City of Rolling Hills INCORPORATED JANUARY 24, 1957

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Agenda Item No.: 10-A
Mtg. Date: 05/16/17

TO: **HONORABLE CHAIRMAN AND MEMBERS OF THE PLANNING COMMISSION**

FROM: **NATALIE C. KARPELES, ASSISTANT CITY ATTORNEY**

SUBJECT: **PUBLIC FORUM REGARDING POTENTIAL CHANGES TO VIEW ORDINANCE, SECTION 17.12.220 AND CHAPTER 17.26 OF THE ROLLING HILLS MUNICIPAL CODE**

DATE: **MAY 16, 2017**

ATTACHMENTS: **CORRESPONDENCE RECEIVED AT OR SINCE APRIL 18, 2017 MEETING**

BACKGROUND:

At the April 18, 2017 meeting, the Planning Commission continued its discussions to evaluate and formulate a view impairment ordinance, once again taking into consideration the language of the City's original view preservation ordinance, the issues presented by the inclusion of Measure B, as well as the language proposed by Mr. Karpf's ordinance and Measure 2017. The Planning Commission provided direction on the definition of "*viewing point*," and considered whether and to what extent the City would be involved in any dispute resolution process. In order to facilitate this discussion, the Planning Commission directed the City Attorney to research whether the degree of City involvement had any effect on the likelihood of litigation, as well as litigation costs.

To determine whether City involvement had any effect on the likelihood of litigation, the City Attorney contacted the Town of Tiburon, the City of Rolling Hills Estates, and the City of Rancho Palos Verdes; additionally, the City Attorney conducted a litigation search and reviewed numerous legal opinions related to the enforcement of view preservation ordinances throughout various California cities. Lastly, the City Attorney considered the view impairment ordinances for the Cities of Torrance and Rolling Hills Estates as potential cost-effective alternatives to the "all or nothing" dispute resolution processes considered thus far.

DISCUSSION

With regard to view impairment dispute resolution, the processes utilized in the Town of Tiburon and the City of Rancho Palos Verdes are at opposite ends of the spectrum. While the Town of Tiburon is itself divested from hearing and rendering final decisions in view impairment disputes, the City of Rancho Palos Verdes requires the involvement and determination of the Planning Commission,[1] View Restoration Commission,[2] and the City Council (on appeal).[3] Despite these vastly different approaches, the view preservation ordinances of both municipalities have equally been challenged in court and currently serve as Seminole cases for California cities attempting to enact view preservation ordinances.

In *Kucera v. Lizza*,[4] the Kuceras used the Town of Tiburon view ordinance to compel Mr. Lizza to remove eight Monterey Pines which were obstructing their view.[5] Mr. Lizza refused to participate in mediation and arbitration; so, after satisfying all of the procedures outlined in the Tiburon view ordinance, the Kuceras filed a lawsuit.[6] This case presented the court with issues of whether the obstruction was reasonable under the ordinance and whether the ordinance was invalid.[7] Ultimately, the court concluded that Tiburon's ordinance was constitutional.[8] Four years after its decision in *Kucera*, the court was asked to determine the constitutionality of the view preservation ordinance for the City of Rancho Palos Verdes.

In *Echevarrieta v. City of Rancho Palos Verdes*,[9] Mr. Echevarrieta challenged the city's view preservation ordinance after the city ordered him to trim eight trees on his property.[10] In this case, the court held that the city's view restoration committee was empowered to impose reasonable conditions or restrictions necessary to protect the public health, safety or welfare – which includes the preservation of views and sunlight.[11]

In addition to serving as illustrative authority, these cases also help to highlight the unpredictability of City entanglement on the likelihood of litigation. In other words, whether the City will be involved in future litigation has less to do with its selected method of dispute resolution than it does with the proclivity of the parties involved.

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[1] In order to preserve City views, the RPV Planning Commission may withhold development permits pending the removal of any offending foliage, and may regulate the building height of new developments.
[2] Following the initial neighbor consultation process, an aggrieved view seeker may request a hearing before the View Restoration Commission.
[3] A final decision of the View Restoration Commission may be appealed to the City Council.
[4] (1997) 59 Cal.App.4th 1141
[5] *Id.* at 1143
[6] *Id.* at 1147
[7] *Id.* at 1143
[8] *Id.* at 1142
[9] (2001) 86 Cal.App.4th 472
[10] *Id.* at 473
[11] *Id.* at 478, 484-485 ("There is nothing unconstitutional about this delegation of broad discretionary power to the [view restoration committee] and the City.")

Since the enactment of the City's view preservation ordinance in 1988, the City has been required to defend itself in only two lawsuits;[12] historically, City residents have accepted the determinations rendered by the CTV and the City Council following view impairment hearings. This may be attributable to the fact that the City goes to great lengths to ensure that its dispute resolution process is justiciable and thorough, so much so that final decisions rendered by City are afforded a certain amount of deference. Therefore, the costs associated with enforcement of the City's view impairment ordinance arise not from litigation, necessarily, but rather from processing and considering view impairment complaints.[13]

CONCLUSION

In short, the costs associated with resolving dispute resolution claims will be impacted by the degree of City involvement required, regardless of whether the decisions rendered by the City are final or merely advisory. With that in mind, the view equity ordinances for the Cities of Torrance and Rolling Hills Estates present a third alternative - where the City renders an advisory opinion while maintaining minimal involvement in the dispute resolution process.[14] The view resolution process for the City of Torrance is summarized below for the Planning Commission's consideration and further discussion of this item.[15]

Step	Summary	Torrance Municipal Code Section
1. Neighbor-to-Neighbor Contact	View seeker and vegetation owner contact each other to reach an agreement; if an agreement is reached, the City remains uninvolved	92.41.080
2. Initial Reconciliation	View seeker notifies the City of view impairment, and the City notifies the vegetation owner to facilitate informal dispute resolution between the parties	92.41.090

[12] *Greenberg v. City of Rolling Hills* (Los Angeles Superior Court Case No. BS140256)(2012); and *Hall v. City of Rolling Hills* (Los Angeles Superior Court Case No. BS 136694)(2012).

[13] For instance, the City's original view preservation ordinance and the language proposed by Mr. Karpf's ordinance and Measure 2017 all require that the City perform certain administrative functions including (1) processing view impairment complaints; (2) scheduling, noticing and preparing for view impairment hearings before the CTV (and the City Council); (3) staff attendance at the CTV/City Council hearing(s); (4) City costs associated with hiring experts to provide testimony at the hearing(s); and (5) preparing, processing and enforcing any resolution(s) adopted.

