

Design for Everyday Living

planting trees and shrubs

by

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The success or failure of trees and shrubs to grow and produce the desired effects begins with proper planting.

Trees and shrubs planted around the home, in shopping centers, around schools, along streets, etc. are forced to grow in an artificial or unnatural environment where soil conditions, water tables, drainage, etc. have been altered. Therefore, it is necessary to make certain that the plants are properly installed and receive the best of care until they become established.

It is best to have as much advance preparation as possible completed before the plants are purchased or received. That is, the planting pit should be prepared and available materials should be on hand. Be ready with shovels, water, fertilizer, backfill, etc. This will let you complete the operation as rapidly as possible to give plants a much better chance of surviving. It is advisable to have a neighbor or someone else alerted to assist with the planting of large trees and shrubs. One person alone should not try to plant barerooted trees any larger than 8 to 10 feet tall or with a trunk diameter over one inch in caliber. He should not try to plant a balled and burlapped or container grown tree or shrub any larger than he can easily carry or manage.

TIME OF PLANTING

Trees and shrubs should be planted in the fall after they have become dormant (about early November) or in the spring before new growth appears (around late March). Balled and burlapped trees and shrubs may be planted any time of the year provided they were dug during the dormant

period and after planting receive ample water during hot, dry weather. It is advisable to spray the foliage of broadleaf evergreens with transpiration inhibitors such as "Wiltpruf"* to minimize transpiration. Broadleaf evergreens planted in the fall should also be so treated to protect the foliage from sun and severe winter winds.

PLANTING PITS

The old adage, "It is better to plant a 25¢ tree in a \$2.00 hole, than a \$2.00 tree in a 25¢ hole" still holds true. Anyone planting ornamentals should protect his investment by taking a few extra minutes to make certain that proper planting procedures are followed.

The planting pit should be dug a minimum of 1 foot wider than the earth ball or spread of bare roots. It should be at least six inches deeper than the earth ball and 2½ to 3 feet deep for bare root plants (See Fig. 1 & 2).

All planting pits should be dug with vertical sides, with the center slightly raised to aid in draining excess moisture away from the plant.

DRAINAGE

Good drainage is essential, so the planting pit should be checked before setting the plant. Fill the pit with water. If the water drains out within six to eight hours, there should be no problems. If on the other hand, water is still standing, artificial drainage should be installed (See Fig. 1-D). Placing gravel in the bottom of the planting pit is of little or no value as it makes no provisions for removing excess water from the site.

BACKFILL

Backfill or planting soil should be of equal or better quality than the soil in which the plant originally grew. General recommendations call for a mixture of equal parts of organic matter, coarse sand and top soil. All backfill should be easily workable and free of debris.

SETTING THE PLANT

Many plants fail to live because they are set too deeply in the planting pit. When this occurs, the plants suffocate as sufficient air does not reach the root system. Balled and burlapped or container grown plants should be so planted that the earth

ball rests 1 to 2 inches above soil level (See Figure 2). This allows for settling to the proper depth. Apply mulch around the plant to protect the roots.

Bare root trees and shrubs should be planted at the depth which they originally grew (See Figure 1). A 'collar' is generally evident at the base of the stem or trunk indicating this depth.

Keep the plant in an upright position at all times unless a special leaning effect is desired.

BACKFILLING AND PACKING

Water Packing Method

Balled and Burlapped Plants

Backfill is placed in the bottom of the pit and packed with the foot to a depth that will permit the earth ball to rest 1 to 2 inches above grade. This will aid in compensating for further settling. After the plant is placed in the pit, add backfill loosely until the original grade is reached. Insert a hose into the backfill and allow water to slowly fill the pit. This aids in eliminating air pockets and supplies additional water to the plant. Additional backfill will be required after settling. Repeat this process until the backfill has reached the desired level.

It is not necessary to remove the burlap as it will rot in a short time. Only loosen it from around the trunk and lay back or cut it off. Remove any rope or wire that would girdle the stem or restrict growth (Fig. 2).

