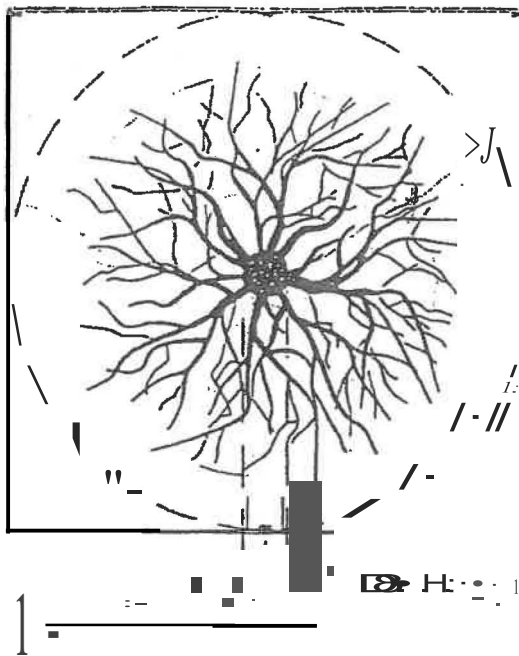


## APPENDIXES

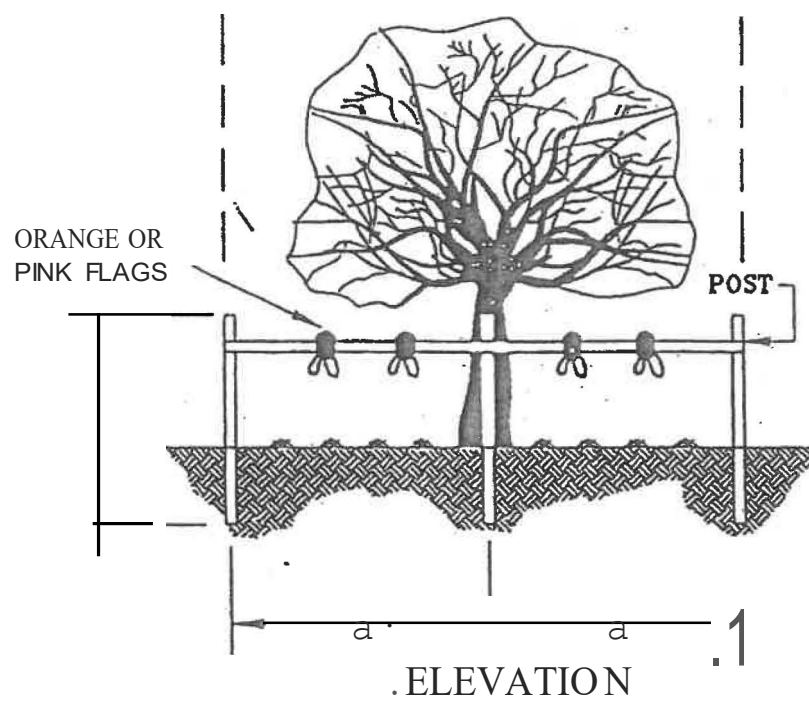
1. Figures 1 - 7, Specifications for Tree Protection and Erosion Control, During OH and UG Construction.
2. Figures 8-11, Illustrations of Tree Trimming methods.
3. Recommended Trees for Planting Near Overhead Power Lines.
4. ANSIA300- for Tree Care Operations 2017 Part 1 Pruning

APPENDIX I

Figures 1 - 7, Specifications for Tree Protection and Erosion Control, During OH and VG  
Construction



—— C.P.Z.



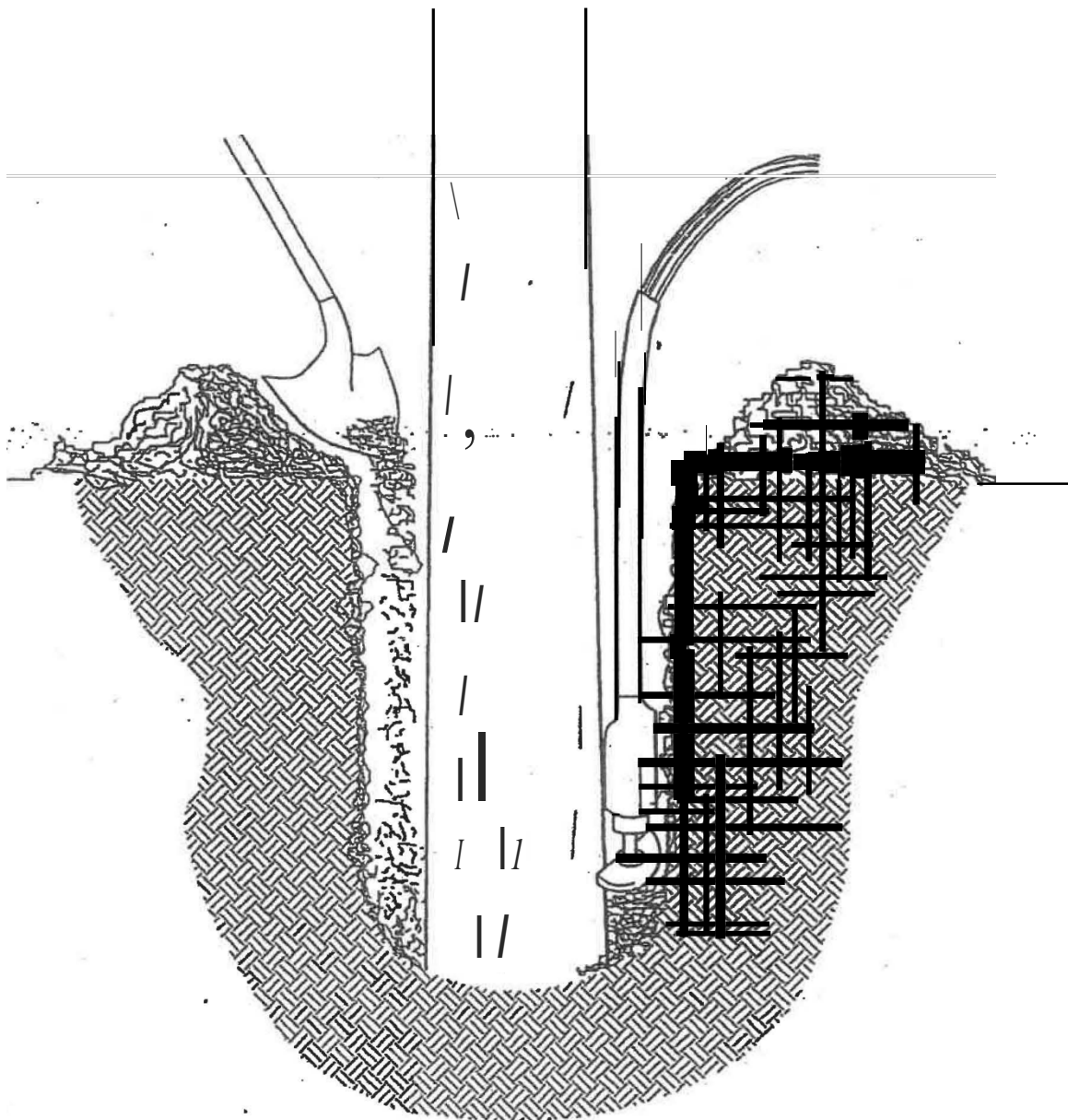
NOTES:

1. D.B.H. :: DIAMETER AT BREAST HEIGHT OR THE DIAMETER OF A TREE MEASURED AT 54" ABOVE THE NATURALLY OCCURRING GROUND LEVEL.
2. C.P.Z. = CRITICAL PROTECTION ZONE = AREA SURROUNDING A TREE WITHIN A CIRCLE DESCRIBED BY A RADIUS OF ONE FOOT FOR EACH INCH OF THE TREE'S D.B.H.
3. 2x4 PRESSURE TREATED POST SHALL BE PLACED 8'-0" TO 10'-0" ON CENTER, CONNECTED BY 1, 1x4 WOODEN RAIL.

