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Foreword

This foreword will not be considered part of the revised A300 (Part 3)-20xx standard.

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.

This draft is a public review document. The public review period starts on XXX, and ends on XXX. This document is not approved as a draft for trial use.

How to file a public review comment: Official public comments must be entered on the TCIA website portal at www.tcia.org/A300comments before the deadline of 11:59 PM Eastern Standard Time (EST) XXX in order to be considered, no exceptions will be made for late comments. You will be asked to register to gain access. Responses to official comments will be provided. Comments may be forwarded to ASC A300 members and/or the TCIA secretary, however comments that are forwarded to ASC A300 members or the TCIA Secretary and are not entered online will not be recorded as official comments and a response will not be provided. If you require an official response, you must post your comments on the TCIA website portal.

Information requests regarding this document must be forwarded to: rouse@tcia.org, A300 Secretary, c/o Tree Care Industry Association, Inc., 670 N. Commercial St. Suite 201 Manchester NH 03101.

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**Organizations Represented**

- 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 Commercial Arborists
- Society of Municipal Arborists
- Tree Care Industry Association
- Tree Care Industry Association – Associate Members (Vendors)
- USDA Forest Service
- Utility Arborist Association

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**ASC A300 Part 3 Subgroup Chair:**

Sam Hill

**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.
Subclauses 1.1 to 1.3 excerpted from ANSI A300 (Part 1)-2017 *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 A – *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 agriculture, horticultural production, or silviculture unless this standard, or a portion thereof, is expressly referenced in other standards or specifications.

30 Part 3 – Supplemental Support Systems

30.1 Purpose

The purpose of this standard is to provide industry guidelines for supplemental support systems and standards for writing specifications.

30.2 Reason

Supplemental support systems are used to support or limit movement of a tree or tree part, when other management strategies have not corrected tree structural issues.

30.3 Implementation

30.3.1 Specifications for tree management should be written, administered and performed by a qualified arborist.

30.3.2 Supplemental support systems should be periodically inspected and maintained.

30.4 Safety

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

30.4.2 Supplemental support systems shall be installed and maintained by qualified arborists.

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who, through related training or on-the-job experience, or both, are familiar with the standards, practices and hazards of arboriculture.

33.4.3 Supplemental support systems shall be installed in compliance with minimum approach distances specified in ANSI Z133 for overhead, energized conductors.

30.4.4 The location and type of utilities and other obstructions both below and above ground shall be considered prior to tree management operations.

31 Normative references

The following standards contain provisions which, through reference in this 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 Tree, Shrub, and Other Woody Plant Management – Standard Practices, all Parts
ANSI B18.12, Glossary of Terms for Mechanical Fasteners
ANSI Z60 Nursery stock
ANSI Z133 for Arboricultural Operations – Safety Requirements
ANSI/UL 96, Lightning Protection Components
ASTM A-475, Standard Specification for Zinc-Coated Steel Wire Strand
Federal Standard: FF-T-276b, Thimbles, Rope
29 CFR 1910, General industry
29 CFR 1910.268, Telecommunications
29 CFR 1910.269, Electric power generation, transmission and distribution
29 CFR 1910.331 - 335, Electrical safety-related work practices

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

32 Inspection

32.1 The sites shall be inspected for visible above ground hazards prior to beginning any tree management procedure.

32.1.2 A qualified arborist shall visually inspect each tree before developing specifications.

32.1.3 Structural integrity and potential changes in tree movement and loading (dynamics) shall be considered prior to installing a tree supplemental support system.
33 Objectives

Support System Process

33.1 Objective(s) for supplemental support systems shall be defined.

33.2 Objectives should include one or more of the following:
   - Limit the movement of codominant stems or branches to reduce the likelihood of failure;
   - Limit the movement of weakly attached branches;
   - Support overextended branches;
   - Reduce the likelihood of a whole tree failure;
   - Reinforce cracks in stems or branches;
   - Restrict movement of rubbing branches.
   - Protect a new transplant from windthrow; and,
   - Support branches or leaning stems to provide clearance.

34 Specifications

34.1 Specifications for support systems should include:
   - Tree location;
   - Objective(s);
   - System type (ie. cable, brace, prop, stake, or guy);
   - Components and configuration:
     o system (e.g. direct, triangular, hub and spoke cable system),
     o materials (number, sizes, and types of components),
     o type of terminations (e.g., through or dead-end anchors, eyebolts, etc.),
     o anchor point locations.

