

A300 Part 1-Pruning Draft 3 Version 1

BSR A300 (Part 1)-201x
A revision draft of ANSI A300 (Part 1)-2008 (R2014)

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

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Draft – This draft is not intended for trial use or any other use.

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Draft - Do Not Use

Foreword This foreword will not be considered part of the revised American National Standard (ANSI) A300 (Part 1)-201x.

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.

The 45-day public review period for this draft runs from August 19, 2016 to October 3, 2016. This document is not approved as a draft for trial use. Official public comments or information requests regarding this document must be forwarded to: rrouse@tcia.org, A300 Secretary, c/o Tree Care Industry Association, Inc., 136 Harvey Road - Suite 101, Londonderry, NH, 03053. Responses will be provided. Comments may be forwarded to ASC A300 members, however comments that are forwarded only to ASC A300 members may not be recorded as official comments and a response may not be provided. After the public review period, the Part 1 Pruning draft may be submitted for approval to ANSI by TCIA and the ANSI-accredited Standards Committee A300 (ASC A300). Committee approval of the standard will not necessarily imply that all committee members voted for its approval.

The ASC A300 has the following members as of August 19, 2016:

Dane Buell, Chair
(BrightView)

Bob Rouse, Secretary
(Tree Care Industry Association, Inc.)

Organizations Represented

Alliance for Community Trees
AmericanHort (formerly ANLA)
American Society of Consulting Arborists

American Society of Landscape Architects
Asplundh Tree Expert Company

Bartlett Tree Expert Company

Davey Tree Expert Company

International Society of Arboriculture

Professional Grounds Management Society

National Association of Landscape Professionals
(formerly PLANET)

Society of Municipal Arborists

Tree Care Industry Association

Tree Care Industry Association – Associate Members (Vendors)

USDA Forest Service

Utility Arborist Association

Name of Representative

tbd
Craig J. Regelbrugge
Torrey Young
Rick Gessner (Alt.)
Susan Cahill
Geoff Kempter
tbd (Alt.)
Wayne Dubin
Dr. Thomas Smiley (Alt.)
Chris Klimas
Dr. Richard Rathjens (Alt.)
Dr. Richard Hauer
Wes Kocher (Alt.)
Gene Pouly
Michael Bova (Alt.)

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Sabeena Hickman (Alt.)
Nolan Rundquist
Gordon Mann (Alt.)
Tom Mugridge
Steve Mays Jr. (Alt.)
Tim Bushnell
tbd (Alt.)
Dana Coehlo
Jill Johnson (Alt.)
William Rees
Neil Fischer (Alt.)

Additional organizations and individuals:

Tim Johnson (Observer)
Myron Laible (Observer)
Beth Palys (Observer)
Richard Roux (NFPA-780 Liaison)

A300 Part 1 Subgroup Chair:

Geoffrey Kempter

Mission: To develop consensus performance standards for the professional management of trees, shrubs and other woody plants.

Vision: ANSI A300 standards will be the foundation for work specifications, training materials, quality protocols, and regulations for the management of trees, shrubs, palms, and other woody landscape plants.

1 ANSI A300 standards

Commented [GPK1]: AMERICAN National Standard

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.

Commented [GPK2]: Recommend **bolding** defined words the first time they appear in the text (mirrors Z133, and other documents).

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*).

Commented [GPK3]: It is explicitly stated that the purpose includes development of regulations. However, conflicts of interest have arisen when the entire Standard is adopted into law, because the Standard is designed with the understanding that end users will add specific information pertinent to individual jobs, such as branch sizes, diameters, clearance distances, etc. Furthermore, "should" recommendations within the Standard often become *defacto* laws, even though it is understood that these are designed to be contradicted when circumstances warrant. We have added the phrase "without additional information and clarification" as a caveat, with the hope that end users understand the limitations of the Standard.

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 agriculture^{eat}, 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 infrastructure, and other specific objectives.

Commented [GPK4]: "In social science, the term built environment refers to the manmade surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply or energy networks."

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.

Commented [BR5]: ASCA-Mertz 1: In part 2.2 the word infrastructure is used. I think the phrase "the built environment" could be used instead. Infrastructure can have a narrow connotation.

ASC A300 Response: Accepted

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, ~~ANSI Z433~~, 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 of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard shall apply the most recent edition of the standards indicated below.

