context, it is important to summarize key findings of other recently completed urban forest management studies. A partial street tree inventory identified important physical attributes of Easton's public trees, its current maintenance needs, and opportunities for increasing tree canopy in public space managed by various Town departments. While a significant number (1,186) of vacant public street tree planting sites were identified (representing 29% of all sites inventoried) the majority of open space capable of supporting additional tree canopy in Easton exists on undeveloped agricultural land and developed residential property.

To attain 40% tree canopy cover in 40 years, 700 acres of the 2,899-acre potential plantable areas identified would need to be planted with approximately 30,000 new trees over the next 10 years. This planting projection accounts for 250 acres of projected growth of existing canopy over a 40-year period. Seventy percent of the 30,000 new trees will have to be planted on private property including residential areas, repurposed agriculture lands, or other commercial and industrial areas. Planting public street trees along highway corridors, in parks, and adjacent to parking lots currently under Town control accounts for 30% of the trees needed for planting.

Increasing annual planting in areas controlled by the Town will require additional funding and community partnerships to accomplish. Achieving the 40% canopy goal in 40 years will require an ambitious public and private tree planting effort in conjunction with preservation and maintenance of existing tree canopy townwide.

While existing regulations and policies afford a level of protection and reforestation on public property and in site development, broadened policies, regulations, and incentive programs will be necessary to achieve Easton's 40% tree canopy goal over the next 40 years. After reviewing existing regulations and policies, the street tree inventory, and the urban tree canopy assessment data, Davey Resource Group has identified the following policy and regulation options that could be considered by Town officials for further evaluation or adoption to support increased tree canopy coverage.

Regulations

Easton's existing ordinances provide a relatively high level of tree protection and encourage tree planting primarily through language in the *Tree Ordinance* and as part of the commercial and new residential development (>20,000 square feet) site plan review process. Summary highlights of the review and suggested changes in each respective ordinance are included below.

Review comments and suggested revisions for *Easton Forest Conservation Ordinance*, *Easton Tree Ordinance*, *Easton Zoning Ordinance–Landscape and Buffering*, and the new proposed sections to *Article III* are included as appendices.

Town of Easton Forest Conservation Ordinance (Appendix A)

Article I (Purpose): It is recommended that the purpose statement be amended to reflect the goals and associated community quality of life benefits of managing and increasing the tree canopy in Easton. This change will enhance community understanding and support of regulatory requirements.

Article II (Forest and Tree Conservation Definitions): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes revised or additional definitions that should be reviewed and incorporated where applicable in Easton's Forest Conservation Ordinance.

Article III (Application): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes several revisions that should be reviewed and incorporated where applicable in Easton's *Forest Conservation Ordinance*. Notable changes include the protection of forest during residential construction on single lots over 20,000 square feet, added or broadened exemptions for electrical substation construction, and various mining activities regulated by State statute. Natural Resources Title 5, Subtitle 16 provides additional exemptions for counties that maintain 200,000 acres of land in forest cover, clearing for navigable airspace to comply with the requirements of 14 CFR 77.25, certain streamside restoration projects, and retrofitting or maintenance of stormwater management structures.

Article III (Declaration of Intent): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes two new sections related to commercial logging and timber harvesting.

Article IV (General Requirements) and *Article V* (Forest Stand Delineation): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes minor technical revisions

Article VI (Forest Conservation Plan): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes important revisions related to local conservation funds and reforestation mitigation banks.

Article VII (Afforestation and Retention): Revisions that support afforestation and retention goals by zoning class based on the urban tree canopy assessment, plantable space analysis, and identification of properties with the highest runoff potential will reinforce or justify afforestation and retention requirements. Developing a 40,000-square-foot or smaller commercial, industrial, or institutional lot does not currently require tree preservation or replanting. Reduce the threshold to include commercial, light industrial, or institutional parcels to 20,000-square-foot lots. A 20,000-square-foot lot is still a sizeable lot (nearly ½ acre) and the Town should consider including lots from 40,000 to 20,000 square feet in this requirement.

Article VII (Afforestation and Retention) 7.1 B(2): The afforestation and reforestation requirements in this section specifying a 2:1 ratio to restore lost forested area is currently unclear and consideration should be given to requiring a 2:1 ratio based on tree diameter, basal area, or crown coverage basis.

Article VIII (Reforestation): Determine if current thresholds are still appropriate or need updating.

Article IX (Priorities and Time Requirements for Afforestation and Reforestation): This entire article is outdated and needs to be replaced with current Article IX in Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance). Important revisions include street tree plantings and acquired off-site, non-protected forested lands as permitted mitigation techniques. The amended article also permits mitigation banks, establishes minimum forested corridor widths, and requires applicants to demonstrate that the benefits of off-site afforestation or reforestation exceed those derived from on-site planting, which should encourage on-site mitigation.

Article X (Payment Instead of Afforestation and Restoration): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) now permits mitigation funds to be used for forests maintenance and to achieve urban canopy goals.

Article X-1 (Payments and Credits From a Forest Mitigation Bank) and *X-2* (Establishing Forest Mitigation Banks): Current Maryland Department of Natural Resources Title 8, Section 19, Chapter 3 (Model Forest Conservation Ordinance) includes these two new administrative subsections in support of mitigation bank afforestation and reforestation activities. Mitigation funds represent a new source of funding to maintain and increase urban canopy in Easton.

Article XIII (Standards for Protecting Trees from Construction Activities): This Article directs Counties to adopt standards for the protection of trees from construction activity.

Appendix G includes recommended tree protection plan components and practices. Additionally, several reference books on tree protection during construction are available through the ISA web store at <http://www.isa-arbor.com/store/category.aspx>.

Article XV (Penalties): Conduct studies to determine whether a penalty rate of 30 cents per square foot (\$13,068/acre) is sufficient to accomplish reforestation and establishment.

Town of Easton Tree Ordinance and Proposed Addition of Two Items Document (Appendix B)

Section 24-47 (Purpose): To show consistency between other Town regulations, amend the purpose statement to reflect the goals and associated community quality of life benefits of managing and increasing the tree canopy in Easton.

Section 24-48 (Goals): Revise this section to reduce ambiguity and establish clear tree canopy and diversity goals and objectives. Address hazardous trees and tree planting in the right-of-way (ROW). Include a permit for resident planting. Expand upon preservation requirements for trees adjacent to the ROW and trees on adjoining private property. Example tree protections ordinances are in Appendix F.

Section 24-50 (Objectives of the Department of Public Works): Add the proposed objectives 8 and 9 provided in Appendix B, and articulate respective responsibilities for public versus private trees.

Section 24-51 (Specifications for Planting): It is recommended that the content of this section be moved to a distinct tree specifications manual. This manual can be maintained separately rather than only being in this code in the same way that Norfolk, Virginia, has done with their *Arboriculture Specifications and Standards of Practice Manual*.

Section 24-52 (Maintenance): Elaborate upon “Subsection #3” text to better articulate what constitutes tree damage or disturbance and the specific acts that require a Tree Permit. Subsection #9 would be difficult to interpret and enforce, and is recommended for elimination.

Section 24-53 (New Developments; Street Tree Renovation Projects): This section appears to be addressed in the landscape ordinance and may not be needed.

Section 24-57 [proposed] (Tree Protection on Sites Less Than 40,000 Square Feet): Suggested additional provisions and language for this new section is included in Appendix C. This section attempts to address Town concerns related to the loss of tree canopy and the lack of tree protection regulation on private property less than 40,000 square feet.

The following suggestions apply to the proposed *Section 24-57* recommended by the Town of Easton Tree Board.

Subsection 5 and 6: For liability and public safety reasons, it is recommended that the Town Arborist be granted authority to issue a tree removal permit immediately upon identification or confirmation following receipt of notice of a dead, dying, or hazardous tree on private property without consultation with or approval from the Town of Easton Tree Board. The requirement for posting a permit seven days in advance of tree removal should be exempt for dead, dying, and hazardous trees permitted for removal.

To improve the *Easton Tree Ordinance*:

- The Town arborist should be granted the authority to place any special restrictions or requirements on Tree Removal or Tree Preservation Permits to ensure the work is completed safely and professionally in accordance with controlling arboricultural specifications and standards (for example, *American National Standards Institute [ANSI] Z133*). This will protect public safety and prevent damage to property, including protected trees.
- Include language describing the basis for the permit application review. See the *Norfolk, Virginia, Tree Ordinance Section 45-17* in Appendix F for an example.

- Include a section providing an appeal process for denied permits. See the *Norfolk, Virginia, Tree Ordinance Section 45-18* in Appendix F for an example.
- Include a section authorizing the Town to issue an immediate “Stop Order” for unsafe work practices or conditions. See the *Norfolk, Virginia, Tree Ordinance Section 45-19* in Appendix F for an example.
- Include a section authorizing the revocation of a permit for non-compliance. See the *Norfolk, Virginia, Tree Ordinance Section 45-19* in Appendix F for an example.
- Consider including a section describing Public Nuisance Trees and their abatement. See the *Norfolk, Virginia, Tree Ordinance Section 45-22* through *Section 45-25* in Appendix F for an example.
- Include the proposed *Section 24-49* (Definitions): This section includes a broadened list of defined terms for the Tree Ordinance (Appendix D).

Town of Easton Zoning Ordinance—Landscape and Buffering (Appendix E)

Section 1015 (Introduction): Include language supporting the 40% urban tree canopy goal to show a relationship to other Town ordinances.

Section 1015.2 (B) (Landscape Plans) Item #5: Provide language about proper planting depth to ensure visibility of root flare or first lateral root.

Section 1015.2 (B) (Landscape Plans) [proposed] Item #9: Provide information on the anticipated future canopy size of installed trees at maturity. Or prepare a chart of anticipated canopy sizes for various species. A "canopy credit" list is currently found in Sec 1015.5 (B) and provides some guidelines, although the actual mature canopy of some species may be larger than the list provided in 1015.5 (B). These canopy credits may become a factor in the development of required Forest Conservation Plans. The information can be useful when determining the appropriateness of species identified in a landscape plan.

Section 1015.3B (Minimum Plant Material Specifications): It is recommended that all ash be added to the species exclusion list.

Policies for Canopy Improvement

General ideas for improving the *Easton Zoning Ordinance—Landscape and Buffering* regulation ensures it is supportive of increasing tree canopy in Easton. Suggestions include:

- Utilize the urban tree canopy assessment stormwater benefit information to amend the *Stormwater Management Ordinance* in support of acceptable afforestation practices and criteria that recognize and encourage additional tree canopy as an effective environmental site design planning technique. Allow for tree planting on Town property as mitigation for redevelopment projects to the maximum extent possible on site. Environmental Site Design techniques are insufficient to meet stormwater management requirements.
- Consider establishing a stormwater fee that would be assessed to all property owners to fund afforestation and tree maintenance costs.
- Develop a structured system for energy or a Stormwater Conservation Credit for development projects.
- Offer stormwater credit (property assessment fee reduction or built infrastructure reduction on new development) that recognizes the stormwater reduction contributions of new and existing trees (preservation) on private property.

- Develop mandatory street construction/utility impact tree replacements for both private and public entities and agencies.
- There are a significant number of older parking lots and residential developments in Easton that have no or very limited tree canopy. Consider regulations that require that certain open areas or parking lots with less than 40% tree canopy cover add trees and landscaping when undergoing modifications (like repaving or developments). Potential areas include commercial or multi-family parking lots and homeowners associations with open space in older developments. Regulations can set standards requiring compliance with new development requirements. Inform parties by issuing an advanced notice of compliance deadlines or requiring a site plan review or building permits for any site undergoing modification.
- Consider alternate parking lot afforestation design standards that would increase the square footage of available open space to support larger tree development. Designs that concentrate groupings of large shade trees in large central or perimeter space should be strongly encouraged over small single tree spaces uniformly distributed across a parking surface. Where possible, parking lot drainage should pitch towards landscaped areas to reduce stormwater runoff and provide a source of supplemental water to support trees and landscape needs. Give consideration to requiring that parking structures in high- and medium-density development/redevelopment projects maximize the percent of green space available to support tree canopy.
- Study strategic parking garages in the central business district and other commercial/industrial corridors in lieu of open parking lots to increase parking density with minimum impermeable surface area.
- Create opportunities to plant large trees in commercial corridors with hardscape ROW using structural soil, Silva Cells, or large open tree planting space.
- Create tax incentive or business improvement districts for business owners to create and maintain streetscapes.
- Afford greater density credits for multi-family or commercial developments that meet or exceed the 40% projected 40-year urban tree canopy goal.
- Maximize planting large trees in open spaces on town-managed properties such as interior spaces on public grounds (libraries, town facilities, schools, and cemeteries).
- Promote open tree lawn planting or shared planting spaces (not individual tree pits) in hardscape areas to maximize tree canopy size.
- Consider a species diversity policy that limits a single species no more than 10% and genus to no more than 20% of the population.

Policies Related to Tree Planting and Protection Initiatives

The following activities, while not directly related to policy and ordinance improvement, are all valuable to promoting the public's involvement in the Town's urban forestry program and can ultimately result in greater political support for policy and regulatory changes.

- Focus on residential planting and tree care opportunities utilizing the tools provided in the *Urban Tree Canopy Assessment and Planting Plan* that accompanies this Report and creative programs (marketing, partnerships) to promote and encourage planting trees on private property
- Take a close look at regulatory practices protecting trees on private property; maintaining the growth of existing canopy is crucial to meeting the 40% urban tree canopy goal.
- Set up a website that tracks public and private trees planted to provide the community with a visual assessment of progress made towards reaching the canopy goal.
- Identify small trees occupying large tree sites in the street tree population and replace with large tree species.
- Partner with community volunteers and other non-profits to develop an urban tree canopy benefit program.
- Establish a tree benefit marketing campaign to educate the public on the importance and benefits of planting trees and expanding the tree canopy. Use an urban tree canopy benefits analysis to communicate tree value (for example, the national Trees Pay Us Back campaign).
- Utilize the plantable space analysis from the *Urban Tree Canopy Assessment and Planting Plan* to establish realistic canopy goals on a land use level based on actual available green space capable of supporting additional tree canopy. Use vacant planting sites to develop incentivized planting programs.
- Utilize tree canopy benefit information and partner with local nurseries to promote the benefits of recommended tree species as a purchase decision factor for Easton's citizens and businesses (branding), and seek grant funding to offset tree purchase costs. Include benefit information tags on all trees that meet the Town criteria for a canopy tree. This will educate buyers on the environmental benefits of trees while promoting the need for increased canopy in the Town.
- Convert vacant land under Town control to neighborhood forests, community orchards, or parks that can be maintained by the residents of the neighborhood.
- Establish a fall tree-distribution event. Provide landowners with large deciduous bare-root or 15-gallon trees that could be easily planted (similar to the Norfolk Arbor Day, or plan distribution with an Oktoberfest-type event).
- Target Arbor Day celebrations on multiple private properties in commemoration of the celebration anniversary (for example 100-year-old buildings, properties with 50 trees) or other community milestones (anniversaries of businesses, churches, schools, scouts, or youth groups). Connect Arbor Day celebrations to related events or activities that draw people (for example an Arbor Day Family Festival).
- Establish a tree planting campaign and website where citizens can record private trees planted as a contribution to the goal, such as the Taking Root Initiative in Cincinnati, Ohio (<http://greenumbrella.org/TakingRoot>).
- Promote Tree City USA and Growth Awards program through media, street signage, and websites.

Policies and Initiatives for Climbing Vines

Easton officials have articulated a concern for private tree damage caused by aggressive climbing vines such as *Hedera helix* (English ivy), *Lonicera* spp.(honeysuckle), and *Pueraria montana* var. *lobata* (Kudzu) and have expressed interest in regulations, policies, and initiatives that could be implemented to effectively control damaging vegetation. Recognizing the Town resources that would be necessary to effectively regulate climbing vegetation on private property, Davey Resource Group recommends a multi-faceted approach inclusive of self-policing regulation and public outreach campaigns supported by public practices that demonstrate desired outcomes.

Regulation

Controlling ordinances in Tacoma Park, Maryland, provides an example of how a self-policing regulation based on a good-faith standard could be structured in Easton. This ordinance demonstrates a commitment by the City for controlling poisonous vines in City parks while recognizing the impractical standard of eradicating prohibited vines in open space areas. Adoption of regulations prohibiting certain climbing vines could also serve as a catalyst for a public outreach campaign by drawing public attention to the potential adverse impacts to the Town's canopy and tree preservation goals.

The following language was taken from Maryland's *Chapter 12.08. Prohibitions on Maintaining Undesirable Vegetation* (<http://www.codepublishing.com/MD/TakomaPark/mobile/index.pl?pg=TakomaPark12/TakomaPark1208.html>)

12.08.040 Noxious Growths.

- A. No person shall maintain on private property poison ivy (*Rhus radicans* or *Toxicodendron radicans*), poison oak (*Rhus toxicodendron* or *Toxicodendron quercifolium*), poison sumac (*Rhus vernix* or *Toxicodendron vernix*), ragweed (*Ambrosia artemisiifolia*) or similar vegetation. Failure to make continued good faith efforts to eradicate such vegetation in accordance with Department regulations is a Class D municipal infraction. The City shall not maintain such vegetation in City parks but shall not be required to remove such vegetation from any City property designated as an open space.
- B. All persons must control the growth of bamboo, kudzu-vine (*Pueraria lobata*), non-native honeysuckle, wisteria, multi flora rose (*Rosa multiflora*), or other vines or vegetation that may damage trees, native vegetation, or structures. Allowing vines to reach the limbs of trees is a violation of this subsection. Failure to make continued good faith efforts to control the growth of such vegetation in accordance with Department regulations is a Class D municipal infraction.
- C. No person shall allow any vine or vegetation listed in subsections (A) and (B) of this section or any other vine or vegetation that may cause a threat to public safety or damage to trees, structures, or native vegetation to spread to an adjoining property over the objection of the adjoining property owner. Failure to make continued good faith efforts to control such growth in accordance with Department regulations is a Class C municipal infraction. (Ord. 2003-40 (part), 2004)

Public Outreach

Buoyed by reasonable regulations that codify the threat to the Town's forest resources, existing or future community organizations could devise and promote an effective public outreach campaign similar to Arlington and Alexandria, Virginia's, Tree Stewards "Take Ivy Off Trees" campaign (<http://treestewards.org/take-ivy-off-trees/>). Materials on this website were developed with grant funds and are available for public use and modification.

Town Practices

Public policies that reinforce regulatory requirements and public outreach efforts will improve the effectiveness of all ivy control strategies. An official position similar to statement below is recommended for consideration.

The Town of Easton's policy is that native, non-native, and noxious vines will not be allowed to grow on public trees in a landscape setting. The Town will take appropriate action to remove existing vines and eliminate new vine growth by mechanical and/or herbicidal control as needed. Public trees in a natural or wooded setting will have vines controlled to the extent possible with consideration given to wildlife habitat.