[14] Both the Cities of Torrance and Rolling Hills Estates provide for an "advisory opinion" step in their view dispute resolution processes. For the City of Torrance, this step takes place early – following unsuccessful attempts by the parties to amicably resolve the issue; for Rolling Hills Estates, an advisory opinion is not rendered until after initial reconciliation, mediation, and arbitration have each proven to be unsuccessful. In speaking with the Planning Director for Rolling Hills Estates, it became apparent that staff involvement at the outset has proven to be more effective in resolving view impairment disputes. For this reason, the discussion here is limited to summarizing the process employed by the City of Torrance.

[15] Please see Sections 92.41.010-92.41.150 of the Torrance Municipal Code

	City may be asked to provide information related to certified arborists which the parties may utilize If an agreement is reached, the City remains uninvolved	
3. Advisory Opinion	View seeker files a claim with the City Staff reviews the view claim application, which includes a processing fee Staff conducts site visits to both properties and will draft an advisory opinion detailing (1) the vantage point of the view; (2) the extent of the view obstruction; (3) the quality of the view (i.e., landmarks, vistas, etc.); and (4) recommended hierarchy of restorative action City is not responsible for enforcing the advisory opinion	92.41.100
4. Mediation	Staff will notify all parties that mediation is requested; this notice will include a link to the City's view equity ordinance and any consequences for failing to participate in mediation Parties are responsible for selecting a mediator; however the City may be asked to randomly select a mediator Agreements shall be submitted to the City Cost of mediation is initially borne by requesting party, however ultimate costs may be allocated via agreement	92.41.110
5. Binding Arbitration	Staff will notify all parties that arbitration is requested; this notice will include a link to the City's view equity ordinance and any consequences for failing to participate in mediation Parties are responsible for selecting an arbitrator; however the City (or Court) may be asked to randomly select an arbitrator Agreements shall be submitted to the City Cost of arbitration is initially borne by requesting party, however ultimate costs may be allocated via agreement	92.41.120
6. Litigation	City shall not be liable for any damages, injuries, costs or expenses which are the result of any	92.41.130, 92.41.150

	advisory opinion issued by a City employee City shall not be responsible for enforcing any agreement made concerning a view equity claim	

At this time, the Planning Commission has three unresolved issues to consider (1) whether the City will be involved in any dispute resolution process and what that process will consist of (*see pages 4-27 of the April 18, 2017 staff report*); (2) what restorative action will be required under the ordinance (*see pages 27-31 of the April 18, 2017 staff report*); and (3) whether the amended ordinance will include any of the various miscellaneous ordinance provisions suggested by Mr. Karpf (*see pages 31-32 of the April 18, 2017 staff report*). Staff recommends that the Planning Commission continue its discussion of this item by selecting one or more of these three unresolved issues.

In addition, enclosed with this report is correspondence received from Mr. Lynn Gill since last meeting. He has provided a guide to pruning trees, corrections to staff's interpretation of Measure 2017 in the table provided to the Planning Commission at the April 18, 2017 meeting and a summary of the presentation Mr. Gill made at the meeting regarding his research of view ordinances and his findings. Mr. Gill encourages the Planning Commission to develop an ordinance where the City's participation and involvement would be advisory/non-binding.

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Monday, April 17, 2017 at 7:47:57 AM Pacific Daylight Time

Subject: Re: 4/18 Planning Commission meeting - Modifications to View Ordinance
Date: Saturday, April 15, 2017 at 7:54:08 PM Pacific Daylight Time
From: Lynn Gill <lynn.gill@cox.net>
To: Ewa Nikodem <enikodem@cityofrh.net>
CC: Yolanta Schwartz <ys@cityofrh.net>

Hello Yolanta and Ewa,
I am so impressed with the staff report 10-A! You have taken an impossibly complex matter and organized the salient issues of *four* documents. I can't even imagine how many hours this must have taken!
I carefully read the comparison tables for Measure 2017, and I'd like to request that a couple of corrections be communicated to the commission. Verbally at the meeting would be fine.

1. Circle 6 second row. Should be, "City's role in the process is advisory; City conducts hearings and renders non-binding recommendations, however parties shall determine whether recommendations rendered by the City will be final (binding)."
2. Circle 7 first row. Add "Responsibility for costs may be subsequently modified by mutual agreement of the parties after recommendation of the mediator, CTV, or council; or by decision of the arbitrator."
3. Circle 9 last row. Add: "however, ultimate responsibility for such costs may subsequently be modified by agreement of the parties."
4. Circle 26 last row. Should be, "Advisory recommendations of the CTV and/or city council shall be admissible as evidence in any civil action." (see page Measure 2017 p.17 5.b.)
5. Circle 31 3) Crown Reduction, from the ISA on-line dictionary,
   "**crown reduction**. method of reducing the height and/or spread of a tree crown by making appropriate pruning cuts.
   In my opinion the definitions in Measure 2017 which came mostly from the RHE ordinance are more helpful to visualize what is "appropriate," i.e., "removal of the longest portions of limbs to lateral limbs large enough to assume the tree's growth." Very important!

Thank you so much for your diligence in helping to craft the best ordinance possible for Rolling Hills.
Best regards,
Lynn

From: Lynn Gill <lynn.gill@cox.net>
Date: Wednesday, April 19, 2017 11:13 AM
To: Yolanta Schwartz <ys@cityofrh.net>
Subject: Role of the City in Protecting Views that Residents Purchased

Honorable Commissioners:

Here is the "elevator summary" of the extensive research results I have provided to you. I fear that I jumped around a bit in my oral presentation, as I tried not to repeat the excellent summary provided by Yolanta and the city attorney.

Thank you so much to your dedication to debating these important issues for our City, long into the night!

Best regards,
Lynn Gill
31 Chuckwagon Road

ROLE OF THE CITY IN PROTECTING VIEWS THAT RESIDENTS PURCHASED- QUASI-JUDICIAL BINDING DECISIONS OR ADVISORY NON-BINDING RECOMMENDATIONS?

- I have done much research on view ordinances, which I have provided for your bedtime reading. Rolling Hills needs a good tree and view ordinance to grant RH residents the right to preserve a view that they purchased and the right to preserve the vegetation they purchased, and to provide a dispute resolution methodology and definitions to guide remediation.