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• Time frame for installation;
• Inspection interval;
• Other information as necessary (prop color, protecting guys, etc.)

35 Practices

35.1 General

35.1.1 At the time of installation, if a condition is observed requiring attention beyond the original scope of work, the condition shall be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

35.1.2 Necessary pruning should be performed prior to installing a tree supplemental support system. Pruning shall be in accordance with ANSI A300 Part 1 – Pruning.

35.1.3 Anchors and braces should not be installed into decayed areas where sound wood is less than 30% of the trunk or branch diameter, see Fig. 35.1.3

Fig. 35.1.3 Equations for finding the percentage of sound wood. Symbol Key for Equations:

X = sound wood depth, working side.
Y = sound wood depth, opposite side.
Z = total trunk/branch diameter, bark diameter not included.

Equation for percentage of sound wood for through-bolt applications:
\[ \frac{(X + Y) + Z}{2} \times 100 = \% \text{ of sound wood for through-bolt applications.} \]

Equation for percentage of sound wood for dead-end applications:
\[ \frac{X + Z}{2} \times 100 = \% \text{ of sound wood for dead-end applications.} \]

35.1.4 Steel cables or guys in trees with existing lightning protection conductors, shall be bonded to the lightning protection system see ANSI A300 (Part 4) – Lightning Protection Systems standard.

35.1.5 Steel hardware shall be corrosion resistant (e.g. galvanized or stainless steel).
35.1.6 Synthetic fiber cable systems shall be ultra-violet (UV) light resistant.

35.1.7 Wire rope clamps should not be used to form terminations in cables larger than 1/8 inch (3 mm).

35.1.8 The filling of cavities shall not be considered a support system.

35.2 Installation practices

35.2.1 Holes should not be drilled closer together than the diameter of the branch or trunk at the plane of installation, or a distance of 12 inches, whichever is less.

![Figure 35.2.1: Brace positioning](image)

35.2.2 The diameter of the hole shall not be greater than 1/6 the diameter of the branch, trunk, or at the point of installation.

35.2.3 Longitudinal alignment of anchors and/or braces closer than 12 inches (30 cm) should be avoided.

35.2.4 Anchor(s) should be installed in alignment with the cable and termination hardware to avoid side loading.
35.2.5 Only one termination shall be attached to an anchor.

35.2.6 Lag-thread hardware shall only be installed in sound wood that is less than 10 inches (25 cm) in diameter.

35.2.7 Lag hooks shall only be used when they can be seated to the full length of the threads.

35.2.8 Lag hooks shall be installed to prevent the cable termination from coming loose.

35.2.9 Bark should not be damaged beyond the scope of the work during installation of the lag hook.

35.2.10 The hole for the lag-thread hardware shall be 1/16" to 1/8" (1.5-3 mm) smaller than the diameter of the lag.

35.2.11 Holes for through-hardware should be no greater than 1/8" (3 mm) of the diameter of the hardware being installed.

35.2.12 When installing through-hardware, heavy-duty or heat-treated, round steel washers shall be installed between the nut(s) and the wood or according to manufacturer’s recommendations, see Fig. 33.5.9.

35.2.13 Washers shall not be countersunk into the wood.
35.2.14 Fasteners for threaded hardware, such as nuts, amon eyes, and turnbuckles, shall be secured to prevent loosening.

35.2.15 Excess portion of the through-hardware shall be removed.

35.2.16 Termination hardware shall be the appropriate size and type for the cable to be installed.

35.2.17 Terminations formed by eye-splice configurations shall incorporate thimbles.

35.2.18 Dead-end grip terminations shall only be used on cable that meets the specifications of ASTM A-475.

35.2.19 Dead-end grip terminations shall incorporate extra heavy-duty wire rope thimbles - Type III, that meet the performance specifications of federal standard FF-T276b.

35.2.20 All hardware within a system shall meet or exceed the minimum strength required to achieve the objective (see Annex A).

35.2.21 Installations shall follow manufacturers’ recommendations.

35.3 Tools and equipment

35.3.1 Equipment and tools shall be used and maintained according to manufacturer’s recommendations.

35.3.2 Work practices that unnecessarily damage living tissue, other plants, or property, shall be avoided.

35.3.2 Climbing spurs shall not be used when installing or inspecting supplemental support systems.

35.3.3 Cable grips used for tensioning shall be designed for use with the type of cable.

36 Cabling

36.1 General

36.1.1 The cabling system should include one or more of the following configurations:

- Direct
- Triangular
- Box
- Hub and Spoke

Figure 36.1.1A: Direct system with one cable and one direct system with two cables.
36.1.2 The triangular system should be preferred when maximum support is required.