ANSI A300 *for Tree Care Operations – Tree, Shrub, and Other Woody Plant Management – Standard Practices*, all Parts¹

ANSI Z60 *Nursery stock*²

ANSI Z133 *for Arboricultural Operations – Safety Requirements*³

29 CFR 1910, *Occupational Safety and Health Standards (General Industry)*⁴

16 U.S.C. §§703-711, *Migratory Bird Treaty Act*⁵

16 U.S.C. 1531-1544, *Endangered Species Act*⁵

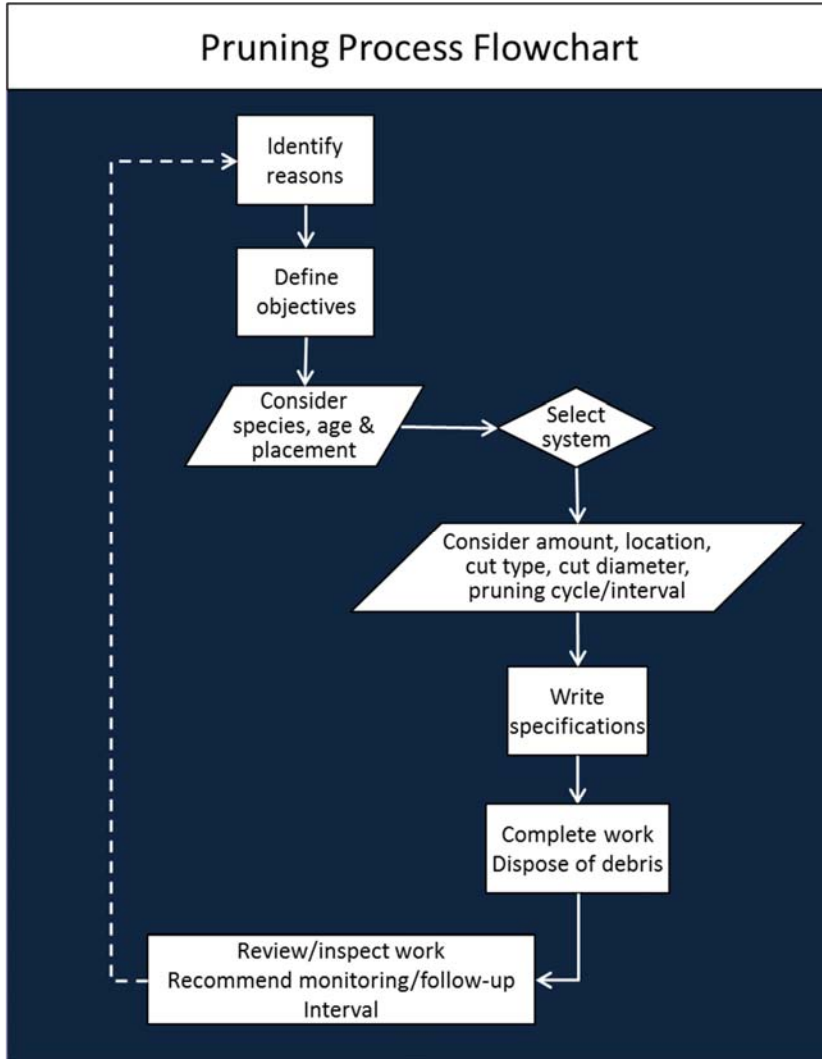
¹) Available from the Tree Care Industry Association, www.tcia.org

²) Available from AmericanHort, www.americanhort.org

³) Available from the International Society of Arboriculture, www.isa-arbor.org

⁴) Available from U.S. Department of Labor, www.osha.gov

⁵) Available from U.S. Fish and Wildlife Service, www.fws.gov



Commented [GPK6]: Clarify that this is not part of the standard. Need a list of illustrations. Remove disposal from flowchart and change cut diameter to cut size.. Remove angular boxes.

Fig. 2 Pruning process flowchart.

4 Pruning objectives

4.1 One or more pruning objectives shall be specified (See Annex D – *Additional explanation of objectives, evolving concepts, explanation of material removed from 2008*).

4.1.1 The pruning system (if specified, see subclause 5), plant health, growth habit, structure, species characteristics, expected response, and the ability of a plant to sustain the amount of pruning proposed shall be considered when establishing pruning objectives.

4.2 Objectives should include, but are not limited to, one or more of the following:
Manage risk (see the most recent versions of ANSI A300 Part 9, *Tree Risk Assessment*, and ANSI A300 Part 3, *Tree Support Systems*).

Manage health (see the most recent versions of ANSI A300 Part 10, *Integrated Pest Management* and ANSI A300 Part 2, *Soil Management*).

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 ~~conflict~~ 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 2008*).