- The Chapter 17.26 view ordinance was adopted 1988, one of the first view ordinances if not the first. It provides for **quasi-judicial** (judge and jury) binding decisions by the CTV and City Council. It has resulted in the City being involved in expensive litigation and the cost of the city attorney attending lengthy hearings; and experts; SEQA, etc. are an expensive use of taxpayer dollars. In 2011, there were 4 concurrent lawsuits filed against Rolling Hills. Two were made moot when Measure B was passed by the voters.

- I reviewed ordinances of 22 prosperous cities picked from a list of 71 cities filing "friend of the court" briefs in Kucera v. Lizza with similar terrain to Rolling Hills and have provided you with comparative information.
    - 8 cities do not have view ordinances, which means that the city has no liability exposure but the citizens have no rights to preserve views.
    - 12 cities provide **advisory/non-binding** recommendations and also include liability protection clauses.
    - The City of Tiburon passed a tree protection and view ordinance in which the role of the city is to provide a process to protect views and definitions, including initial reconciliation, voluntary mediation which is **advisory/ not-binding**, and voluntary binding arbitration. It also included a liability protection clause protecting the city from litigation. It was tested in 1997 in Kucera v. Lizza which

found a legal use of the city's police powers to protect views, air and light.
  - In the 6 years since RHE passed their view ordinance (**advisory**), they have not had a single appeal to City Council or lawsuit.
  - Only RPV and Sausalito provide **quasi-judicial** decisions. Let's see how it has worked out for them!

- The citizens of RPV passed a view ordinance by ballot measure which is **quasi-judicial**. It went to the California Court of Appeals in 2011 (Echevarrieta v. City of RPV) which found it lawful, primarily because as the court said, "If the citizens want it, and they'll delegate the power to a city agency to do it, we won't interfere with it." RPV averages 14 view complaints per year, 4 of which are appealed to City Council. When yet another lawsuit was filed against RPV in 2009, Joel Rojas, director of planning, is quoted, "From what I hear, it's [the view ordinance] almost a model of what not to do."

- A staff report of the City of Mill Valley, compared Sausalito's ordinance (**quasi-judicial**) to Tiburon's and Belvedere's (**advisory**), and they found that Sausalito's ordinance resulted in one or two view cases per month, most of which are appealed to the City Council. Tiburon and Belvedere's staff said theirs were not burdensome, as the ordinance provides a process for neighbors to work things out for themselves.

- An arbitrator friend tells me that with Rolling Hills' **quasi-judicial** approach, when the view seeker knows that the city will in effect represent the interests of the view seeker during hearings and will foot the bill for any ensuing litigation, there is not a willingness to settle. They will press it to the limit.

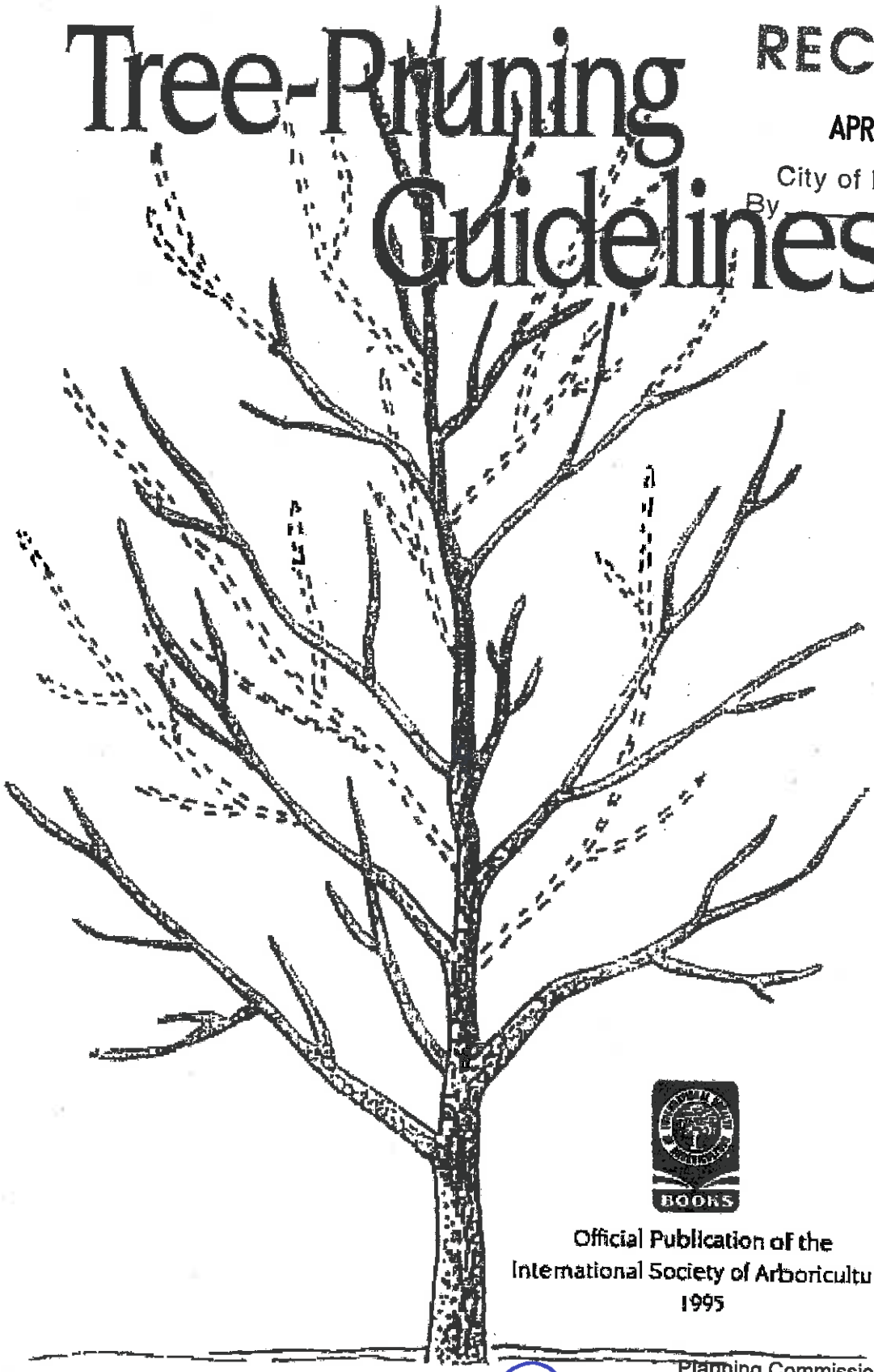
- Rolling Hills can get along just fine with **advisory/non-binding** CTV recommendations!