36.1.2 The box system should only be used when minimal direct support is needed.

36.2 Cabling installation

36.2.1 Support cables should be taut following installation.

36.2.2 For codominant and upright stems, anchor(s) should be installed at or near a point two-thirds (2/3) of the length/height of the branch or leader, measured from the union to be supported, see Fig. 36.2.2
36.2.2.1 The angle of cable installation should be perpendicular to an imaginary line bisecting the angle between the tree parts being cabled, see Fig. 36.2.2.1

36.2.3 For over-extended, weakly attached, or excessively large lateral branches, cable, termination, and anchors shall be selected so their breaking strength exceeds the weight of the branch.

36.2.4 The cable should be anchored on the branch at the estimated center of mass, typically between 40 and 50% of the distance from the point of branch attachment on the trunk, and the tips of the branch.

36.2.5 The cable angle should be 45 degrees or greater from horizontal.

36.2.6 Eyebolt anchors should be installed perpendicular to the branch or stem or angled to align with the cable.

36.2.7 If existing cables are to be replaced, they shall not be removed until the new system is installed.

37 Bracing

37.1 General
37.1.1 Bracing system specifications details should include one or more of the following configurations.

- Single
- Parallel
- Alternating
- Crossing

**Figure 37.1.1A:** Single brace system

**Figure 37.1.1B:** Parallel brace system

**Figure 37.1.1C:** Alternating brace system
37.2 Bracing installation

37.2.1 When installing both a brace rod and a cable, the stems should be tensioned with a come-along or cable before installing the brace rod.

37.2.2 When installing a brace rod in a non-split union, the preferred location should be approximately equal to the diameter of the largest branch, above the union.

37.2.2.1 The exact position of the brace rod should be adjusted based on wood strength and branch structure.

37.2.3 Bracing systems using multiple rods should have at least one rod installed above the union consistent with Fig. 37.2.2.

37.2.3.1 Hardware shall be of sufficient strength to meet the objective (Annex A).

37.2.3.2 Brace rods shall be terminated with heavy duty washers and nuts.

38 Propping

38.1 Propping systems should include one or more of the following configurations.

- I-prop
- A-prop
- H-prop

[Insert New Illustrations for I-prop, A-prop, H-prop]

38.2 Props shall be of sufficient strength to hold the intended load.

38.3 Props shall be fastened to the branch or stem in a manner that minimizes damage and restriction of plant growth.

38.4 The branch or stem shall be secured to prevent it from falling off the prop.

38.5 Props shall be anchored to the ground.

39 Guying established trees
39.1 General

39.1.2 Guying established trees should include one or more of the following configurations (see Fig. 39.1.2A and Fig. 39.1.2B):

- Tree-to-ground
- Tree-to-tree
39.1.2.1 Tree-to-ground guys shall be preferred.
39.1.2.2 Guys should be attached to the tree at or above a point one-half the height of the tree to be supported.

39.1.3 Guys should be visually identified, marked, and/or protected.

39.2 Guying installation

39.2.1 Permanent guys shall be attached to the tree with dead-end hardware or through-hardware.

39.2.2 Temporary guys should be considered when there is an immediate or short term need for supplemental support.

39.3 Tree-to-ground guying

39.3.1 Guys shall be secured to a ground-anchor(s) sufficient to achieve the objective.

39.3.2 Ground-anchor(s) should be placed no closer to the trunk than two-thirds the distance from the ground to the height of the lowest point of attachment in the tree, adjusted for slope and site conditions.

39.4 Tree-to-tree guying

39.4.1 Anchor-tree(s) shall be inspected for structural integrity to meet the objective.

39.4.2 Guy anchors should be installed in the lower half of the anchor-tree(s).

40 Supporting newly installed landscape plants

40.1 Supports should not be installed on new transplants unless necessary.

40.2 Systems should include one or more of the following configuration types:

- Prop
- Guy
- Stake

[Insert New Illustrations for Prop, Guy, Stake]

40.3 Temporary systems shall be preferred.

40.4 Guys should be attached at or above a point one-half the height of the tree.

40.5 Guys should be visually identified, marked, and/or protected.

40.6 Supports shall be attached using a method that minimizes damage to the tree.

40.7 A minimum of two guys or props should be installed at an angle sufficient to support the tree.

40.8 For trees with a trunk diameter over 10-inches, guys should be installed in accordance with subclause 39.

40.9 Supports shall be secured to ground anchors sufficient to achieve the objective.

40.10 Stakes and guy anchor stakes should be installed vertically.
40.11 Supports shall be removed when they are no longer needed.

