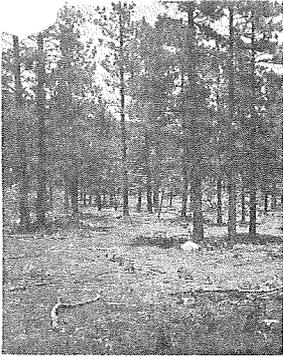


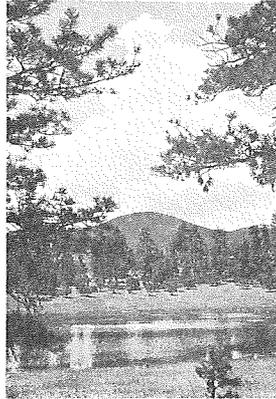
Technical Notes Woodland Conservation



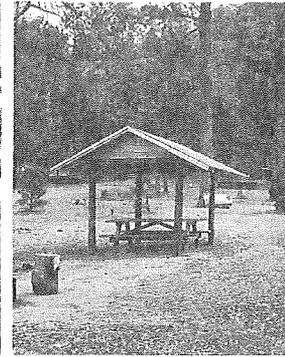
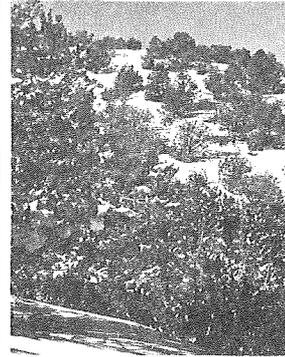
FOREST MANAGEMENT



WINDBREAKS



WATERSHEDS



FOREST RECREATION

U. S. DEPARTMENT OF AGRICULTURE NEW MEXICO SOIL CONSERVATION SERVICE

April 28, 1972

WOODLAND TECHNICAL NOTE NO. 24

SUBJECT: Preserving Woody Vegetation During Changes In Land Use

This technical note is designed to provide information on the necessary protective measures to insure the survival of desirable woody vegetation for shade, beautification and vegetative cover.

These techniques may be employed on land planned as commercial/industrial, community services, residential, transportation services or in any area where construction is planned or where vegetation may otherwise be altered by natural or man-made disturbances.

A. Planning: The following items should be considered when selecting woody vegetation for retention or establishment in an urban area:

1. Aesthetic values, beautification, shade, wildlife value, screening and other benefits.
2. Adaptation of trees to environmental changes: tree species; their age, size, vigor, growth habit - both above and below the ground.

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3. Economics of the matter. The complete cost of preserving a tree should be carefully estimated. Sometimes it is more economically feasible to replace a small tree than to preserve one that is immediately adjacent to the building site. Also, the cost of preserving trees having a short life expectancy due to old age and/or disease should be evaluated carefully.

B. Retention of single trees:

Trees that are to be retained on a construction site should be marked and protected as needed.

Trees within the immediate area where heavy equipment will be operated should be protected by fencing, planks or split poles held firmly against the tree trunk with wire or rope. These should not be nailed directly to the tree.