ORIG. DATE	REVISION 1	REVISION 2	REVISION 3

FIGURE 1

TREE PROTECTION



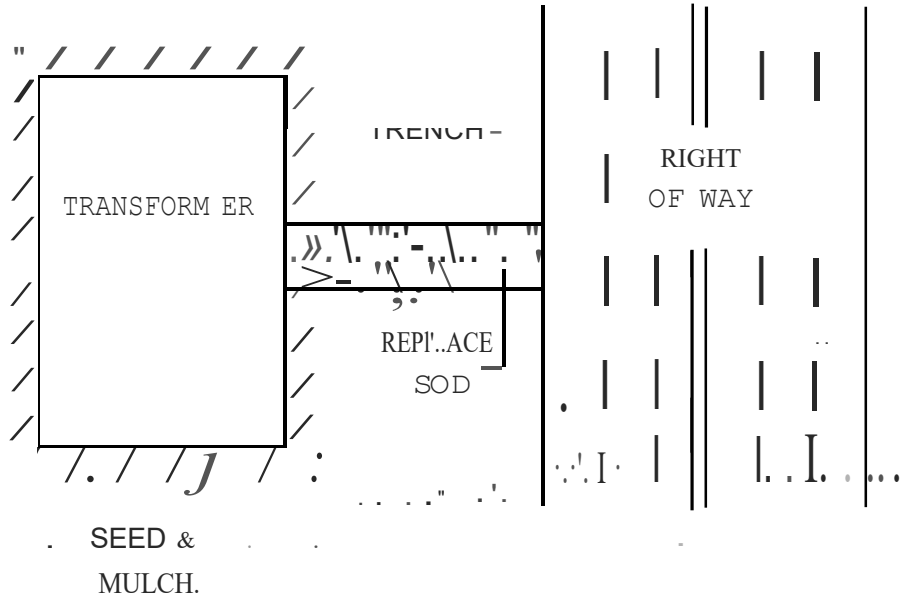
BEGIN TAMPING AT BOTTOM OF HOLE

	CHIC:IH	REVISION 1	REVISION 2	REVISION 3
DRAWN:	CC			
01ZC*IXD,				

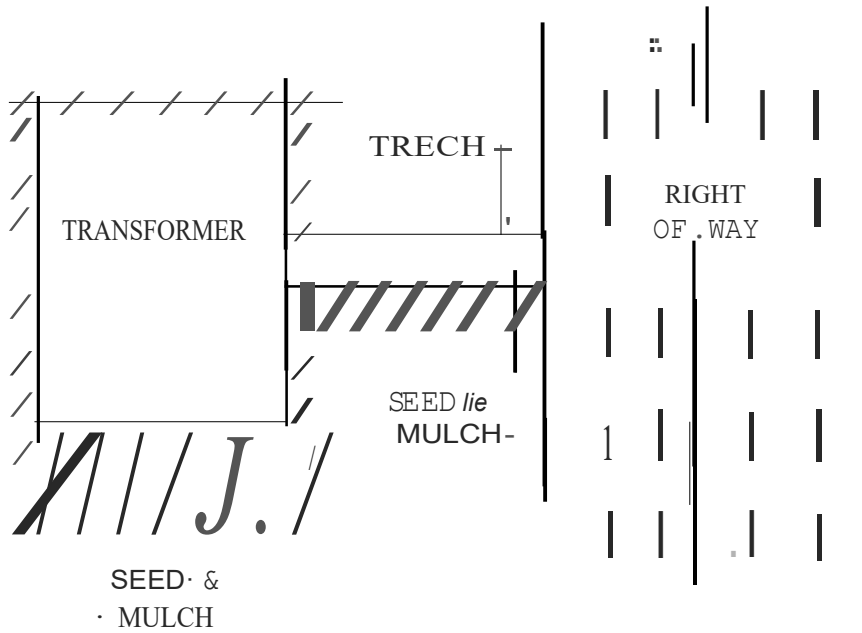
FIGURE 2

OVERHEAD POLE INSTALLATION

## DEVELOPED AREAS



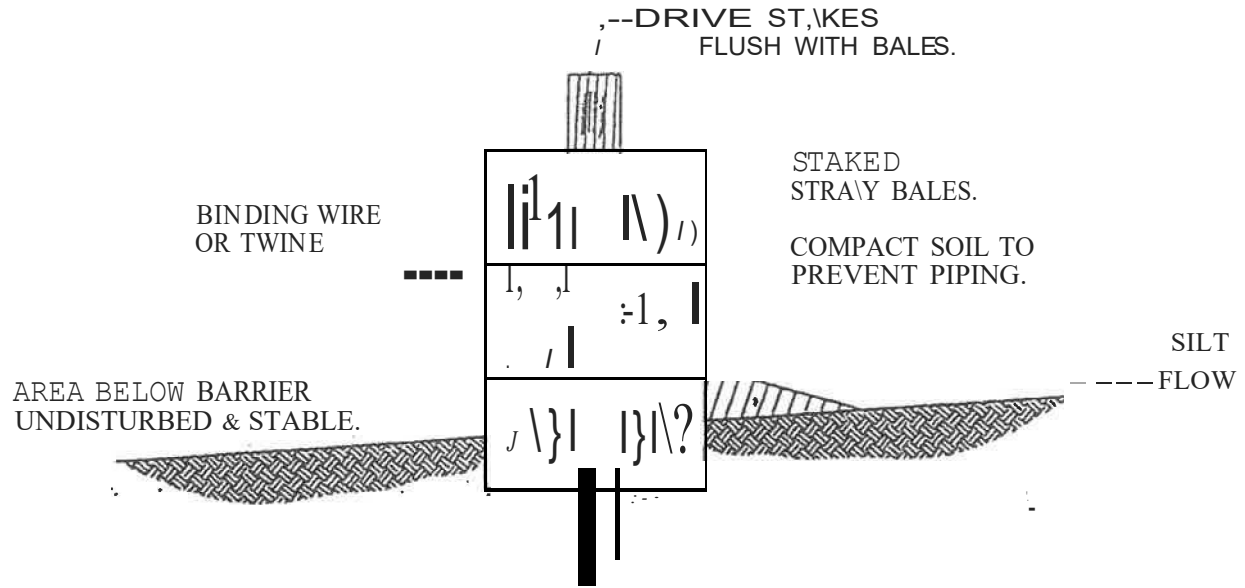
## UNDEVELOPED AREAS



<b>DRAWN:</b>	<b>CC</b>			
	ORIGINATOR	REVISION	REVISION	REVISION
<b>cm:</b>				

FIGURE 3

URD INSTALLATION



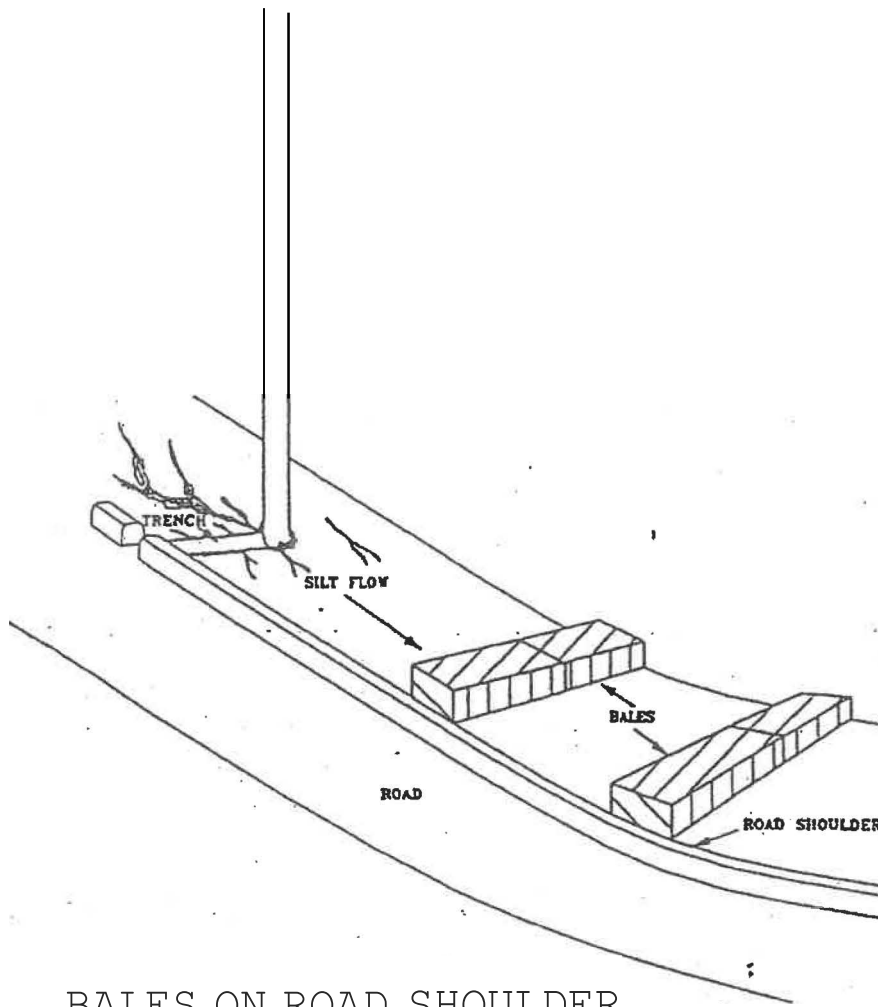
- 1) Each bale shall be securely anchored by at least two stakes or rebars drive through the bale. Stakes and rebars shall be driven deep enough to securely anchor the bales to a minimum depth of 6 inches below the bale bottom.
- 2) Straw bale barriers shall be removed when they have fulfilled their usefulness, but not before the upslope areas have been permanently stabilized.

