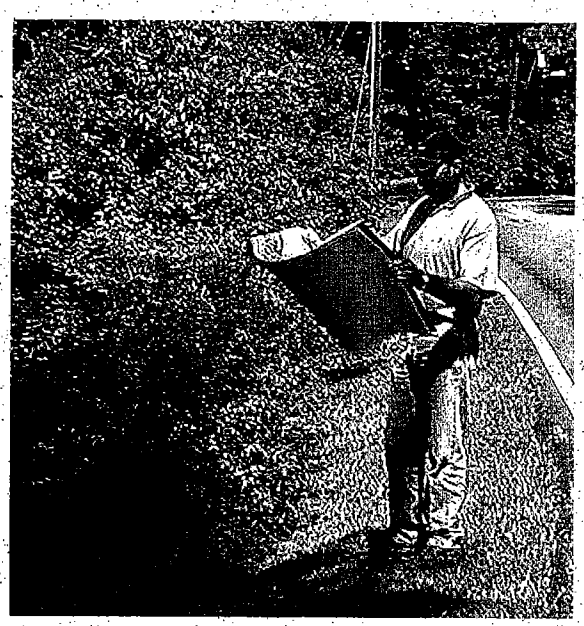
Trees add beauty, shade, privacy and value to homes. Unfortunately, many valuable trees are needlessly damaged during construction of new homes. Once damaged, a tree is usually impossible to repair and costly to remove.



This brochure is for land owners, builders, and anyone who wants to enhance the value and comfort of a home site by saving existing trees during the construction process. The following five-step process describes how to develop and carry out a **tree protection plan**. This plan documents tree protection measures and can be made a part of a house construction contract.

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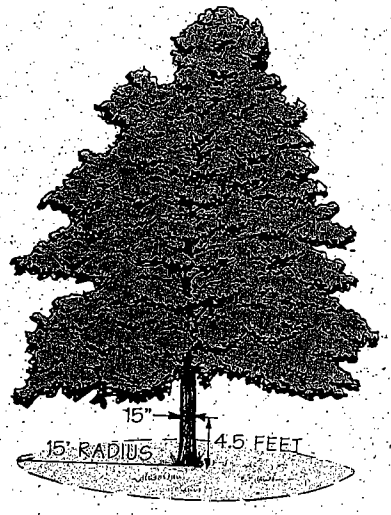
HOW TO PROTECT EXISTING TREES

WHEN BUILDING A NEW HOME

Prepared by the
Department of Public Works
Town of Chapel Hill, North Carolina

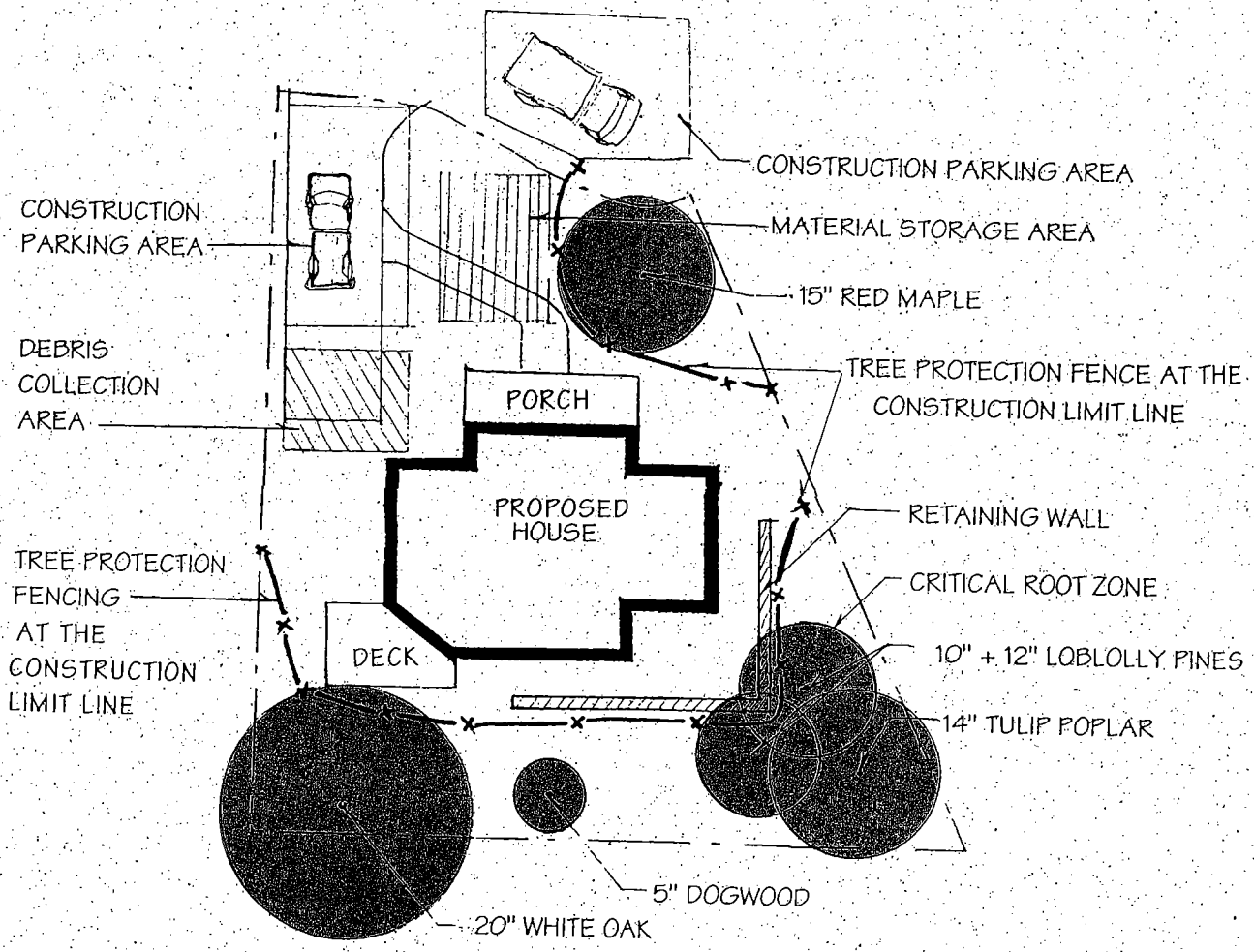
To minimize damage to a tree during construction, it is essential to preserve the roots in the tree's **critical root zone**. The **critical root zone** is defined as a circular area around the trunk of a tree which contains most of the roots necessary to sustain the tree. As a general rule, *if more than one fourth of the critical root zone is disturbed, the tree likely will suffer significant damage and may not survive.*