Provide clearance, such as to:

- Ensure safe and reliable utility services;
- Minimize current interference with ~~infrastructure, building~~ 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 2008*)

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 a pollarding system 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.

5.3.4 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.

5.5.2 Branches that extend outside the desired plane of growth shall be pruned and/or tied back.

5.5.3 Ties shall be replaced or adjusted as needed to prevent girdling.

5.6 Pleaching

Commented [BR7]:
ASCA-Gessner 3: 6.3.1 Trees selected for a pollarding system should be of an appropriate size, species, and age.

ASC A300 Response: Comment accepted.

Commented [GPK8]: Add guidance in annex

Commented [BR9]: ASCA-Gessner 4: 6.3.3 Existing pollard heads should not be damaged or removed. Shoots growing from the pollard heads should be removed during the dormant appropriate season.

ASC A300 Response: The text is changed to "...at an appropriate time, usually during the dormant season" to address the concern.

Commented [GPK10]: Add info about lapsed pollards in Annex.

A pleaching system should be used to train plants to achieve a desired form through pruning, interweaving and tying branches to one another, or to a frame.

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

5.6.2 When pleaching is initiated, branches that are not included within the desired form should be reduced, removed or tied to other branches or a frame.

5.6.3 New shoots that are not growing within the desired form should be periodically pruned, or tied or woven into the desired form.

5.6.4 Ties shall be replaced or adjusted as needed to prevent girdling.

6 Pruning specifications (see Fig. tbd and Annex B – *Specification writing guideline*)

Commented [GPK11]: The Pruning Specs section is moved to follow after Systems section.

- 6.1** Pruning specifications should include:
- Physical location of the plants to be pruned;
 - Pruning objectives;
 - Pruning system;
 - Type of parts to be removed (e.g. living or dead branches, fruit, mistletoe);
 - Pruning amount (e.g. percent of foliage or crown, or number of branches to be removed);
 - Location in crown of parts to be removed;
 - Pruning cut types (e.g. removal, reduction, heading, shearing);
 - Size (~~diameter~~) range (e.g. diameter, length) of parts to be removed;
 - Plan for disposal/repurposing of debris;
 - Time frame for completion; and,
 - Other information as necessary (e.g. topiary shape, clearance distances, desired views, lines of sight).

Commented [BR12]: ASCA-Gessner 1: There is a difference between "line of sight" and "view". These terms should not be used interchangeably. Views require a specific vantage point and a designated landmark. Line of sight applies to traffic, etc. These terms cannot be used interchangeably.

Change: 4.1 bullet --
Other information as necessary (e.g. topiary shape, clearance distances, view from lines-of-sight-specific vantage points and desired landmarks)

And 5.2 bullets --
Minimize future conflict with traffic-lines of sight or infrastructure;
Minimize current interference with infrastructure, buildings or other plants;
Raise crown(s) for movement-of-traffic-visibility? lines of sight or light penetration;
Ensure lines-of-sight-or-desired-views of designated landmarks from specified vantage points;

6.2 Pruning operations should remove no more living material than what is necessary to achieve specified objectives.

6.3 ~~Plant s~~Species, size, age, condition, and site shall be considered when specifying the location and amount of live branches to be removed.

ASC A300 Response: RE: 4.1. The terms "view" and "lines of sight" are not used interchangeably. They are listed separately with other different parameters. The committee added the word "desired" to account for "vantage points" and "landmarks," which would be specified individually.

RE: 5.2: "Current interference" differentiates from "future conflict," which is part of "Develop structure."
"Movement of traffic" refers to vehicular, pedestrian or whatever traffic might be affected by tree growth.

7 Pruning cuts

7.1 General

Commented [BR13]: ASCA – Gessner 2: 4.3 Plant species, size, age ? is age relevant or related to condition?, condition, and site shall be considered when specifying the location and amount of live branches to be removed.

7.1.1 The smallest diameter cut that meets the objective should be preferred.

7.1.1.1 The number and size of cCuts that expose heartwood should be ~~avoided~~ minimized.

7.1.2 Branches shall be precut when necessary to avoid splitting of the wood or tearing of the bark. Branches likely to split wood or tear bark beyond the pruning cut shall be precut to avoid this type of damage (see Fig. tbd and Annex A).

ASC A300 Response: Age may or may not be redundant with condition, depending on circumstances. It is worth retaining as it could play a part in determining amount to be pruned.

7.1.3 When removing a branch with a narrow angle of attachment, the cut should be made from the outside of the branch to prevent damage to the parent-remaining branch or stem (see Fig. tdb).