Appendix A

Forest Conservation Ordinance Review (Article I through Article XVIII)

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1
Purpose	The Easton Town Council has determined that to meet the requirements of Natural Resource Article, 5-1601--5-1612, Annotated Code of Maryland, the provisions of this Ordinance must be enacted.	Article I	Consider changing the tone, "to promote and protect public health and safety, and to enhance the quantity and quality of tree canopy cover and associated tree canopy benefits in the Town of Easton, and to meet the requirements of the Maryland Forest Preservation Act of 2013"	Provides a more optimistic view of making Easton a more livable place, rather than just adopting an ordinance because residents "must".
Definitions	2.1 Afforestation	Article II	Revisit to ensure section 2.1 C. is still needed	2.1 C. in current ordinance does not appear in either the Model Conservation Ordinance (DNR Title 8, Subtitle 19, Chapter 3 article II sec.2.1
	2.8 Champion tree of the State	Article II	Eliminate	This section has been repealed
	2.24-1 Forest mitigation bank	Article II	Add - new section	See DNR Title 8 Section 19 Chapter 3 Article II 2.24-1
	2.24-2 Forest mitigation bank agreement	Article II	Add - new section	See DNR Title 8 Section 19 Chapter 3 Article II 2.24-2
	2.24-3 Forest mitigation bank plan	Article II	Add - new section	See DNR Title 8 Section 19 Chapter 3 Article II 2.24-3
	2.25 Forest stand delineation	Article II	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual"	Revised DNR title in Title 8 Section 19 Chapter 3 Article II 2.25
	2.30-1 Linear project	Article II	Add - new section	See DNR Title 8 Section 19 Chapter 3 Article II 2.30-1
	2.38 Net tract area	Article II	Expanded Definition - Revise section	See DNR Title 8 Section 19 Chapter 3 Article II 2.38 A-C
	2.49 Reforestation	Article II	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual"	See DNR Title 8 Section 19 Chapter 3 Article II 2.49 A(ii)
	2.49 Reforestation	Article II	Add - new section - Linear project	See DNR Title 8 Section 19 Chapter 3 Article II 2.49 C
	Priority funding area	NR Title 5-1601 (ff)	Add definition if applicable to TOE	See Natural Resources Title 5 Subtitle 16 (5-1601 (ff)
	Stream restoration project	NR Title 5-1601 (II) (1)-(4)	Add definition if applicable to TOE	See Natural Resources Title 5 Subtitle 16 (5-1601 (II) (1)-(4)
Application	3.2 B. Areas governed by Chesapeake Bay Critical Area Protection Law	Article III	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article III 3.2B
	3.2.D. Agricultural activities...	Article III	Evaluate need for possible revision	DNR Title 8 Section 19 Chapter 3 Article III 3.2.D. includes this section verbatim; however, NR Title 5, Subtitle 16 5-1602 (b) (4) does not address the 40,000 sq ft condition
	3.2 E. Cutting public utility rights-of-way	Article III	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article III 3.2E
	3.2 F. Routine maintenance of public utility rights-of-way	Article III	Incorporate revised section	See Title 8 Section 19 Chapter 3 Article III 3.2F
	3.2 H. Residential construction activity - linear project	Article III	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article III 3.2H
	3.2 H. (1). Residential construction activity - square footage	Article III	Incorporate revised section - 20,000 sq. ft.	See DNR Title 8 Section 19 Chapter 3 Article III 3.2H (1)
	Coal mining	Article III	Add section if applicable to TOE	See DNR Title 8 Section 19 Chapter 3 Article III 3.2 I.
	Noncoal surface mining	Article III	Add section if applicable to TOE	See Title 8 Section 19 Chapter 3 Article III 3.2 J.
	County exemption 200,000 acres forested land	Article III	Evaluate exemption for inclusion	Natural Resources Title 5, Subtitle 16 5-1602 b (10) exempts counties that has and maintained 200,000 acres of land area in forest cover

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1
	Clearing of trees. Navigable airspace	Article III	Evaluate exemption for inclusion	Natural Resources Title 5, Subtitle 16 5-1602 b (11) exempts tree cutting and clearing to comply with 14 C.F.R 77.25
	Maintenance and retrofitting of stormwater management structure	Article III	Evaluate exemption for inclusion	Natural Resources Title 5, Subtitle 16 5-1602 b (113) exempts maintenance and retrofitting of stormwater management structures
	3.2 I. (1). Constructing dwelling house	Article III	Incorporate revised section - 20,000 sq. ft.	See DNR Title 8 Section 19 Chapter 3 Article III 3.2 K. (1)..
Declaration of Intent	Commercial Logging and Timber Harvesting	Article III	Add section	See DNR Title 8 Section 19 Chapter 3 Article III 3.2 I.
	Agricultural Activities or Commercial Logging and Timber Harvesting	Article III	Add section	See DNR Title 8 Section 19 Chapter 3 Article III 3.2 J.
General Requirements	4.1 B. Use methods...	Article IV	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual"	See DNR Title 8 Section 19 Chapter 3 Article IV 4.1 B.
Forest Stand Delineation	5.1 B Delineation prepared by...	Article V	Change COMAR reference to 08.19.06.01A.	See DNR Title 8 Section 19 Chapter 3 Article V 5.1 B.
	5.1.B.(6) Field sample data sheets	Article V	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual". Confirm applicability and reference accuracy	This subsection is not included in DNR Title 8, Section 19
	5.1. D. Simplified delineation...	Article V	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article V 5.1.D.
	5.1. E. completed delineation	Article V	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article V 5.1.E.
Forest Conservation Plan	6.1 B. (2) Priority forests	Article VI	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article VI 6.1.B (2).
	6.1 C. Payment to local conservation fund	Article VI	Incorporate revised section related to mitigation bank credits	See DNR Title 8 Section 19 Chapter 3 Article VI 6.1.C.
	6.1 D. Nontidal wetlands	Article VI	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article VI 6.1.D.
	6.1 D. (2). Reforestation mitigation	Article VI	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article VI 6.1.D. (2).
	6.2 A. Preliminary forest conservation plan	Article VI	Change COMAR reference to 08.19.06.01A.	See DNR Title 8 Section 19 Chapter 3 Article VI 6.2.A..
	6.2. B. (11) Info..Forest Conservation Manual	Article VI	Eliminate this omitted subsection	See DNR Title 8 Section 19 Chapter 3 Article VI 6.2.B..
	6.3. A. Final forest conservation plan	Article VI	Change COMAR reference to 08.19.06.01A.	See DNR Title 8 Section 19 Chapter 3 Article VI 6.3.A.
Afforestation and Retention	7.2. A. Retention of trees, shrubs....	Article VII	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article VII 7.2.A.
Afforestation and Retention		Article VII	In Section 7.1, add the following after the title Afforestation Requirement, "In order to achieve an overall goal of 40% canopy cover..." a person making application... This language provides a more solid connection to compliance with state law. Additionally, as a 40,000 sq. ft. parcel size would exempt development or tree loss on many low- and medium-density residential parcels, consideration should be given to reducing the sq. ft. threshold to 20,000 sq. ft., which is still a sizeable residential sized lot. 7.1 B(2): The afforestation and reforestation requirements in this section, specifying a 2 to 1 ratio to restore lost forested area is unclear and consideration should be given to requiring a 2:1 ratio based on tree diameter, basal area, or crown coverage, or forest acreage basis similar to Article VIII.	The Town's current canopy cover is 27% based on the City's 2013 Urban Tree Canopy study. State law promotes 40% tree canopy. Many cities have developed a range of tree canopy goals based on zoning. Examples include: Atlanta, GA; Louisville, KY; and Chesapeake, VA. Canopy goals are typically higher in low-density residential. Amend recommended change to reflect UTC findings recommendations where canopy coverage goals mirror plantable space findings and target properties identified with highest runoff potential...perhaps require higher canopy protection or coverage in these areas
Reforestation	8.1.B Mitigation Payments....	Article VIII	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article VIII 7.2.A.
	8.1. C (2)	Article VIII	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual".	See DNR Title 8 Section 19 Chapter 3 Article VIII 8.1.C. (2)

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1
Reforestation	Currently provides for afforestation targets of 20% for agriculture and resource areas and medium-density residential areas; and 15% for institutional areas, high-density residential, mixed use, and planned unit developments, and commercial and industrial use areas.	Article VIII	There is evidence from 1991 to 2006 to show that the threshold levels and implementation of the law are increasing canopy cover. http://www.dnr.state.md.us/forests/programapps/newFCA.asp Determine if recent data show that the threshold levels are still appropriate.	
Priorities and Time Requirements for Afforestation and Reforestation	Entire Article IX is outdated	Article IX	Replace and amended as needed entire Article IX found in NR Title 8 Section 19 Article IX	This section has changed considerably. 9.1 (2) allows municipal corporations and counties with tree management or master planning documents to accept street trees, and acquired off-site protection easements on non-protected forested lands as acceptable mitigation techniques. The revised Article also permits mitigation banks, establishes minimum forested corridor widths, requires applicants to demonstrate that environmental benefits of off-site afforestation or reforestation exceed those derived from on-site planting.
Payment Instead of Afforestation and Reforestation	10.1 B. Forest conservation fund contributions	Article X	Incorporate revised sections relative to contribution requirements (payment within 90 days prior to certificate of occupancy).	See DNR Title 8 Section 19 Chapter 3 Article X 10.1 B. (1), (2).
	10.1 C. Forest conservation fund payment terms	Article X	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article X 10.1 C.
	10.1 D. Reforestation or Afforestation timeframe	Article X	Incorporate revised section	See DNR Title 8 Section 19 Chapter 3 Article X 10.1 C.
	10.1 E.. Conservation Fund use and distribution	Article X	Incorporate revised section which allows mitigation funds to be used for maintenance of forests and achieve urban canopy goals.	See DNR Title 8 Section 19 Chapter 3 Article X 10.1 E. (1) - (3).
Payment by Credits From a Forest Mitigation Bank	New Article - Use of Forest Mitigation Bank	Article X-1	Adopt Article X-1	See DNR Title 8 Section 19 Chapter 3 Article X-1
Establishing Forest Mitigation Banks	New Article - Establishing Forest Mitigation Banks	Article X-2	Adopt Article X-2	See DNR Title 8 Section 19 Chapter 3 Article X-2
Recommended Tree Species	11.1 (B). Tree species - Forest Conservation Manual	Article XI	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual".	See DNR Title 8 Section 19 Chapter 3 Article XI 11.1 B.
Financial Security for Afforestation and Reforestation	12.1 D.	Article XII	Change "Forest Conservation Manual" to "Forest Conservation Technical Manual".	See DNR Title 8 Section 19 Chapter 3 Article XII 12.1 D.
Standards For Protecting Trees from Construction Activities	13.1 A.	Article XIII	Change to "The Town shall adopt standards for the protection of trees from construction activity".	This Article directs Counties to adopt standards for the protection of trees from construction activity. See Appendix G for recommended tree protection plan components and practices. Links to several reference books on tree protection during construction are also provided.

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1
Penalties	15.1 A (1) Penalty Assessment	Article XV	Revisit the 30 cent per square foot non-compliance fee to determine if adequate.	Is the 30 cent per square foot non-compliance fee enough? It would equal \$13,068 per acre. Determine if this is a reasonable cost to reforest an acre and guarantee survival and creation of new tree canopy.
Annual Report	16.1 Annual report submission	Article XVI	Incorporate revised section: date and location change	See DNR Title 8 Section 19 Chapter 3 Article XVI 16.1 .
	16.1 B. Trees cleared...	Article XVI	Incorporate revised section that includes 100-year floodplain.	See DNR Title 8 Section 19 Chapter 3 Article XVI 16.1 B.
	16.1 New section-approved projects...	Article XVI	Add new subsection E.	See DNR Title 8 Section 19 Chapter 3 Article XVI 16.1 E.

Appendix B

Tree Ordinance Review (Article III, Trees–Section 24-47-24-56)

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1	References
Purpose	<ol style="list-style-type: none"> 1. Establish a policy for the planting, maintenance, and removal of trees located on public property in the Town of Easton. 2. Names Public Works Department (PW) as the responsible agency. 	Section 24-47	Consider adding , "to promote and protect public health and safety, and to enhance the quantity and quality of tree canopy cover in the Town of Easton"	The addition of language about public safety is very common in municipal community forestry purpose statements. Goal statements can be a bit more specific. Referencing tree canopy keeps you consistent with the Maryland law.	
Goals	<ol style="list-style-type: none"> 1. Establish and maintain appropriate tree cover 2. Maintain and conserve Town trees in a healthy and non-hazardous condition 3. Establish and maintain diversity toward native species and age classes 4. Assist and work with persons as they develop their properties, including new residential, commercial, or industrial sites; preserve existing trees or oversee proper replacement of tree removed 	Section 24-48	<ol style="list-style-type: none"> 1. Promote planting, maintenance, restoration, protection, and survival of desirable trees to achieve an overall tree canopy of 40%, consistent with the Maryland Forest Preservation Act of 2013. 2. Reduce risk associated with personal injury, property damage, and public property from damage caused by improper tree planting and care. 4. Enhance future tree canopy by reducing the potential loss of canopy from development activities on privately owned residential, commercial, and industrial sites and to reduce potential canopy loss from public lands during public infrastructure improvement or construction. Include ordinance provisions that actually address tree protection on private property. See proposed new draft language developed by tree board. 	The Town's current canopy cover is 27% based on the City's 2013 Urban Tree Canopy study. State law promotes 40% tree canopy. See suggested tree protection provisions listed in proposed new sections below. Many cities have developed a range of tree canopy goals based on zoning. Examples include: Atlanta, GA; Louisville, KY; Chesapeake, VA. Canopy goals are typically higher in low-density residential.	
Definitions	ANSI A300, developer, street tree, topping	Section 24-49	Consider adding: Adjusted diameter, caliper, canopy tree, certified arborist, condition factor, construction site, diameter, forest conservation account, limit of disturbance, maintenance, public trees, street trees, topping, tree, tree canopy coverage, tree removal permit, tree protection area, tree protection plan (TPP).	List of suggested terms and definitions is included in separate document "Proposed Section 24-49 Definitions".	
Objectives of the Department of Public Works (PW)	<p>Outlines duties, all related to trees on public property.</p> <ol style="list-style-type: none"> 1. Street tree spacing 2. Prepare a street tree master plan 3. Prepare a plan for the care of trees on public property 4. Prepare a tree planting budget and submit to Council 5. Seek grants 6. Define work specifications to develop bid submissions from qualified contractors. 7. Educate the public about the benefits of trees 	Section 24-50	<p>Consider adding the following (per Easton's proposed revisions):</p> <p>#8. Review and approve or deny applications by residents to remove Canopy Trees from private property.</p> <p>#9. Review and approve or deny Tree Protection application and plans from applicants regarding trees on private property.</p>	Be sure to clearly describe which Town department or staff have responsibility for public trees vs. private trees. If the desire to have two different entities have responsibility for tree concerns, then be sure to clearly describe those duties in the ordinance and include language that mandates communication and cooperation of the different entities.	

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1	References
Specifications for Planting	<ol style="list-style-type: none"> 1. Street tree spacing 2. No plantings shall obstruct utilities 3. Street tree size - AANS Standards (1 1/4 to 1 1/2 inch caliper) 4. Planting techniques will utilize State of Maryland Department of Natural Resources Forest Service guidelines 5. Species - Town Engineer and Planning and Zoning shall determine appropriateness of tree species. Permission required to plant trees on public property 	Section 24-51	These types of specifications should be included in a separate "Tree Specifications Manual" that is prepared by the City and much easier to update and change as new research teaches us better ways to practice arboriculture. The ordinance can simply indicate that planting specifications referenced in the city's "Tree Specifications Manual" shall be used. The manual can be written in plain English making it easier to follow. Some communities also have Spanish versions of the manual. Or, perhaps the Maryland Department of Natural Resources guidelines will suffice?	See Norfolk, Virginia, tree Ordinance Chapter 45-2 as an example of reference to "Controlling Arboricultural Specifications and Standards" that are maintained and updated as needed by staff without City Council action. Includes the following relevant standards: 1) City of Norfolk Tree Protection Notes and Details— Specifications, standards, and details for protection of trees during construction, including trees located on city-owned property, trees located within Chesapeake Bay Preservation Areas, and privately owned trees impacted by city construction activities; 2) City of Norfolk Street Tree Planting and Location Standards— Standards governing the placement and type (species) of street trees approved for use in the city, most recent edition; 3) City of Norfolk Mitigation Standards	http://library.municode.com/index.aspx?clientId=10121&stateId=46&stateName=Virginia
Maintenance	<ol style="list-style-type: none"> 1. Town has right to treat, prune, etc. 2. PW can remove, or order the removal, of hazard trees 3. Property owners may not treat, prune, remove, or disturb public trees. Replacement required for removal. 4. Contractors must follow ANSI A300 5. Tree topping not permitted on public trees 6. Pruning required by property owner if private trees obstruct roadways 7. PW can remove hazard trees from public property; and can notify private landowners to remove private trees that pose a hazard to public rights-of-way. 8. Stumps are removed when public trees are removed 9. Replacement/Mitigation: promotes the idea of establishing new plantings for five years near declining trees. 10. Work should be performed by MD Roadside Tree Expert, licensed MD Tree Expert or equivalent. 	Section 24-52	<p>Consider the following changes:</p> <p>#3. (per Easton's proposed revisions) Add to #3. Property owners, regardless of zoning, may not remove canopy or specimen trees without receipt of a Tree Removal Permit. Neither can they severely damage a canopy or specimen tree's crown, trunk, or root system before having an approved Tree Protection Plan from the Town Manager.</p> <p>#9. Consider deleting #9. It is difficult to interpret and there are numerous circumstances where this creates undue burdens on the ability and/or cost of tree removal. Additionally, the ability to determine extent of decline, etc. can be difficult and lacks quantifiable foundation.</p>	Towns and cities vary widely on the extent to which they control public trees. Some allow adjacent homeowners to maintain street trees, others require a permit for any type of maintenance. Examples of ordinances from municipalities that heavily regulate public trees include University City, MO (http://www.ucitymo.org/DocumentCenter/Home/View/1267) and Clayton, MO (http://www.claytonmo.gov/Government/Departments/Public_Works/Street_Tree_Trimming.htm).	http://www.ucitymo.org/DocumentCenter/Home/View/1267

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1	References
New Developments; Street Tree Renovation Projects	Makes provisions for street tree planting in new developments. City's Zoning ordinance (landscaping) provides requirements.	Section 24-53	Is this needed here if it's referenced in landscaping section?		
Interference with the Department of Public Works	Unlawful to interfere PW in the course of its carrying out this ordinance.	Section 24-54	No changes recommended		
Certification; Insurance	1. Contracted firms by PW that prune or remove public trees shall show proof of ISA CA or MD Licensed Tree Expert and shall follow ANSI A300 standards 2. Contracted firms that spray will show proof of ISA CA or MD Licensed tree Expert and hold a MD Pest Control Operator's License 3. Contracted forms must show proof of Workmens' Compensation Insurance and adequate Liability Insurance	Section 24-55	No changes recommended		
Penalties	No information provided	Section 24-56	No changes recommended	Much of the penalty info is built into other sections of the ordinance, though a standard penalty clause for non-listed violations could be useful. Many municipalities list them as misdemeanors and indicate that each day of violation is a separate offense.	
Tree Removal on Private Property	Proposed revisions by Easton Tree Board	Section 24-57			
Tree Protection Requirements on Sites Less Than 40,000 sq. ft.	Current ordinance does not address this topic		Add a new Section 24-57 that addresses tree protection on private land sites less than 40,000 sq. ft. in area. *See Appendix C, "Proposed Section 24-57 to be added to Easton's existing Section 24 – Article III: Tree Protection Requirements During Development on Sites Less Than 40,000 sq. ft. in Size" *See Appendix D "Section 24-49 - Definitions"	While there are different levels of tree protection that a community can require, most communities prefer a balance that gives residential property owners the ability to manage their day-to-day use of their primary residence as they deem best. Tree protection requirements typically kick in once a person is required to apply for a building permit or site plan review. Additionally, a replacement formula that considers the condition of trees to be removed has some popularity.	