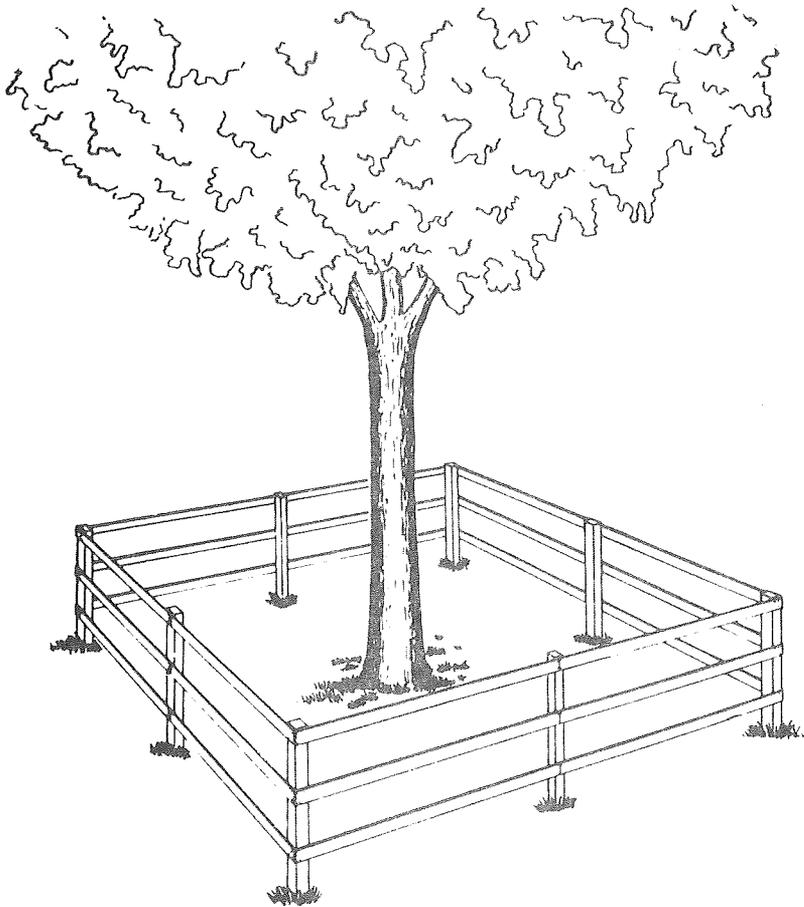


Figure 1

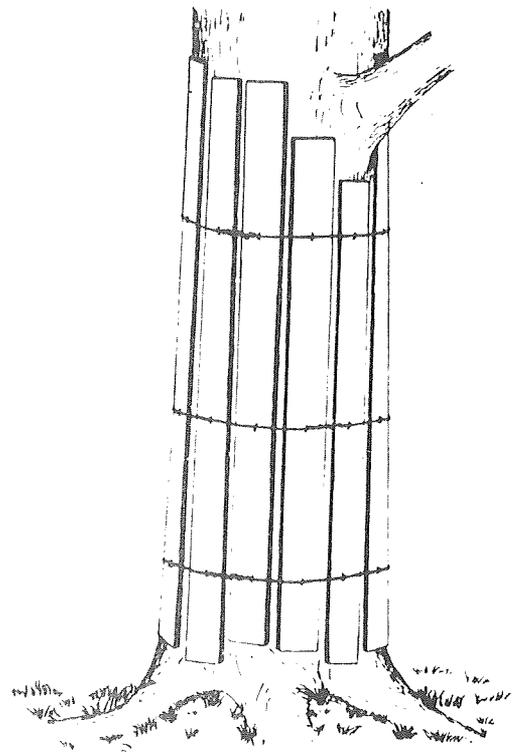


Figure 2

If injury does occur, the wound should be shaped as indicated by the broken line in Figure 3. This will facilitate healing. Also, the wound should be covered with a good grade of "tree paint".