Commented [GPK14]: Language awkward. Changed to: "Branches shall be precut when necessary to avoid splitting of the wood or tearing of the bark" to clarify.

7.1.4 When removing a branch with included bark, the cut should be made as close as possible to the point where the wood of ~~both the stems joins~~ without damaging the remaining stem (see Fig. tbd).

7.1.5 When removing a dead branch or stem, the final cut shall be made just outside the collar of living tissue, without leaving a dead stub (see Fig. tbd).

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

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

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

7.1.9 A flush cut is not an acceptable pruning practice (see Fig. tbd).

7.2 Branch removal cuts (9.43, Annex A – Pruning cut guideline)

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

7.2.2.1 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. tbd).

7.3 Reduction cuts (9.40)

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

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

7.3.4 A reduction cut should be made at a slight angle to the remaining branch or codominant stem, without damaging the branch bark ridge and without leaving a stub (see Fig. tbd).

7.4 Heading cuts

7.4.1.1 A heading cut should only be made when necessary to conform with certain pruning systems (e.g. Initiation of a pollarding system, topiary pruning), or to accomplish specific pruning objectives, such as:

- Structural development on young plants;
- Mitigating risk, where reduction to a suitable lateral branch is not practical, where no such branch is present, or where cutting to such a branch does not achieve the objective;
- Restoration of damaged plants;
- Rejuvenation of shrubs;
- To avoid making an unnecessarily large branch removal cut ~~in cases where~~ an appropriate lateral branch is not present; and,
- Conserving or creating wildlife habitat.

7.4.2 A heading cut should only be made when it can be expected that the remaining lateral(s) or shoots that grow from retained buds are able to sustain the remaining branch. ~~A heading cut should only be made when it can be expected that the remaining lateral(s) or shoots that grow from retained bud(s) will sustain the remaining branch.~~

Commented [BR15]: ASCA-Gessner 5: 7.1.4 When removing a branch with included bark, the cut should be made as close as possible to the ~~point where the wood~~ union of both stems ~~joins~~ without damaging the remaining stem (see Fig. tbd).

ASC A300 Response: The committee decided to make no changes. It is important to point out that with included bark, the "point where the wood of the stems join" is where the union of both stems takes place. This will be clarified with an illustration.

Commented [GPK16]: Pick one, or use below.

Commented [BR17]: Hawthorne 1: 7.3.2. (It is confusing and unclear as written) Change to: "The remaining lateral branch or limb should typically be no smaller than one third the diameter of the stem or branch being removed."

ASC A300 Response: The committee agreed that the phrase is awkward and removed the phrase "larger than" to clarify the meaning.

Commented [BR18]: ASCA-Gessner 6: 7.4.2 A heading cut should only be made when ~~it can be expected that~~ the remaining lateral(s) or shoots that grow from retained bud(s) will sustain the remaining branch. **Needs some work.**

ASC A300 Response: "A heading cut should only be made when the remaining lateral(s) or shoots that grow from retained buds are able to sustain the remaining branch." This mirrors 7.3.1 Reduction cuts.

7.5 Shearing cuts

7.5.1 Shearing should be performed when necessary to accomplish specified objectives within the Topiary system (see subclause 6.4 Topiary).

7.5.2 Shearing should be performed on appropriate species at intervals that minimize deleterious effects on plant health.

7.5.2.1 Shearing cuts should only be made to stems capable of generating new shoots.

7.5.3 Reduction cuts should be considered after shearing when necessary.

8 Pruning practices

8.1 Inspection

8.1.1 In addition to required safety procedures, an arborist or qualified professional should conduct a visual inspection of the plant(s) to identify conditions that would affect the original scope of work.

8.1.2 Conditions identified in the visual inspection that would affect, or are outside of, the scope of work should be reported to an immediate supervisor or to the client.

8.1.2.1 When the scope of work is limited by property boundaries, easements, or other constraints, inspection of plants or parts of plants outside of the assigned scope of work shall not be required.

8.2 Work Practices

8.2.1 Equipment and tools used in pruning operations shall be maintained according to manufacturers recommendations.

8.2.2 Work practices that damage living tissue, other plants or property, beyond the scope of normal work practices, shall be avoided.

8.2.2.1 Where necessary, to avoid damage or injury to other parts of the tree, people, or property, ropes, rigging 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 8.4.1.3).

8.2.3 ~~Severed-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.

Commented [BR19]: ASCA-Gessner 7: 8.2.2.2 Climbing spurs shall not be used when ~~entering and climbing trees~~ for the purpose of pruning, except in situations where other means are ~~impractical-deemed not safe~~, 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 8.11). I know this is probably going nowhere but I have to try!