Appendix C

Proposed Section 24-57 to be Added to Easton's Existing Article III–Section 24

TREE PROTECTION REQUIREMENTS DURING DEVELOPMENT ON SITES LESS THAN 40,000 SQ. FT. IN SIZE

- (A) **Tree Removal Associated With Construction or Development Activities in all zoning categories.** When development activities on sites less than 40,000 square feet (sq. ft.) in size require a building permit or site plan approval, a Tree Removal Permit, as issued by the Town of Easton, is required to remove or destroy any tree 7-⁵/₈ inches in diameter or greater. Additionally, on sites greater than 40,000 square feet in size, compliance with the Town of Easton Forest Conservation Plan (Article 1 thru Article 18) is required.

The removal of diseased or dead trees, and trees that are a public nuisance, is exempt. The property owner or developer of the site must apply for and secure the Tree Removal Permit before any removal or destruction commences. An application for a Tree Removal Permit shall be submitted to the Town of Easton and shall include the following:

- (1) A Tree Protection Plan prepared by an ISA Certified Arborist, registered Landscape Architect, licensed Tree Expert, or equivalent, with exhibited experience in the preparation of tree protection plans.
- (2) A surety or cash escrow for the benefit of the Town of Easton to account for trees that die, or are damaged beyond repair, as a result of grading or construction damage within a two-year period after the issuance of the final occupancy permits. The amount of the surety required shall be in the amount of \$2 for each square foot of the tree preservation area. (OPTIONAL ADDITION... or, in the amount of the appraised value of said trees if less than 10 trees are involved. Appraised value shall be determined utilizing the methodology described in the “Guide for Tree Appraisal” published by the International Society of Arboriculture.)

The Town of Easton, with advice from the designated forestry official, shall review all Tree Removal Permit applications for compliance with these regulations and return to the applicant as either approved, approved with conditions, returned for revisions, or denied within 45 days of receipt. Approval shall be based upon the reasonable efforts to preserve trees on the site as determined by the Town of Easton.

Upon receipt of an approved Tree Protection Plan and a Tree Removal Permit, the property owner will post a copy of said permit on the property at least seven (7) days prior to construction activities. The posted Tree Removal permit will remain posted until all construction activities are complete. Posting will adhere to guidelines developed for posting of the Town's or County's building permit notices.

- (B) **Denial of Tree Removal Permit – Right of Appeal.** In the event the Town of Easton denies a Tree Removal Permit application associated with development activities, the applicant may appeal such decision to the appropriate municipal hearing panel.
- (C) **Required Tree Protection or Replacement on Sites of 40,000 sq. ft. and Greater.**
1. Provisions outlined in the Town of Easton's Forest Conservation Ordinance shall be followed.

(D) **Required Tree Protection or Replacement on Sites Less Than 40,000 sq. ft. in Area.**

1. Canopy Trees shall be protected during development. Each Canopy Tree removed during development is subject to the replacement provisions outlined below in Required Tree Replacement.
2. Required Tree Replacement. Tree replacement shall occur in such amounts so that the total caliper measurement of all replacement trees must equal the total Adjusted Diameter measurement of removed Canopy Trees. If sufficient space on site is not available for replanting the required number of trees, the owner/developer may provide replacement trees for planting on Town property within the Town permits or, in lieu thereof, may make a payment to the Town of Easton Forest Conservation Fund at a monetary value of \$160 per replacement caliper inch with the total required payment not to exceed \$20,000 per acre of tract area.
3. Evidence of tree removal on a site within a five-year period prior to the tree removal permit application will require replacement of said removed trees, utilizing the replacement formula above.

(E) Tree Replacement Standards. All replacement plantings shall be performed according to the latest standards set forth by the International Society of Arboriculture, ANSI Z60.1 “Standards for Nursery Stock” and by utilizing species found on the Town of Easton approved plant list unless the desired species is approved by the Town of Easton.

(F) Off-Site Planting or Payments in Lieu of Planting. In a case where all replacement trees cannot be planted on site, the trees can be planted on other sites in the Town of Easton that are approved by the appropriate Town authority. Alternatively, the owner/developer may make a payment to the Town of Easton Forest Conservation Fund equal in value to the value to the amount specified in Section (D)-2 of this ordinance.

(G) **Prior to issuing any occupancy permits**, should any tree, designated for protection, die or become damaged as a result of grading or construction, the owner/developer shall pay an assessment equal to the value of the trees that die, are damaged beyond repair, or are removed. The value of the trees shall be determined using the ISA’s methodology of tree appraisal. (Copies of the booklet outlining the methodology are available from ISA at PO Box 3129; Champaign, IL; www.isa-arbor.com). The City shall withhold any Occupancy Permits until such assessment is paid. Assessments shall be paid from any existing sureties or escrows. If no sureties or insufficient escrow exists, funds will be deposited into the Town of Easton Forest Conservation Fund.

(H) **Within a two-year period after the occupancy permit is issued**, the owner/developer shall replace protected trees that die, or are damaged beyond repair, as a result of grading or construction damage as determined by a certified arborist. The number of replacement trees shall be determined by the formulas in Section (D), (E), and (F) above. Failure to plant successfully shall constitute a default and the Town of Easton shall be entitled to proceed against the surety or escrow. Replacements shall be planted on site unless the density of the planting becomes unreasonable. In cases where all replacement trees cannot be planted on site, the trees may be planted on other sites in the Town of Easton that are approved by the designated forestry official. Alternatively, the owner/developer may make a payment to the Town of Easton in an amount calculated by using the formulas in Section (G) above. Funds will be deposited into the Town of Easton Forest Conservation Fund and use of all such payments for the planting, establishment, and maintenance of trees on Town-owned property.

Appendix D

Proposed Section 24-49 Definitions to be Added to Easton's Existing Article III–Section 24

In the following list of terms, the definitions provided shall be used throughout this ordinance:

ANSI A300 – American National Standards Institute, Inc. “Standard Practices for Tree Care Operations”.

adjusted diameter - The actual diameter of a tree measured at 4 1/2 feet above ground multiplied by the tree's condition rating. Condition rating is the same as those defined for use when performing tree appraisal per the “Guide for Plant Appraisal” published by the International Society of Arboriculture. For example, if a tree has a diameter of 32 inches in diameter and is in relatively poor health with a condition rating of 40%, its “adjusted diameter” is (32 X .40) or 12.8 inches.

canopy tree - A tree with a trunk circumference of twenty-four (24) inches in circumference measured at four and one-half (4 ½) feet above the ground, or larger. This is equal to 7-⁵/₈ inches in diameter, or larger. If a tree divides into branches at less than 4-½ feet, the trunk diameter shall be measured beneath the dividing point.

caliper - Typically used for nursery stock and is the diameter of a tree measured at six (6) inches above ground if the measurement is no more than four (4) inches. If the measurement is more than four (4) inches, then the measurement is made at twelve (12) inches above ground.

condition factor - A numerical expression of a tree's condition. Typically expressed as a percentage from 0 (a dead tree) to 100 (a perfectly healthy tree). The International Society of Arboriculture describes the condition rating process in the manual “Guide for Plant Appraisal”.

conservation – Maintenance of the existing order from loss, waste, or harm.

construction site - Any portion of property, including the public rights-of-way, within the Town of Easton where demolition, construction, grading, or excavation activity of any kind occurs for work performed under a building, excavation, grading, or demolition permit related to construction or expansion of a primary or accessory building or improvement of a site. The Construction Site is defined by a Limit of Disturbance line shown on a Tree Preservation Plan and corresponding fencing placed on the construction site. The Limit of Disturbance line shall also be shown on the Site Plan for a set of construction drawings for the project.

critical root zone (CRZ) – The area around the trunk of a tree where roots essential for tree health and stability are located. The radius in feet of a CRZ is equal to the diameter (DBH) in inches of a tree. For example, a 14-inch DBH tree will have a CRZ radius of 14 feet. Specimen Trees will have a CRZ equal to 1.5 times the DBH. For example a Specimen Tree with a DBH of 32 inches will have a CRZ radius of 48 feet.

developer – Includes an individual, group of individuals, or corporation, or other entity having intent to develop and/or subdivide or improve a lot, piece, or parcel of land for the purpose of transfer of ownership or leasehold or building development.

diameter (DBH) - The diameter of a tree measured at 4-½ feet above ground. If a tree divides into branches at less than 4-½ feet, the trunk diameter shall be measured beneath the dividing point.

emergency situations – Events that require immediate attention to protect public safety.

forest conservation account – A financial and budgeting account within the Town of Easton that can accept funds for payments made in lieu of required tree planting and associated fees and fines associated the Town of Easton Forest Conservation Ordinance and the Town of Easton Tree Ordinance. Funds in the account must be tracked and spent specifically for afforestation, reforestation, tree planting, maintenance and management of existing or proposed tree canopy cover, and planning activities associated with enhancing the quantity and quality of tree canopy cover in the Town of Easton, and to meet the requirements of the Maryland Forest Preservation Act of 2013.

ISA – International Society of Arboriculture.

large tree – A tree typically exceeding 45 feet at maturity.

limit of disturbance - Typically represented as a line on the site plan and Tree Preservation Plan that identifies the limit of construction, demolition, grading, or excavation activity of any kind. This line will typically delineate the Tree Protection Area.

maintenance - Any measure considered vital or beneficial to the proper care and cultivation of any tree, shrub, or other plant material, or considered necessary to abate nuisances. This includes pruning, irrigating, fertilizing, spraying or otherwise applying pesticides, staking, bracing, guying, cabling, wrapping, mulching, and insect and disease control, and any other horticultural practices performed as seen necessary to promote the general health of plant material.

medium tree – A tree typically exceeding 20 feet, but not exceeding 45 feet at maturity.

park trees – Trees located in public parks, public open spaces, and all areas to which the public has free access, except rights-of-way owned by the Town.

person – A natural person, individual, partnership, corporation, limited liability company, trust, voluntary association, club, society, or any group of persons acting as a group.

private tree – Trees not located on public property regardless of the tract’s zoning designation.

public tree – Trees located on Town owned, or controlled, property. Includes rights-of-way, parks, and other Town owned land.

PW – The Town of Easton’s Public Works Department.

small tree – A tree typically less than 20 feet at maturity.

specimen tree – Trees with a DBH of 30 inches or more, or trees having a DBH that equals, or exceeds, the current State Champion Tree for that species.

street trees - Trees on Town-owned property within the right-of-way of all streets, avenues, alleys, or ways within the Town.

topping - The drastic removal, or cutting back, of large branches in mature trees leaving large, open wounds, which subjects the tree to disease and decay. Topping causes immediate injury to the tree and may ultimately result in its early failure or death. Other names for topping include “heading”, “tipping”, “hat-racking”, and “rounding-over”.

tree - A woody plant typically growing as a single stem (rarely a multiple stem) in an upright form that will attain a mature height of at least 15 feet and a DBH of at least 2 inches.

tree canopy coverage - The area of ground taken up when measuring the branch spread of a tree from branch tip to branch tip, or the area covered by a group or cluster of trees with contiguous (or nearly contiguous) canopies.

tree removal permit - A permit obtained from the Town of Easton to remove trees as described in this ordinance.

tree protection area - The tree canopy coverage on a site proposed for development that will not be disturbed by grading or storage of materials or disturbance of any kind. Tree protection area is a “no-violation” zone that is typically bordered by the limit of disturbance line and delineated on the ground with tree protection fencing.

tree protection plan - (TPP) A map-based plan prepared by a person who has demonstrated the knowledge and ability to evaluate tree condition and value, who is familiar with construction methods and techniques to protect trees from damage during construction. This individual is typically an ISA Certified Arborist or equivalent. The TPP shall be submitted as part of the construction documents for a project and will provide:

1. Detailed information about the species, diameter (DBH), condition, value, and location of all existing Canopy Trees, 24-inch circumference and larger, that are on a Construction Site or within 10 feet of the boundary of the Construction Site. The dollar value of each Canopy Tree shall be calculated using methodology developed by the International Society of Arboriculture and described in their guidebook “Guide to Plant Appraisal” (available at www.isa-arbor.com).
2. A professional opinion regarding the survivability of trees on the site.
3. Detailed information about which trees are planned for protection and which trees are to be removed.
4. Proposed protective measures, including the use of root pruning, retaining walls, etc.
5. A “Limit of Disturbance Line” to indicate the border of areas where no grading is to occur and to delineate the Tree Protection Area(s). An aerial photo of the site at a scale similar to or equal to the TPP map may be included. In areas where large groupings (>10,000 square feet of contiguous tree canopy coverage) of trees greater than 24 inches in circumference exist, individual trees within the interior of the grouping need not be plotted if no grading or other tree disturbance is planned. Trees located within 20 feet of the edge of the grouping, adjacent to areas planned for grading, shall be mapped and identified.
6. When tree replacement is required or proposed, the new plantings shall be shown and identified as to species, location and size.
7. A table shall be provided that lists the quantity and size, by species, of each tree to be planted.
8. Tabulation of the total number of replacement caliper inches required and the total number of caliper inches provided by replanting.

Appendix E

Landscape Ordinance Review (Article X, Landscaping and Buffering—Section 1015)

Topic	Current Easton Ordinance	Location	Recommended Changes	Comment/Example 1
Introductory Paragraph	An introductory paragraph providing the foundation for the provisions in Section 1015	Section 1015	This section should provide language that addresses the 40% canopy expressed in the state law. Easton may also be adopting the 40% goal.	
Landscape Plans	A list of eight items that are to be included on landscape plans.	Section 1015.2(B)	<p>In Item #5: Provide language about proper planting depth to ensure visibility of root flare or first lateral root.</p> <p>Add Item #9 - Provide anticipated future canopy of installed trees at maturity. An alternative would be to have the city prepare a chart of anticipated canopy for various species. A "canopy credit" list is found in Sec 1015.5 (B) and provides some guidelines, although the actual mature canopy of some species may be higher than the list provided in 1015.5 (B). These canopy credits may become a factor in the development of required Forest Conservation Plans. The information can be useful when determining the appropriateness of species identified in a landscape plan.</p>	<p>Tree planting guidelines: http://www.treesaregood.com/tree_care/tree_planting.aspx Tree planting specifications can be found in ANSI Z60.1</p>
Minimum Plant Material Specifications	Species exclusion list	Section 1015.3 (B)	Consider adding the <i>Fraxinus</i> spp. (ash) genus to the list.	http://www.emeraldashborer.info

Appendix F Example Ordinances

Norfolk, Virginia, Tree Ordinance

ARTICLE II. TREE ORDINANCE

Sec. 45-12. Purpose and intent.

Sec. 45-13. Permits; when required.

Sec. 45-14. Maintenance permit for work on city property.

Sec. 45-15. Maintenance permit for work on private property.

Sec. 45-16. Permit exemptions.

Sec. 45-17. Review of application for permit.

Sec. 45-18. Appeal of denial of a permit.

Sec. 45-19. Revocation of permit.

Sec. 45-20. Safeguards during construction work.

Sec. 45-21. Stop work order.

Sec. 45-22. Public nuisance.

Sec. 45-23. Eradication of public nuisance; public or private property.

Sec. 45-24. Notice.

Sec. 45-25. Abatement by city.

Sec. 45-26. Reserved.

Sec. 45-12. Purpose and intent.

It is the purpose of this article, to be referred to as the "Norfolk Tree Ordinance," to promote and protect the public health, safety and general welfare by providing for the regulation of the planting, maintenance, and removal of trees, shrubs, and other vegetation in the city. It is the intent of the city council that the terms of this article shall be construed so as to promote the planting, maintenance, restoration, and protection of desirable trees, shrubs, and other vegetation within the city, to protect citizens from personal injury and property damage, and to protect public property from property damage caused or threatened by improper planting, maintenance, or removal of trees, shrubs, or vegetation plants located within the city.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-13. Permits; when required.

- (a) Residents of Norfolk may apply for a permit to prune and trim city trees located between the curbs and sidewalks. A request for a permit can take place only after a resident has successfully completed a workshop devoted to basic tree trimming techniques led by an ISA certified arborist for the city, and the individual resident receives a certificate of completion in such training. All appropriate tools and required safety equipment must be supplied by the resident(s) and approved by the arborist. The pruning may take place from the ground only, utilizing only nonpowered hand tools. Debris from any pruning session must be removed in accordance with normal Norfolk Division of Waste Management regulations.
- (b) Except as otherwise provided in this section, it shall be unlawful for any person except an authorized employee of the bureau of parks and forestry to perform any of the following acts on city-owned property without first obtaining a permit from the director:

- (1) Plant, transplant, prune, trim, root prune, spray, fertilize, treat, remove, paint, climb, or otherwise damage or disturb any tree, shrub, or other vegetation or any part thereof (including live, diseased, declining, or dead), or protective and supportive devices.
 - (2) Place either above or below ground level, a container for trees, shrubs, or other vegetation.
 - (3) Affix or cause to be affixed to any tree, shrub, or other vegetation any sign, notice, announcement, banner, rope, cable, nail, tape, wire, or any other object, or to use the same in any connection with any guard or stake protecting or supporting such tree, or permit any electrical wires, cables, poles, cross arms, brackets, insulators, or other wires or fixtures to come into contact with any shade tree or ornamental tree on the streets or other city-owned property.
 - (4) Dig a tunnel, trench, or otherwise excavate within the critical root zone of a tree, except within the paved roadways from curb face to curb face.
 - (5) Apply and chemical or material of any sort to or within the critical root zone of any tree located on city-owned property, including but not limited to insecticides, herbicides, fungicides, or soil sterilants/growth regulators that either prevent or hinder the establishment or viability of vegetation or is detrimental to the environment.
 - (6) Place any material of any sort, including, but not limited to, dirt, soil, rubble, concrete, bricks, wood, dredge spoil, asphalt, creosote timbers, logs, garbage, tires, organic wastes, and personal property such as boats, trailers, vehicles on or within the critical root zone of any tree, shrub, or other vegetation.
- (c) It shall be unlawful for any person to perform any of the following acts within the resource protection area or intensely developed areas in the Chesapeake Bay Preservation Area Overlay District without first obtaining a permit from the director:
- (1) Plant, transplant, trim, prune, remove or otherwise disturb any tree, shrub, or other vegetation (including live, diseased, declining, or dead), or portion thereof.
 - (2) Damage, cut, tap, caulk, paint, attach any rope, wire, nail, sign, or any other manmade object to any tree or shrub.
 - (3) Dig a tunnel trench or otherwise excavate within the critical root zone of any tree, shrub, or other vegetation.
 - (4) Apply any chemical, including, but not limited to, herbicides and/or growth regulators, that either prevents or hinders the establishment of viability of vegetation or is detrimental to the environment.
 - (5) Place any material of any sort, including, but not limited to, dirt, soil, rubble, concrete, bricks, wood, dredge spoil, asphalt, creosote timbers, logs, garbage, tires, organic wastes and personal property such as boats, trailers, vehicles on or within the crown-spread or critical root zone of any tree, shrub or other vegetation.
- (d) For shoreline erosion control projects, trees and woody vegetation may be removed, necessary control techniques employed, and appropriate vegetation established to protect or stabilize the shoreline in accordance with the best available technical advice as approved by the bureau of environmental services and in accordance with applicable permit conditions or requirements.