From Lynn Gill

APPENDIX E

Tree-Pruning Guidelines

By



Official Publication of the
International Society of Arboriculture
1995

Tree-Pruning Guidelines

Performance Guidelines Committee

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TABLE OF CONTENTS

PURPOSE

Trees and other woody plants respond biologically in specific and predictable ways to pruning and wounding. Careful study of these responses has led to pruning practices that can best develop, preserve and enhance the beauty, structural integrity and functional value of trees.

In an effort to promote practices that encourage the development and preservation of tree sturcture and health, the ISA Performance-Guidelines Committee has established the following Tree-Pruning Guidelines not only for arborists but also for those who manage and employ arborists. The reader may want to refer to "Standard Practices for Tree, Shrub and Other Woody Plant Maintenance" (ANSI A300). The Guidelines are presented as a working tool, recognizing that trees are individually unique in form and structure, and that their pruning needs may not always fit strict rules. The arborist must take responsibility for special pruning practices, or regional variations, that may vary from these Guidelines.

Pruning Techniques

A plant's responses to most techniques of pruning are universal to almost all trees and situations.

Types of Pruning Cuts

An understanding of tree responses to pruning cuts leads to a more reasoned approach to pruning.

A *thinning* cut removes a branch at its point of origin or shortens it or the leader, to a lateral large enough to assume the terminal role (Figure 1). Thinning opens the foliage of a tree, reduces weight on heavy limbs, can reduce a tree's height, distributes ensuing invigoration throughout a tree and helps retain the tree's natural shape. Thinning cuts are usually the preferred method of tree pruning.

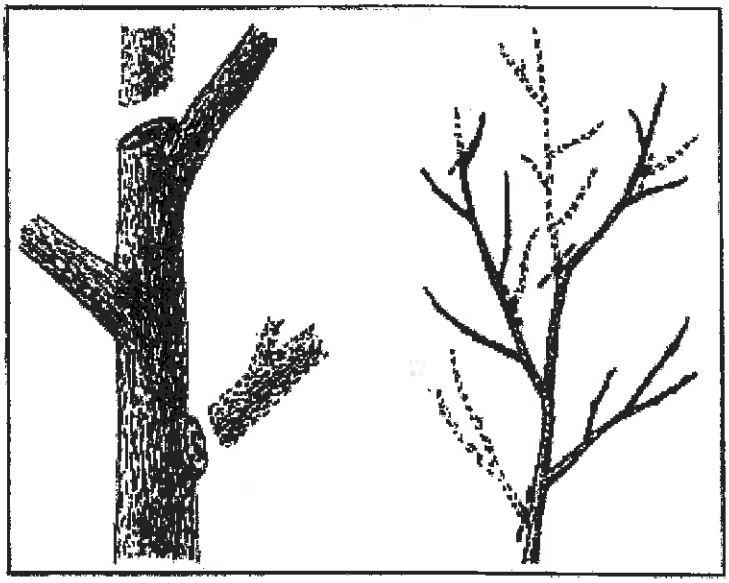

Figure 1. Thinning is removing a branch at its point of origin (lower cut on each) or shortening a branch or leader by cutting to a lateral large enough to assume the terminal role (upper cut on each), commonly called "drop-crotching" in mature trees.

Heading is cutting a currently growing or one-year-old shoot back to a bud, or cutting an older branch or stem back to a stub or lateral branch not sufficiently large enough to assume the terminal role (Figure 2). Heading cuts are appropriate for specific purposes such as:

- Reducing leaf area on an unbranched shoot when training young trees.
- Pollarding trees.
- Shaping terminal flowering plants (lilac, privet, crape myrtle, roses).
- Shearing hedges.

Heading should rarely be used in mature trees, since it forces the growth of vigorous, weakly attached upright sprouts originating just below such cuts (Figure 7), and the tree's natural form is altered. In some situations, branch stubs die back or produce sprouts with low vigor.

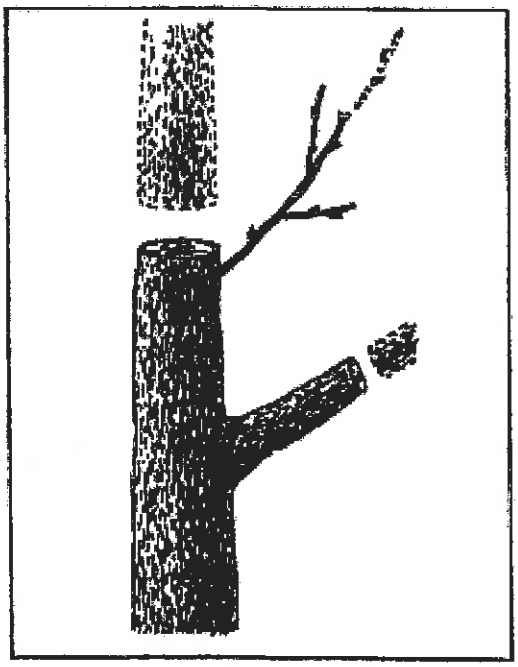

Figure 2. Heading is pruning to a stub (lower branch), a small lateral (trunk) or a bud (terminal on small lateral).

Making the Cut

When removing a live branch, pruning cuts should be made just outside the branch bark ridge and collar (Figure 3). This location of cut is in contrast to a "flush cut" which is made inside the branch bark ridge and collar. Flush cuts should be avoided because they result in a larger wound and expose trunk tissues to the possibility of decay. If no collar is visible, the angle of the cut should approximate the angle formed by the branch bark ridge and the trunk.

When removing a dead branch, the final cut should be made outside the branch bark ridge and the collar of live callus or woundwood tissue. If the collar has grown out along the branch stub, only the dead stub should be removed; the live collar should remain intact (Figure 4).

If it is necessary to reduce the length of a branch or the height of a leader, the final cut should be made just beyond (without violating) the branch bark ridge of the branch being cut to. The remaining branch should be no less than 1/3 (one third) the diameter of the branch being removed, and with enough foliage to assume the terminal role. On large trees this type of cut is commonly called drop crotching (Figure 1).

