

PRIMARY USE: Used to preserve and protect trees.

ADDITIONAL USES: Used to stabilize the soil and prevent erosion, decrease stormwater runoff, moderate temperature, provide buffers and screens, filter pollutants from the air, supply oxygen, provide habitat for wildlife, and increase property values.

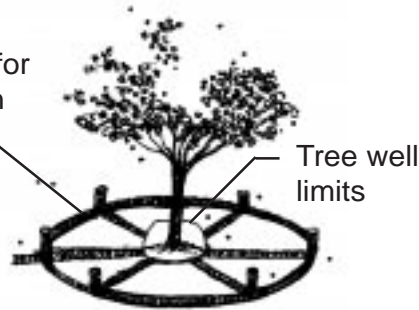
TREE PRESERVATION & PROTECTION

What is it? Practices to preserve and protect desirable trees from damage during project development.

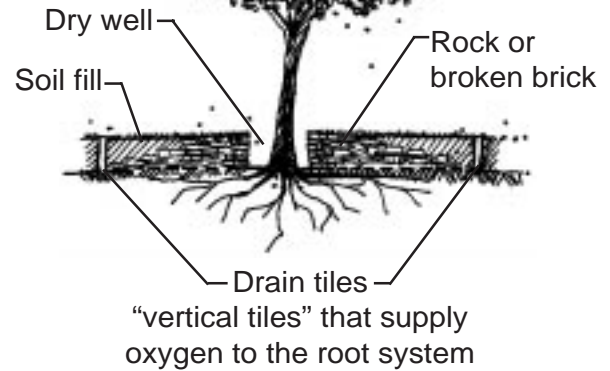
Purpose

To preserve and protect trees that have present or future value for use in protection against erosion, for their landscape and aesthetic value, or for other environmental benefits.

Radiating pipes for supply of oxygen and nutrients



Location of Radiating Pipes when Filling Around Existing Trees
Perspective View



Tree Well
Section View

Limitations

Some desirable characteristics to consider while selecting which trees should be protected include: tree vigor, tree species, tree age, tree size and shape, and use as wildlife food source.

Materials

Barrier materials (i.e., fencing, timbers, and earthwork), flagging, pruning equipment, tree paint, peat moss/ moist topsoil, broken brick, gravel, perforated pipe, and filter fabric.

Installation

Installation considerations should include areas of development sites containing trees or stands of trees.

Source: NRCS Planning and Design Manual, NRCS.

TREE PRESERVATION & PROTECTION

Additional Considerations:

Planning Considerations

Preserving and protecting trees and other natural plant groups often results in a more stable and aesthetically pleasing development. During site evaluation, note where valuable trees and other natural landscape features should be preserved and consider these trees and plants when determining the location of roads, buildings, or other structures.

Trees that are near construction zones should be either protected or removed because damage during construction activities may cause the death of the tree at a later time.

Trees should be considered for preservation for the following benefits:

1. They stabilize the soil and prevent erosion.
2. They reduce stormwater runoff by intercepting rainfall, promoting infiltration, and lowering the water table through transpiration.
3. They moderate temperature changes, promote shade, and reduce the force of wind.
4. They provide buffers and screens against noise and visual disturbances, thus providing a degree of privacy.
5. They filter pollutants and remove carbon dioxide from the air and produce oxygen.
6. They provide a habitat for animals and birds.
7. They increase property values and improve site aesthetics.

Tree Selection Criteria

Consider the following characteristics when selecting trees to be protected and saved:

1. Tree vigor. Preserve healthy trees. A tree of low vigor is susceptible to damage by environmental changes that occur during site development. Healthy trees are less susceptible to insects and disease. Indications of poor vigor include dead tips of branches, small annual twig growth, stunted leaf size, sparse foliage, and pale foliage color. Hollow or rotten trees, cracked, split, or leaning trees, or trees with broken tips also have less chance for survival.
2. Tree age. Old, picturesque trees may be more aesthetically valuable than smaller, younger trees, but they may require more extensive protection.
3. Tree species. Preserve those species that are most suitable for site conditions and landscape design. Trees that are short-lived or brittle or are susceptible to attack by insects and disease may be poor choices for preservation.
4. Tree aesthetics. Choose trees that are aesthetically pleasing, shapely, large, or colorful. Avoid trees that are leaning or in danger of falling. Occasionally, an odd-shaped tree or one of unusual form may add interest to the landscape if strategically located; however, be certain that the tree is healthy.
5. Wildlife benefits. Choose trees that are preferred by wildlife for food, cover, or nesting. A mixture of evergreens and hardwood may be beneficial. Evergreen trees are important for cover during the winter months, whereas hardwoods are more valuable for food.