- (e) When trees, shrubs, or other vegetation are removed, destroyed, or damaged beyond recovery in violation of this section, the director may require that they be replaced in accordance with controlling arboricultural specifications and standards. Failure to mitigate as directed shall constitute a violation of this chapter.
- (f) It shall be unlawful to fail to comply with any terms or conditions of any permit issued pursuant to this section.
- (g) Nothing in this section shall be construed to exempt any person from the requirements of obtaining any additional permits as may be required by law.

(Ord. No. 41,728, § 1, 2-15-05; Ord. No. 44,580, § 1, 2-28-12)

Sec. 45-14. Maintenance permit for work on city property.

- (a) The director, under special circumstances, may issue a maintenance permit which authorizes residents within a defined area to maintain the shrubs, trees, and flowers on city-owned property lying between the paved portion of the street and in areas of the city where sidewalks do not exist and the distance between the paved portion of the street and the property line is larger than is normally found in other areas of the city, and in such other areas as the director shall determine that the issuance of such maintenance permit would be in the best interest of the city in carrying out the purpose and intent of the tree ordinance. The director may impose such conditions and limitations on the permits as would be consistent with the terms and conditions of this article. If residents in the area fail to carry out the maintenance program within the conditions and limitations set forth in the permit, the director of neighborhood and leisure services may revoke the same. The issuance of such permit shall not in any way condone or authorize any property owner to maintain a public nuisance on public or private property, nor does the permit exempt such property owner from the other provisions of this article.
- (b) The director may issue an area-wide or city-wide permit in order to correct or eliminate problems or conditions where it is not feasible or practicable to handle in any other way. The director may implement this permit by advertising in a newspaper of general circulation in the city setting forth the problem or condition to be corrected or eliminated, the manner and materials to be used, and other conditions, as he sees fit, to protect the urban forest.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-15. Maintenance permit for work on private property.

The director may issue a maintenance permit for activity in the resource protection area or intensely developed area in the Chesapeake Bay Preservation Area Overlay District when he has determined that the applicant has presented sufficient information to ensure the objectives of the zoning ordinance and the tree ordinance will be faithfully carried out by the applicant. The director shall impose such conditions and limitations as would be consistent with the terms and conditions of the zoning ordinance. If the permittee fails to carry out the maintenance program within the terms and conditions set forth in the approved management plan, the director shall revoke the same and take such action as is appropriate to remedy or restore the buffer area. The director shall be guided by the following performance standards designed to maintain the functional value of the buffer area and the indigenous vegetation located therein:

- (1) Trees in excess of three (3) inches in diameter at breast height (four and one-half (4.5) feet above the ground) shall not be pruned or removed except as necessary to provide minimal sight lines and vistas, and provided that where removed they will be replaced with other vegetation that in the discretion of the director is equally effective in retarding runoff, preventing erosion and filtering nonpoint source pollution from runoff.
- (2) Any access path in the buffer area shall be constructed and surfaced so as to effectively control erosion.
- (3) A three-tier riparian vegetated buffer comprised of overstory, understory, and groundcover plant materials will be established and/or maintained where practical in the discretion of the director. Disturbance to the soil environment and root systems of trees to remain shall be minimized.
- (4) When permitted, alterations to the resource protection area or intensely developed area in the Chesapeake Bay Preservation Area Overlay District on city-owned property must be completed and maintained by a Virginia Nurseryman and Landscape Association (VNLA) certified horticulturist, or ISA certified arborist or ISA certified tree worker.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-16. Permit exemptions.

- (a) Any person performing emergency utility work to restore, but not increase beyond the original capacity of underground transmission or distribution systems or utility services to existing residential, commercial, or governmental facilities, and within the same trench as existing utilities, shall be exempt from obtaining a permit, provided that all applicable controlling arboricultural specifications and standards are followed and that the city forester is notified as soon as practical should excavation necessitate cutting roots in excess of three (3) inches in diameter.
- (b) Any person performing emergency work to restore but not to relocate or increase the capacity of overhead transmission or distribution systems or overhead utilities services to residential, commercial, or governmental facilities and which necessitates the cutting of limbs or branches up to four (4) inches in diameter, as measured outside the branch collar, shall be exempt from obtaining a permit, provided that all applicable controlling arboricultural specifications and standards are followed and the city forester is notified as soon as practical following the completion of such work.
- (c) A resident of the city shall not be required to obtain a permit for pruning sucker growth less than one inch in diameter which originates from the base of crape myrtle trees growing in that portion of the public right-of-way between the curb and sidewalk and directly adjacent to property owned or substantially controlled by said resident, or from watering without a permit any tree, plant or shrub located in the right-of-way.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-17. Review of application for permit.

- (a) The director, within ten (10) working days of the receipt of an application for a permit, shall issue a permit to perform any of the specified acts for which a permit may be required pursuant to this chapter as long as the following conditions are met:
 - (1) When such acts would result in abatement of a public nuisance;
 - (2) When such acts consistent with the development and implementation of the street tree management plan or with any regulations and controlling arboricultural specifications and standards or with the purpose and expressed intent of this chapter;
 - (3) When an application has been signed by the applicant and submitted to the bureau of parks and forestry detailing the location, number, size and species of trees, shrubs and other vegetation would be affected by such acts, setting forth the purpose of such acts and the methods to be used along with any additional information the city forester may find reasonably necessary;
 - (4) When the applicant agrees to perform the work for which the permit is sought in accordance with the provisions of this article, the street tree management plan and controlling arboricultural specifications and standards; and
 - (5) When the applicant certifies that he has read and understands the provisions of this article, the terms and conditions of the permit, controlling arboricultural specifications and standards, city tree protection notes and details, and street tree planting and location standards, or other applicable standards which are pertinent to the work for which the permit is sought; or
- (b) The director may place certain conditions, limitations or other applicable standards and guidelines in the permit which he deems to be necessary to carry out the purpose and expressed intent of this article.
- (c) The director may require the applicant to post a bond or provide a letter of credit in an amount and with surety and with conditions satisfactory to him securing compliance with the conditions and limitations set forth in the permit.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-18. Appeal of denial of a permit.

Any person aggrieved by the actions or orders of the director respecting issuance of a permit shall within ten (10) days from such action or order have an appeal to the city manager or to a person designated by the city manager to hear such appeals. The decision of the city manager or his designee shall be the final administrative remedy under this article.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-19. Revocation of permit.

The director may revoke any permit issued under this chapter if the work for which a permit is issued is not completed in full compliance of stated conditions and limitations or if the work is completed in an unsafe manner, or in violation of any provision of this chapter, the Virginia State Code [Code of Virginia] and guidance promulgated thereto, an order of the board of zoning appeals, or any other applicable permit. The director may also take action as is appropriate to remedy or restore to a safe condition any tree, shrub or other vegetation for which a permit has been revoked or suspended at the applicant's expense.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-20. Safeguards during construction work.

For the purposes of safeguarding trees on city-owned property and in the resource protection area and intensely developed area in the Chesapeake Bay Preservation Overlay District in zoning ordinance) (sic) during construction, including pruning, overhead or underground utility, installations and excavations, within the critical root zone, the following conditions shall apply to all trees other than those for which a permit has been issued authorizing removal:

- (1) Prior to the commencement of construction, all trees, shrubs and other vegetation on the building site or within the project area shall be inventoried by the applicant or contractor as to species, diameter at breast height (four and one-half (4.5) feet above ground) expressed in inches crown-spread expressed in feet, and location on the lot, and the inventory shall be clearly and accurately shown to scale on a map, drawing, or plat of known scale, and shall be submitted to the bureau of parks and forestry.
- (2) Damage to any trees, shrubs and other vegetation during construction shall be immediately reported by the person causing the damage, or the owner, to the city forester, and the applicant shall treat the tree for damage in the manner specified by the director.
- (3) Excavations within the critical root zone of any tree, except within the paved roadways and for all emergency repairs to existing underground utilities, shall be done only after consultation with the director and then only to the extent authorized in the permit and in accordance with all controlling arboricultural specifications and standards and city tree protection notes and details.
- (4) Unless otherwise allowed by the director, approved protective fencing shall be installed at the crown-spread or critical zone of all trees, shrubs and other vegetation located within the work zone prior to the commencement of any construction activity including mobilization, except for construction activities which limit disturbance to within the paved roadways (from face of curb to face of curb) and for emergency restoration of existing underground utility service, in order to prevent unnecessary damage to the trunk, crown, root system or soil environment.
- (5) Whenever excavations, approved through a permit issued by the director, are made within the critical root zone of trees, shrubs and other vegetation appropriate measures as specifically described or referenced in the permit or City of Norfolk tree protection notes and details, shall be taken to protect the root system (roots and rooting environment) from any damage or loss, desiccation, and soil compaction.

- (6) Except on improved paved roadways (from face of curb to face of curb), no material of any sort, including, but not limited to, soil, dirt, rock, stone, rubble, bricks, concrete, concrete rinse, mortar mix, asphalt, steel, wood, construction supplies, dredge spoil, fill material, organic wastes, herbicides, oil, gasoline, diesel fuel, chemicals, paint, paint thinners, waste water, construction effluents, or other materials detrimental to trees, shrubs and other vegetation or soil environment, shall be placed within the crown-spread or critical root zone of any tree, shrubs and other vegetation or uphill from such where said substance might reach the roots through a leaching process without a tree permit specifically approving same.
- (7) Except on paved roadways and for emergency restoration of existing utility service to original capacity, and for construction projects where a permit has been issued by the director authorizing the use of equipment fundamental to the proposed construction activity within the critical root zone, no vehicles or heavy equipment shall be permitted within the critical root zone of any trees, shrubs and other vegetation.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-21. Stop work order.

The director may order the cessation of any work to any tree, shrub or other vegetation located on private property or public property when such work is completed in an unsafe manner which is deemed threatening to any property owned or controlled by the city, or the health, safety or welfare of the general public, or when such acts constitute a violation of this chapter. The director may further direct whatever action is reasonably necessary to protect the public safety, including, but not limited to, establishment of worker qualifications and work standards and specifications, hold harmless indemnification, and a liability insurance policy in the amount established by the director which names the city as an additional insured.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-22. Public nuisance.

- (a) Any tree, shrub or other vegetation or a portion thereof, whether located on city-owned property or on private property, which by reason of its location or condition constitutes an imminent danger to the public health, safety or welfare of the general public shall constitute a public nuisance.
- (b) Any tree, shrub or other vegetation or a portion thereof, whether located on city-owned property or on private property, which dangerously obstructs free passage of pedestrian or vehicular traffic shall constitute a public nuisance.
- (c) Any tree, shrub or other vegetation or a portion thereof, whether located on city-owned property or on private property, which dangerously obstructs the view in the "visibility triangle" as defined in the city street tree planting and location standards shall constitute a public nuisance.
- (d) Any tree, shrub or other vegetation growing on private property, when infested by any insect or infected by any disease, which by reason of such infestation or infection endangers the life or growth or healthful existence of other trees, shrubs or other vegetation within the city not so infested or infected shall constitute a public nuisance.

- (e) Any tree, shrub, or other vegetation growing on private or public property, which by reason of its invasive or aggressive growth habit encroaches upon or threatens any rights-of-way, park, or other city-owned property shall constitute a public nuisance.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-23. Eradication of public nuisance; public or private property.

- (a) Any public nuisance as specified in this article which is located on city-owned property shall be pruned, removed, or otherwise treated by the director in whatever fashion is required to cause the abatement of the nuisance within a reasonable time after its discovery.
- (b) Any public nuisance as specified in this article which is located on private property shall be pruned, removed, or otherwise treated by the property owner or his agent in whatever fashion is required to abate the nuisance.
- (c) In the event that a confirmed infestation or infection, as described in section 45-22, shall occur, the director, at the convenience of the city and when authorized by the city manager, may cause such abatement measures as he shall deem appropriate to be accomplished at public expense.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-24. Notice.

In the event of a public nuisance existing on private property, the director shall cause a written notice to be personally served, posted on the property, or sent by regular mail to the person to whom was sent the tax bill for the real estate taxes for the last preceding quarter. Such notice shall describe the kind of tree, shrub or other vegetation which has been declared to be a public nuisance, its location on the property, the reason for the declaration of a nuisance and shall state the actions that the property owner may undertake to abate the nuisance and the time limit for the abatement. Failure to abate in the time specified shall constitute a violation of this chapter.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-25. Abatement by city.

If such nuisance remains on any land or premises after the expiration of the time specified in the notice given under this section, the director may cause the same to be abated or removed therefrom at the expense of such person, or of the occupant or owner of such land or premises, as the case may be. In addition, an administrative fee, as prescribed by the Code of Virginia and as approved by the city manager, shall be assessed in each case. If the land is unoccupied and the owner is not a resident of the city, notice of abatement by the city shall be given by mailing or delivering a letter to the last known address of the owner no less than five (5) days before the abatement by the city. If the abatement is done at the expense of the owner, the expense of abatement or removal and the administrative fee shall be a lien upon such land or premises and shall be reported to the city treasurer, who shall collect the same in the manner in which city taxes levied upon real estate are authorized to be collected. Such expenses shall be docketed in a book kept for that purpose in the office of the city treasurer and indexed in the name of the person owning such premises or land at the time such lien accrued.

(Ord. No. 41,728, § 1, 2-15-05)

Sec. 45-26. Reserved.

Chapel Hill, South Carolina, Tree Ordinance

AN ORDINANCE AMENDING SECTION 5.7 OF THE CHAPEL HILL LAND USE MANAGEMENT ORDINANCE REGARDING TREE PROTECTION

WHEREAS, the Council of the Town of Chapel Hill has considered the proposed text amendments to the Land Use Management Ordinance regarding tree protection and finds that the amendments are warranted in order to achieve the purposes of the Comprehensive Plan;

NOW, THEREFORE, BE IT ORDAINED by the Council of Chapel Hill as follows:

Section 1. Article 5, Section 7 of the Chapel Hill Land Use Management Ordinance, Design and Development Standards, is hereby revised to read as follows:

5.7 Tree Protection Ordinance DRAFT

5.7.1 General Provisions

(a) Short Title

This Section shall be known and may be cited as the Chapel Hill Tree Protection Ordinance.

(b) Purpose

The intent of this Section is to preserve, maintain, and increase tree canopy to protect the public health, safety, and welfare and enhance the quality of life in Chapel Hill.

(c) Applicability and Permits

The provisions of this Article apply to all land in the Town's zoning jurisdiction:

- 1) Activities that require a Zoning Compliance Permit:
 - i. All work impacting trees on lots designated for non-residential, multifamily residential, and mixed use and
 - ii. All work impacting trees on lots designated for single- and two-family residential use where total land disturbance exceeds 5,000 square feet
- 2) Activities that require review and approval by the Town's Urban Forester:
 - i. Private work on public land,
 - ii. Removal of any tree greater than thirty-six inches diameter breast height (DBH) and
 - iii. The practice of forestry as defined by North Carolina General Statute 105-277.2-.7 which is permitted only after an applicant submits a plan for harvesting and replanting consistent with the most current Forest Practices Guidelines Related to Water Quality published by the N.C. Department of Natural Resources and Community Development, or its successor agency.

(d) Exceptions not subject to the provisions of this Article are:

- 1) Land in the Town's **Office/Institutional-4 zoning** district, provided, however, that Section 5.7.4 of this Article shall apply;
- 2) **Routine maintenance** of existing trees outside the public right-of-way, including pruning done in a manner consistent with established arboricultural standards;

- 3) The **removal of dead, severely damaged or diseased trees** that have been diagnosed and, if applicable, determined by a Certified Arborist to be beyond treatment or recovery, the burden of proof being placed on the remover;
- 4) **Land surveying** provided no trees greater than six (6) inches dbh are damaged or removed; and
- 5) **Eradication** of exotic, non-native, and invasive or otherwise undesirable species listed in Section 5.7.6(d).

(e) Emergency Waiver

The provisions of this Section are waived if compliance would impede the rescue of life or property from immediate danger or the repair of utilities in the event of emergencies such as wind storms, ice storms, or other disasters. Any emergency work shall follow as closely as possible the standards outlined in the Town's Landscape Standards and Specifications.

5.7.2 Tree Canopy Coverage Standards

(a) Tree Canopy Defined

The **tree canopy** in Chapel Hill is defined as the topmost layer of leaves, branches, and stems comprising the crowns of trees growing at least 20 feet above the ground.

(b) Minimum Canopy Coverage Standards

The Town desires to maintain the maximum practical tree canopy cover across all land uses within the Town's jurisdiction. When canopy removal is subject to the provisions of this Section, the following minimum tree canopy coverage percentages are required within the zoning lot boundaries exclusive of public right-of-way:

Table 1: Minimum Tree Canopy Coverage Standards

Land Use and Zoning	Minimum Canopy Coverage
Low Density Single Family Residential R-LD5, RT, R-LD1,	50%
Low Density Single Family Residential R-1A, R-1	40%
Low Density Single and Two-Family Residential R-2A, R-2	30%
Medium and High Density Single and Two-Family Residential R-3, R-4, R-5, R-6	20%
Medium Density Multi-Family Residential R-3, R-4	40%
High Density Multi-Family Residential R-4, R-5, R-6	30%
Commercial NC, CC	30%
Institutional OI-1, OI-2, OI-3	40%
Mixed Use Zoning Varies	40%
Town Center TC-1, TC-2	half of above

(c) Modifications to Canopy Coverage Standards

An approving body may allow a modification to these regulations when public purposes are met and canopy removal supports other goals of the Town, including but not limited to:

- goals of the Comprehensive Plan
- LEED or “green” building and low impact development
- affordable housing
- stormwater management
- community character of adjoining property and established managed landscapes

(d) Implementation of Standards

Compliance with canopy protection and replacement standards of Section 5.7.2 is demonstrated by the following:

- 1) Approval and implementation of a **Landscape Protection Plan** prepared in accordance with Section 5.7.3(b).
- 2) Approval and implementation of a **tree planting plan** prepared in accordance with landscape architectural standards and the Town’s Design Manual.

- 3) **Maintenance** of protected and planted trees.
- 4) Tree **mitigation** payments as per 5.7.2 (d)3).