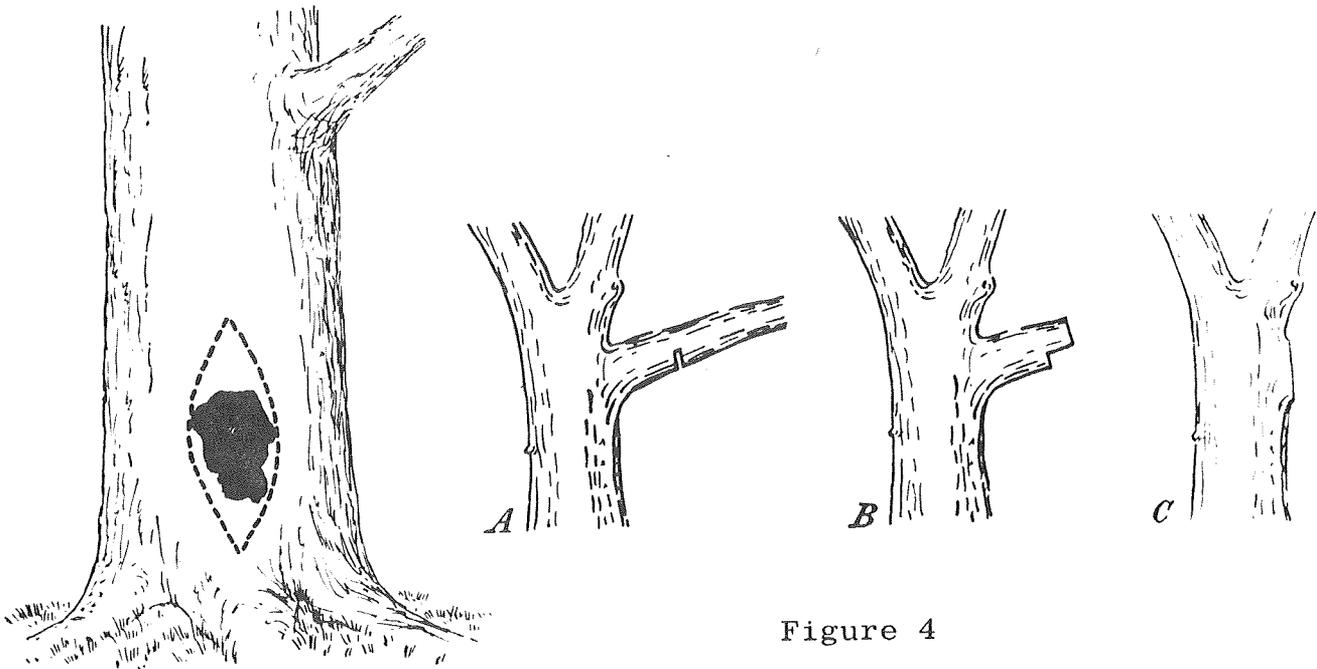


Figure 3

Figure 4

Damaged branches should be removed according to the procedures in Figure 4. (a) Make the first preliminary cut. (b) make second preliminary cut and (c) make the final cut. Removing branches in this manner prevents further damage to the trees.

Feeder roots should not be cut in an area equal to twice the breast height circumference expressed in feet. (Example: A tree with a circumference of 10 inches at breast height would have a "no cut" zone of 20 feet in all directions.) If possible, this should also apply when ditching for utility lines. When necessary to ditch near a tree, less damage occurs by tunneling under rather than cutting through the root zone. (See Figure 5)

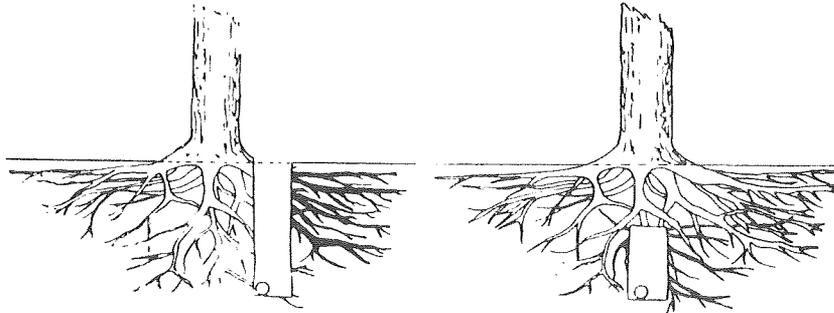


Figure 5

C. Retention of blocks of trees:

Preserving clumps or blocks of native vegetation can be the easiest and most successful way of landscaping. Also, this is often the most economical way of landscaping. On steep slopes and waterways, this is an ideal way of preventing soil erosion. Trees and shrubs preserved in clumps and blocks serve as excellent barriers against people and noise.

The areas to be preserved should be well marked and all equipment should be excluded.

D. Changes in land grade or topography:

Changes in grade have a definite effect on trees. Lowering the grade tends to lower the water table if it is near the surface. Raising the grade tends to suffocate the tree unless proper action is taken.

A maximum of tree roots can be preserved during grade changes by terracing or erecting a retaining wall as shown in Figure 6. When the existing ground level is raised, a dry well should be constructed around each tree. (See Figure 7.) The well provides air circulation and allows for drainage of excess water. Drainage from the dry well should be provided by tile placed at the original ground level. The tile line should be vented by means of a vertical tile near the outlet. Small stones over the tile system allows air to circulate over the root area.