Bare Root Plants

Planting bare root trees and shrubs differs only slightly from planting those which are balled and burlapped. After the backfill has been placed and tamped to the desired depth, and the plant properly aligned, add sufficient topsoil to cover the roots and apply water until the consistency of a thick liquid is obtained. Gently raise and lower the plant to allow the soil to fill between the fibrous roots, thus eliminating air pockets. Add water and soil alternately until the pit is filled to grade. After settling, the tree will rest one to two inches below the original growing depth.

Tamping or Dry Packing

This method of planting follows the same procedure as the previous method but without the aid of water. As each layer of soil, about six inches, is filled into the pit, pack it with your foot or tamping rod. This lessens the chance of air pockets remaining in the pit. Set the plant and firm the soil around the roots with your hands. A stick about the diameter of a broom handle and about 18 inches long is helpful in packing the soil around bare roots or earth ball. Caution should be taken not to injure the roots while packing or tamping the soil.

The plant is then watered by placing a hose inside the earth ring and letting the water run

slowly. If a hose is not available, fill the earth ring several times until the soil becomes saturated.

STAKING AND GUYING

Staking or guying plants is a method of securing the plant in position and preventing roots from being loosened from the soil or earth ball. Nearly all trees and large shrubs should be staked for the first two years after transplanting.

Staking

Small trees 10 to 12 feet tall and with a caliber of 1 to 2 inches should be staked with one to four stakes, depending upon the amount of space and the amount of protection needed. If only one stake is used, it should be placed on the windward side. Additional stakes give better anchorage, and provide better protection as well as allowing for securing wire or other material around the plants to protect them against rodents.

Stakes should be metal and 8 to 10 feet long (Fig. 1). Cedar stakes with the bark intact or those treated with wood preservatives may be used. Wooden stakes should have a diameter of two inches at the top and 3 inches at the butt. Place them a minimum of 18" from the trunk and drive 3' into the soil. If possible place the stakes outside the planting pit for better anchorage. If the stakes must be placed within the planting pit, they should be 18" to 24" longer and driven well into the bottom of the pit.

Attach the tree to the stakes with wire that has been inserted into a piece of garden hose (Fig. 1-A).

Guying

Trees over 2 inches in caliber should be guyed for better support with three stakes at equal distances around the trees and anchored with 2" x 2" x 30" stakes (Fig. 2).

The stakes should be placed well outside the planting pit for secure anchorage. Guy wires also should not interfere with the limbs of the plants as insects or diseases may enter at these contact points. It is advisable to notch the stakes on the outside edge to prevent slipping of guy wires.

It is also advisable to use turnbuckles with the guy wires (Fig. 2) in order to maintain the proper tension. Wires should be sufficiently taut to keep the tree erect but still allow for certain amount of natural movement. Wires should not be so taut as to pull on the plant. If for some reason the plant begins to lean, it may be straightened by adjusting the turnbuckles.

WRAPPING

Trees up to 3 inches in caliber should be wrapped immediately when planted to prevent sun scald and to lessen transpiration. Trees over 3 inches need not be wrapped as they are older and more hardened to the elements. Wrapping also