Compliance with the canopy coverage standards in Table 1 shall be accomplished by the following methods:

- 1) **Protection of existing tree canopy.** The extent of existing tree canopy coverage retained at the time of permit application may be documented by survey or by using current aerial photographs.
 - i. Required cleared active recreation areas and utility easements shall not be included in the total land area used in the canopy coverage calculation.
 - ii. Trees installed in a Town right-of-way as part of an approved street tree planting plan may count toward total tree canopy coverage.
- 2) **Replacement of canopy.** If the existing protected tree canopy is less than the minimum standard for the zoning district as shown in Table 1, the canopy shall be reestablished. The tree canopy deficit is determined by subtracting the area of existing tree canopy to be retained as shown on the Landscape Protection Plan from the area of minimum canopy coverage calculated using the required percentage found in Table 1 in Section 5.7.2.
 - i. Two (2) replacement trees per 1,000 square feet of tree canopy coverage deficit shall be planted in accordance with an approved planting plan.
 - ii. All canopy trees planted in accordance with the Town's Design Manual to meet the Town's buffer and parking lot shading standards can all be counted when calculating replacement canopy trees provided.
 - iii. Supplemental canopy trees planted to complete the canopy coverage requirements shall be planted no less than twenty (20) feet apart.
 - iv. Replacement trees that are planted in a Town right-of-way may count toward total tree canopy coverage if there is insufficient space for replanting on the lot.
 - v. Installation and Maintenance
 - Plantings.** All required plantings shown on an approved Canopy Replacement Plan shall be prepared, installed and maintained according to the Town's Landscaping Standards and Specifications and must be planted or an accepted performance guarantee placed with the Town in order to satisfy compliance with the requirements of this Section.
 - (a) Replacement trees for single- and two-family properties shall have a minimum size caliper at planting of one inch (1").
 - (b) For all other properties subject to the provisions of this section, the minimum replacement tree caliper shall be two and one-half (2.5) inches at installation.
 - (c) Upon approval by the Town Manager, if all replacement trees have a caliper of four (4) inches or greater when planted, the total required number of trees may be reduced by half.

Maintenance. The property owner is responsible for demonstrating that the lot in its entirety will continue to meet minimum tree canopy coverage standards after canopy is removed and replacement trees are planted if necessary. Validation of compliance by a Certified Arborist or Landscape Architect may be required by the Town.

Trees that are damaged or decline in health during construction shall be assessed for viability and safety.

- (a) Viable trees shall be treated to promote their continued health and safety.
- (b) If the Town Manager determines a protected tree in a required buffer or other required planting is dead or dying at the time of the issuance of a certificate of occupancy replacement of the tree may be required.

3) **Mitigation** - If the applicant chooses not to plant replacement canopy trees, **payments to the Town of Chapel Hill Tree Mitigation Fund** shall be calculated as follows:

- i. For **single-family and two-family** residential properties,
 - (a) \$200 per tree where there is not sufficient space on site for required replanting.
 - (b) \$400 per tree if the permit is applied for after work has begun **or** if a property owner chooses to provide payment in lieu of tree planting where there is otherwise sufficient space on the subject property to accommodate tree planting.
 - (c) \$800 per tree if an after-the-fact permit is issued **and** the property owner chooses to provide payment in lieu of tree-planting.
- ii. For **multi-family residential, non-residential, and mixed-use** properties,
 - (a) \$1,000 per tree (plus application fees) for all development subject to the provisions of this section.
 - (b) \$2,000 per tree (plus application fees) if the permit is applied for after work has begun **or** if a property owner chooses to provide payment in lieu of tree planting where there is otherwise sufficient space on the subject property to accommodate tree planting.
 - (c) \$4,000 per tree (plus application fees) if an after-the-fact permit is issued **and** the property owner chooses to provide payment in lieu of tree planting.

Tree Mitigation Fund

A primary objective of the Tree Mitigation Fund is to use payments for the installation and maintenance of trees on public property. The Town shall also use all such payments for the cost associated with implementation of this ordinance, for Town sponsored tree management programs, and for the study, inventory, maintenance or treatment of public trees requiring the services of a Certified Arborist or other qualified consultant. Mitigation funds will not be used in lieu of general fund support for the existing urban forest management program.

5.7.3 Landscape Protection Plan

(a) *Activities requiring a Landscape Protection Plan*

1. Zoning Compliance Permit applications shall include a Landscape Protection Plan unless otherwise exempted.
2. Work limited to the removal of trees may require a Landscape Protection Plan and shall conform to the required tree replacement and mitigation standards as described in 5.7.2.

(b) *Landscape Protection Plan Standards*

- 1) The Town Manager shall prescribe the contents of Landscape Protection Plans and the information that may be reasonably required to determine compliance with this Article, with sufficient copies for necessary referrals and records. Minimum requirements for the Landscape Protection Plan include the following information:
 - i. The size, location, and type of all existing rare and specimen trees as defined in Section 5.7.6 within 50 feet of proposed disturbance.
 - ii. All significant trees stands, as defined in Section 5.7.5.
 - iii. Areas where trees, vegetation, and soils are to be protected and preserved and areas where trees, vegetation, and soils are to be removed or modified. This includes indicating proposed grading, utilities, and improvements as well as access, staging, and storage areas. The plan shall graphically identify each tree to be saved or removed.
 - iv. All Critical Root Zones (CRZ) within or overlapping the disturbed area, and the measures of tree, vegetation, and soil protection and management that will be used before, during, and after all construction activities to promote the survival or retention of such elements. The CRZ is defined as a circular area surrounding a tree, of which the center is the center of the tree trunk and which has a radius of at least one (1) foot for every inch of trunk diameter (dbh) taken at 4.5 feet above grade.
$$\text{CRZ radius} = \text{diameter breast height (inches)} \times \text{one (1) foot}$$
 - v. The percentage of the property with tree canopy coverage to be protected. The Town Manager may require that a Certified Arborist and/or a Licensed Landscape Architect confirm the accuracy of this information.
 - vi. The location of tree protection fencing along the limits of disturbance with a detail of the tree protection fence and a note indicating that a pre-construction meeting with the Town's Urban Forester will be scheduled prior to the start of work.

(c) *Implementation of Landscape Protection Plan*

- 1) **Protective fencing.** Fences, or other equally effective measures as determined by the Town Manager, shall be used to protect areas identified on an approved Landscape Protection Plan during demolition and construction activity. Protective fencing shall be installed according to Town Standards. Field adjustments may be allowed subject to prior approval by the Town Manager. All land disturbing activity, storage of equipment, building material, soil, and other debris shall be kept outside the protected areas.

- 2) Landscaping activities taking place after the removal of protective fencing shall be accomplished with light machinery or hand labor and in accordance with the Town's Landscaping Standards and Specifications. This requirement should be noted on the plans.
- 3) **Pre-Construction Conference.** Prior to the commencement of any activities requiring a Zoning Compliance Permit, a pre-construction conference with the Town's Urban Forester or Landscape Architect shall take place to review procedures for protection and management of all protected landscape elements identified on the Landscape Protection Plan.
- 4) **On-site Supervision.** For all development other than that related to single-family and two-family dwellings on individual zoning lots, the following on-site supervision is required:
 - i. The applicant shall designate as Landscape Protection Supervisors one or more persons who have completed instruction in landscape protection procedures with the Town.
 - ii. It shall be the duty of the Landscape Protection Supervisor to ensure the protection of new or existing landscape elements, as defined in the Landscape Protection Plan. The approved Landscape Protection Supervisor shall supervise all site work to assure that development activity conforms to provisions of the approved Landscape Protection Plan. At least one identified Landscape Protection Supervisor shall be present on the development site at all times when activity that could damage or disturb soil and adjacent landscape elements occurs such as:
 - clearing and grubbing;
 - any excavation, grading, trenching or moving of soil;
 - removal, installation, or maintenance of all landscape elements and landscape protection devices; or
 - delivery, transporting, and placement of construction materials and equipment on site.

(d) Public Hazard

- 1) A Certificate of Occupancy may be denied for any development if the Town Manager determines that a public hazard as defined in this Article exists on said lot, until that public hazard is abated.
- 2) A street dedicated to the Town may not be accepted for maintenance at the end of the warranty period until any public hazard related to a tree in the right-of-way is abated.

(e) Enforcement

- 1) The Town Manager shall have development sites inspected frequently to assure that work is conforming to the approved Landscape Protection Plan and the applicable sections of this Article.
- 2) Absence of a Landscape Protection Supervisor(s) from the site at times when development activity is taking place that has the potential to adversely affect trees to be preserved may result in the issuance of a Stop-Work Order until a Landscape Protection Supervisor is present.

5.7.4. Trees in Public Rights-of-Way

(a) Tree Planting

- 1) Trees may be planted on any public street right-of-way provided they are consistent with plans for public landscaping that have been approved by the State of North Carolina or the Town of Chapel Hill, they will not hinder the repair or construction of public utilities and a permit has been issued by the Town Manager when required.
- 2) Trees planted on any public street right-of-way may be of a species and in a location desired by the abutting property owner except that no trees or shrubs shall be planted close enough to any public street intersection to interfere with the sight distance at the intersection or with streets, sidewalks, signs, street lights, or above- and below-ground utility lines as specified in the Town's Landscaping Standards and Specifications.
- 3) All planting of trees and shrubs on public property shall be subject to general considerations of public health, safety and convenience, and the material and aesthetic value accruing to the whole community. Planting shall be restricted to the species known to be suited to the local climate and environment and shall be intended to preserve and enhance the beauty and variety of the public landscape as recommended in the Town's Landscaping Standards and Specifications.

(b) Prohibited Trees

Notwithstanding section 5.7.4.a, it shall be unlawful to plant in any public right-of-way any of the following:

- 1) any trees which by the nature of their fruit, root system, brittleness of wood, or susceptibility to disease are deemed undesirable as specified in the Town's Landscaping Standards and Specifications;
- 2) Any invasive exotic plant materials as identified in the Design Manual and in Section 5.7.6(d).

(c) Public Hazards

- 1) It shall be the duty of the owner of the property wherein or whereupon a public hazard exists, to abate the hazard by removing or trimming the growth.
- 2) Where the roots of a public tree constitute a hazard to private property, or where trees on private property may damage sidewalks, curbs, or public streets or whose roots may enter public sewers or water mains shall be considered a public hazard and shall be pruned or removed by the Town's Public Works Department, as deemed necessary by the Town Manager.
- 3) If the owner of property, after being notified of the existence of a public hazard on their property, fails to abate the hazard within thirty (30) days, the Town Manager shall have the hazard abated and assess the exact cost to the owner as provided by law in the case of special assessments or liens.
- 4) Where the growth and limbs of public trees constitute a hazard to private property, the Town, upon notice, shall correct the condition or permit affected property owners to correct the condition using established arboricultural standards.

- 5) Where the growth of trees interferes with public utilities, such conditions shall be corrected by proper pruning, removal, or replacement of the tree causing the interference. Corrective measures shall be carried out in accordance with the provisions of this Article and the Town's Landscaping Standards and Specifications.

(d) Removal of Trees

- 1) Private parties shall not remove trees from public property or public street rights-of-way without approval by the Town Manager.
- 2) The Town may remove dead or diseased trees or trees that interfere with the proper maintenance or improvement of a public street right-of-way, easement owned or maintained by the Town or any public street or highway. A tree on the right-of-way line that is half or more than halfway on the right-of-way at its base will be considered to be on the right-of-way and, therefore, a public tree.
- 3) The Town retains the right to remove any tree except that no rare tree shall be removed from land or easements owned by the Town unless the Town Manager determines there is no reasonable way the tree can be saved.

5.7.5 Significant Tree Stands

(a) Significant Tree Stand Defined

For purposes of this Section, a “Significant Tree Stand” means an area of contiguous mature woods greater than 5,000 square feet in size where over half of the canopy is provided by hardwoods with a diameter breast height (dbh) greater than twenty-four (24) inches.

(b) Applicability

The provisions of this Section apply to any application requiring a Landscape Protection Plan.

(c) Submittal Requirements

A Landscape Protection Plan shall delineate the boundaries of all significant tree stands and describe their dominant plant species. All plans shall also show the proposed clearing limit lines and calculate the percentage of significant tree stand areas that are proposed to be cleared.

(d) Preservation of Significant Tree Stands

The Significant Tree Stand delineation shall be used during the design review process to determine the most suitable and practical areas for woodland conservation. To the extent practicable, Significant Tree Stands shall be preserved and incorporated into site design. Areas designated for preservation on approved plans shall be protected during construction.

5.7.6 Rare and Specimen Trees

(a) Rare and Specimen Tree Defined

With the exception of invasive exotic species listed in 5.7.6.d,

- 1) A Rare Tree is
 - i. any healthy living pine tree that has a trunk diameter of thirty-six (36) inches or more, or any other species that:
 - ii. has a trunk diameter at breast height (dbh) of twenty-four (24) inches or more; or
 - iii. has a trunk dbh of twelve (12) inches or more in the case of North Carolina native species from the list of genera in this section; or
 - iv. is listed as a State or National Champion by the North Carolina Forest Service or the American Forestry Association; or
 - v. provides unique habitat for any endangered or threatened wildlife species protected by Federal law; or
 - vi. has been cited by the Town Council as being historically significant; or
 - vii. Represents an uncommon species, such as Long Leaf Pine, Live Oak, or Sequoia Redwood, that the Town Manager considers to be desirable and not to pose a threat to the local ecological balance.
- 2) A Specimen Tree is
 - i. any healthy living pine tree that has a trunk diameter of eighteen (18) inches or more, or any other species that:
 - ii. has a trunk diameter at breast height (dbh) of twelve (12) inches or more; or
 - iii. a trunk dbh of six (6) inches or more in the case of the North Carolina native species from a following list of genera:
- 3) North Carolina Native Genera:

<i>Aesculus</i> (Buckeye)	<i>Fagus</i> (Beech)
<i>Amelanchier</i> (Serviceberry)	<i>Halesia</i> (Silverbell)
<i>Asimina</i> (Pawpaw)	<i>Hamamelis</i> (Witch-hazel)
<i>Carpinus</i> (Hornbeam)	<i>Ilex</i> (Holly)
<i>Cercis</i> (Redbud)	<i>Juniperus</i> (Cedar)
<i>Chionanthus</i> (Fringetree)	<i>Ostrya</i> (Hophornbeam)
<i>Cornus</i> (Dogwood)	<i>Oxydendrum</i> (Sourwood)
<i>Crataegus</i> (Hawthorn)	<i>Sassafras</i> (Sassafras)
<i>Diospyros</i> (Persimmon)	<i>Tsuga</i> (Hemlock)

(b) Rare and Specimen Trees on Developing Land

- 1) Rare and specimen trees shall be shown on all Landscape Protection Plans if such trees are within fifty (50) feet of areas of proposed soil disturbance or construction activity. These trees shall be identified and located by survey on the approved Landscape Protection Plan if such trees are located on the development site or adjacent public property. The Town Manager may visit the site to determine the accuracy of identification.
- 2) Proposed development should maximize the preservation of rare and specimen trees. Flexible approaches such as adjustments to lot layout, placement of buildings and paved surfaces and location of utilities should be pursued in order to save rare and specimen trees.
- 3) Notwithstanding any provision of the Land Use Management Ordinance to the contrary, saving of a rare or specimen tree shall constitute sufficient evidence that Sections 4.12.2(a)–(e) have been met in any variance application.
- 4) No rare tree shall be removed unless the Town Manager determines there is no reasonable way the property can be otherwise developed, improved or properly maintained, and the tree saved.

(c) Voluntary Protection of Rare Trees on Private Land

- 1) Rare trees shall be protected if voluntarily registered by the property owner.
- 2) Registration of such trees shall survive transfer of ownership if language is contained in the document transferring ownership and shall extend the coverage hereof and render the owner of the lot subject to the following privileges:
 - i. The owner shall be entitled to consultation with the Town Forester concerning proper care of the tree at no charge.
 - ii. If a permitted auxiliary structure or addition to a house is being planned, notwithstanding any provision of the Land Use Management Ordinance to the contrary, saving of a rare or specimen tree shall constitute sufficient evidence that Section 4.12.2 of the Land Use Management Ordinance has been met in any variance application.
 - iii. Subject to approval by the Town Manager, the voluntary listing and protection of rare trees on a site may be considered in lieu of all or a portion of the tree canopy mitigation requirements included in this section of the Ordinance that may otherwise be required on that site.
- 3) Once so registered, trees may be removed from the register at a later date at the request of the property owner.

(d) Invasive Exotic Species

The following invasive exotic species are not required to be shown on proposed landscape protection plans, regardless of size. These species cannot be planted in a public right-of-way or to satisfy any Town landscaping requirements and are recommended for removal and replacement, should they be identified on developing property:

Acer platanoides (Norway Maple)
Alianthus altissima (Tree of Heaven)
Albizia julibrissin (Mimosa)
Broussonetia papyrifera (Paper Mulberry)
Melia azadarach (Chinaberry)
Morus alba (White Mulberry)
Paulownia tomentosa (Princess Tree)
Populus alba (White Poplar)
Pyrus calleryana (Callery/Bradford Pear)
Quercus accutissima (Sawtooth Oak)
Ulmus pumilia (Siberian Elm)

5.7.7 Administrative Mechanisms

(a) Fees

Reasonable fees sufficient to cover the costs of administration, inspection, appraisal, and publication of notice shall be charged to applicants for Zoning Compliance Permits established by this Article. The amount of such fees shall be fixed by the Town Council.

(b) Penalties

- 1) In the event that other mitigation measures contained herein are determined by the Town Manager to be insufficient, any act constituting a violation of this Article resulting in the loss or destruction of trees may subject the landowner to a civil penalty up to 1.5 times the monetary value of the trees removed or destroyed up to a maximum of \$20,000. For purposes of such determination, the Town Manager shall apply the most current formula of the Council of Tree and Landscape Appraisers, or a similar method in common use and accepted by courts of law.
- 2) Development activity which has taken place in compliance with conditions of the Zoning Compliance Permit issued for that activity shall establish a presumption that the property owner has met the requirements of this Section. It shall be the duty of the permit holder to demonstrate that the activity was in compliance with the issued permit.
- 3) Unless otherwise specified in this Article, the Town of Chapel Hill shall enforce the provisions of this Article in accordance with procedures, penalties, and remedies described in Article 4 of the Land Use Management Ordinance.

(c) Appeals

Unless otherwise specified in this Article, interpretations, appeals, and variances of or from provisions of this Article shall be pursuant to the provisions of Article 4 of this Chapter.

Section 2.

Appendix A. Definitions of the Chapel Hill Land Use Management Ordinance is hereby revised to add or modify the definitions as follows:

Arboricultural Standards: Accepted professional practices and techniques for tree installation and maintenance established to keep trees in a safe and healthy condition.

Caliper: The term "caliper" shall mean the measurement of a tree trunk's diameter in inches at a height six inches above the ground for trees up to and including four inches in caliper, and at a height 12 inches above the ground for trees exceeding four inches in caliper, but no greater than 8 inches in caliper. This measurement is used for new tree planting and young, recently established trees.