41 Maintenance

41.1 The owner or owner’s agent shall be notified of the need for periodic inspection and maintenance.

41.2 Scheduling inspections and maintenance shall be the responsibility of the tree owner.

41.3 Inspection should include the support system, its components, and the tree.

41.3.1 The tree should be inspected for changes in defects or conditions such as decay, lean, and compromised structural integrity.

41.3.2 Systems should be inspected for appropriateness of current location in the tree, angles, changes in effectiveness, and contact with the tree.

41.3.3 System components should be inspected for one or more of the following: wear, corrosion, degradation, tension, anchor settling, changes in effectiveness, and clearance distances.

41.4 If problems are detected they should be corrected or the system should be repaired, replaced, or modified.

41.5 Temporary support systems should be removed within one year, when they are interfering with tree growth, or when they are no longer needed.

42 Definitions (This clause is considered part of the ANSI A300 Part 3-2013 standard.)

42.1 Alternating brace: Alternating bracing consists of two or more rods installed in directional alignment but not vertical alignment, see 37.1.1C.

42.1 aмон-eye nut: Drop-forged eye nut, used to fashion through-hardware anchor(s), see Fig. 42.1.

Figure 42.1: aмон-eye nut
42.2 anchor: Hardware installed to affix and/or terminate a cable or guy to the tree, ground, or other device.

42.3 anchor-tree: A tree used to provide supplemental support in a guying installation.

42.4 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.

42.5 bond: An electrical connection between an electrically conductive object and a component of a lightning protection system that is intended to significantly reduce potential differences created by lightning currents.

42.6 box cable: Box cabling consists of connecting four or more tree parts in a closed series.

42.7 bracing: The installation of lag-thread screw or machine-thread steel rods in branches, leaders, or trunks to provide supplemental support.

42.8 cable: 1) Zinc coated strand per ASTM A-475 for dead-end grip applications. 2) Wire rope or strand for general applications. 3) Synthetic-fiber rope or synthetic-fiber webbing for general applications.

42.9 crossing: Crossing bracing consists of two or more rods installed in a non-aligned pattern, Fig. 37.1.1D.

42.10 cable-end termination: Hardware designed to anchor cables installed through a branch or stem.

42.11 cable grip: A mechanical device that temporarily grasps and holds a wire rope or strand cable during installation.

42.12 cabling: The installation of a steel wire rope, steel strand, or synthetic-fiber system within a tree between branches or leaders to provide supplemental support.

42.13 compartmentalization: Physiological process that creates the chemical and physical boundaries that act to limit the spread of disease and decay organisms.

42.14 connector clamp: A multi-purpose bolt clamp that is used to bond conductors, or bond a conductor to a ground terminal or tree supplemental support system, and meets the specifications of ANSI/UL-96.

42.15 dead-end brace: A brace formed by threading a lag-thread screw rod directly into the limb, leader, or trunk, but not through the side opposite the installation.

42.16 dead-end grip: A manufactured wire wrap designed to form a termination in the end of 1 X 7, left hand lay cable that meets the specifications of ASTM A-475 for zinc coated strand, see Fig. 42.16.
42.17 **dead-end hardware:** Anchors or braces that are threaded directly into the tree but not through the side opposite the installation. Dead-end hardware includes but is not limited to: lag hooks, lag eyes, and lag-thread screw rod.

42.18 **Direct cable:** Direct cabling consists of a single cable between two tree parts, e.g., two branches, two stems, or a trunk and a branch.

42.19 **eye bolt:** A drop-forged, closed-eye bolt, see Fig. 42.19.

42.20 **eye splice:** A closed-eye termination formed into common grade cable by bending it back on itself and winding each wire around the cable a minimum of two complete turns, see Fig. 42.20.

42.21 **guying:** The installation of a steel cable or synthetic-fiber cable system between a tree and an external anchor to provide supplemental support.