Commented [BR20]: ASCA-Childs 1: I have worked with and alongside several utility companies over the years and was concerned when I read that section allowing spikes. I've seen a lot of short cuts taken in many situations and would hate to see more opportunities for tree damage.

ASC A300 Response: A300 has gradually increased the limitations on the use of spurs. However, it should be understood that not all arborists are trained in the use of, or are equipped with, the latest climbing gear, and that tree work sometimes must be performed with whatever means are available. As better climbing methods continue to be incorporated and used by more arborists, it is expected that future revisions will further restrict the use of spurs. No changes were made.

Commented [BR21]: ASCA-Schill 1: The revisions are good and it was great to see the diagrams. I too disagree with the allowance of spikes for whatever reasons and we must continue to voice that opinion.

ASC A300 Response: A300 has gradually increased the limitations on the use of spurs. However, it should be understood that not all arborists are trained in the use of, or are equipped with, the latest climbing gear, and that tree work sometimes must be performed with whatever means are available. As better climbing methods continue to be incorporated and used by more arborists, it is expected that future revisions will further restrict the use of spurs. No changes were made.

Commented [BR22]: ASCA-Ahlum 1: I think it looks good! I still do not like the allowance of spikes to be used as it damages trees and is proven to damage trees. Otherwise I like all the new revisions and diagrams

ASC A300 Response: A300 has gradually increased the limitations on the use of spurs. However, it should be understood that not all arborists are trained in the use of, or are equipped with, the latest climbing gear, and that tree work sometimes must be performed with whatever means are available. As better climbing methods continue to be incorporated and used by more arborists, it is expected that future revisions will further restrict the use of spurs. No changes were made.

Commented [BR23]: Hawthorne 2: 8.2.3. ("Severed" looks too close to "several", also change wording order for clarity)
Proposed: "Cut or detached limbs should be removed from the crown prior to leaving tree unattended (for breaks or at close of work day) and upon completion of pruning".

ASC A300 Response: Changed "severed" to "cut or detached."

8.3.4 When pruning has a high potential to spread pests, appropriate precautions should be taken (see Annex A and the most recent version of ANSI A300 Part 10, *Integrated Pest Management*).

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

8.3.6 Wound treatment

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

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

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

8.7 Clearance pruning

8.7.1 Branches growing toward specified clearance areas should be reduced to lateral branches or removed to parent stems growing outside and/or away from the clearance area (directional pruning).

8.7.2 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.

8.7.2.1 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.

8.7.3 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.

8.8 Mechanical pruning

8.8.1 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.

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

8.9 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.

8.10 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.

8.11 Disposal and/or repurposing

Commented [BR24]: ASCA-Gessner 8: 8.3.5 When pruning has a high potential to result in sunscald, a temporary protective covering for vulnerable areas of bark should be considered. This is contradictory. Why are we pruning when we know damage will occur? I would like this removed or modified.

A300 Response: Pruning objectives may require exposing branches to sunscald. In such cases, the standard recommends taking steps to prevent damage.

Commented [BR25]: ASCA-Martyn 1: 8.10 Ed Gilman uses lions-tailing I believe.

ASC A300 Response: The committee included Ed Gilman and other experts in deciding on this term.

8.11.1 A method for disposal of pruning debris should be specified (see Annex E, Urban forest products flowchart).

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

8.11.3 Repurposing of debris should be preferred (eg. creating mulch, firewood, wood products, etc.).

8.12 Monitoring and pruning interval

8.12.1 A monitoring and/or a pruning interval should be recommended, and should be based on the objectives, pruning system, plant health, site/location, species and growth rate (see ANSI A300 Part 7 *Integrated Vegetation Management* and, when approved, ANSI A300 Part 10 *Integrated Pest Management*).

8.13 Emergency operations

Exemptions to the non-safety related sections of this standard shall be allowed during emergencies, including those declared by federal, state or local governments, utilities or other critical service providers, when services must be restored.

8.13.1 Following the emergency, restoration pruning should be considered.

9 Pruning palms and similar plants

9.1 Dead, damaged, or loose fronds should be pruned when necessary to reduce risk or improve aesthetics.

9.2 Healthy fronds should not be removed except when necessary for to provide clearance.

9.3 Fruits that pose unacceptable risk or nuisance, or flowers that will lead to the development of such fruits, should be removed.