Certified Arborist: A professional tree care specialist that currently retains the designation of Certified Arborist as defined and governed by the International Society of Arboriculture (ISA). All levels of ISA certification, except Certified Tree Worker, shall be acceptable to the Town.

Critical root zone: A circular area surrounding a tree, of which the center is the center of the tree trunk and the radius is the distance from the outside of the trunk to any point twelve (12) times the diameter at breast height (DBH), which points constitute the circumference of the critical root zone. The critical root zone shall extend to a depth of two (2) feet below surface ground level. The Town Manager, or his/her designee, may expand or partially retract the critical root zone depending on the tree species and site specific situations so as to improve the chances that trees will not be damaged during construction and to permit construction to take place.

DBH--Diameter at breast height: The total cross-sectional diameter of the trunk(s) of a tree measured four and one-half (4.5) feet from the ground at the center of the tree. For trees with less than four and one-half feet of clear trunk, diameter shall be of the largest leader measured four and one-half feet above ground level. For multi-trunk trees it shall be the sum of the individual trunks measured four and one-half feet above ground level. This point of measurement is used for established and mature trees.

Landscape protection supervisor: A person who has attended the Town training on requirements for landscape protection.

Public hazard:

- Any tree, plant, shrub or vegetation which so overhangs any sidewalk or public street either dedicated or proposed to be dedicated, or which is growing thereon (or adjacent thereto), in such a manner as to obstruct or impair the free and full use of the sidewalk or public street by the public as determined by the Town Manager; or
- Any tree, plant, shrub, or vegetation which obstructs clear and reasonable view of traffic safety or other public safety lights, signals, and signs; or
- Any tree, plant, shrub, or vegetation in the vicinity of utility lines which has the potential to interfere with the provisions of reliable utility service as determined by the Town Manager.

Tree: A perennial woody plant, single or multiple trunks, with few if any branches on its lower part, which at maturity will obtain a minimum six (6) inch caliper and generally be over eight (8) feet in height.

Tree canopy: the topmost layer of leaves, branches, and stems comprising the crowns of trees growing least 20 feet above the ground.

Tree--rare or specimen: A tree that meets those qualifications as outlined in subsection 5.7.6.

Undeveloped land: A zoning lot or a tract on which no residential, commercial, office, or industrial activity is taking place.

Section 3. If any one or more Sections or portions thereof of this Section are held to be invalid or unenforceable, all other Sections and portions thereof shall nevertheless continue in full force and effect.

Section 4. That this Ordinance shall become on the. _____ day of _____, 20__.

This the _____ day of _____, 20

Appendix G

Recommended Tree Protection Plan Components and Practices

Tree Protection Plan Components

1. Comprehensive site development plan (to scale) depicting the following:
 - a. Existing and proposed property limits
 - b. Proposed limits of construction
 - c. Existing and proposed site grading
 - d. Existing and proposed underground utilities
 - e. Delineation of all contiguous forested areas depicting the limits of the edge of tree canopy and square foot or acreage
 - f. Delineation of all isolated trees or smaller groupings of trees depicting the limits of the tree canopy and tree inventory reference number
 - g. To scale graphical depiction of the critical root zone (CRZ) dimensions
 - h. Construction details (drawings) showing excavation dimensions (depth, width, length) of any proposed disturbance within the critical root zone (CRZ)
 - i. An inventory of all individual trees and trees at the edge of forested areas or groupings of trees
 - j. Ingress and egress access to the construction zone
 - k. Tree protection fencing delineation placed at the limits of the critical root zone
 - l. Tree Protection Zone placard for placement on fencing (e.g., “Tree Protection Area – No equipment or vehicles permitted”)
 - m. Soil and materials stockpiling locations outside of tree protection zones
 - n. Equipment storage areas
 - o. Project trailer (s) location
 - p. Tree protection signage
 - i. Entrance sign
 - ii. Fence placards
 - q. Trees to be removed
 - r. Tree protection details
 - i. Tree protection fencing
 - ii. Tree protection zone placard (see Norfolk, Virginia, example)
 - iii. CRZ delineation
 - iv. Equipment excavation within the CRZ (see Norfolk, Virginia, example)
 - v. Hand excavation within the CRZ (see Norfolk, Virginia, example)
 - vi. Directional boring (See Norfolk, Virginia, example)
 - vii. Root pruning (See Norfolk, Virginia, example hand and mechanical)
 - viii. Root mat protection (see Norfolk, Virginia, example)

- ix. Root aeration
- x. Erosion control installation
- s. Tree Protection Action Plan, spreadsheet listing by tree inventory number citing
 - i. Tree Inventory reference number,
 - ii. Tree species
 - iii. Tree diameter
 - iv. Tree condition rating
 - v. Special protection provisions such as preconstruction pruning, root pruning, vertical mulching,
- t. Post Construction Tree Maintenance
 - i. Mulching
 - ii. Irrigation
 - iii. Condition assessment and monitoring
 - iv. Fertilization
 - v. Deadwood/damage mitigation pruning, bark tracing, or other arboricultural treatment
 - vi. Soil remediation
 - 1. Compaction mitigation
 - 2. Organic soil amendment (compost top dress, compost tea, humic acids, etc).

Tree Protection Practices

Tree protection provisions required to complete site improvements in an environmentally sensitive manner vary widely depending on nature and scope construction activity and techniques proposed, and forest resource at risk. Young and immature trees in good health are more tolerant of site disturbance than are larger mature or overmature trees, or trees displaying stress symptoms. And construction activities that degrade soil environments or root systems more severely impact tree survivability during construction than trunk wounds or tree crown damage. Accordingly, tree protection requirements should be project specific to provide necessary protection that balances impact potential and cost.

The following resources are recommended by Davey Resource Group for Easton's consideration in establishing tree protection practices in private and public construction projects:

- Fairfax County Public Facilities Manual, Chapter 12 (Tree Conservation and Plates)
- <http://www.fairfaxcounty.gov/dpwes/publications/pfm/chapter12.pdf>
- Fulton County Tree Preservation Ordinance and Administrative Guidelines
- <http://www.fultoncountyga.gov/images/stories/ECD/tree-04.pdf>
- ANSI A300 - Best Management Practices Construction Management Combo
- <http://www.isa-arbor.com/store/product.aspx?ProductID=154>
- Trees and Development: A Technical Guide to Preservation of Trees During Land Development
- *By Nelda Matheny and James R. Clark*
- <http://www.isa-arbor.com/store/product.aspx?ProductID=108&CID=43>

Norfolk, Virginia, Tree Protection Examples

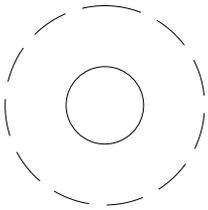
SYMBOLS



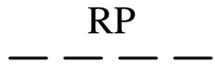
TREE TO BE REMOVED



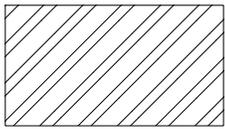
TREE TO BE PRESERVED



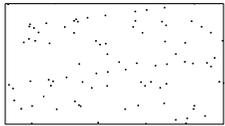
CRITICAL ROOT ZONE



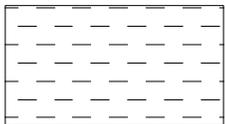
ROOT PRUNE



HAND DIG



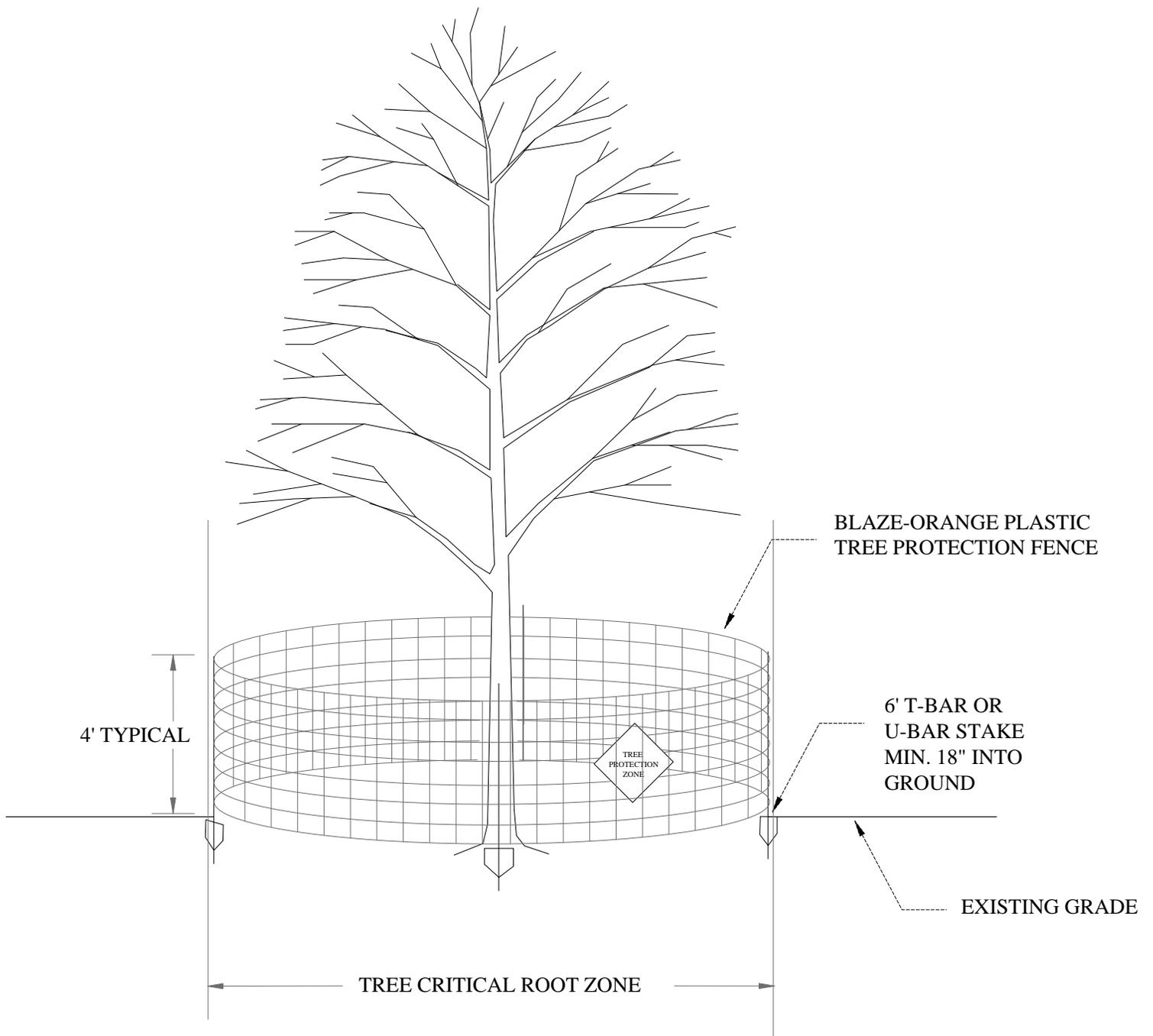
FILL WITHIN CRZ (RAISE GRADE WITHIN CRZ)



CUT WITHIN CRZ (LOWER GRADE WITHIN CRZ)