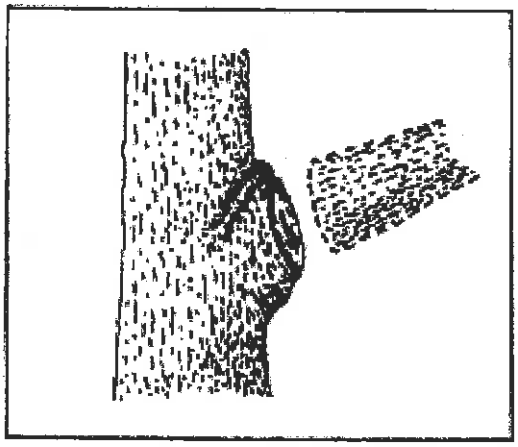

Figure 3. Pruning cuts should be made just outside the branch bark ridge (top of cut) and the collar (bottom of cut).

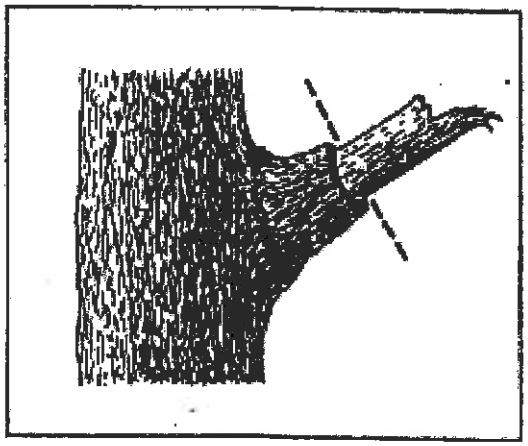

Figure 4. On a dead branch that has a collar of live wood, the final cut should be just beyond the outer edge of the collar.

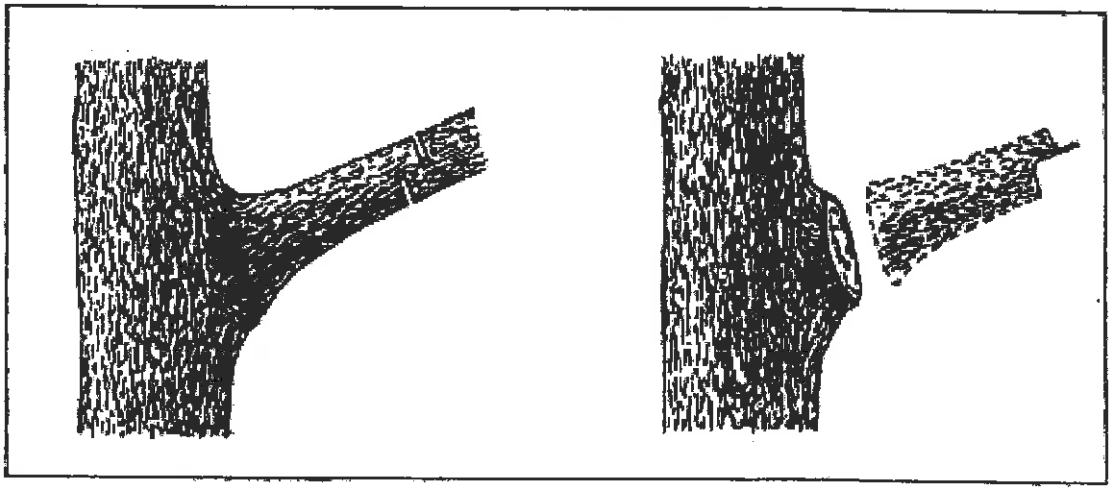

Figure 5. Remove a large limb by making three cuts. First cut on the bottom of the limb about 12 inches (30 cm) from the branch attachment (left). Make the second cut on the top about 1 inch (2-3 cm) from the under cut. The final cut is just outside the branch bark ridge and the outer protion of the collar (right).

Pruning cuts should be clean and smooth, leaving the bark at the edge of the cut firmly attached to the wood. A three-cut process will reduce chances of injury when removing large limbs (Figure 5).

Large or heavy branches that cannot be safely thrown clear, should be lowered on ropes to prevent injury to the tree or other property.

Wound dressings and tree paints have not been shown to be effective in preventing or reducing decay. They are therefore not recommended for routine use on pruning cuts unless specified for disease, borer, mistletoe or sprout control.

Size of Pruning Cuts

Pruning can be done to different levels of detail or refinement. The removal of many small branches rather than a few large branches requires more time, but produces a less-pruned appearance, forces fewer watersprouts, and helps to maintain the vitality and structure of the tree.

Designating the minimum size of undesirable branches to be removed from the tree crown, such as one-half inch, one inch or two inches (1, 2.5 or 5 cm) basal diameter, will establish the detail and extent of pruning desired.

Climbing Techniques

Special care should be taken by the climber to ensure that the tree is safe to climb before entering it. Climbing techniques can affect tree health by preventing, or creating, injuries to the tree.

Pre-Climbing Examination. A thorough inspection of the tree's structure for possible hazards should be made of every tree before climbing. A tree worker's safety inspection should also include an examination of the tree's root collar, where the roots flare out into the soil.

The tree should be inspected for potential hazards such as branch attachments with included bark, co-dominant (equal-sized) stems, trunk and branch about equal size, weakly-attached watersprouts, limbs with cracks, broken limbs and hangers. Discussion should take place with the crew as to how to avoid or reduce the hazards to the climber when such structural defects are present in the tree. Hazards of the work site should also be reviewed, such as the presence and location of all electrical conductors, especially high voltage conductors. Check for property that might be damaged by falling branches.

If no root flare is present, either the soil may have been raised over the original grade, girdling roots may be present or the tree is of a species that seldom develops root flares. In the first two cases, a potentially dangerous situation may exist, and a root-collar excavation is recommended. Likewise, if there are signs of significant injury or decay at the base of the trunk, an excavation of the root collar is recommended.

A root-collar excavation includes the removal of soil around the trunk, six to twelve inches (15-30 cm) below the original grade, to expose the major roots for inspection. These roots are then examined for signs of healthy or dead bark and/or decay.

After the examination is completed, the soil should be returned to the original grade of the tree's root collar. This can usually be determined by horizontal lines or wrinkles on the lower trunk or major buttress roots. Tree wells resulting from deep soil fills that have been removed during the root collar excavation can be covered with grates, decks or surrounded by small fences to maintain public safety.

Diseased tissue should be left exposed for one or more years, or until callus is well formed and the progress of the disease has stopped. Roots should be protected in winter months from freezing temperatures by recovering them with mulch or soil, and exposing

Climbing Practices. Climbing and pruning practices, except for pruning cuts, should not injure the tree.