**APPLICABILITY :**

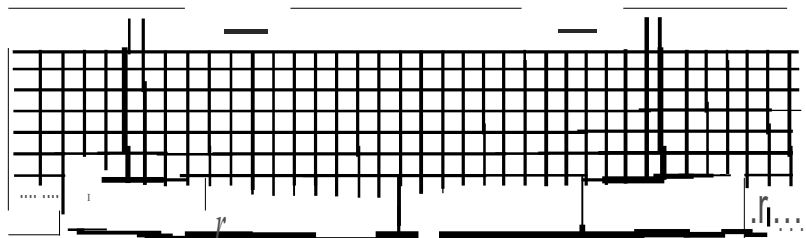
Use only when flow is sheet flow and drainage does not exceed .1/4 acre per 100 l.f. of line. Other situations require special alternate design.

	OFFICIAL	REVISION
CHECKED:		
APPROVED:		
APPROVED:		
DATE:		

FIGURE 4  
STRAW BALE SPECIFICATION



BALES ON ROAD SHOULDER



6x1" FENCE

BALES BACKED BY FENCE

LOOSE SOIL PLACED BY SHOVEL AND  
 THOROUGHLY COMPACTED ALONG UPSTREAM  
 FACE OF BALES.

	OKICUAL	IR'HSIOH	U'HSIOH	RMS1011
	ce			
Clte:ICED:				
<b>APPROVED:</b>				
<b>APPROVED:</b>				

FIGURE 5

STRAW BALE APPLICATIONS

DESIGNED BY:	DATE:
CHECKED BY:	
APPROVED BY:	
DATE:	