critical root zone = protected area

The size of the critical root zone is a function of the size of the tree. The **radius** of this circular area is equal to one foot for every inch of **diameter** of the tree trunk measured 4.5 feet above the ground. For example, if the **diameter** of a tree is 15 inches, the **radius** of the critical root zone is 15 feet measured from the trunk, as illustrated above.

A **tree protection plan**, like the sample shown below, can direct construction in a way that preserves desired trees by providing protection methods for most of their critical root zones. For success with your tree protection plan, be sure to consult with your construction contractors and utility providers. You also may want to seek the advice of a professional arborist, who can evaluate the health and value of your existing trees, and/or a landscape architect, who can help you find design solutions to retain selected trees.

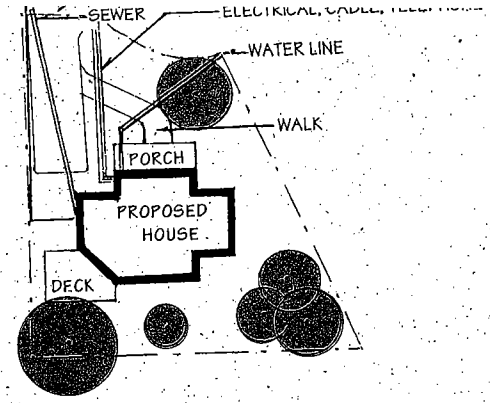


Sample Tree Protection Plan

SCALE: 1" = 30'

Step 3 - Locate Proposed Construction

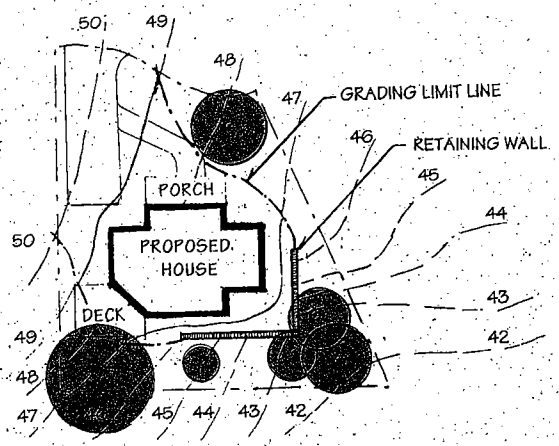
- ☑ Working with your building contractor, add to the composite plan:
  - The house footprint using the exact dimensions of the foundation;
  - Other proposed site improvements such as driveways, sidewalks, patios, and decks; and
  - Construction access, parking, storage of materials/debris, and a staging area around the foundation (usually at least 10 feet wide).
- ☑ With utility providers input, determine where proposed service lines (water, sewer, gas, electric, telephone, cable TV) to the house will be installed.