City of
Norfolk



TREE PROTECTION FENCE

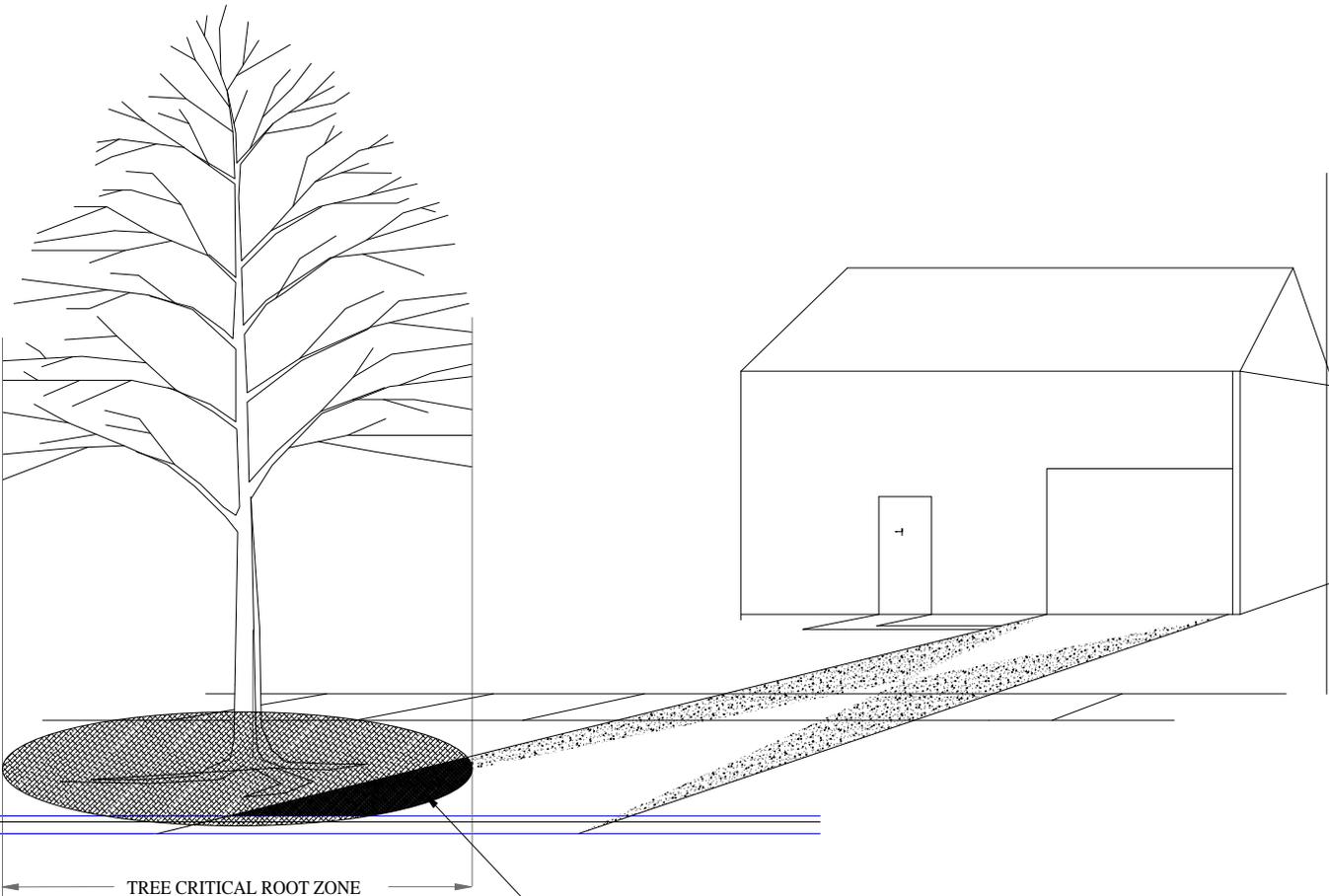


City of
Norfolk

NO SCALE

NO ACTIVITY ALLOWED
TREE
PROTECTION AREA



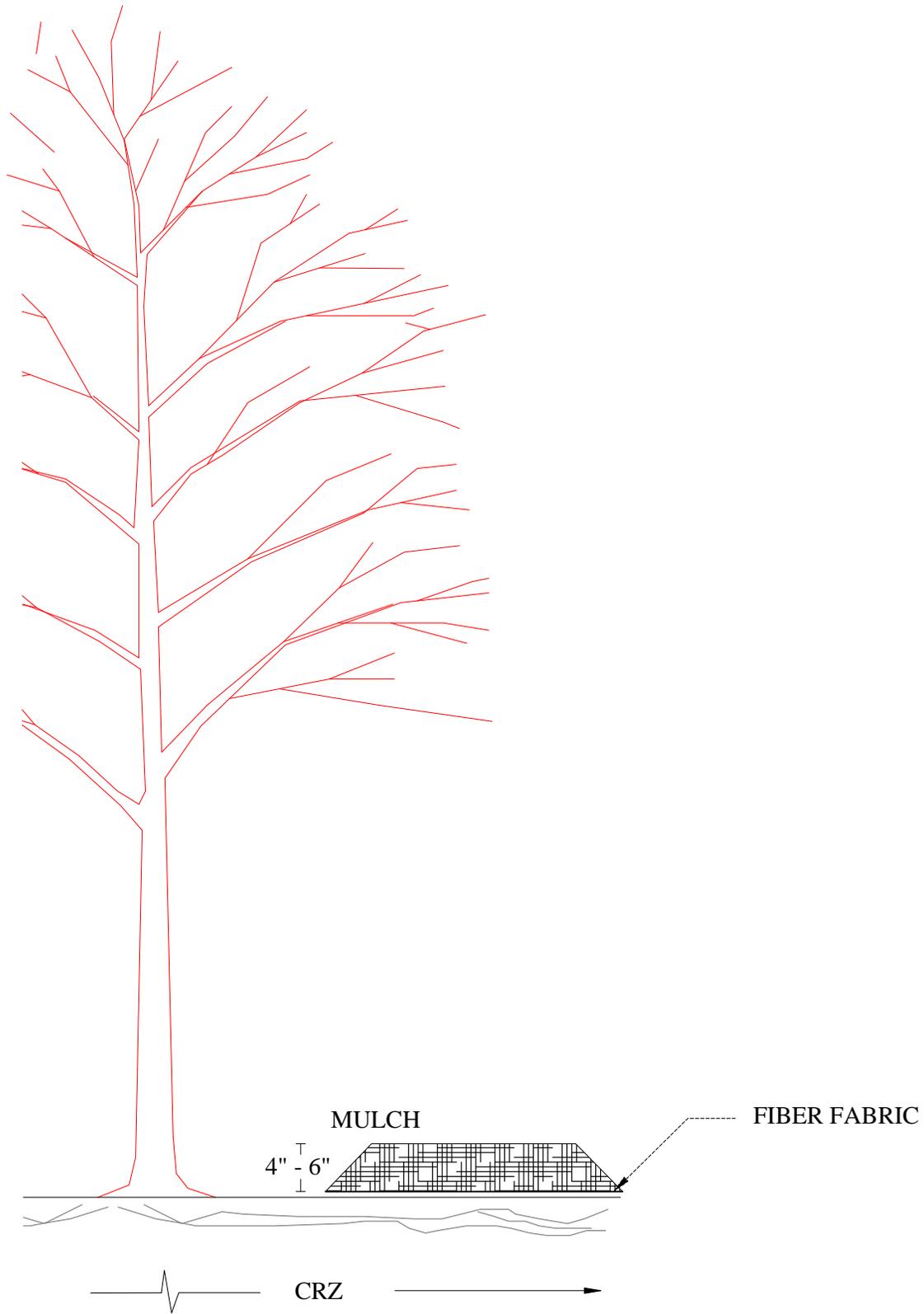


**Driveway within Critical Root Zone
TREE PERMIT REQUIRED
Contact Parks and Urban Forestry
Phone 757.823.4023**

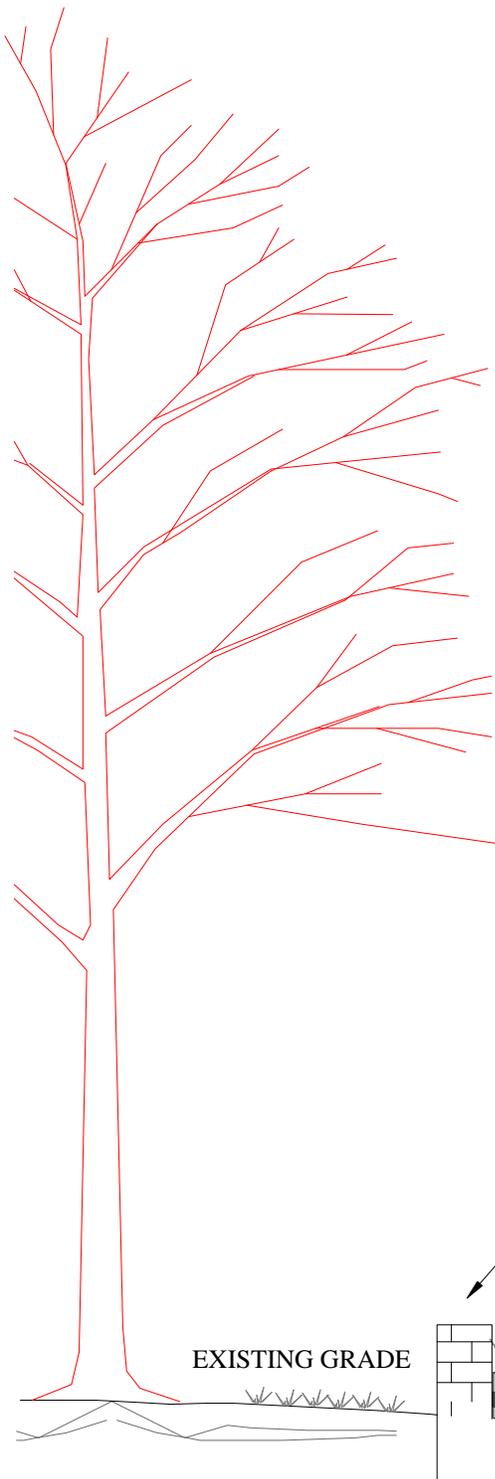
DRIVEWAY INSTALLATIONS REQUIRING TREE PERMITS



NO SCALE



MULCH CONSTRUCTION MAT

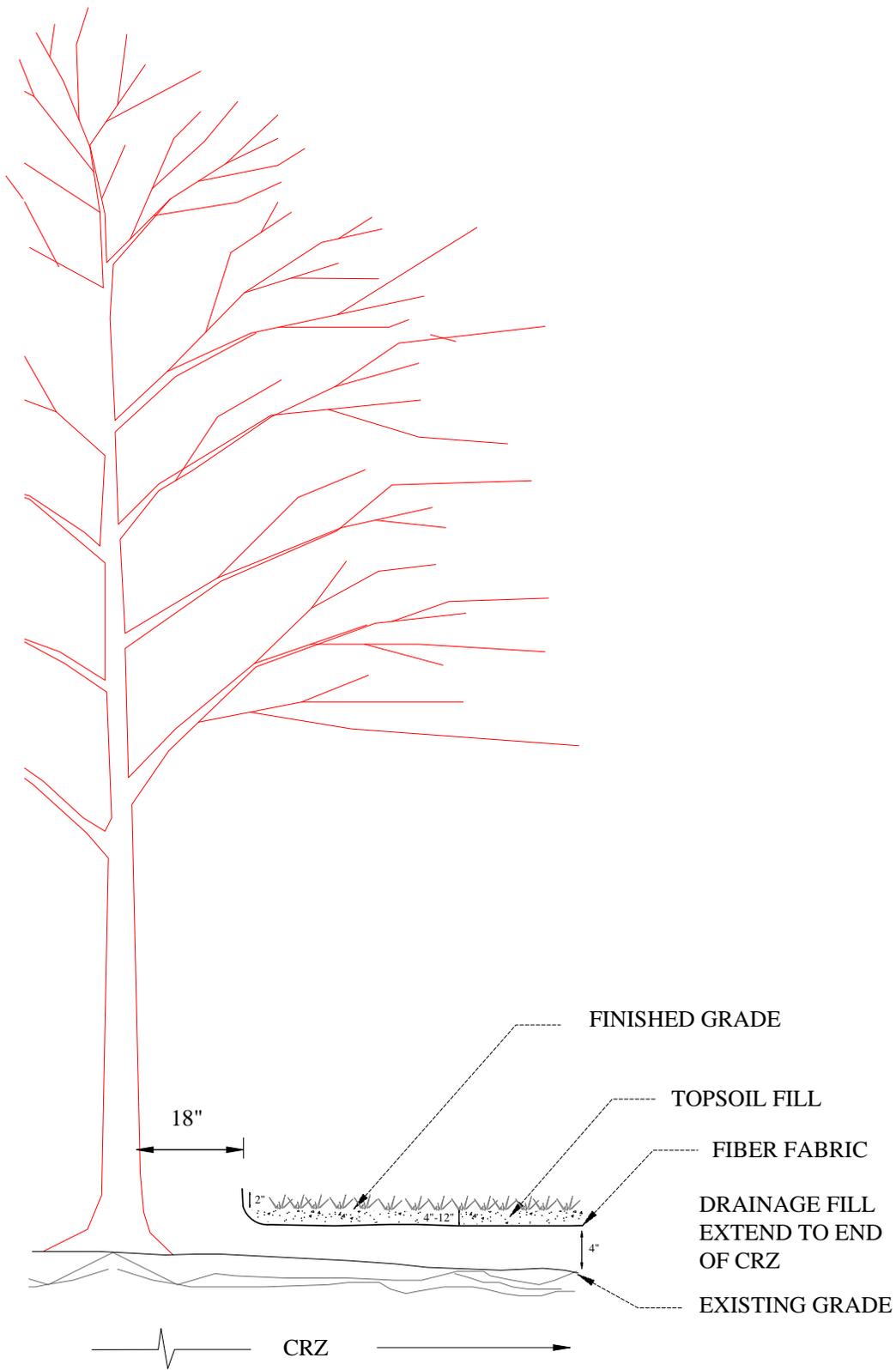


MAJOR FILL IN
CRITICAL ROOT ZONE
GREATER THAN 12" FILL



City of
Norfolk

NO SCALE

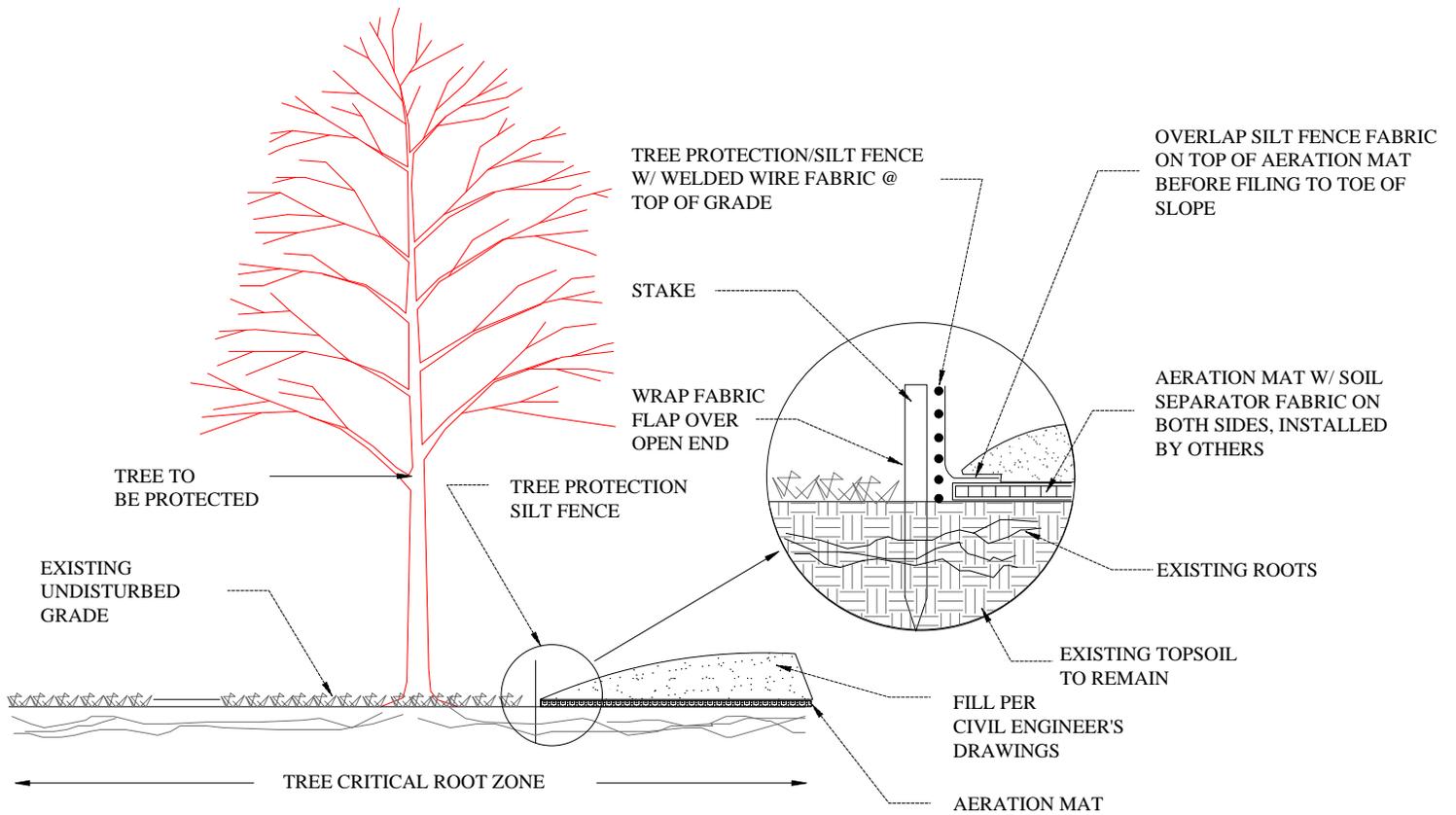


**MODERATE FILL IN
CRITICAL ROOT ZONE
4" - 12" FILL**



**City of
Norfolk**

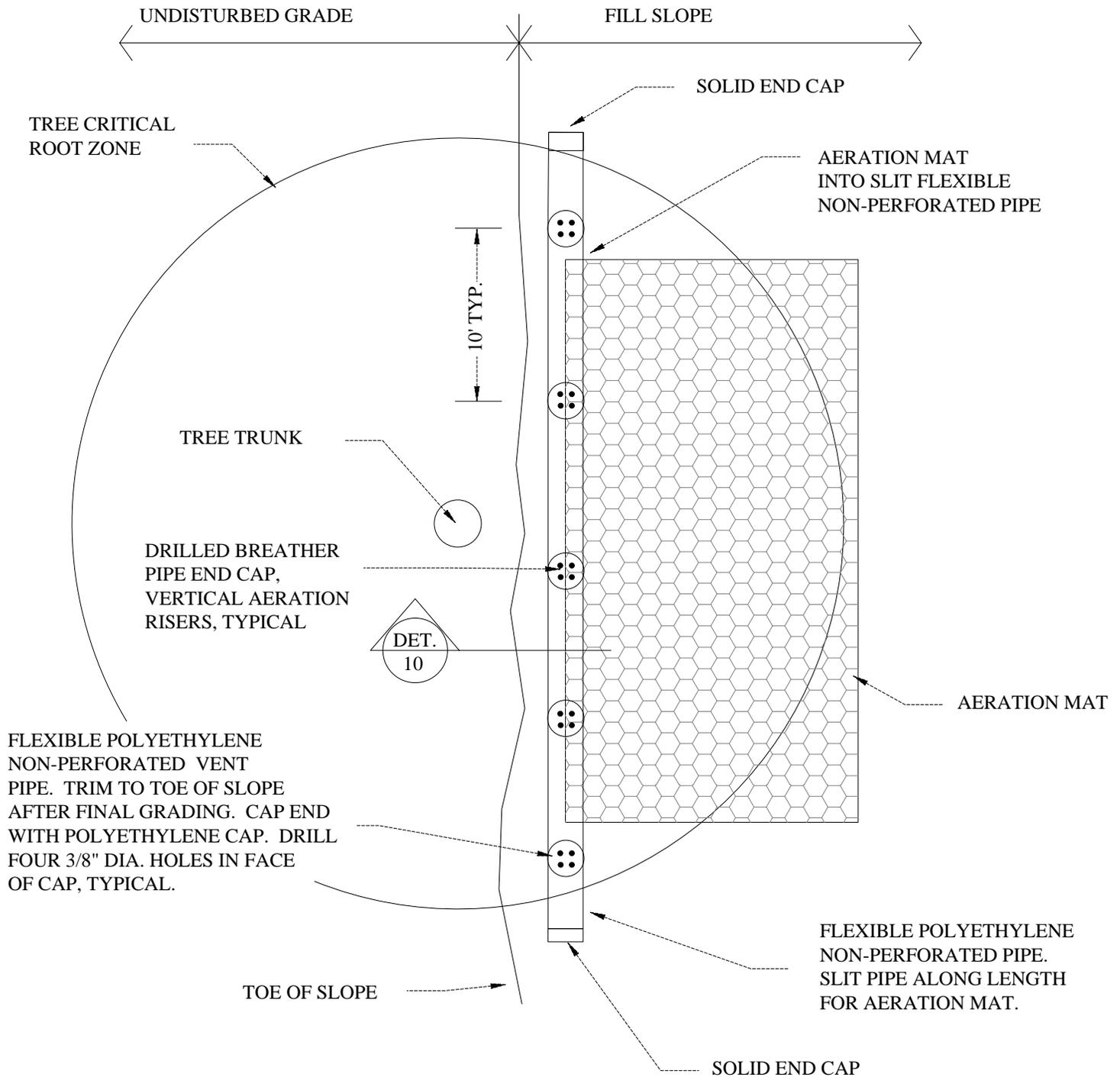
NO SCALE



ROOT AERATION MAT



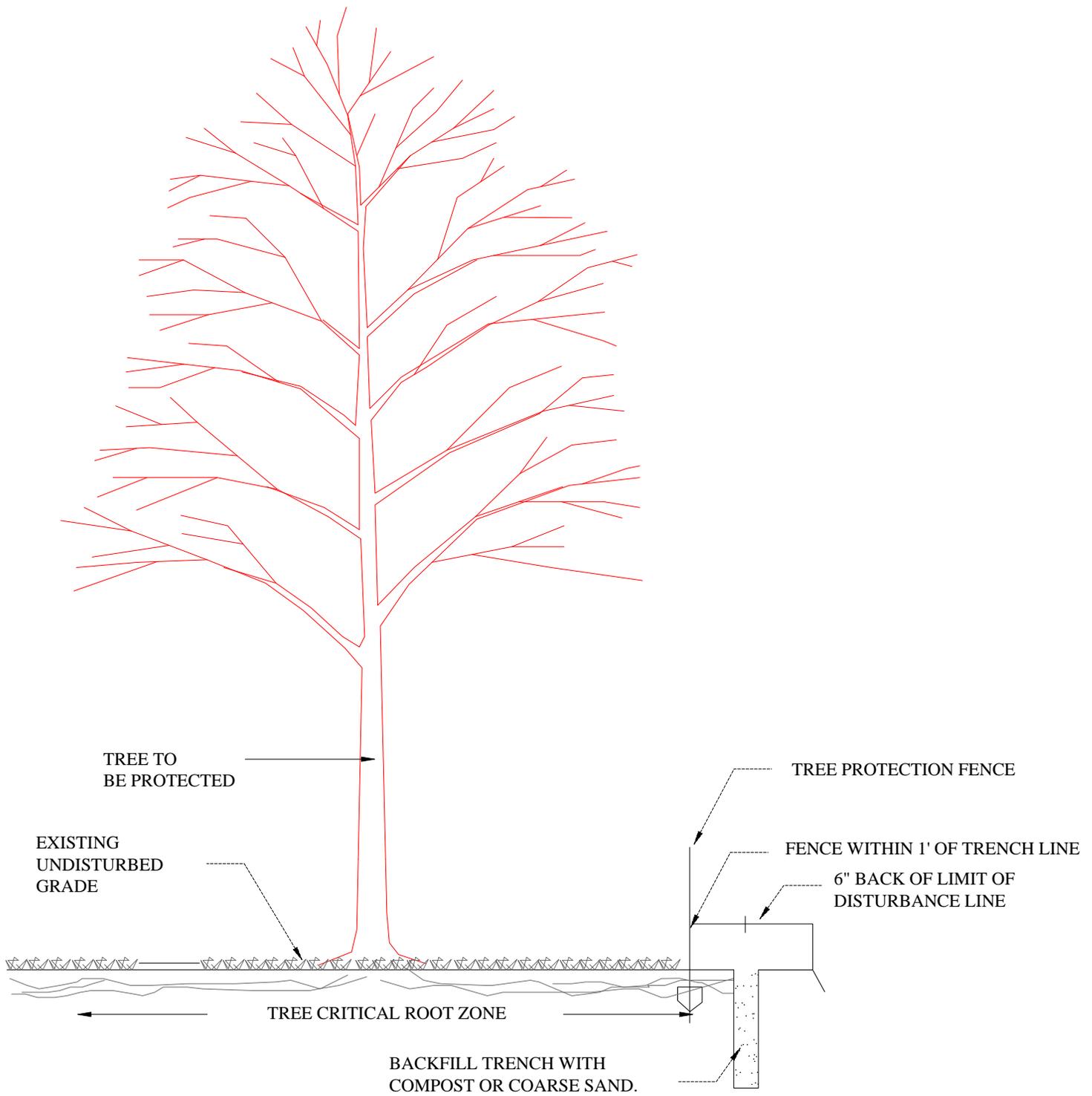
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AERATION MAT & VENT PIPE DETAIL FILL PLAN OVER CRITICAL ROOT ZONE