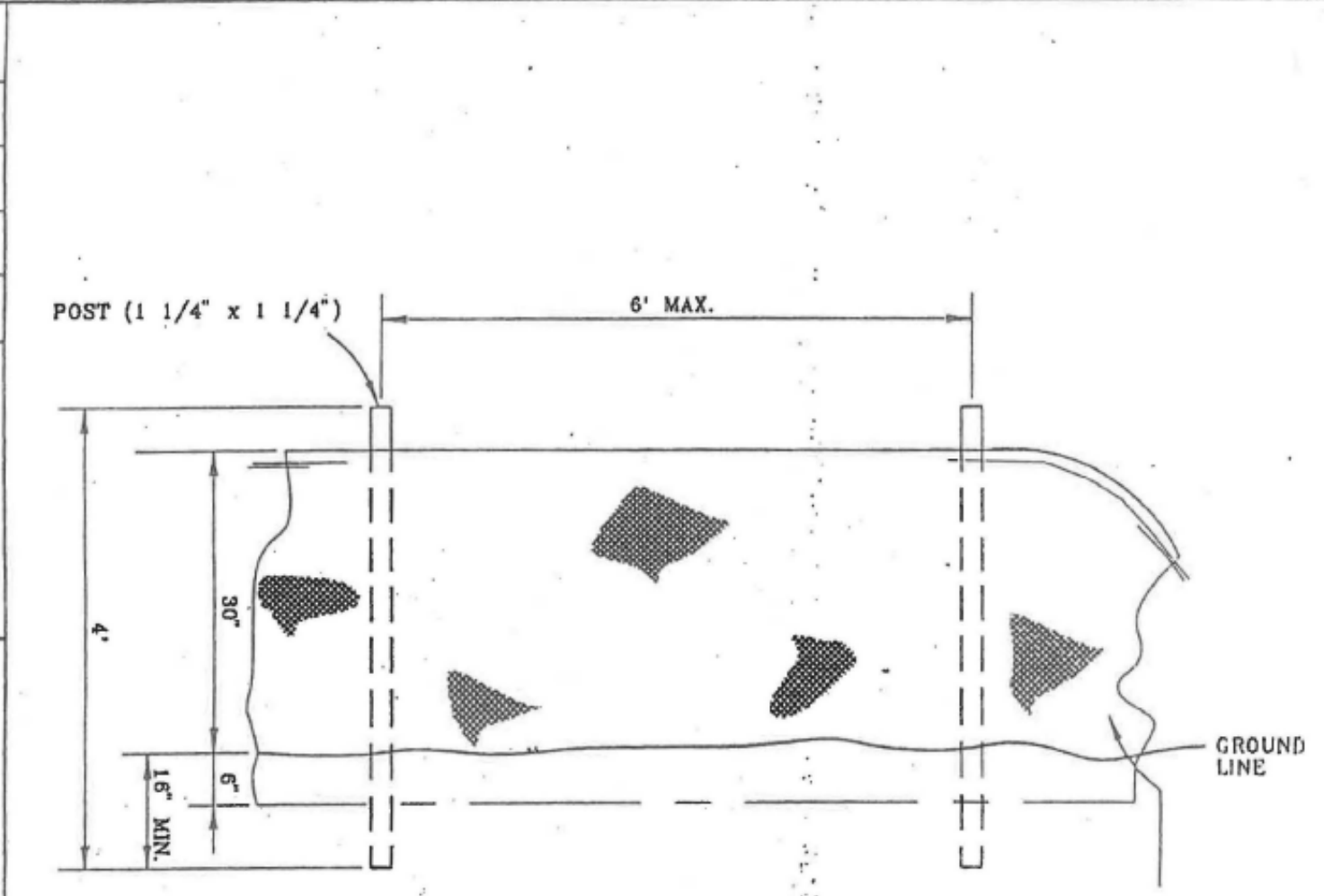


FIGURE 6

SILT FENCE SPECIFICATIONS

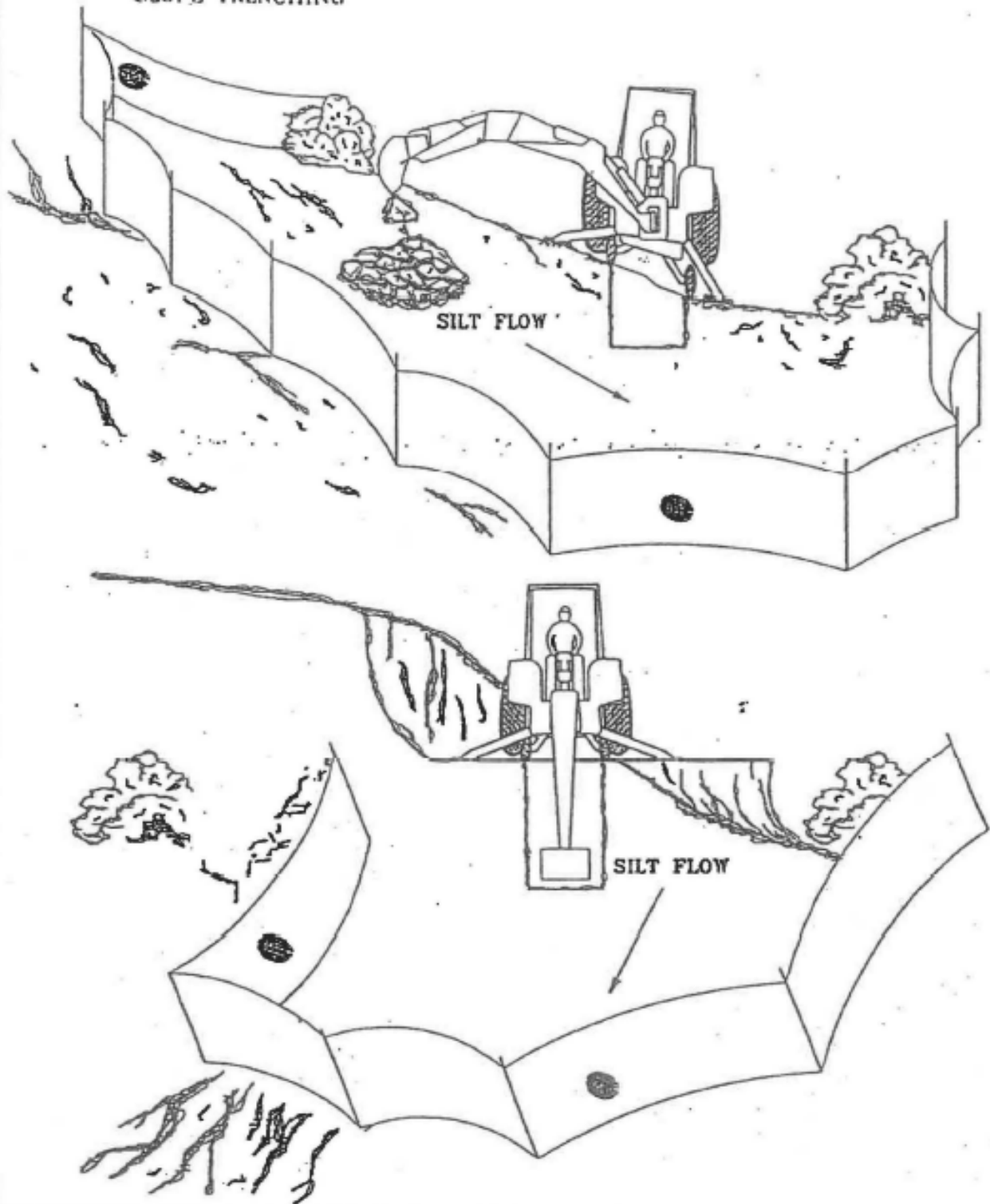
**APPLICABILITY:**

Use only when flow is sheet flow and drainage does not exceed 1/4 acre per 100 l.f. of fence. Other situations requires special alternate design.

POLYPROPYLENE FILTER FABRIC  
STOCK NO. 293600



**SLOPE TRENCHING**



	ORIGINAL	REVISION 1	REVISION 2	REVISION 3
DRAWN:	CC			
CHECKED:				
APPROVED:				
APPROVED:				
DATE:				

**FIGURE 7**

**SILT FENCE APPLICATIONS**

## APPENDIX 2

Figures 8-11. Illustrations of Tree Trimming methods.

**SIDE TRIMMING**

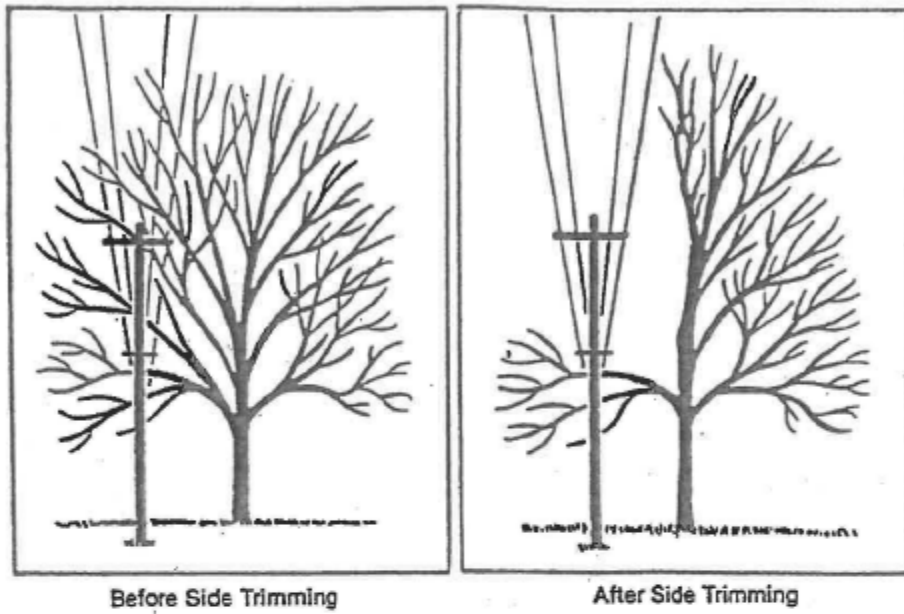


Figure 8

**UNDER TRIMMING**

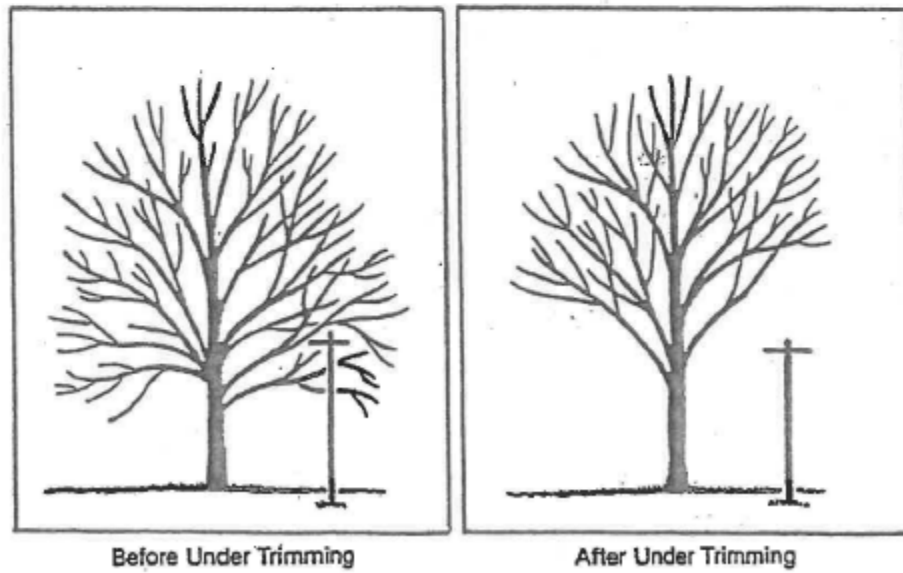


Figure 9

**THROUGH TRIMMING**

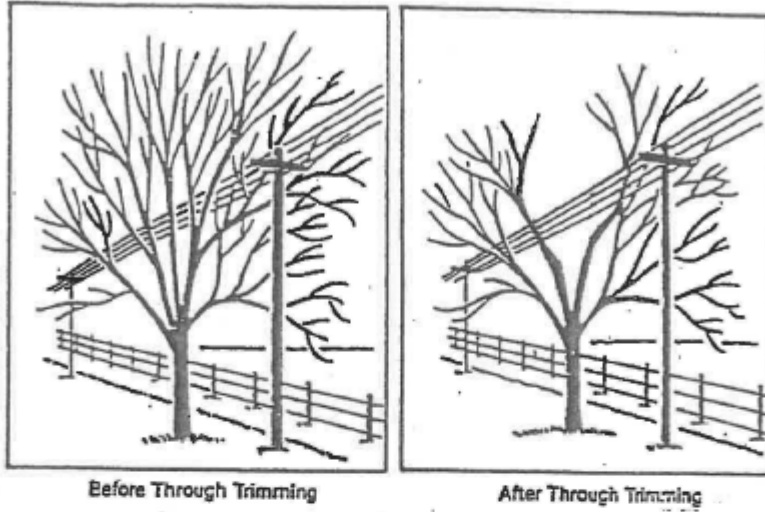


Figure 10

**CROWN REDUCTION BY NATURAL METHOD**

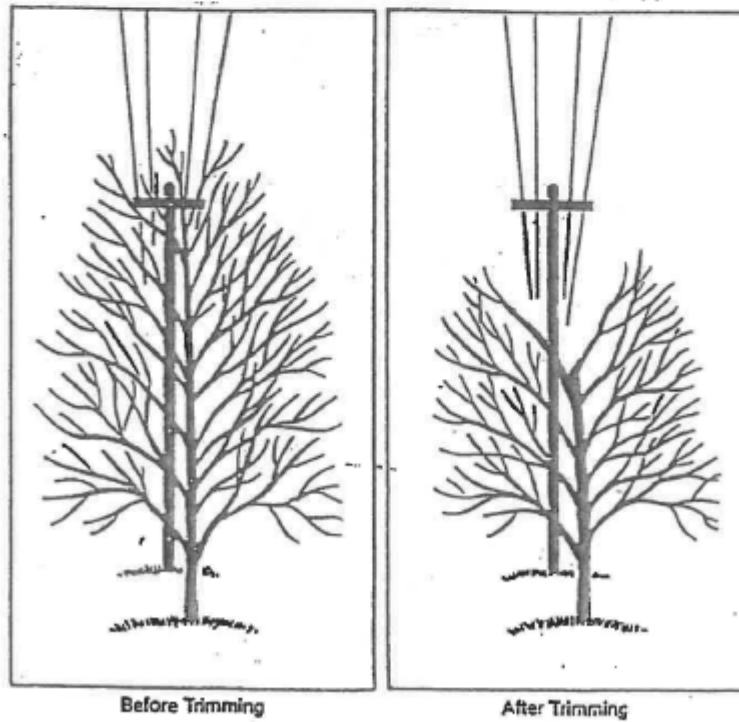


Figure 11

### Appendix 3

Recommended Trees for Planting Near Overhead Power Lines.