42.22 **hub and spoke cable:** Hub and Spoke cabling consists of a center attachment (hub) with spans (spokes) of cable radiating to three or more leaders.

42.23 **lag eye:** Lag-thread, drop-forged, closed-eye anchor, see Fig. 42.23.
42.24 lag hook (J-hook): Lag-thread, J-shaped anchor, see Fig. 42.24.

42.25 lag thread: A coarse screw thread designed for securing into wood.

42.26 lag-thread hardware: Anchors or braces with lag-threads. Lag-thread hardware includes, but is not limited to: lag eyes, lag hooks, and lag-thread screw rod.

42.27 lag-thread screw rod: Lag-thread, steel rod, used for dead-end and through-brace installations, see Fig. 42.27.

42.28 machine-thread: A fine screw thread designed for fittings (such as hardware nuts).

42.29 machine-thread rod: A machine-thread steel rod used for through bracing installation.

42.30 parallel brace: Parallel bracing consists of two or more rods installed in vertical and directional alignment, see Fig. 37.1.1B.

42.31 peen: The act of bending, rounding or flattening the fastening end(s) of through-hardware for the purpose of preventing a nut from "backing-off."

42.32 prop: The installation of a rigid support placed between a trunk and/or branch and another supporting structure.
42.33 **shall:** As used in this standard, denotes a mandatory requirement.

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

42.35 **single brace:** Single bracing consists of one installed rod, see Fig. 37.1.1A

42.36 **specifications:** A detailed, measurable plan or proposal for performing a work activity or providing a product, usually a written document.

42.37 **stabilize:** To support a tree in a new location or after root or soil failure.

42.38 **stake:** A tree support system used on new transplants that attaches a vertical post to the tree trunk to limit movement.

42.39 **standard, ANSI A300:** The performance parameters established by industry consensus as a rule for the measure of extent, quality, quantity, value or weight used to write specifications.

42.40 **supplemental support system:** A system designed to provide additional support or limit movement of a tree or tree part.

42.41 **taut:** Tightened to the point of eliminating visible slack.

42.42 **temporary guy:** a guy system that is intended to be removed from the tree after a short period, often one to two years.

42.43 **termination:** A device or configuration that secures the end of a cable to the anchor in a cabling or guying installation.

42.44 **termination hardware:** Hardware used to form a termination. Termination hardware includes but is not limited to dead-end grips, thimbles used in eye-splice configurations, cable-end terminations, and swage-stop terminations.

42.45 **thimble:** An oblong galvanized or stainless steel fitting with flared margins and an open-ended base, see Fig. 42.45.

![Figure 42.45: thimble](image)

42.46 **threaded-steel rod:** A machine-thread, steel rod used for through-brace installations.

42.47 **triangular cable:** Triangular cabling consists of connecting tree parts in combination of threes.
42.48 **through-brace**: A brace formed by installing hardware completely through a branch, leader, or trunk.

42.49 **through-hardware**: Anchors, cables, or braces that pass completely through the branch, leader, or trunk, secured with nuts and heavy-duty washers or cable-end termination. Through-hardware includes but is not limited to: cables, eyebolts, lag-thread screw rods, and threaded-steel rods.

42.50 **turnbuckle**: A drop-forged, closed-eye device for adjusting tension, see Fig. 42.50.

![Figure 42.50: turnbuckle](image)

42.51 **tree-to-ground guy**: A guy configuration in which at least one cable is connected between the tree to be supported and a ground anchor.

42.52 **tree-to-tree guy**: A guy configuration in which at least one cable is connected between the tree to be supported and an anchor tree.

42.53 **wire rope clamp**: A clamp consisting of a "U" bolt, bracing plate, and fastening nuts, see Fig. 42.53.

![Figure 42.53: wire rope clamp](image)
Annex A – Additional hardware information (This annex is not part of the ANSI A300 Part 3-20XX standard.)