Step 3 - Proposed Construction

Step 4 - Consider Site Grading and Drainage

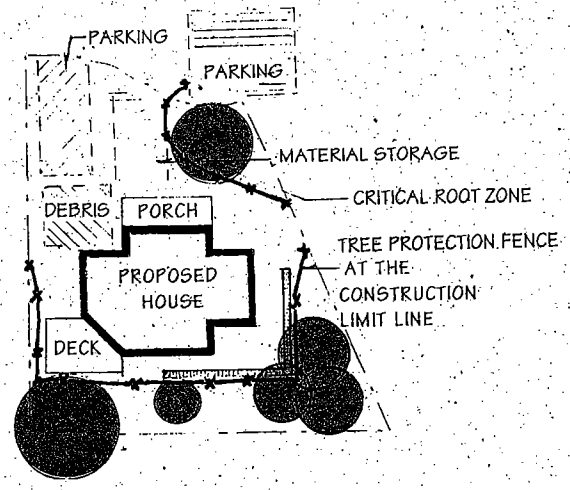
- ☑ Building sites are typically graded so that stormwater will drain away from the house. Different techniques such as retaining walls may be used to minimize the extent of grading and reduce the impact of construction on the roots of remaining trees. Consider getting advice from a landscape architect about grading and drainage alternatives.
- ☑ On the composite plan, show:
  - retaining walls, berms, and areas of significant cut and fill;
  - ditches or underground pipes proposed for stormwater runoff; and
  - a line representing the limits of grading.



Step 4 - Grading and Drainage

Step 5 - Plan Tree Protection Measures

- ☑ Draw a line around the area needed for construction as determined in Steps 3 and 4. This is the **construction limit line**. If the composite plan has become too cluttered, for clarity you may want to transfer this line to a **final tree protection plan** along with the other information shown on the sample plan. If more than ¼ of a tree's critical root zone is within the area of the lot designated for construction, damage to the tree probably will be significant. In this case, the tree should be removed prior to construction or the site plan revised to protect more of the tree's critical root zone.
- ☑ *Prior to any disturbance of the site*, install **tree protection fencing** at the construction limit line. A high visibility woven plastic fabric attached to wooden or metal fence posts is recommended and should remain in place until all construction activities are completed.



Step 5 - Tree Protection Measures

How to Create a Tree Protection Plan

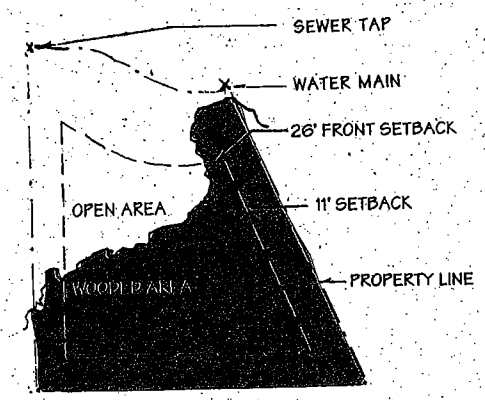
To create an effective **tree protection plan**, you should consider all of the requirements for building on the lot. These include the existing conditions, and proposed construction, access, utilities, grading, and drainage. Not all of the information that you will gather, as described in the steps below, needs to be shown on the final tree protection plan; however, all aspects need to be considered to determine the **construction limit line**. Establishing this line, where **tree protection fencing** can be erected prior to construction, is the primary objective of creating the composite plan described in the following five steps.

Step 1 - Develop a Base Map

☑ Begin with an accurate drawing of the property. A survey plat reproduced at a scale of 1 inch = 10 feet usually works well.

☑ Show the following information on the base map:

- property lines;
- existing wooded and open areas;
- utility connections to the lot;
- minimum building setback lines; and
- site features such as drainage ways and rock outcrops that may affect construction.



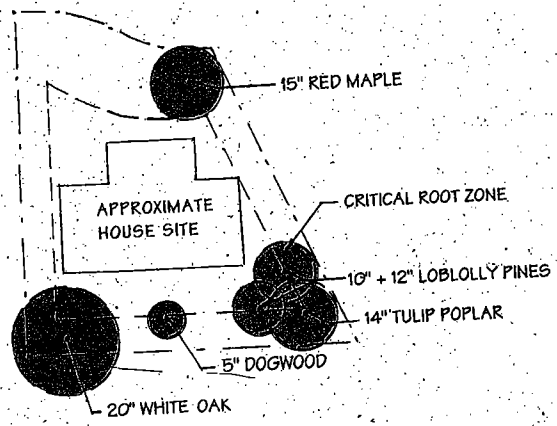
Step 1 - Base Map

Step 2 - Identify Trees to be Preserved

☑ Pencil in the approximate house site on a copy of the base map. Measure the locations of nearby trees to be preserved. You may want help from a professional arborist to apply the following guidelines:

- Healthy trees are stronger;
- Smaller trees are more tolerant of nearby disturbance;
- Groups of trees generally survive better than single specimens; and
- Conifers (pines, cedars, etc.) can handle stress better than most hardwoods.

☑ Indicate the trees to be saved and their critical root zone circles on the composite plan.



Step 2 - Identify Trees

GAS DRIVEWAY