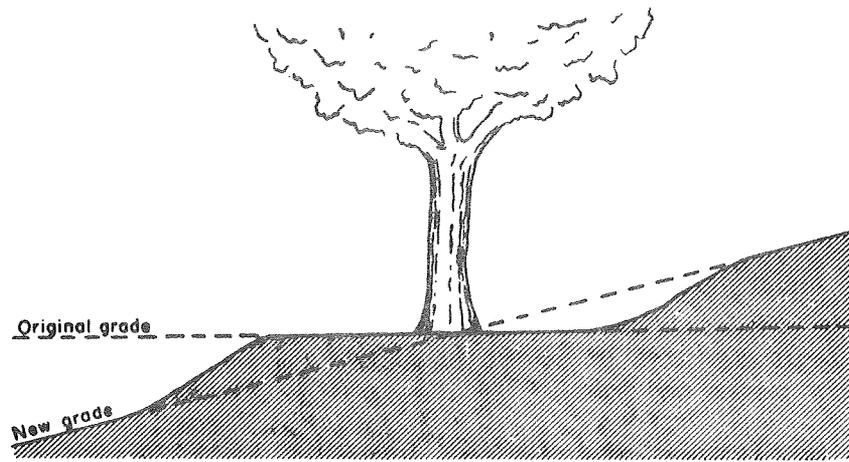


Figure 6

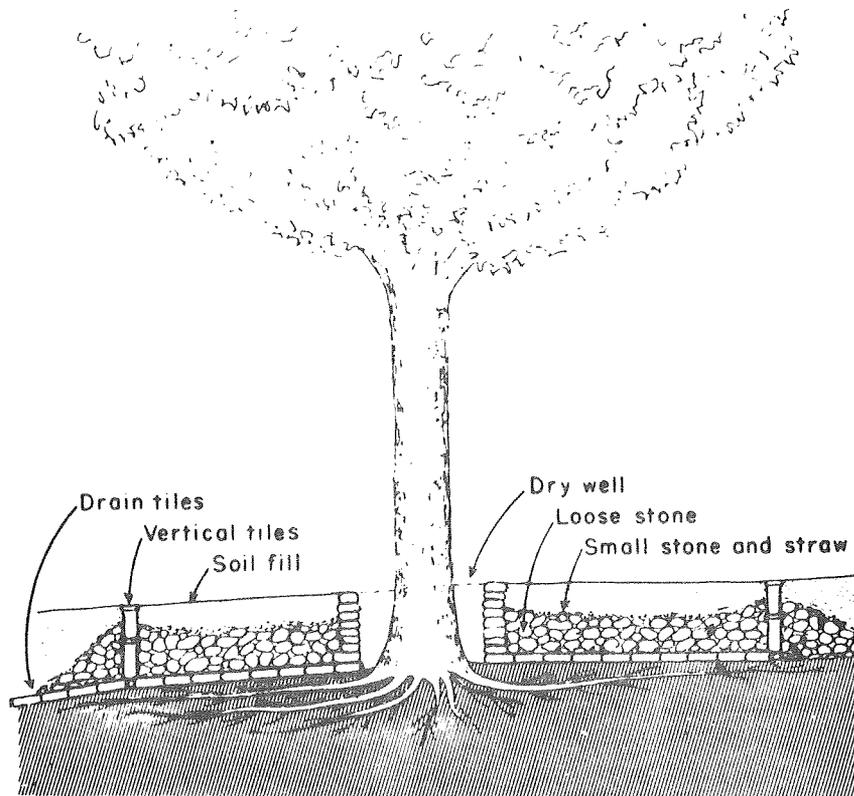
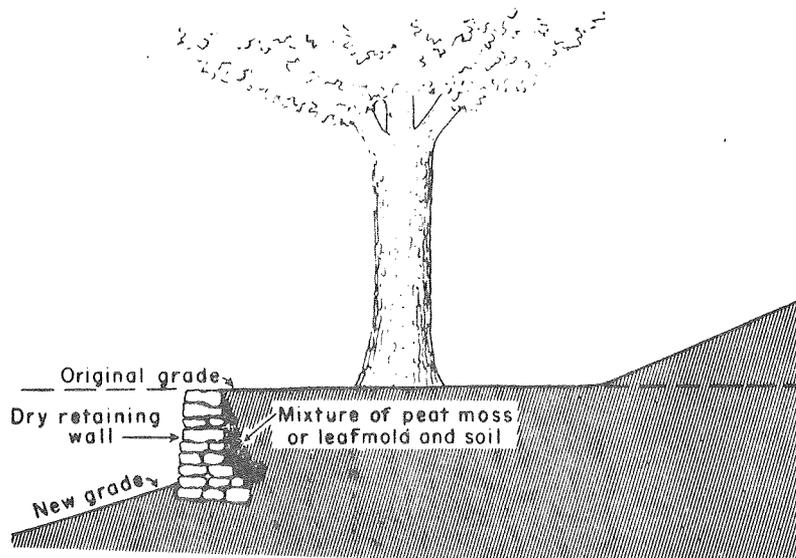


Figure 7

E. Tree planting:

The proper time to plant or transplant bare-root plants is in the spring of the year. The job should be started as soon as the frost is out of the ground and should be completed before the planting stock breaks dormancy. These conditions exist for only a short period of time; usually only two or three weeks. Prior to planting, plants should be kept in the shade and their roots covered with wet sphagnum moss or sand.