9.4 9.4 Palms that could grow into and damage or interfere with electric utility or other infrastructure should be pruned, treated with growth regulated regulators, relocated, or removed Palms that under normal growing conditions could damage or interfere with electric utility or other infrastructure should be pruned, growth regulated, relocated, or removed (see subclause subclause 7.5.3).

9.5 Yellowing fronds that are not diseased or infested should be retained, except when they pose safety or aesthetic concerns.

9.5.1 Diseased or infested palms should be treated, or fronds removed, when necessary to reduce the spread of pests and/or to protect the health of the palm (see the most recent version of ANSI A300 Part 10, *Integrated Pest Management*).

9.6 If all or most fronds are damaged (e.g. following high winds or frost), damaged green fronds that do not pose unacceptable risk should be retained until new fronds develop (see Fig. tbd, An overpruned palm. This is not an acceptable pruning practice).

9.7 Fronds should be removed by making a cut close to the petiole base without damaging living trunk tissue.

Commented [BR26]: Comment ASCA-Young 1: **9. Pruning palms and similar plants, 9.4:** Why is this line necessary, since this is true for all species of trees?

ASC A300 Response: There is a separate section for palms, since these plants have very different management requirements than woody plants. Some information is restated. In addition this statement attempts to differentiate between preventable interference from palms that "could grow into" due to proximity, events that cannot reasonably be prevented, such as palms that lose fronds that are blown into utility lines from some distance away. Some clarification was provided.

9.7.1 To ensure worker safety, removal of palm frond skirts ~~with three years or more of growth~~ shall be performed from the top down (see the most recent version of ANSI Z133 *Arboricultural Safety*).

9.7.2 When removing dead petiole bases (skinning, peeling, shaving), living trunk tissue should not be damaged.

9.8 When palm pruning practices have a high potential to spread pests, appropriate precautions shall be taken.

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

9.9 Disposal of debris should be specified per subclause ~~7.6~~ 8.11 *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, as shown in Fig. tbd.

10 Definitions This clause will be considered part of the revised American National Standard (ANSI) A300 (Part 1)-201x.

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.

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

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

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

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

Fig. xyz: Standard branch definitions.

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. tbd).

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

10.7 cambium: Meristematic tissue that gives rise to xylem, phloem and new cambium.

Commented [BR27]: ASCA-Gessner 9: 9.7.1 To ensure worker safety, removal of palm frond skirts ~~with three years or more~~ growth shall be performed from the top down (see the most recent version of ANSI Z133 *Arboricultural Safety*).

ASC A300 Response: Comment accepted. This is harmonized with A300.

10.8 clean: Arboricultural term used to describe selective pruning to remove one or more of the following: dead, diseased, infested, rubbing, declining, detached and/or broken branches.

10.9 clearance area: specified area from which vegetation is to be removed.

10.10 client: a person, corporation, or other entity who has hired the qualified professional.

10.11 climbing spurs: Sharp, pointed devices strapped to a climber's lower legs used to assist in climbing trees (syn.: gaffs, hooks, spurs, spikes, climbers).

10.12 crown: The part of a tree or shrub, measured from the lowest branch upward, including all the branches and foliage.

10.13 culm: the stem of a grass or sedge, including, for the purposes of this standard, the woody, hollow aerial stem of bamboo.

10.14 decay: The degradation of woody tissue caused by microorganisms.

10.15 directional pruning: Selective removal of branches to guide and/or discourage growth in a particular direction.

10.16 espalier: A pruning system that trains plants to grow within a plane, such as along a wall, trellis or fence.

10.17 flush cut: A pruning cut that removes the branch bark ridge and/or branch collar, damaging the trunk or parent branch. ~~Not an acceptable practice~~ (see Fig. tbd).

10.18 frond: A leaf of a palm.

10.19 heading: Pruning cut that removes a branch or stem between nodes (leaving a stub), to a bud, or to a live branch typically less than one-third the diameter of the branch or stem being removed.

10.20 leader: A main trunk or stem that dominates all or a portion of the crown. Trees and shrubs may have one leader or several individual leaders.

10.21 line of sight: ~~The~~ line of vision to a specific view element (syn. sightline).

10.22 lion tailing: ~~Using The use of~~ branch removal cuts to remove interior lateral branches that result ~~resulting~~ in a concentration of growth at branch ends. ~~Lion tailing is not an acceptable practice.~~

10.23 mechanical pruning: Pruning with heavy equipment (not hand-held) fitted with power saws or other cutting devices (e.g. saws mounted on booms or suspended from a helicopter).