RECOMMENDED TREES FOR PLANTING NEAR  
OVERHEAD ELECTRIC POWER LINES

Southern Flowering Crabapple

Tree Sparklebeny

Fringe Tree

Washington Hawthorne

Poosum Haw

Japanese Maple var. "Blood Good"

May Hawthorne (Mayhaw)

Red Buckeye

Crepe Myrtles: Choose from the following varieties:

white - "Acoma" or "Burgundy Cotton"

purple - "Catawba" or "Zuni"

pink - "Sioux", "Hopi", or "Pink Velour"

red - "Tonto", "Cheyenne" or "Arapahoe"

lavender - "Yuma"

"Star" Magnolia

Chickasaw Plum

Yellow Anise

Burford Holly

Nelly R Stevens Holly

Weeping Yaupon Holly

Tea Olive

Wax Myrtle

Salt Bush

Confederate Rose

Rusty Black Haw

Revised 8/1/2021

## APPENDIX 4

ANSI A300 (Part 1)- 2017 Pruning

**American National Standard**

*Tree, Shrub, and Other Woody Plant  
Management –  
Standard Practices (Pruning)*

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ANSI A300 (Part 1)-2017 Pruning  
Revision of ANSI A300 (Part 1)-2008 (R2014)





## American National Standard

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing or using products, processes or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

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**Foreword** This foreword is not considered part of American National Standard *A300 (Part 1)-2017*.

ANSI A300 standards are intended to guide work practices for the care of trees, palms, shrubs, and other woody landscape plants. They apply to arborists, horticulturists, landscape architects, and other professionals who provide for or supervise the management of these plants for property owners, property managers, businesses, government agencies, utilities, and others who use these services. The standard does not apply to agriculture, horticultural production, or silviculture, except where explicitly noted otherwise.

These standards should be used to develop specifications for work assignments; however, they are not intended to be used as work specifications in and of themselves. Effective specifications must include measurable criteria, and must account for the variable characteristics of landscape plants and the individual management objectives of their owners.

The Tree Care Industry Association (TCIA) oversees the Accredited Standards Committee (ASC) on Tree, Shrub, and Other Woody Plant Management Operations - Standard Practices, A300 (ASC A300), which writes the ANSI A300 Standards. TCIA is an ANSI-accredited Standards Developing Organization (SDO), and is secretariat of the ANSI A300 standards. ANSI requires that approved standards be developed according to accepted principles, and that they be reviewed and, if necessary, revised every five years.

Prior to 1991, various industry associations and practitioners developed their own standards and recommendations for tree care practices. Recognizing the need for a standardized, scientific approach, green industry associations, government agencies and tree care companies agreed to develop consensus for an official American National Standard.

Since 1991, ASC A300 has met regularly to write new, and review and revise existing ANSI A300 standards. The committee includes industry representatives with broad knowledge and technical expertise from residential and commercial tree care, utility, municipal and federal sectors, landscape and nursery industries, and other interested organizations.

ANSI A300 Standards are divided into multiple parts, each focusing on a specific aspect of woody plant management (e.g. Pruning, Soil Management, Supplemental Support Systems, etc.). The ANSI A300 standards unify and take authoritative precedence over all previously existing tree care industry standards.

ANSI A300 (Part 1)-2017 Pruning was approved as an American National Standard by ANSI on January 10, 2017.

Suggestions for improvement of this standard should be forwarded to: A300 secretary, c/o Tree Care Industry Association, Inc., 136 Harvey Road – Suite 101, Londonderry, NH 03053.

ASC A300 approval of the standard does not imply that all committee members voted for its approval.

American National Standard

## Part 1- Standard Practices (Pruning)

### 1 ANSI A300 standards

#### 1.1 Scope

ANSI A300 performance standards cover the care and management of trees, shrubs, palms, and other

woody landscape plants.

#### 1.2 Purpose

ANSI A300 standards are intended for the development of work practices, written specifications, best practices, regulations and other measures of performance.

1.2.1 These standards may be excerpted or incorporated by reference; however, they are not intended to be adopted in their entirety into laws and regulations or as work specifications without additional information and clarification (*see Annex B- Specification writing guideline*).

#### 1.3 Application

ANSI A300 standards shall apply to any person or entity engaged in the management of trees, shrubs, palms, or other woody plants, including federal, state or local agencies, utilities, arborists, consultants, arboricultural or landscape firms, and managers or owners of property.

1.3.1 ANSI A300 standards shall not apply to commercial agricultural, horticultural production, or silviculture unless this standard, or a portion thereof, is expressly referenced in other standards or specifications.

## 2 Part 1-Pruning standards

### 2.1 Purpose

The purpose of Part 1, *Pruning*, is to provide performance standards for the pruning of trees, shrubs, palms, and other woody plants, and to guide the

development of written specifications, best practices, training materials, regulations, and other performance measures.

For root pruning standards, refer to the most recent version of ANSI A300 Part 8, *Root Management*.

### 2.2 Reasons

Reasons for pruning include reducing risk, improving or maintaining health, developing desired structure and appearance, preventing interference with the built environment, and other specific objectives.

### 2.3 Implementation

2.3.1 Specifications for pruning should be written and administered by an arborist or other qualified professional (see clause 4).

2.3.2 Following pruning operations, monitoring and follow-up recommendations should be made based on the pruning objective, plant condition, site/location, species, and growth rate.

2.3.3 Pruning shall be performed only by arborists or other qualified professionals who, through related training and on-the-job experience are familiar with the standards, practices, and hazards of arboriculture related to pruning and the equipment used in such operations.

2.3.4 The location and type of utilities and other obstructions shall be considered prior to pruning operations.

### 2.4 Safety

2.4.1 This performance standard shall not take precedence over applicable industry safe work practices.

2.4.2 Performance, including pruning in proximity to energized conductors, shall comply with applicable Federal Occupational Safety and Health Administration (OSHA) standards, 29 CFR 1910.331-335, 29 CFR 1910.269, ANSI Z133, and state and local laws and regulations as they apply.

## 3 Normative references

The following standards contain provisions, which, through reference in the text, constitute provisions

Develop structure, such as to:

- Improve branch and trunk architecture.
- Promote or subordinate certain leaders, stems, or branches;
- Promote desirable branch spacing.
- Promote or discourage growth in a particular direction (directional pruning);
- Minimize future interference with traffic, lines of sight, or infrastructure, or other plants;
- Restore plants following damage; and/or,
- Rejuvenate shrubs (see Annex D – *Additional explanation of objectives, evolving concepts, explanation of material removed from previous versions*).

Provide clearance, such as to:

- Ensure safe and reliable utility services.
- Minimize current interference with traffic, lines of sight, infrastructure, or other plants.
- Raise crown(s) for movement of traffic or light penetration.
- Ensure lines-of-sight or desired views.
- Provide access to sites, buildings, or other structures; and/or,
- Comply with regulations.

Manage size or shape.

Improve aesthetics.

Manage production of fruit, flowers, or other products.

Manage wildlife habitat.

## 5 Pruning systems

5.1 A pruning system should be specified to achieve the desired long-term form of the plant.

5.1.2 Consideration shall be given to the ability of the plant to respond to the selected pruning system.

5.2 Natural (see Annex D – *Additional explanation of objectives, evolving concepts, explanation of material removed from previous versions*).

A natural system should be preferred.

5.2.1 A natural system should allow for changes in appearance resulting from pruning when achieving certain specified objectives, such as:

- Crown or branch reduction;
- Raising crowns;
- Developing or improving structure;
- Providing clearance;
- Improving tree health;
- Risk reduction; and,
- Enhancing views.

## 5.3 Pollarding

A pollarding system should be considered when appropriate to achieve management objectives.