Climbing spurs or gaffs should not be used when pruning a tree. They may be used to enter the tree, where the branches are more than throwline distance apart. In such cases the spurs should be removed once the climber is tied in.

Spurs may be used to reach an injured climber or when climbing to remove a tree.

Rope injury to thin-barked trees from loading out heavy limbs should be avoided by installing a block in the tree to carry the load. A block or rope guard may also be used to reduce injury to the bark from the climber's line.

Training Young Trees

Properly trained trees will develop into structurally strong trees well suited to the site and their intended landscape function. These trees will fulfill their intended function sooner and should require little corrective pruning as they mature. Young trees that reach large mature size should have a sturdy, tapered trunk with well-spaced branches that are smaller in diameter than the trunk.

These guidelines apply primarily to decurrent (round-headed) large-growing trees to develop a structure characteristic of the species or cultivar. Trees that will become decurrent seldom have lateral shoots on current-season's growth.

Trees of excurrent (central leader) growth habit usually need little or no training except to remove laterals that are too low or to control laterals that may compete with the leader.

Trunk Development

For most trees, maintain a single, straight trunk or central leader. Do not head the leader except:

- to correctly position the lowest main branch;
- to space other main branches at least 18 inches apart vertically;
- to remove a tight grouping of terminal twigs so that a more vigorous shoot will develop as the leader.

At least one half of the foliage should be on branches (temporary and permanent) arising in the lower two-thirds of a tree. Similarly, branches should have a like distribution of foliage along their lengths.This will increase trunk taper and more uniformly distribute branch weight and wind stress along the trunk.

Permanent Branch Selection

The height of the lowest permanent branch will depend on the function of the tree and local ordinance; e.g.: screen an unsightly view, provide a wind break, shade a patio or be a street tree.

Unless they are too close together or weakly attached, or the tree may not receive adequate water, remove few or no branches on a newly-planted tree. This will ensure a better selection for permanent main branches in subsequent years, promote trunk taper and early rapid growth of a tree.

Potential permanent branches can be spaced 6 to 12 inches (15-30 cm) apart by thinning. By the fifth year, these branches should be thinned to at least 18 inches (50 cm) apart, if at maturity the trunk diameter is expected to be greater than 18 inches (50 cm). Spacing can be less with an expected trunk diameter of less than 12 inches (30 cm) at maturity.

Select permanent branches to maintain an even radial distribution. Where branches are growing one directly above another, maintain at least 15-36 inches (40-100 cm) above the lower branch on small to medium-size trees, and 60 inches (150 cm) on large-growing trees.

Temporary Branches

Retain small branches along the trunk for 1 to 5 years to increase lower-trunk size and taper and to protect the trunk from injury by the sun and vandals. It is more important to have temporary branches below the lowest permanent branch than above.

Preferred vertical spacing of temporary branches is 4 to 6 inches (10-15 cm), with none within 6 inches (15 cm) of potential main branches. Select the least vigorous shoots for temporary branches. If larger-than-desired branches need to be kept as temporaries, head them

back to 2 or 3 buds. It is important to have some on the side of the trunk facing the afternoon sun. Attachment angle of temporary branches is not important since they will be removed.

Temporary branches should be kept short to provide clearance for paths, etc. and to increase height growth of the leader. These branches may need more than one pruning during a growing season, depending on tree vigor.

During the first dormant season, prune to thin the temporary branches. Leave about 3/4 (three fourths) of those left the first year. Leave them uniformly spaced, remove the largest or cut them back to 2 or 3 buds.

During the next dormant season, reduce the number of temporary branches by 1/5 (one fifth) to 1/4 (one fourth) of those present the first year. In most situations, by the fifth dormant season, all of the temporary branches should be removed.

Developing Strong-Branch Structure

The relative size of a branch in relation to the trunk is more important for strength of branch attachment than is the angle of attachment. Branches should be 1/2 (one half) or less of the diameter of the trunk immediately above the branch.

No permanent branch attachments should have included bark.

Retain lateral branches along limbs, but each should be less than 1/2 (one half) the diameter of the limb at its attachment. Permanent lateral branches along limbs should be at least 2 feet (60 cm) out from the trunk.

As trees grow to maturity, pruning should focus on maintaining or improving structure, and directing the tree's growth.

A goal of structural pruning is to maintain the size of permanent lateral branches to less than 1/2 (one half) the diameter of the parent branch or trunk. If a scaffold branch is too large in relation to the leader or another scaffold, thin the competing scaffold's laterals particularly near its terminal. Thin the leader and other scaffolds less, if at all. Thinning laterals from a branch will reduce the weight of the branch, slow its total growth and develop a stronger branch attachment. If pruning the competing scaffold is not appropriate, it should be removed.

On large-growing trees, except for whorl-branching conifers, branches that are more than one-third the diameter of the trunk should be spaced along the trunk at least 18 inches (50 cm) apart, on center. If this is not possible, because of the present size of the tree, such branches should have their foliage thinned, particularly near their terminals.

Pruning Mature Trees (Maintenance Pruning)

As trees mature, their need for structural pruning should decrease. Pruning should then focus on maintaining tree structure, form, health and appearance by:

- removing dead branches
- thinning to reduce weight and/or the windsail effect of large laterals, and
- maintaining inner branches.

Pruning such as crown reduction, or shaping, is sometimes necessary if tree branches of foliage begin to interfere with surrounding improvements, such as buildings, utility wires or paths. The types of pruning generally used in the industry are described below.

Crown Cleaning

Crown cleaning, or cleaning out, is the removal of dead, dying, diseased, crowded, weakly attached, low-vigor branches, and watersprouts from a tree's crown.

Crown Thinning

Crown thinning is the selective removal of branches to increase light penetration and air movement through the crown. Thinning opens the foliage of a tree, reduces weight on heavy limbs, distributes ensuing invigoration throughout a tree and helps retain the tree's natural shape. Thinning cuts are usually the preferred method of tree pruning. When thinning the crown of mature trees you should seldom remove more than 1/4 (one fourth) of the live foliage.

At least 1/2 (one half) of the foliage should be on branches that arise in the lower 2/3 (two thirds) of the tree. Likewise, when thinning laterals from a limb, an effort should be made to retain well-spaced inner lateral branches with foliage. Trees and branches so pruned will have mechanical stress more evenly distributed along a branch and throughout the tree.

Caution must be taken not to create "lion-tailing," which is caused by removing all or most of the inner foliage. This places foliar weight at the ends of the branches and may result in sunburn, watersprouts, weakened branch structure and limb breakage.