Balled and burlapped plants can usually be planted any time of the year except when the ground is frozen. A lack of feeder roots makes it imperative that the moisture requirement of these trees be met.

Successful plantings can be made in rocky or compacted soils if the site is properly prepared as shown below.

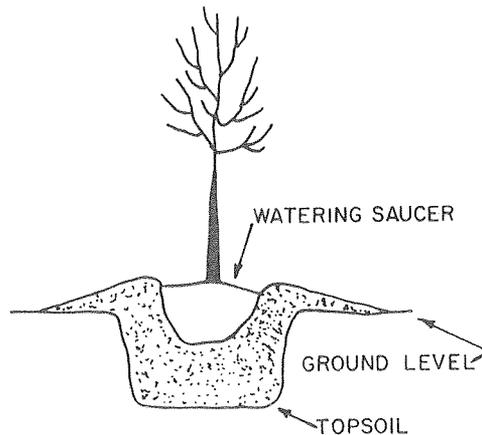


Figure 8

F. Fertilizing:

A heavy application of complete fertilizer should be applied to broad leaf (deciduous) trees to aid in recovery from shock or damage caused by construction operations. Fertilization should be done during early spring following construction. One to two pounds of fertilizer (10-6-4) should be applied for each diameter inch of tree trunk measured at $4\frac{1}{2}$ feet above ground line. (Approximately one-half this amount is required for evergreens.) Fertilizer should be

placed in holes 18 inches deep and 2 feet apart extending to the drip line of the tree, but not closer than 6 feet to the trunk. A funnel should be used to pour the fertilizer into the holes; otherwise grass near the hole may be burned because of over-fertilization.

New planting stock, both bare-root and balled and burlapped, should be fertilized in accordance with recommendations from the local nursery where purchased.

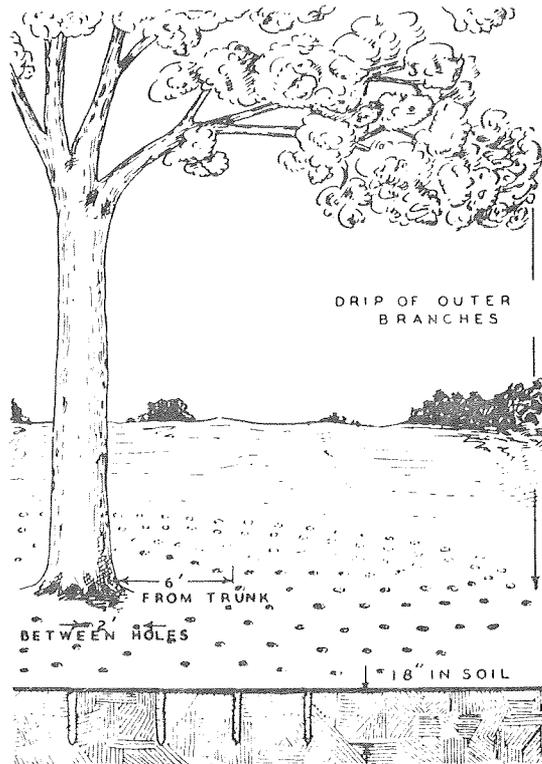


Figure 9

G. Watering:

Trees suffering shock or damage from construction operations often require supplemental water. This need is usually for only one or two years. The applications should be thorough and at scheduled intervals rather than many light, frequent applications. The area of application should be the same as that for fertilizer.

Deep watering probes are also very effective. They are commercially available complete with fertilizer applicator. (Follow manufacturer's instructions for proper use.)

REFERENCES:

Care of Damaged Shade Trees, Farmers' Bulletin 1896.

Reducing Damage to Trees from Construction Work,
Farmers' Bulletin 1967.