Table A-1 Minimum hardware size for cabling trees

<table>
<thead>
<tr>
<th>Maximum Limb Diameter at anchor attachment point in inches</th>
<th>Estimated Load in pounds</th>
<th>Lag Hook diameter in inches</th>
<th>Eye Bolt diameter in inches</th>
<th>Amonut / Loop nut Threaded-rod diameter in inches</th>
<th>Common Grade Cable (galvanized, 1 x 7) diameter in inches</th>
<th>Extra High Strength Cable (1 x 7) diameter in inches</th>
<th>Aircraft Cable (galvanized, 7 x 19) diameter in inches</th>
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<td>3/8</td>
<td>7/16</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>20</td>
<td>1400</td>
<td>N/A</td>
<td>1/2</td>
<td>7/16</td>
<td>1/2</td>
<td>5/16</td>
<td>1/4</td>
</tr>
<tr>
<td>24</td>
<td>2200</td>
<td>N/A</td>
<td>1/2</td>
<td>1/2</td>
<td>N/A</td>
<td>5/16</td>
<td>3/8</td>
</tr>
<tr>
<td>28</td>
<td>3300</td>
<td>N/A</td>
<td>5/8</td>
<td>5/8</td>
<td>N/A</td>
<td>7/16</td>
<td>1/2</td>
</tr>
<tr>
<td>30</td>
<td>3700</td>
<td>N/A</td>
<td>N/A</td>
<td>7/8</td>
<td>N/A</td>
<td>7/16</td>
<td>1/2</td>
</tr>
</tbody>
</table>

The minimum hardware requirements for braces should be in accordance with the following table.

<table>
<thead>
<tr>
<th>Diameter at Brace (in inches)</th>
<th>Brace Rod Diameter (in inches)</th>
<th>Minimum number of rods with split or included bark</th>
<th>Minimum number of rods with no apparent split or included bark</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>1/4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5-8</td>
<td>3/8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8-14</td>
<td>1/2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14-20</td>
<td>5/8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20-40</td>
<td>3/4</td>
<td>3 min. with one additional for each 8” in excess of 30”</td>
<td>2 min. with one additional for each 8” in excess of 30”</td>
</tr>
<tr>
<td>&gt;40</td>
<td>7/8</td>
<td>4 min. with one additional for each 8” in excess of 40”</td>
<td>3 min. with one additional for each 12” in excess of 40”</td>
</tr>
</tbody>
</table>

* N/A indicates not an acceptable application.

ADD TABLE FOR TRANSPLANT SIZE MATERIALS.
Annex B – Applicable ANSI A300 interpretations (This annex is not part of the ANSI A300 Part 3-20XX standard.)

The following interpretations apply to the ANSI A300 Part 3 Supplemental Support Systems standard.

B-1 Interpretation of “should” and “shall” in ANSI A300 standards

“An advisory recommendation” is the common definition of “should” used in the standards development community and the common definition of “should” used in ANSI standards. An advisory notice is not a mandatory requirement. Advisory recommendations might not be followed when defensible reasons for non-compliance exist.

B -2 Revised interpretation for compliant lag hooks, (original version from ANSI A300 Part 3 – 2000)

The intent of this interpretation remains the same as the 2000 and 2006 versions.

Excerpts:

XX-XX Lag-thread hardware shall only be installed in sound wood. The hole for the lag-thread hardware shall be 1/16" to 1/8" (1.5-3 mm) smaller than the diameter of the lag.

XX-XX Lag hooks shall only be used when they can be seated to the full length of the threads. If it is not possible to seat the full length of lag hook threads other hardware shall be selected.

XX-XX Lag hooks shall be installed to prevent the cable termination from coming loose. Bark should not be damaged beyond the scope of the work during installation of the lag hook.

Interpretation: In normal circumstances, lag hooks that have a thread depth variance greater than 1/16 inch make determination of correct hole size impossible and cannot be installed in a manner compliant with the ANSI A300 Part 3 standard. Lag hooks with threads cut beyond the bent portion of the hook cannot be installed in a manner that allows the full length of the threads to be seated without damaging the bark beyond the scope of the work and cannot be installed in a manner compliant with the ANSI A300 Part 3 standard.
B-3 Interpretation for cable selection when using dead-end grip terminations, update for ANSI A300 Part 3 – 20XX standard

The intent of this interpretation remains the same as the 2006 version.

The user of ANSI A300 standards is instructed to cross-reference definition subclauses **XXX cable** and **XXX dead-end grip** and subclause **XXX**

**Interpretation:** In normal circumstances, dead-end cable grips that meets the ANSI ASTM A475 standard specification for zinc coated steel wire strand can be used with common grade and extra high strength grade cable that also meets the ANSI ASTM A475 standard as long as they are installed correctly and according to manufacturer’s instructions.

ANNEX C

[Content, Green Log Weight Chart, TBD]