10.24 natural (pruning system): ~~A p~~Pruning system intended to maintain the tree's characteristic growth pattern and adaptations.

10.25 node: Slightly enlarged portion of a stem (or branch) where shoots arise.

10.26 palm: ~~monocotyledonous~~ Monocotyledonous plant of the *Aracaceae* family, generally with one or more unbranched trunks, with fronds emanating from a meristem at the top of the trunk.

Commented [BR28]: ASCA-Young 2: **10. Definitions, 10.22 Lion Tailing:** Describing as "unacceptable" is unnecessary and an inappropriate judgment for standards. The actual definition is sufficient.

ASC A300 Response: Comment accepted.

- 10.27 palm frond skirt:** One or more year's accumulation of dead and drooping fronds at the bottom of the canopy and along the trunk.
- 10.28 petiole:** The stalk of a leaf or frond.
- 10.29 planary form:** Shape that conforms to a geometric plane.
- 10.30 pleaching:** Pruning system that trains one or more plants to achieve a desired shape or form through a combination of pruning and interweaving or tying small branches to one another, or to a pre-formed frame.
- 10.31 pollard head:** Response growth that forms a knob or swelling at sprout removal sites on trees maintained within a pollarding pruning system.
- 10.32 pollarding:** A pruning system that maintains crown size by initial heading of branches on young trees, followed by removal of shoots to their point of origin at appropriate intervals without disturbing the resulting pollard head.
- 10.33 pruning:** The selective removal of plant parts to achieve defined objectives.
- 10.34 pruning amount:** Quantity of plant parts removed at one pruning, expressed in terms of a number of branches or other parts removed, and/or percentage of the crown or buds removed on an entire tree or specific branches.
- 10.35 pruning system:** Process used to achieve the desired long term form of the plant.
- 10.36 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.
- 10.37 raising:** Arboricultural term referring to pruning of branches to provide vertical clearance below the crown.
- 10.38 reduction:** Arboricultural term referring to decreasing branch length, or plant height and/or spread.
- 10.39 reduction cut:** A pruning cut that removes the larger of two or more branches or stems, or one two or more codominant stem(s), to a live lateral branch, typically at least 1/3 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.

10.44 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).

10.45 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.

10.47 shoot: New stem or branch growth.

10.48 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 detailed, measurable plan or proposal for provision of a product or service.

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 ~~that to~~ influences the orientation, spacing, growth rate, strength of attachment, and ultimate size of branches and stems, ~~to achieve a desired objective.~~

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 the most recent version of 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.

10.59 topiary: ~~Pruning system that uses a~~ The combination of pruning, supporting, and training branches to orient a plant into a desired shape. ~~Hedging is a form of topiary.~~

10.60 topping: Reduction of tree size by cutting live branches and leaders to stubs, without regard to long-term tree health or structural integrity. ~~Topping is not an acceptable practice.~~

10.61 tracing: The removal of loose, damaged tissue from in and around a wound.

Commented [BR29]: ASCA-Young 3: **10.60 topping:** Describing as "unacceptable" is unnecessary and an inappropriate judgment for standards. The actual definition is sufficient.

ASC A300 Response: Comment accepted.

10.62 tree: A woody perennial plant with a single or multiple trunks which typically develop a mature size of over several inches diameter and ten or more feet in height.

10.63 trunk: ~~The main or primary stem or stems of a tree. The main woody part of a tree beginning at the ground and extending up into the crown.~~

10.64 union: Junction of branches, stems or leaders.

10.65 utility: A public or private entity that delivers a public service, such as electricity, gas, or communications.

10.66 vine: A woody perennial plant that typically lies along the ground, or that rises above the ground by attaching to other plants or objects with tendrils or by twining.

10.67 wound: An opening that is created when the bark of a live branch or stem is cut, penetrated, damaged, or removed.

Commented [BR30]: ASCA-Young 4: **10.63 trunk:** Seems an unusual definition, overly descriptive. Other examples: ISA Glossary definition: "main or central stem of a tree" seems good enough.

ASC A300 Response: The definition was clarified.

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Annexes, All – Annexes will not be considered part of the revised American National Standard (ANSI) A300 (Part 1)-201x.

The following are comments related to portions of the document that are not standards (figures, preamble, and Annex), or they are editorial comments:

ASCA-Young:

Fig. 2: It seems confusing that the flow chart is inserted here, but the sections following are not in the same order as the flow chart. Should not the sections follow the flow chart? Otherwise, I suggest moving to after Section 9, or Annex (after all referenced information is presented).