Construction activities can significantly injure or kill trees unless protective measures are taken. Although direct contact by equipment is an obvious means of damaging trees, the most serious damage is caused by root zone stress from compacting, filling, or excavating too close to the tree. Clearly mark boundaries to maintain sufficient undisturbed areas around the trees.

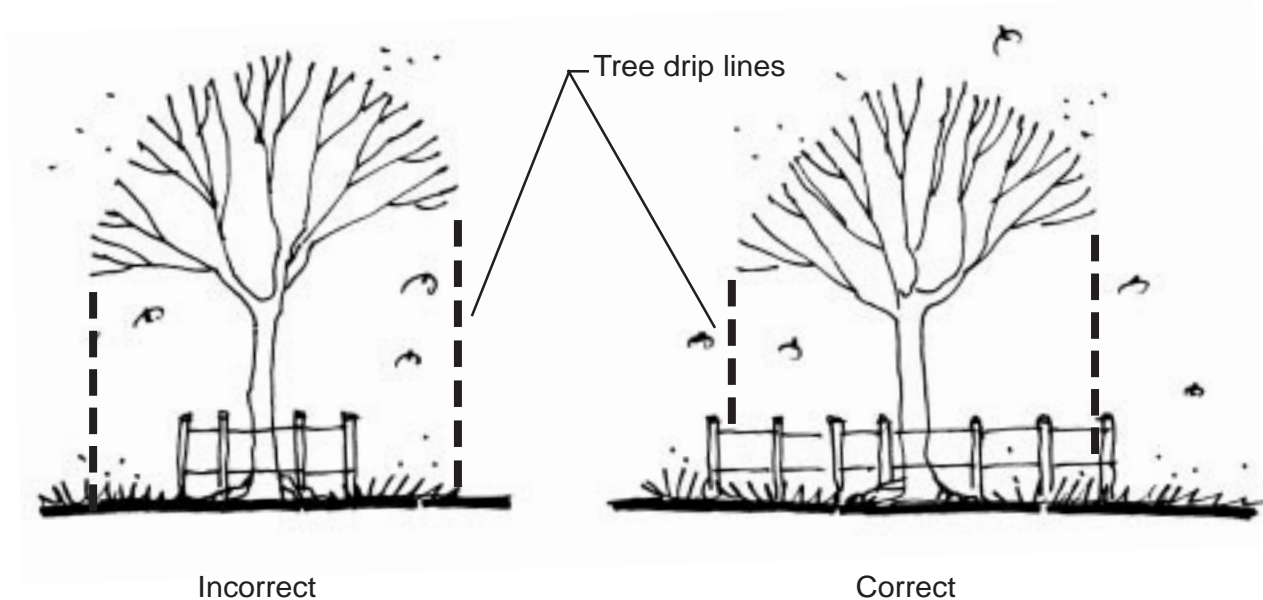
TREE PRESERVATION & PROTECTION

Additional Considerations and Drawings:

Design Criteria

The following general criteria should be considered when developing sites in wooded areas:

1. Leave critical areas (such as flood plains, steep slopes and wetlands) with desirable trees in their natural condition or only partially cleared.
2. Locate roadways, storage areas, and parking pads away from valuable tree stands. Follow natural contours, where feasible, to minimize cutting and filling in the vicinity of trees.
3. Select trees to be preserved before siting, roads, buildings, or other structures.
4. Minimize trenching in areas with trees. Place several utilities in the same trench.
5. Designate groups of trees and individual trees to be saved on the erosion and sedimentation control plan.
6. Do not excavate, traverse, or fill closer than the drip line, or perimeter of the canopy, of trees to be saved. See figure below for correct barrier placement.



Note: Barrier should be installed at the drip line of a tree's branches.

Proper Fencing Around Existing Trees Elevation View

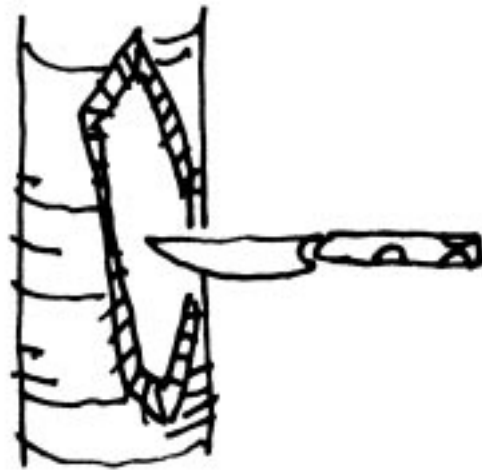
TREE PRESERVATION & PROTECTION**Additional Considerations and Drawings:****Maintenance**

In spite of precautions, some damage to protected trees may occur. In such cases, repair any damage to the crown, trunk or root system immediately.