NO SCALE

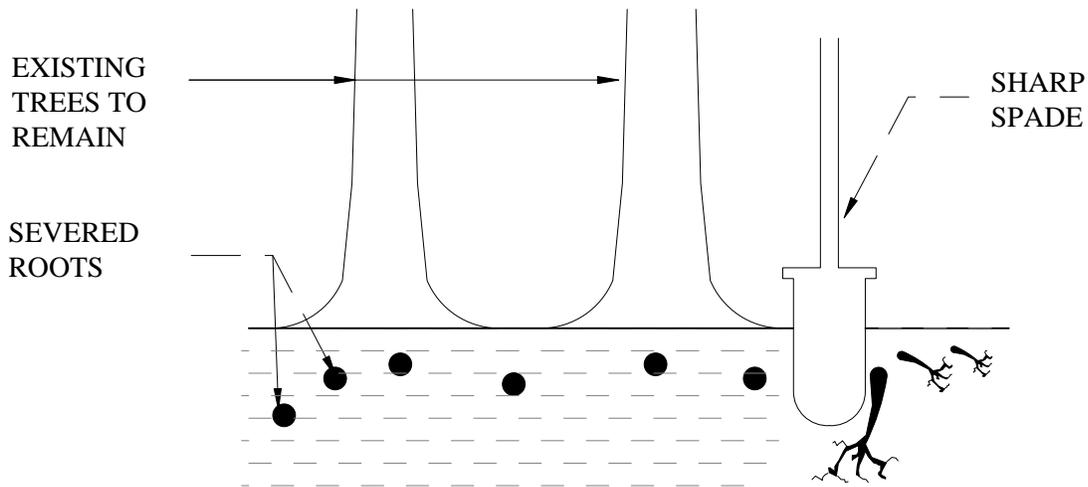


ROOT PRUNING

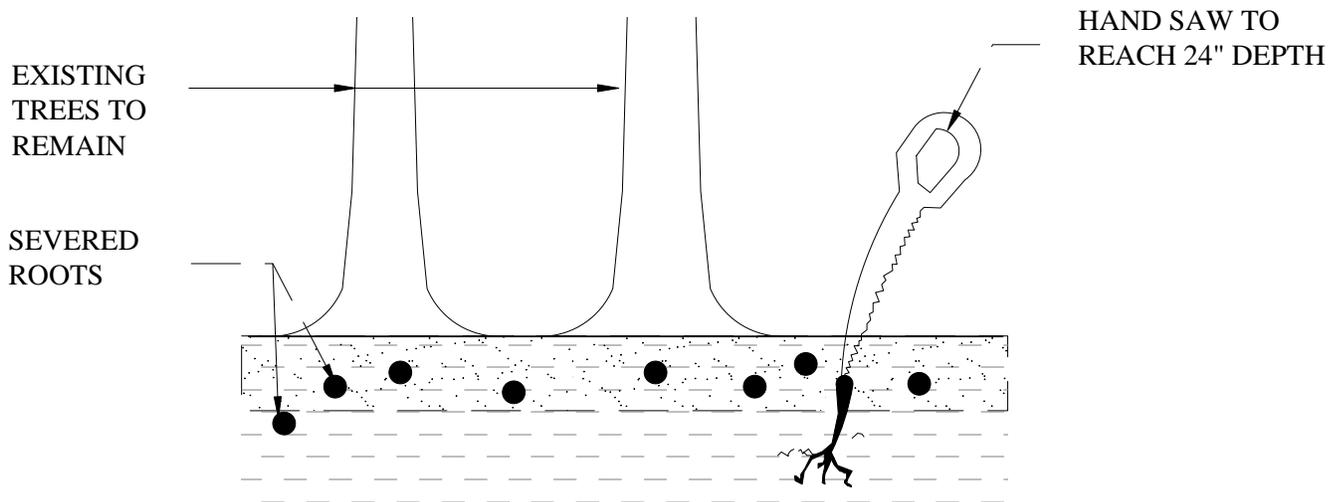


City of
Norfolk

NO SCALE



STEP #1
 PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW.
 ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.



STEP #1
 PRUNE ROOTS LESS THAN 2" WITH SHARP SPADE OR PRUNING SAW.
 ROOTS 2" OR LARGER TO BE PROTECTED AND LEFT UNDISTURBED.

STEP #2
 PRIOR TO BACKFILLING TRENCH, CUT ALL ROOT STUBS WITH SHARP
 HAND SAW TO EDGE OF TRENCH.

ROOT PRUNE HAND

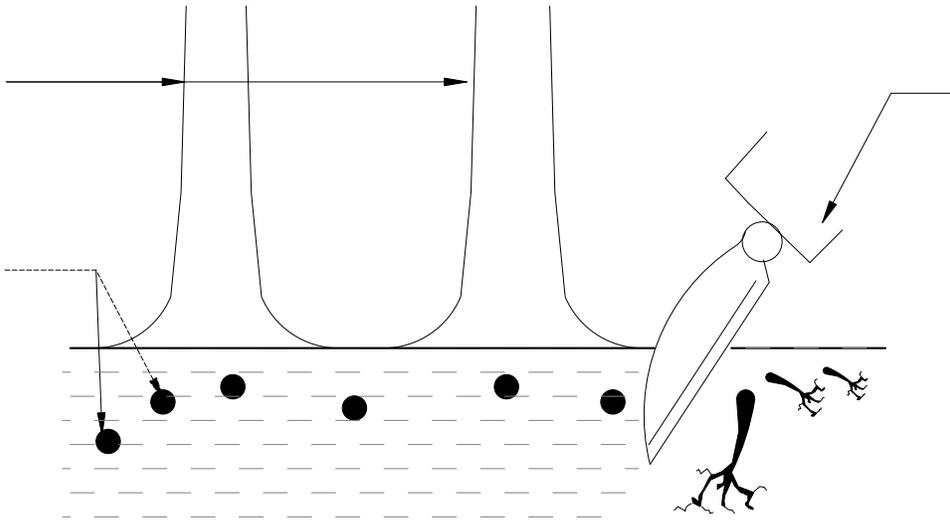


City of
Norfolk

NO SCALE

EXISTING
TREES TO
REMAIN

SEVERED
ROOTS

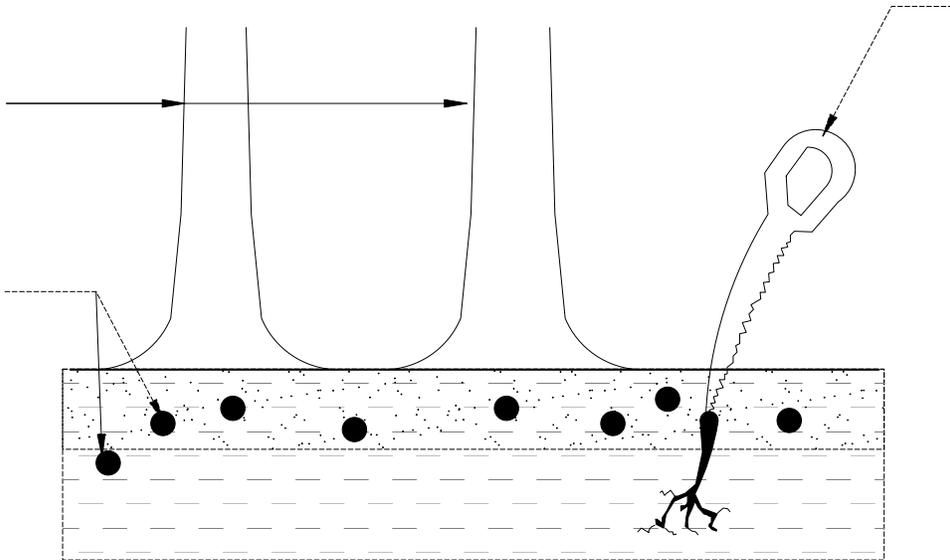


VIBRATORY
PLOW, ROOT
PRUNING MACHINE,
ROCK SAW, OR
SHARPENED
TRENCHER

STEP #1
ROOT PRUNE WITH VIBRATORY PLOW,
ROOT PRUNING MACHINE, ROCK SAW, OR
SHARPENED TRENCHER.

EXISTING
TREES TO
REMAIN

SEVERED
ROOTS



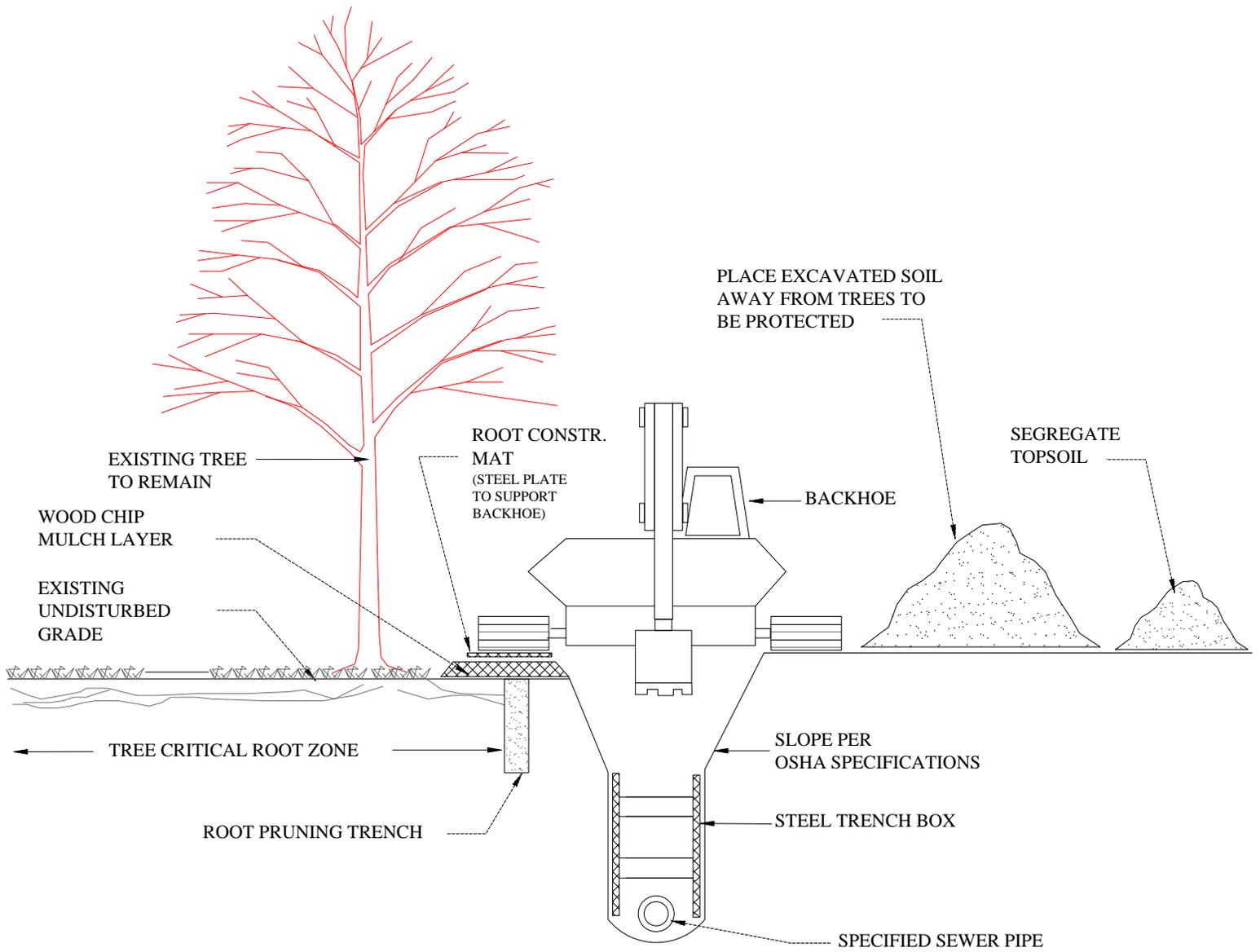
HAND SAW FOR
CONTROLLED
PRUNING OF LARGE
DIAMETER ROOTS

STEP #2
HAND PRUNE ROOTS THAT REMAIN
FOLLOWING MECHANICAL PRUNING

ROOT PRUNE MECHANICAL



NO SCALE

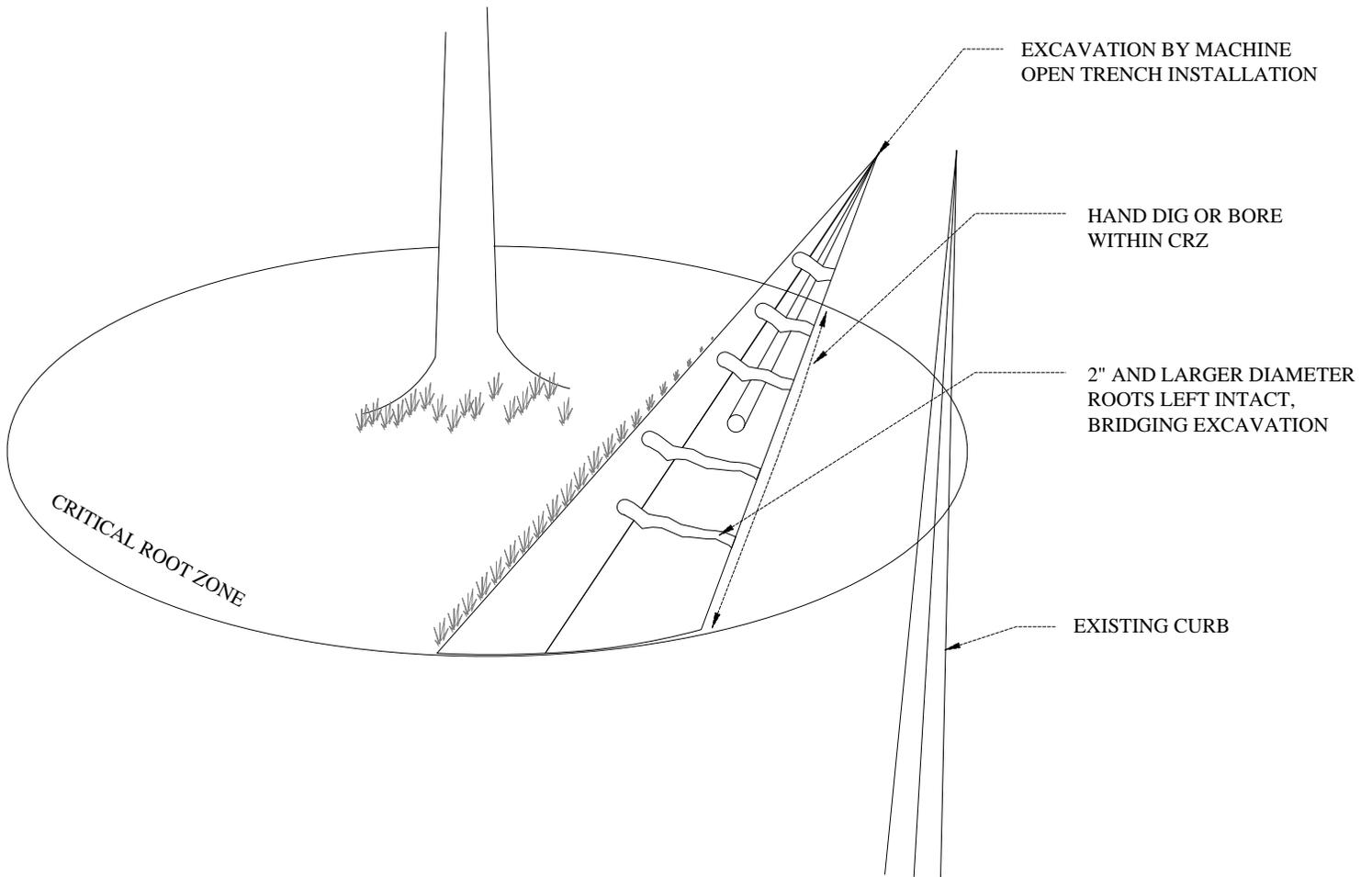


NOTE: EXACT DIMENSIONS TO BE DETERMINED BY PROJECT FORESTER

UTILITIES EXCAVATION WITH ROOT CONSTRUCTION MAT



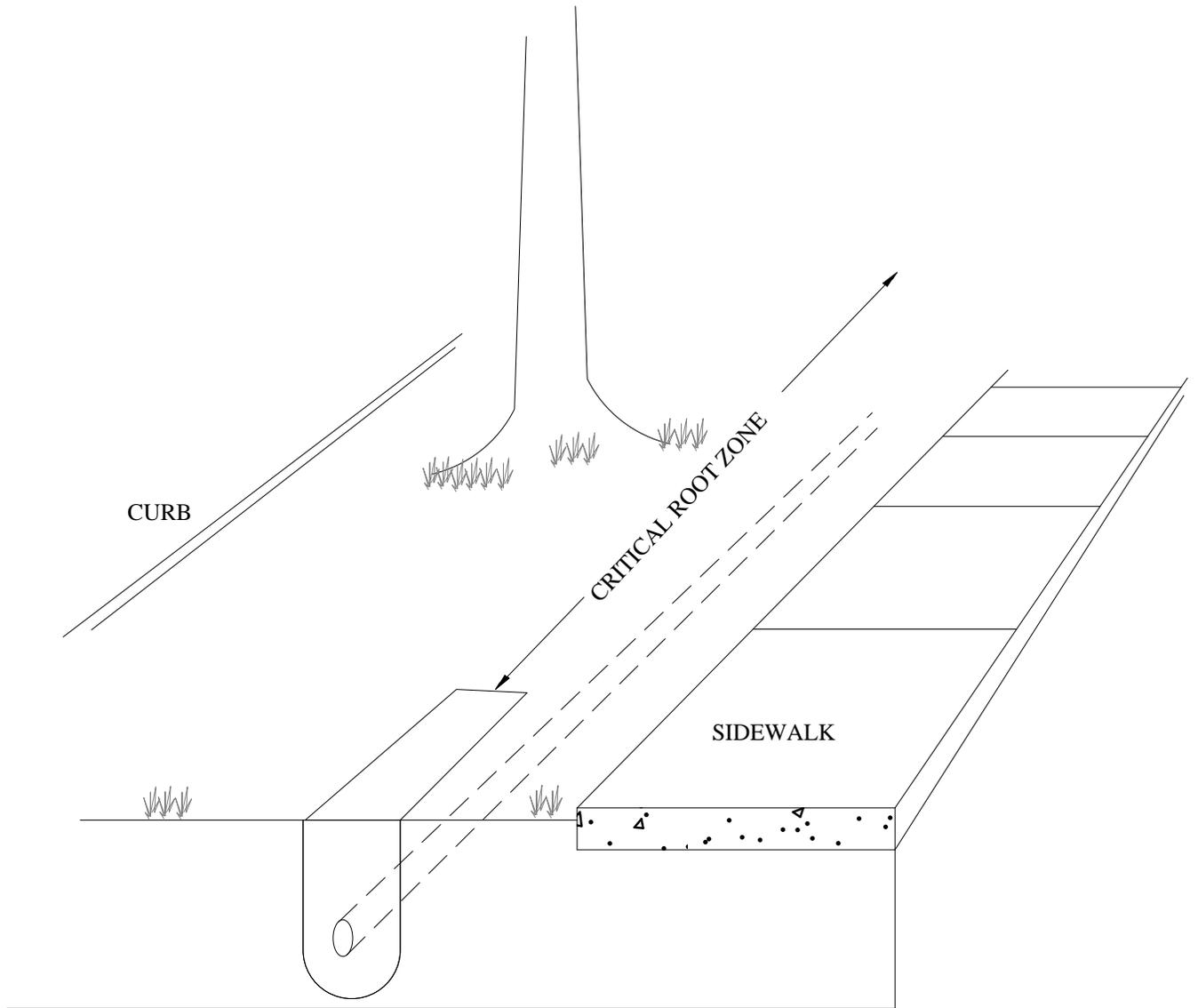
NO SCALE



UTILITY INSTALLATION IN CRITICAL ROOT ZONE



NO SCALE



TRENCHLESS UTILITY INSTALLATION IN CRITICAL ROOT ZONE



NO SCALE