Crown Raising

Crown raising removes the lower branches of a tree in order to provide clearance for buildings, vehicles, pedestrians and vistas. It is important that a developing tree have at least 1/2 (one half) of its foliage on branches that originate in the lower 2/3 (two-thirds) of the tree. Similarly, branches should have even distribution of foliage along their lengths. This will ensure a well-formed, tapered structure and to uniformly distribute stress within a tree. In some cases, this may not be possible because local ordinances require removal of low branches for clearance.

When pruning for view, it is preferable to develop spaces between branches, or "windows" through the foliage of the tree, rather than to severely raise or reduce the crown.

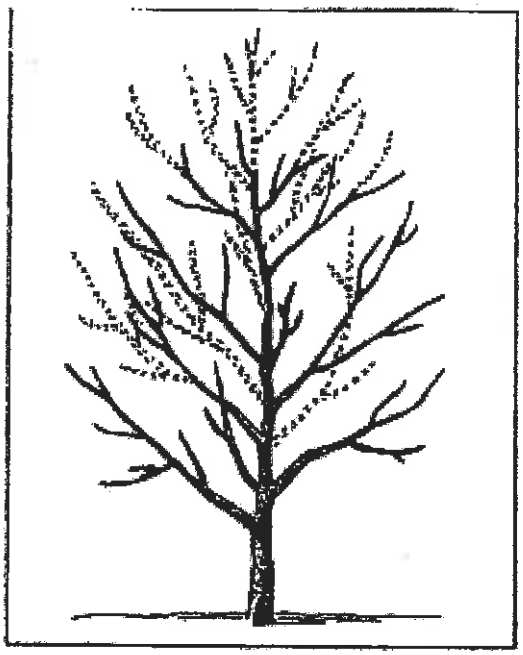

Figure 6. The height and spread of a tree can usually be reduced and still maintain its natural shape. Branches that have been removed by thinning cuts are outlined by broken lines.

Crown Reduction

If a tree has grown too large for its allotted space, either:

- Remove the tree, particularly if it has a central-leader growth habit;
- Thin branches to reduce tree height and/or spread by pruning back leaders to lateral branches (Figure 6), or
- Head branches to reduce the height and/or spread of the tree crown. This is the least desirable of the three alternatives.

Thinning cuts to reduce the size of the crown results in fewer sprouts and can maintain the structural integrity and natural form of the tree, delaying the need to re-prune. The lateral to which a branch or leader is cut should be at least 1/3 (one third) the diameter of the branch being removed.

A tree pruned by the crown reduction method appears more natural and lasts longer if confined to relatively small thinning cuts. This is the preferred method of crown reduction. The removal of a large limb or leader to a large lateral, or shorter vertical, is commonly called drop crotching or drop-crotch pruning. Pruning the leader of a central-leader tree to a large lateral is inappropriate. Even though large wounds may lead to decay, drop-crotch pruning is preferred to making heading cuts.

Occasionally, on vigorous small diameter trees with broken or damaged tops the crown can be reduced in height and/or spread by heading cuts leaving a stub containing buds or a lateral branch that is not large enough to assume the terminal role. Heading cuts, however, should seldom be used for crown reduction on large trees because vigorous, weakly attached, upright sprouts are forced just below such cuts (Figure 7) the tree's natural form is altered and the heading cuts are more subject to decay.

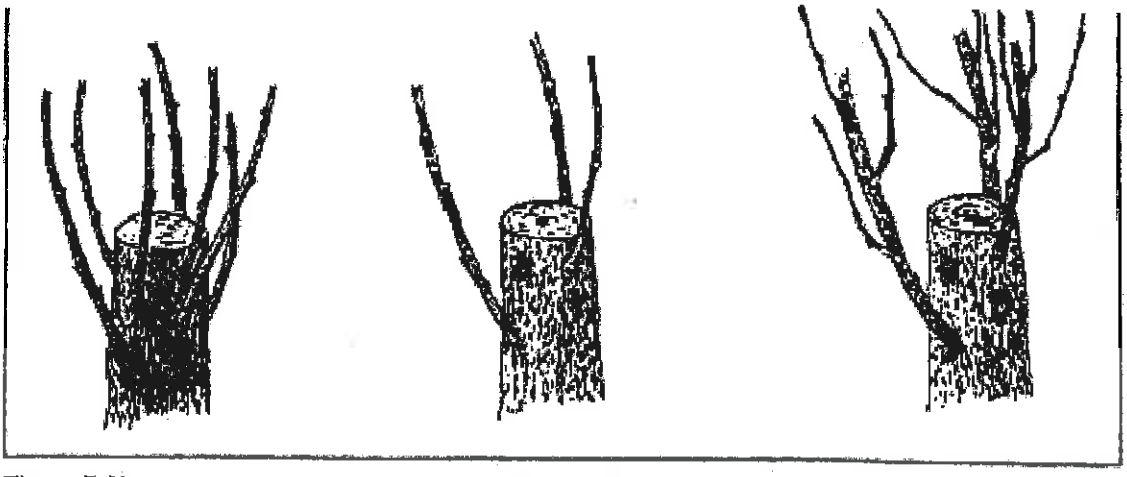

Figure 7. Numerous watersprouts resulted from the heading cut the previous winter of this leader or large upright branch (left). The one-year-old watersprouts have been thinned to three to begin to rebuild the tree (center). The number of sprouts left depends on the size of the branch and number of branches in the tree. Laterals on the sprouts the following season (right) may need to be thinned to reduce weight and wind-sail effects that could break sprout attachment. If such a heading cut is made, it is preferable to cut at an angle with the high side towards the afternoon sun. (The full length of the sprouts and laterals are not shown.)

Crown Restoration

Crown restoration is intended to improve the structure and appearance of trees that have sprouted vigorously after being broken, topped or severely pruned using heading cuts. One to three sprouts, on main branch stubs, should be selected to form a natural appearing crown. The more vigorous sprouts may need to be thinned, cut to a lateral, or even headed, to control length growth or ensure adequate attachment for the size of the sprout. Crown restoration may require several prunings over a number of years (Figure 7).

Utility Pruning

Line-clearance tree workers should be trained to work safely around high voltage conductors. The United States Occupational Safety and Health Act (O.S.H.A.) and The American National Standards Institute (A.N.S.I.) have established minimum distances to be maintained by tree workers from electrical conductors. The following guidelines are designed to maintain the required clearance of trees from high voltage transmission lines with a minimum of resprouting and fewer pruning cycles. The guidelines are based on known tree responses to various pruning techniques. In no sense should the guidelines take precedence over safe work practices.