1. Repair roots by cutting off the damaged areas and painting them with tree paint. Spread peat moss or moist topsoil over exposed roots.
2. Repair damage to bark by trimming around the damaged area, tapering the cut to provide drainage, and painting with tree paint. See figure below.
3. Cut off all damaged tree limbs above the tree collar at the trunk or main branch. Use three separate cuts to avoid peeling bark from healthy areas of the tree. See following figures.



Tree wound



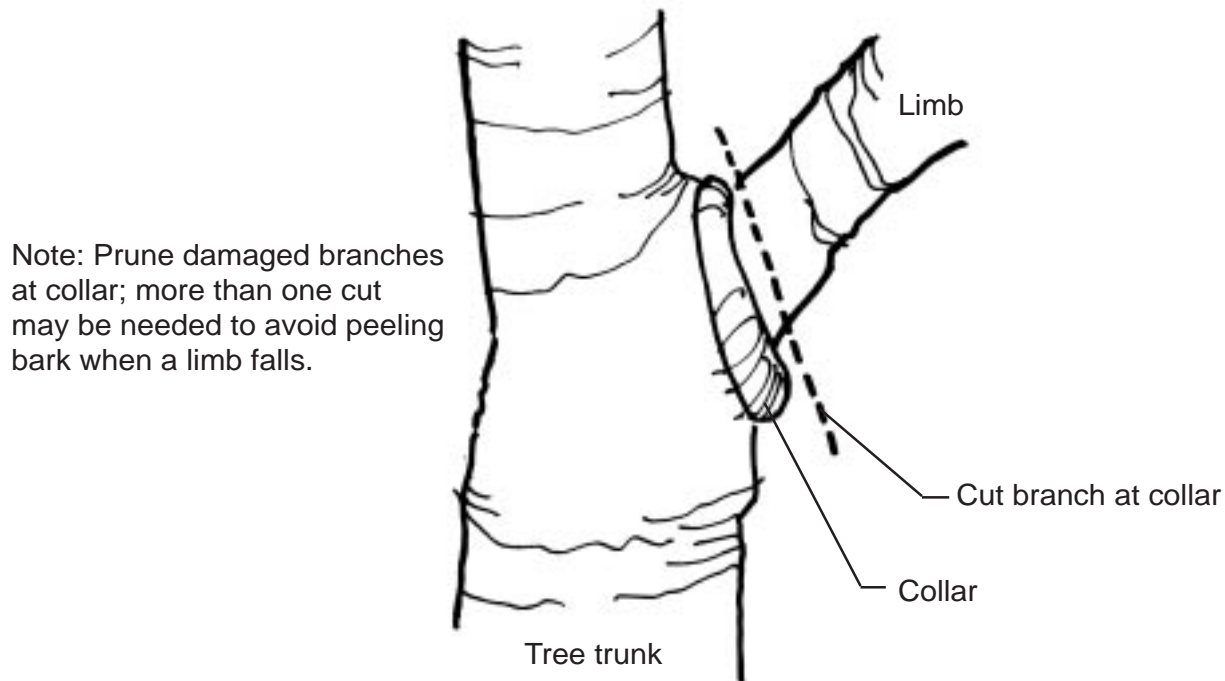
Trim and taper wound edge

Note: Trim bark wounds with a tapered cut, then apply tree paint.

**Repairing Tree Bark Wounds
Perspective View**

TREE PRESERVATION & PROTECTION

Additional Considerations and Drawings:



Proper Pruning of Damaged Branches Perspective View

Plans and Specifications

Plans for tree preservation and protection shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve the intended purpose. Plans shall identify the location of all trees to be preserved.

Specifications for tree preservation and protection shall use or be in conformance with the following: (Any variation from these specifications shall be approved by an engineer).

1. Place barriers to prevent the approach of equipment within the drip line of trees to be retained.
2. Do not nail boards to trees during building operations.
3. Do not cut tree roots inside the tree drip line.
4. Do not place equipment, construction materials, topsoil, or fill dirt within the limit of the drip line of trees to be saved.
5. If a tree marked for preservation is damaged, examine the damage to determine if repair is possible to preserve the tree. Provide repair in accordance with standard procedures outlined in the "Maintenance" section. Note: If the tree is damaged beyond repair, remove it and replace it with tree of the same or similar species - 2 in (51mm) diameter or larger - from balled and burlaped nursery stock when activity in the area is complete.
6. During final site cleanup, remove barriers around trees.