“Dispose of debris” seems unnecessary. While part of the project, not specifically relevant to pruning. “Consider Species, age, ...” seems an unnecessary level of detail for a flow chart, and is included in the sections following.

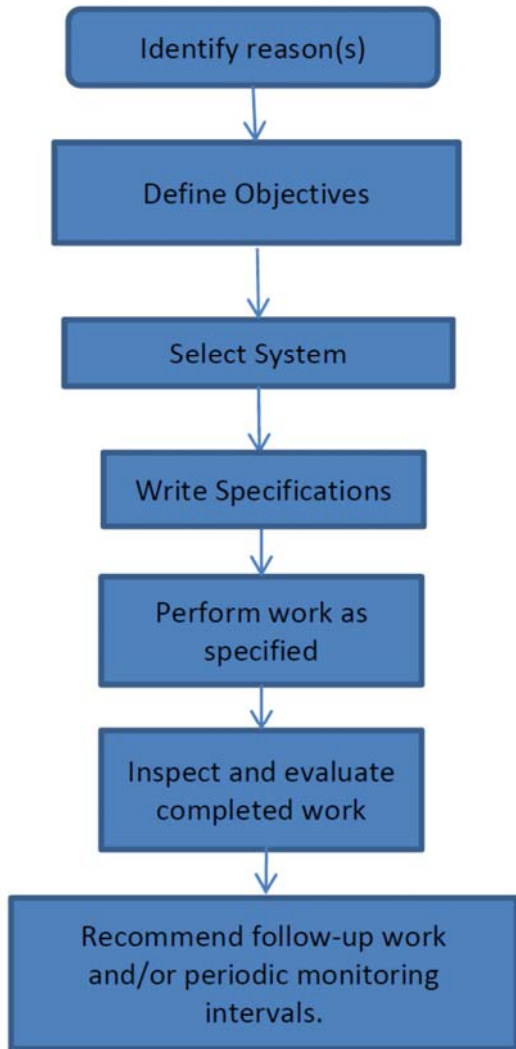
“Consider amount, location... ” also seems an unnecessary level of detail for a flow chart, and is included in the sections following.

I don't see why there is a dashed line returning to Identify Reasons?

Suggested flow chart revision:

- Commented [GPK31]:**
Response:
Debris is a direct result of pruning, and disposal of debris is often a significant consideration for both arborist and client. It seems worth mentioning.
- Commented [GPK32]:** Response:
When would you not consider amount and location when specifying pruning?
- Commented [GPK33]:**
Response:
This is a reminder that pruning is a systemic, cyclic process, and that at some point in the future the process will need to be repeated.

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Not Use

ASCA-Mertz:

Fig. 2: Pruning flowchart Fig 2: In the pruning flowchart Fig 2. I would recommend changing “cut diameter” to “size of cut” or something more descriptive. Cut diameter seems awkward.

Commented [GPK34]: Response: Change accepted – changed to “cut size”

ASCA-Gessner:

6.6.2 When pleaching is initiated, branches ~~that are~~ not included within the desired form should be reduced, removed or tied to other branches or a frame.

7.1.1 The smallest diameter cut ~~that meeting~~ the objective should be preferred.

7.1.1.1 Cuts ~~that exposing~~ heartwood should be avoided.

7.1.2 Branches likely to split wood or tear bark beyond the pruning cut shall be precut to avoid this type of damage (see Fig. tbd and Annex A). ~~Awkward, I suppose the figure will clarify?~~

Commented [GPK35]: Branches shall be precut when necessary to avoid splitting of the wood or tearing of the bark.

7.3.1 A reduction cut should be made to a live lateral branch ~~that is~~ able to sustain the remaining branch.

7.4.1.1 A heading cut should only be made when necessary to conform with certain pruning systems (e.g. Initiation of a pollarding system, topiary pruning), or to accomplish specific pruning objectives, such as:

Structural development on young plants;

Mitigating risk, where reduction to a suitable lateral branch is not practical, where no such branch is present, or where cutting to such a branch does not achieve the objective;

Restoration of damaged plants;

Rejuvenation of shrubs;

To avoid making ~~an~~ unnecessarily large branch removal cuts ~~in cases~~ where an appropriate lateral branch is not present; and,

Conserving or creating wildlife habitat.

9.2 Healthy fronds should not be removed except ~~when necessary to provide~~ clearance.

9.4 Palms ~~that growing under normal~~ conditions ~~that~~ could damage or interfere with electric utility or other infrastructure should be pruned, ~~treated with~~ growth ~~regulated-regulators~~, relocated, or removed (see subclause 7.5.3).