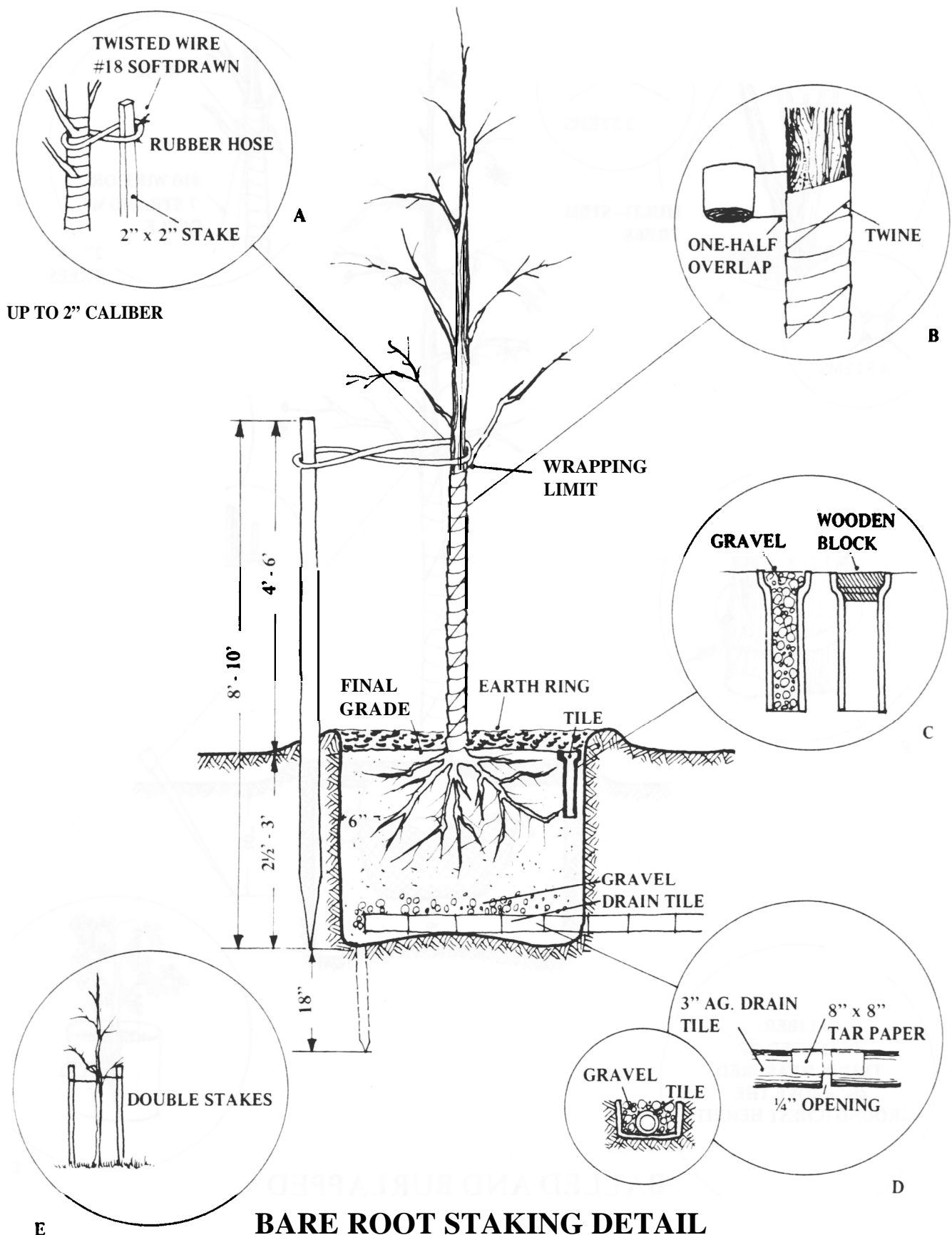