5.3.1 Trees selected for pollarding should be of an appropriate size, species, and age.

5.3.1.1 Pollarding should not be initiated on mature trees.

5.3.1.2 A plan shall be made for the periodic removal of shoots.

5.3.2 To initiate pollarding, heading cuts should be made at specified heights or locations in the crown after which no additional heading cuts should be made.

5.3.3 Existing pollard heads should not be damaged or removed. Shoots growing from the pollard heads should be removed at an appropriate time, usually during the dormant season.

5.3.3.1 Shoots should be removed at intervals of three years or less. The recommended shoot removal interval should be determined by species, plant health, climate, and design intent.

5.3A Existing pollarded trees should be maintained as pollards.

## 5.4 Topiary

A topiary system should be used when the objective is a specified form or shape, such as a hedge.

5.4.1 Plants selected for a topiary system should be of an appropriate size, species, and age.

5.4.2 The shape of the topiary should be determined prior to the start of pruning.

5.4.3 Selective pruning and shearing should be performed as needed to develop and/or maintain the desired shape.

## 5.5 Espalier

An espalier system should be used when the objective is to grow plants in a planary form.

5.5.1 Plants selected for an espalier system should be of an appropriate size, species, and age.

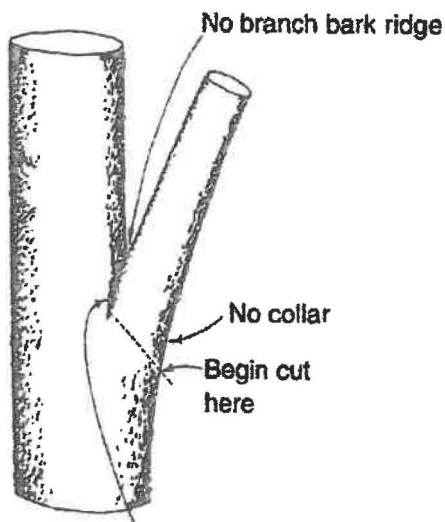


Fig. 7.13 Included bark  
Removing a branch with narrow angle of attachment.

7.16 The final pruning cut should leave adjacent bark firmly attached.

7.17 Interior and lower branches should be retained when compatible with objectives and system.

7B When removing live branches, the majority of cuts should be in the outer portion of the crown.

7D A flush-cut is not an acceptable pruning practice (see Fig. 7.19).

72 Branch removal cuts (see subclause 10.42 and Annex A - Pruning cut guideline)

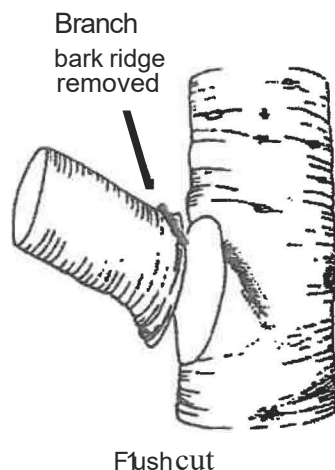


Fig. 7.19

A flush cut, not an acceptable practice

7.2.1 A branch removal cut shall be made without cutting into the branch bark ridge or branch collar, or leaving a stub (see Fig. 7.2.1).

7.2.1.1 When a branch collar is not apparent, the cut shall be made without cutting into the branch bark ridge, parent stem, or leaving a stub (see Fig. 7.2.2.1).

7.3 Reduction cuts (see subclause 10.39 and Annex A - Pruning cut guideline)

7.3.1 A reduction cut should be made to a live lateral branch or codominant stem when it can be expected to sustain the remaining branch or stem.

7.3.2 The remaining lateral branch should typically be at least one-third the diameter of the stem or branch being removed.

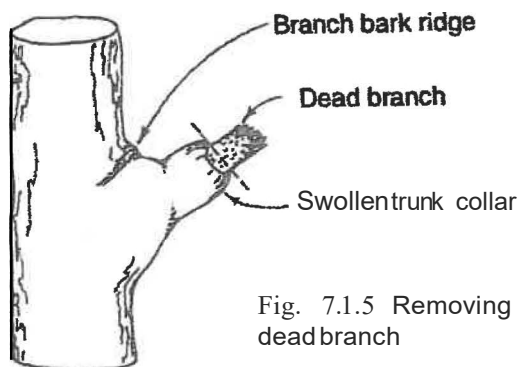


Fig. 7.1.5 Removing a dead branch

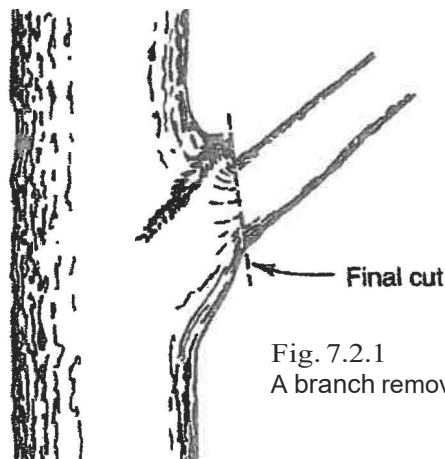


Fig. 7.2.1  
A branch removal cut

ging or other equipment shall be used to control and lower heavy plant parts to the ground.

8.2.2.2 Climbing spurs shall not be used when entering and climbing trees for the purpose of pruning or other tree maintenance, except in situations where other means are impractical, such as:

- Remote/rural utility rights-of-way;
- When branches are more than throw-line distance apart and there is no other means of climbing the tree;
- When the outer bark is thick enough to prevent damage to the inner bark or cambium; and,
- Emergency operations (see subclause 8.10).

8.2.3 Cut or detached branches shall be removed from the crown upon completion of pruning, at times when the tree would be left unattended, or at the end of the workday, unless otherwise specified in the scope of work.

8.2.4 When pruning has a high potential to spread pests, appropriate precautions should be taken (see Annex A – *Pruning cut guideline* and ANSI A300 Part 10, *Integrated Pest Management*).

8.2.5 When pruning has a high potential to result in sunscald, a temporary protective covering for vulnerable areas of bark should be considered.

### 8.3 Wound treatment

8.3.1 Wound treatments should be used only when necessary to prevent the spread of pests or for other specified reasons.

8.3.2 Wound treatments that damage the plant shall not be used.

8.3.3 When treating damaged bark, only loose or damaged tissue shall be removed.

### 8.4 Clearance pruning

8.4.1 Branches growing toward specified clearance areas should be reduced to lateral branches or removed to parent stems growing outside and/or from the clearance area (see subclause 10.15 (eg. creating mulch, firewood, wood products, etc.). directional pruning).

8.4.2 When a minimum clearance distance is required, a branch removal or reduction cut should be made beyond the specified clearance distance at

a suitable branch union.

8.4.2.1 When a reduction cut cannot be made to a suitable lateral branch, and to avoid an unnecessarily large pruning cut at the parent stem, a heading cut should be considered.

8.4.3 When frequent or excessive pruning is required to achieve objectives due to species, growth habit and/or location, alternatives such as relocation, treatment with growth regulators, or removal and replacement with an appropriate plant, should be considered.

### 8.5 Mechanical pruning

8.5.1 Mechanical pruning cuts should be made close to the main stem, outside of the branch bark ridge and branch collar. Precautions should be taken to avoid stem wounding.

8.5.2 Mechanical pruning shall only be performed in remote/rural locations, away from settled areas and dwellings, or during emergency situations.

### 8.6 Topping

Reduction of tree size by cutting to stubs without regard for long-term tree health or structural integrity, shall be considered an unacceptable practice.

### 8.7 Lion tailing

When pruning trees using the natural system, the removal of interior lateral branches that results in a concentration of growth at branch ends shall be considered an unacceptable practice.

### 8.8 Disposal and/or repurposing

8.8.1 A method for disposal of pruning debris should be specified (see Annex E – *Urban forest products chart*).

8.8.2 Disposal of pruning debris shall comply with applicable regulations, including quarantines.

8.8.3 Repurposing of debris should be preferred away from the clearance area (see subclause 10.15 (eg. creating mulch, firewood, wood products, etc.). directional pruning).

### 8.9 Monitoring and pruning interval

8.9.1 A monitoring and/or a pruning interval should be recommended, and should be based on

9.8.1 Climbing spurs should not be used to climb live palms.

9.9 Disposal of debris should be specified per subclause 8.8 Disposal and/or repurposing.

9.10 Bamboo

9.10.1 Culms and branches shall be pruned by making cuts just above nodes, without leaving a stub (see Fig. 9.10.1).

10 Definitions This clause is part of the ANSI A300 (Part 1)-2017 standard.

10.1 arboriculture: The art, science, technology, and business of commercial, public, and utility tree care.