Utility pruning may vary in urban and rural areas. The quality of care given a tree should balance with the landscape setting. The pruning of high-value trees in urban landscaped areas should more closely follow the preceding Tree Pruning Guidelines. Public pressure in some areas may require leaving more branches inside the canopy, which may potentially contact the conductor. This practice will be more costly as it requires more frequent pruning cycles.

It is important to prevent bark injuries on large and high-value trees by controlled lowering of heavy limbs being removed and by not climbing with gaffs. Urban trees often sustain injuries to the lower bole which open sites for decay. All trees should be carefully examined for structural problems before climbing.

Lateral or Directional Pruning. A tree's growth under utility lines is most economically managed by lateral or directional pruning (thinning cuts). Directional pruning is the removal of a branch to the trunk or a significant lateral branch growing away from the conductor. Heading cuts (topping), on the other hand, encourage vigorous sprouting and increases the frequency of pruning cycles and the cost of maintenance.

All trees should be examined for hazards before climbing. Hangers and large dead branches should be removed. The root collar should be examined for signs of decay or root rot which would make the tree unstable.

Where possible, the tree should be allowed to attain normal height, with crown development maturing away form high-voltage conductors.

To achieve clearance, pruning should be restricted to removal of branches at crotches within the crown.

As few cuts as are reasonable should be used to achieve the required clearances.

When the pruning of a branch will result in the loss of more than 1/2 (one half) of the foliage on the branch, it should be removed to the parent stem.

Precautions shall be taken to pre-cut large limbs to avoid stripping or tearing the bark, and minimize unnecessary wounding. Heavy limbs should be lowered on ropes to avoid damaging bark on limbs and trunks below.

The placement of pruning cuts shall be determined by anatomy, structure and branching habit. Limbs should not be arbitrarily cut off based on a pre-established clearing limit.

Final drop-crotch cuts should be made outside the branch bark ridge on the main stem or lateral branch. The remaining branch shall be no smaller than 1/3 (one third) the diameter of the portion being removed. The remaining should be pruned to direct the growth away from conductors.

The use of multiple, small-diameter shaping cuts to create an artificially uniform crown form, commonly known as a "roundover", or a hedged side-wall effect, is not cost effective nor consistent with proper pruning practice.

Severe crown reduction pruning should be practiced only where trees are located under lines. Topping of tall-growing species directly under utility lines should be discouraged in favor of the removal and replacement with a species that matures at a lower height.

Climbing spurs, gaffs, climbing irons or hooks shall not be used except for tree removal or where branches are more than a throw-line distance apart or for emergency rescue.

Mechanical Utility Pruning. Appropriate for remote sites where trees occur in wooded areas or forest stands.

To the extent possible, the placement of pruning cuts should be determined by crown structure and branching habit.

The minimum number of cuts should be utilized to achieve required clearances.

Cuts should be made as reasonably close to the main stem as possible or to a lateral branch 1/3 (one third) the diameter of the removed branch that will direct future growth away from conductors.

Pruning cuts are to be made outside the branch collar, leaving as small a stub as possible (see Figure 3).

Precautions shall be taken to avoid excessive wounding and stripping or tearing of bark.

Severed limbs shall be removed from the crown of the tree.

GLOSSARY OF TERMS

(Page number corresponding with first use of term.)

Arborist: A person possessing the technical competence through experience and related training to provide for or supervise the management of trees and other woody plants in the residential, commercial and public landscape. (pg. 1)

Branch: A secondary shoot or stem arising from the main stem or trunk. (pg. 2)

Branch Collar: Trunk tissue that forms around the base of a branch between the main stem and the branch or a branch and a lateral. As a branch decreases in vigor or begins to die, the collar usually becomes more pronounced and more completely encircles the branch. (pg. 3)

Branch Bark Ridge: A ridge of bark in a branch crotch that marks where branch and trunk tissues meet and often extends down the trunk. (pg. 3)

Callus: Undifferentiated tissue initially formed by the cambium around and over a wound. (See woundwood.) (pg. 3)

Climbing Spurs: Sharp-pointed devices affixed to a climber's legs used to assist in climbing trees (a.k.a. gaffs, hooks, spurs, spikes, climbers). (pg. 5)

Crotch: The angle formed at the attachment between a branch and another branch, leader or trunk of a woody plant. (pg. 10)

Crown: The leaves and branches of a tree or shrub; the upper portion of a tree from the lowest branch on the trunk to the top. (pg. 8)

Decurrent: Round-headed or spreading plant with no main leader to the top of the plant. (See excurrent.) (pg. 6)

Drop Crotching or Drop-Crotch Pruning: A thinning cut which removes the terminal portion of a large branch or leader back to a lateral large enough to assume the terminal role. (pg. 2)

Excurrent: Tree with cone-shaped crown with a central leader that outgrows and subdues lateral branches. (See decurrent.) (pg. 6)

Flush Cut: A pruning cut made inside the branch collar and branch bark ridge. (pg. 3)

Heading: Pruning a currently growing or one-year-old shoot back to a bud, or cutting an older branch or stem back to a stub or lateral branch not sufficiently large enough to assume the terminal role. (pg. 2)

Included Bark: Bark that occurs in a crotch between branch and trunk or between codominant stems. Included bark usually prevents the trunk from growing around a branch. (pg. 4)

Lateral: A branch or twig growing from a parent branch or stem. (pg. 2)

Leader: A dominant upright stem, usually the main trunk. (pg. 2)

Limb: Same as branch, but usually larger and more prominent. (pg. 2)

Parent Branch or Stem: the tree trunk; or, the larger limb from which lateral branches are growing. (pg. 7)

Root Collar: The junction between the root of a plant and its stem, often indicated by the trunk flare. (pg. 4)

Scaffold: A large limb that is or will be part of the permanent branch structure of a tree. (pg. 7)

Thinning: The removal of a branch at its origin or cutting it or the leader to a lateral large enough to assume the terminal role to open up or reduce the crown. (pg. 2)

Wound: An opening that is created when the tree's protective bark covering is penetrated, cut, or removed, injuring or destroying living tissue. Pruning a live branch creates a wound, even when the cut is properly made. (pg. 3)

Woundwood: Differentiated woody tissue which forms after initial callus has formed around the margins of a wound. Wounds are closed primarily by woundwood. (See callus.) (pg. 3)

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