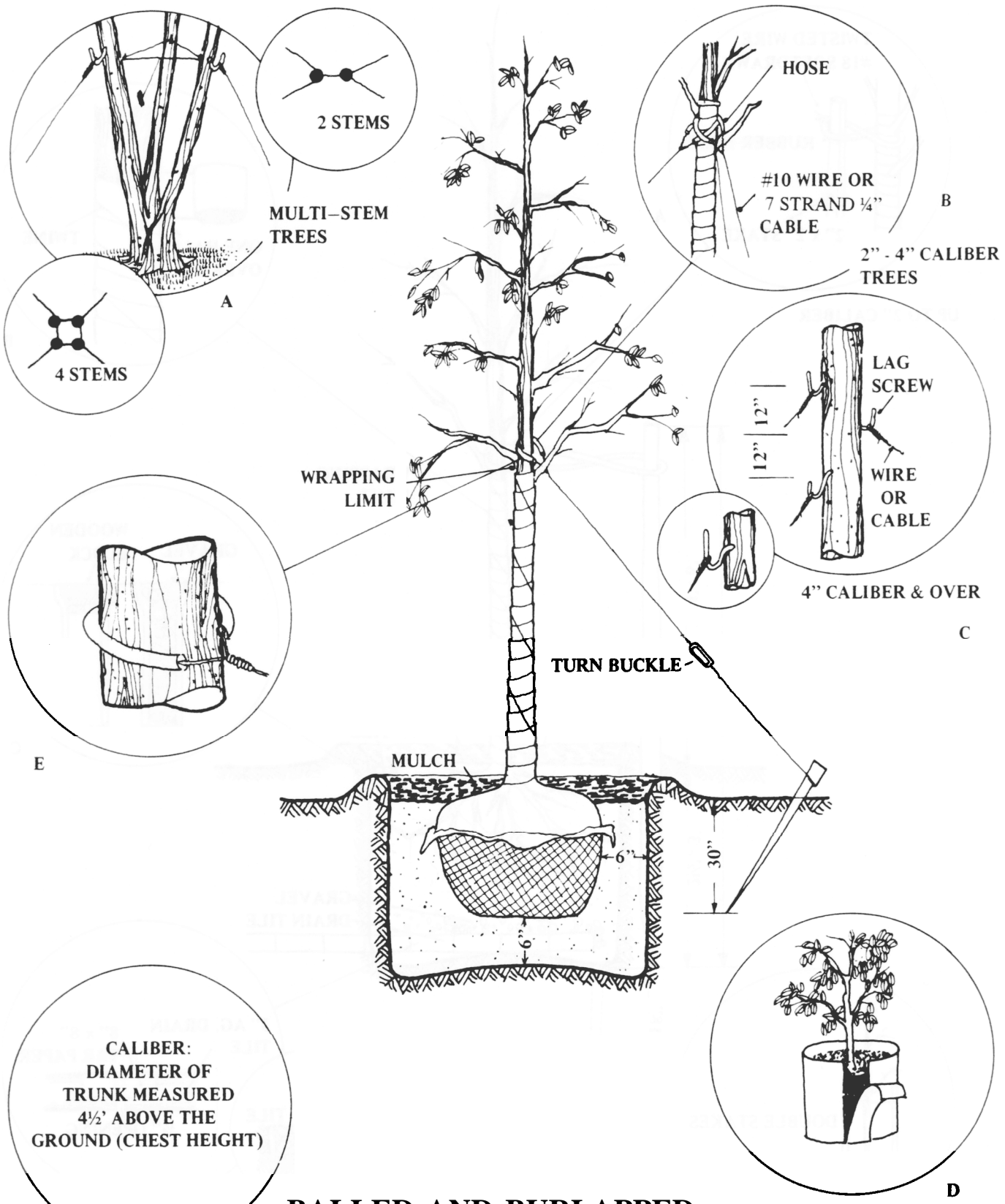