10.2 arborist: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.

10.3 arborist trainee: An individual undergoing on-the-job training to obtain the experience and the competence required to provide for or supervise

the management of trees and other woody plants. Such trainees shall be under the direct supervision of an arborist.

104 branch: A shoot or stem arising from another branch or stem (see Fig. 10.4).

10.4.1 codominant stem/codominant branch: Two or more stems or branches of similar diameter originating from the same union (see Fig. 10.4.1).

1042 lateral branch: A shoot or stem growing from a larger (parent) branch (see Fig. 10.4).

1043 parent stem/branch: A tree trunk, main stem, leader or branch from which other smaller branches grow (see Fig. 10.4).

10.5 branch-bark ridge: The raised strip of bark on the top and side of a union where the branch and parent stem meet. (see Fig. 7.2.1).

10.6 branch collar: The area of swelling at the union between a parent stem and a smaller branch.

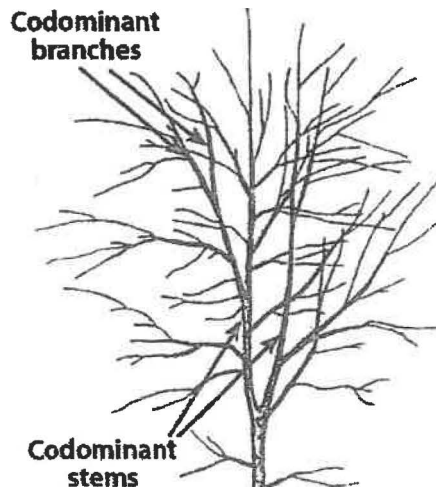


Figure 10.4.1  
 Codominate branch and stem

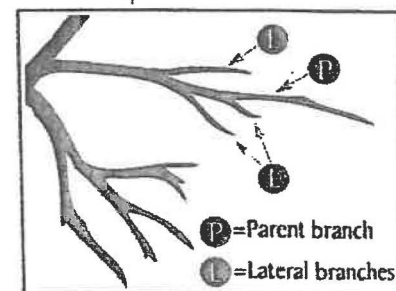
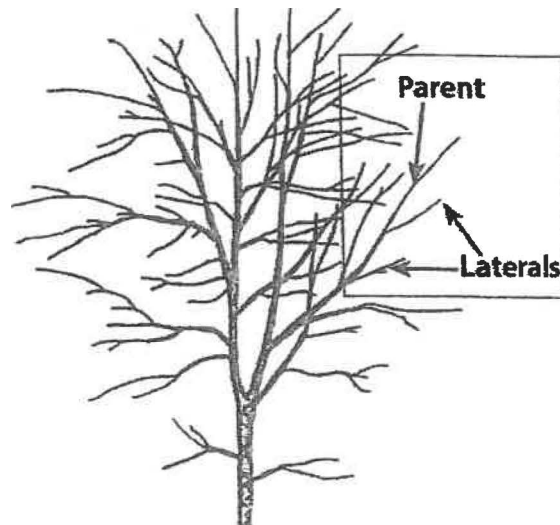


Figure 10.4  
 Standard branch definitions

or percentage of the crown or buds removed on an entire tree or specific branches.

**1035** pruning system: Process used to achieve the desired long-term form of the plant.

**1036** qualified professional: An individual who, by reason of training and experience, has demonstrated the ability to safely and effectively perform assignments, and, where required, is properly credentialed in accordance with federal, state or local laws and regulations.

**1037** raising: Arboricultural term referring to raising of branches to provide vertical clearance detailed in specifications of a product or service.

**1038** reduction: Arboricultural term referring to decreasing branch length, or plant height and/or spread.

**10.H** reduction cut: A pruning cut that removes the larger of two or more branches or stems, or one or more codominant stem(s), to a live lateral branch, typically at least one-third the diameter of the stem or branch being removed.

**10.40** rejuvenation: Removal of overmature, dead or dying stems of a shrub, near the ground, to stimulate new stem development.

**10.41** remote/rural location: Undeveloped or sparsely populated area including areas of agricultural and forest land, not in direct association with dwellings or development.

**10.42** removal cut, branch: A pruning cut that removes the smaller of two branches at a union, or a parent stem, without cutting into the branch bark ridge or branch collar, or leaving a stub.

**10.43** restoration: Pruning to redevelop structure, form, and appearance of topped or damaged woody plants.

**1044** risk: The combination of the likelihood of an event (e.g. tree failure and impact to a target) and the severity of the potential consequences (e.g. personal injury, property damage, or disruption of activities).

**1045** shall: As used in this standard, denotes a mandatory requirement.

**10.46** shearing: Cutting leaves, shoots and branches to a desired plane, shape or form. using tools designed for that purpose, as with topiary.

**1047** shoot: New stem or branch growth.

**1048** should: As used in this standard, denotes an advisory recommendation.

**10.49** shrub: Woody perennial plant, usually with several stems that may be erect or close to the ground, generally smaller than a tree.

**10.50** specifications: A document stating a pruning of branches to provide vertical clearance detailed, measurable plan or proposal for provision below the crown.

**10.51** standard, ANSI A300: Industry consensus standards for the professional management of trees, shrubs and other woody plants that serve as the foundation for work specifications, training materials, quality protocols, and regulations for the management of trees, shrubs, palms, and other woody plants.

**10.52** stem: A dominant leader or branch bearing buds, foliage, and giving rise to other branches and stems.

**10.53** structural development pruning: Pruning to influence the orientation, spacing, growth rate, strength of attachment, and ultimate size of branches and stems.

**10.54** stub: Portion of a branch or stem remaining after an internodal cut or branch breakage.

**10.55** subordination: The removal of the end of a branch or stem to reduce leaf surface area, and to slow its growth relative to its parent, or to other branches or stems.

**10.56** sucker: Vigorous upright epicormic shoot that arises from latent buds below soil level or the graft union.

**10.57** target: People, property, or activities that could be injured, damaged, or disrupted by the failure of a tree or tree parts (see ANSI A300 Part 9, *Tree Risk Assessment*).

**10.58** thinning: An arboriculture term used to describe selective pruning to reduce density of branches and foliage.



## **Annex A-Pruning cut guideline**

This annex is not part of the ANSI A300 (Part 1) 2017 standard.

### **A-1 . Pre-cut method**

Multiple cutting techniques exist for application of a pre-cut method. A number of them may be used to implement an acceptable pre-cut method.

**A-1.1** The technique depicted in Figure 7.12 demonstrates one example of a pre-cut method common to handsaw usage. It is not intended to depict all acceptable pre-cut method techniques.

## B-2 Manage health

Prune to improve or maintain plant health, or control pests (see ANSI A300 Part 2, *Soil Management* and ANSI A300 Part 10, *Integrated Pest Management*).

### Specification Guidelines

- Remove deleterious parts, e.g. branches that are dead or dying, diseased or infested, rubbing, weakened or broken, or parasitic plants, etc. (*specify condition of concern, types, sizes and locations of cuts, and monitoring interval*).
- Take appropriate precautions if necessary, to prevent the spread of pests, e.g. seasonal timing, sterilization of tools, handling/disposal of debris/by-products.

## B-3 Develop or improve structure

Prune to improve plant architecture (i.e. optimum branch size, spacing, diameter and aspect ratios), ensure compatibility with site (e.g. conflict with traffic, line-of-sight or the built environment), or to restore damaged plants. Initiate structural pruning early to enhance benefits and value and reduce long-term costs and potential for failure.

### Specification Guidelines

- Develop dominant leader(s) and desirable scaffold branches appropriate for the species and site (*specify leaders and branches to be retained and developed*).
- Subordinate or remove competing leaders, branches and shoots. If necessary, subordinate larger branches over multiple growing seasons to avoid making cuts with large aspect ratios and to avoid removing excessive amounts of material (*specify competing leaders and branches to be subordinated or removed, and appropriate maintenance interval*).

### B-3.1 Restoration pruning

Prune to redevelop or improve structure, form, and appearance following damage from storms, vandalism, lion tailing, topping or other substandard pruning, or other causes.

#### Specification Guidelines

- Assess trees for risk if necessary, prior to beginning restoration pruning (see ANSI A300 Part 9, *Tree Risk Assessment*).
- Retain suitable leaders, branches and shoots to be developed (*specify parts to retain and develop*).
- Reduce, subordinate and/or remove competing or undesirable parts (*specify parts to be removed, and types, sizes number and locations of cuts*).
- Follow process outlined in B-3, pruning to develop or improve structure.

## B-4 Provide clearance

Prune to prevent interference with infrastructure, buildings, traffic, lines-of-sight, desired views, or other plants; also to ensure safe and reliable utility services, raise crowns, provide access to sites, and comply with regulatory and other requirements as necessary.

### Specification Guidelines

- Determine clearance amount according to intended site use, planned maintenance interval, and characteristic form of the plant, including shape, growth rate and likely growth response following pruning (*specify reason for clearance, clearance distance, and/or branches and leaders to be removed, and/or types, sizes and locations of cuts*).
- Use directional pruning to encourage growth away from the specified clearance area and to develop compatible and stable structure (*specify location of branches to be retained, and an appropriate maintenance interval*).

## B-5 Manage size and/or shape

Prune to reduce size or maintain desired shape.

### Specification Guidelines

*to be removed*).

## B-9 Manage Wildlife Habitat

Pruning activities may affect wildlife, either directly through disturbance, or by manipulation of habitat such as food supplies, cover, nesting or roosting sites. Pruning activities may also violate certain regulations, including the federal Migratory Bird Treaty Act, the Endangered Species Act and other federal, state and local regulations. Arborists should be aware of regulations and modify work procedures-as appropriate to avoid disturbing, injuring or killing protected wildlife.

Pruning to improve, conserve or manipulate wildlife habitat may be part of an overall strategy across an entire property, park, right-of-way or other management area. The practice may involve multiple pruning objectives and/or various pruning systems and may include other strategies beyond the scope of a pruning standard.

### Specification Guidelines

- Specify retention or enhancement of desired wildlife features that do not pose unacceptable risk, such as perches, cavities or other nesting sites (*specify features to retain or enhance, parts to be removed, and types, sizes and locations of cuts*).
- Prune to stimulate growth, cover, fruit or seed production (*specify branches to be pruned or retained, and seasonal timing appropriate for species*).

Annex D-Additional explanation of objectives, evolving concepts, explanation of material removed from previous versions  
This annex is not part of the ANSI A300 (Part 1)-2017 standard.

ANSI A300 Part 1 was revised in 2008, and that revision was reaffirmed in 2014, while the Standard underwent further review and revision. The 2017 revision includes many changes, including a restructuring of sequence, addition of new terms, and removal of certain sections. The following provides an overview of these changes, and additional guidance in application of ANSI A300 (Part 1)-2017 *Pruning*.

#### D-1 Restructuring of A300 Part 1, *Pruning*

The 2017 revision restructured A300 Part 1 to better match work flow in the field, and to improve the writing of specifications. ANSI A300 (Part 1)-2017 *Pruning* follows this general structure:

1.	A300 Standard	All parts
2.	<b>Part 1, Pruning standard</b>	
	• Purpose	What A300 Part 1 is for
	• <b>Why the plant should be pruned</b>	<b>Why the plant should be pruned?</b>
	• Implementation	Using the standard
	• <b>Safety</b>	<b>ANSI Z133 and other safety rules</b>
3.	Normative references	Additional standards that apply
4.	<b>Objectives</b>	<b>What pruning will accomplish</b>
5.	Pruning systems	How the plant will be maintained over time
6.	<b>Pruning specifications</b>	<b>How the work will be done to meet the objective</b>
7.	Pruning cuts	Explains basic information, including different types of pruning cuts
8.	<b>Pruning practices</b>	<b>Amount of pruning, additional guidelines and details, site specific information, disposal methods, monitoring/maintenance interval.</b>
9.	Palm pruning and similar plants	Specific guidelines for pruning palms and similar plants
10.	<b>Definitions</b>	<b>Defines commonly used arboriculture terms in this document</b>

#### D-2 Introduction of pruning systems

The 2017 revision recommends that arborists specify a "pruning system" to achieve and/or maintain the desired long-term form of the plant (5.1). Various pruning systems have been used to improve results in horticulture and fruit production, some dating back many centuries. Though not required, specifying a pruning system can clarify specifications and ensure that client or owner expectations are met.

Part 1 recognizes five pruning systems:

##### 1. Natural

The natural system is most commonly used for trees, and generally conserves the characteristic growth pattern and adaptations of the plant. However, the natural system allows for pruning to develop preferred structure and branch architecture, and to avoid conflict with infrastructure, lines of sight, vistas, etc. The natural system can be applied to either trees in a woodland setting or those in an open planted landscape. Indeed, trees adapt in unique ways to their surroundings; for example, trees of the same species assume different forms depending on site factors, including terrain, and the presence of other trees or other nearby landscape features.

#### Thin

The term "thin" no longer appears in the body of the standard. Consensus was that "thinning" was frequently misunderstood, and was often overprescribed, or used to justify poor practice such as lion tailing. If "reducing the density of live branches" is required, for example, to manage health, or to increase light penetration, it can be specified as such. "Thinning" remains as a defined term (10.58).

#### Raise

The term "raise" is included in the 2017 revision under subclause 4.2 *Objectives*, and as a defined term (10.37).

#### Reduce

The term "reduce" is included in the 2017 revision under subclause 6.3 as a type of cut ("reduction cut") and as a defined term (10.38).

#### D-4 Greater inclusion of landscape considerations, including shrubs

The revision was carefully reviewed to ensure that language was applicable to woody plants other than trees whenever appropriate. Additional terms and processes pertinent to the care of shrubs have been incorporated into the standard.

#### D-5 Addition of names and descriptions of pruning cuts

Clause 6 of the revision now names, describes and defines four types of pruning cuts, including "branch removal cut," "reduction cut," "heading cut," and "shearing cut."

#### D-6 Amount of pruning

*Objectives* subclause 6.1.4 of the 2008/2014 version/reaffirmation stated: "Not more than 25 percent of the foliage should be removed in an annual growing season. The percentage and distribution of foliage to be removed shall be adjusted according to the plant's species, age, health and site." In addition, the *Pruning methods*, *Thinning* subclause 7.5.2 stated "Not more than 25 percent of the crown should be removed within an annual growing season." These were both advisory "should" statements, with the understanding that 25 percent may be too much or too little, depending on the tree and the objectives.

The second part of subclause 6.14 contains a "shall" statement ("...shall be adjusted") requiring the arborist to "adjust" for individual factors ("species, age, health and site"). For example, 25 percent might be excessive for a mature tree; or 25 percent might be inadequate to achieve safe clearance from energized conductors. Though not the intent, 25 percent was often considered to be the maximum allowable amount regardless of other factors.

There was also concern about the accuracy of estimating or measuring 25 percent of "foliage" or "crown," and whether subclauses 6.14 and 7.5.2 were in conflict due to the difference in wording.

The 2017 revision removes the 25 percent guideline and provides the arborist with the flexibility to exercise professional judgment in determining pruning amount based on "species, size, age, condition, and site." The pruning amount can be expressed as an estimated percentage of foliage to be removed from certain locations, number of pruning cuts of certain sizes or types, or by other means. In addition, the revision makes the following recommendations:

- Specify what to remove (e.g. live branches), including location, size range, and/or type of cuts.
- Remove no more living material than what is necessary to achieve specified objectives.

Encourage good balance and structure by retaining lower and interior branches when compatible with objectives.

#### D-8.3 Sucker, shoot, sprout, and watersprout

The term "sucker" is often used to refer to shoots or sprouts arising from anywhere on a tree; however, it is technically a horticultural term that refers to shoots arising exclusively from roots, especially the rootstock of grafted plants. Correct terms for shoots that originate from above the roots or graft line include "watersprout," "epicormic sprout," or "epicormic shoot." "Sprout" and "shoot" are synonymous.

The term "shoot," which is defined as "new stem or branch growth on a plant," covers all of these terms. Given this, A300 Part 1 defaults to the term "shoot" when referring to new growth. Arborists may use any of these terms in writing specifications, however they are encouraged to use correct terminology (see *Annex glossary*, D-9).

#### D-8.4 Coppicing, rejuvenation, and retrenchment pruning

*Rejuvenation* is most often performed to restore the appearance of shrubs in a landscape setting. *Coppicing* refers primarily to the practice of cutting trees or shrubs to the ground for the purpose of encouraging new sucker growth from the roots, for any purpose. *Retrenchment pruning* applies to trees and is carried out on a larger scale and over a longer time frame than rejuvenation or coppicing.