FIGURE 1



**BALLED AND BURLAPPED
GUYING DETAIL**

FIGURE 2

CALIBER:
DIAMETER OF
TRUNK MEASURED
4½' ABOVE THE
GROUND (CHEST HEIGHT)

F

D

C

E

A

B

serves as a protector against burning by severe winter winds. While wrapping may be done at almost any stage of planting, it is easier to wrap the tree before it is secured in the planting pit.

Special wrapping paper may be purchased, but burlap cut into six-inch widths will do. Wrapping should begin just below grade and extend upward in a clockwise direction, ending just above the lower limbs. One-half of each spiral should overlap to form a double layer (Figure 1-B). Secure the wrapping with twine, beginning above the lower limbs and winding down the trunk in a counter-clockwise direction.

It is advisable to spray the trunk of the tree with a general insecticide and fungicide before wrapping. The wrapping should remain in place two years, but should be checked periodically to determine if insects or diseases are present.

WATERING

The remaining step is to make provisions for watering the plants. This may be accomplished by constructing an earth ring around the plant, leaving a depression in the earth around the plant, or inserting drain tile filled with gravel around the plant (Figure 1-C).

During winter months earth rings should be removed or the depression filled. This is done to prevent water from collecting around the plant, freezing and damaging the trunk.

Watering is an operation in plant maintenance that is too often hurriedly executed. Newly planted trees and shrubs require more water than older, established plants. Generally, newly planted trees and shrubs should be watered thoroughly once a week. Heavy watering once a week is preferred over daily evening sprinklings which force the roots to the surface to obtain moisture. Shallow rooted plants are more susceptible to drought than deeply rooted ones. Sandy soils may require more frequent watering while heavier soils may require less.

Place the garden hose inside the earth ring or depression and allow the water to run slowly for several hours. Tiles should be filled several times to allow the water to penetrate the surrounding area.

A watering schedule should be established and continued for at least a year. (Some experts recommend a 3 year period.) When warm spells occur during winter months, plants should be watered as alternate freezing and thawing will dry the soils almost as rapidly as direct sun.

FERTILIZING

Newly planted trees and shrubs should be fertilized with superphosphate at the time of planting to stimulate root growth. Some experts use a "starter" fertilizer such as 20-20-20 or similar analysis. This fertilizer is water soluble and is mixed at the rate of one level tablespoon per gallon of water. This is the same type fertilizer used for house plants and is sold under various trade names, such as Rapid-Gro*, Instant Vigoro*, etc.; usually 2 to 3 gallons are sufficient.

CONTAINER GROWN PLANTS

Container grown plants are planted in one of the same methods as previously described for balled or burlapped plants. The difference lies in removing the plants from the containers. If the plants are grown in clay pots or "knock out" containers, it is a simple process of inverting the container and rapping it sharply on the edge of a table, steps, etc. The plant and earth ball will separate intact from the container. If the plant has become root bound, make three vertical cuts ($\frac{1}{4}$ " to $\frac{1}{2}$ " deep) equal distance apart around the plant to cut the roots. This helps to prevent the roots from continuing to grow in a circular pattern.

Tin cans will have to be cut to remove the plant without disturbing the root system any more than necessary (Fig. 2-D). Tools especially designed for cutting these cans are available, but tin snips will usually suffice. Ask your nurseryman to cut the cans for you. The containers can then be tied sufficiently to allow transporting of the plant to the site with a minimum of disturbance.

NEVER PULL A PLANT FROM THE CONTAINER. CUT THE CONTAINER AWAY FROM THE ROOT SYSTEM AND EARTH BALL.

Some nurseries plant bare rooted small trees and large shrubs in hampers or bushel baskets. If this is the case, it is not necessary to remove the plant. Simply plant container and all.

GUIDE FOR ALL PLANTINGS

1. Two people should be available when trees and shrubs are to be planted.
2. Handle trees and shrubs carefully. Balled and burlapped plants should be carried by the earth ball, not by the trunk.
3. Keep bare roots covered at all times with wet burlap and keep earth balls moist at all times.
4. Trees and shrubs should be held in an upright position at all times after placing in the planting pit.
5. Plant only healthy trees and shrubs.
6. Remove all broken or damaged branches and roots.
7. Have all necessary equipment and materials handy at the time of planting.
8. Plant trees and shrubs as soon as they arrive.
9. Water trees and shrubs well after planting and keep the soil moist at all times.
10. Mulch after planting.
11. Remove all tags and labels that may cut or rub the bark of the plants.
12. Guy or stake trees in position to prevent roots from becoming loose in the soil.
13. Eliminate all air pockets in the planting pit.
14. Make certain the soil drains properly.
15. Protect plants against damage by lawn mowers, automobiles, etc.
16. Check plants periodically for loose wrappings and wires, broken limbs, insect or disease damage, drainage and proper moisture.
17. Planting should not be done when the soil is wet or soggy. The soil should be loose and workable.

*Names of products and manufacturers cited do not constitute endorsement and are used only where this information is necessary to provide knowledge for products likely to be unfamiliar to retailers or homeowners. Listing of products and manufacturers are neither assumed or intended to be complete. A number of similar and satisfactory products are available under a wide variety of trade names.

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