I. General for Planting and Transplanting

For any question regarding the intended use of these items, contact the Regional Landscape Architect or Designer. The Regional Landscape Architect typically assigns a designee to assist with the inspections. The majority of inspection tasks do not require a Landscape Architect.

Note: A “licensed” Landscape Architect or an individual working under the direction of a licensed Landscape Architect is required for certain tasks as described below. A licensed Landscape Architect means an individual licensed to practice Landscape Architecture in New York State.

Note: In cases where insect damage and diseases are suspected, contact the NY State Agriculture and Markets Inspector.

- Verify that the Contractor’s progress schedule shows the estimated beginning and completion dates for the work included in the contract.
  - Seasons are limited in the standard specifications (611-3.01) and the Inspector needs to verify that the Contractor is including realistic dates in the project schedule.
  - The timeframe for planting may have an impact on the overall project schedule.

- Check that all materials are approved prior to use.

- Ensure all plants are protected from damage and drying out, including during transporting (See Figure 1), handling or while in temporary storage. Tarpaulins or other covers shall be placed over plants transported by open vehicles.

Figure 1: An example of a plant delivery. Note the wrap on tree trunks to protect them from damage. The tarp that covered the trees has been removed but was in place as trees were transported to protect the trees from wind damage. The plant material is slanted to further protect the material from transport damage and drying out.
Unless the vehicle is well ventilated, delivering or storing plant material in enclosed trucks or vans is generally not a good idea. The heat that may develop in the enclosed vehicle will dry out and in some cases “bake” or kill the plant material.

A. Temporary On-Site Storage for Planting and Transplanting

Following inspection, all accepted plant materials shall be stored (carefully), as required, until planted. Plants held more than 48 hours without care have a poor chance of survival.

- Ensure the Contractor is caring for plant materials (including watering) placed in temporary storage. This care is included in the pay items.
- Ensure that Balled and Burlapped (B&B) and transplanted plants are handled carefully to avoid cracking or breaking the root ball and that they are protected against drying out.
- Check that plants are handled appropriately and not by the trunk or stems. Handling a plant in this manner may damage the trunk/stem and/or affect the integrity of the rootball or root mass.
- Check for damaged balls, leaders, major branches, and/or roots. If any plants are damaged during storage, the Contractor is not in compliance with the 611 pay items and the work may not be accepted for payment.
- Verify pruning is to remove dead, conflicting and broken branches and in accordance with ANSI A300 Part 1.
- Ensure plants are not damaged during transport from the storage area to the planting site.

Typical plant storage may include the following:
- Outside storage that is shaded and protected from the wind.
- Plants covered with burlap, tarpaulin, or mulching material to protect against freezing or drying.
- Plants that are “heeled-in” (recommended for plants not planted within 2 days of delivery). “Heeling-in” involves covering the bare root or root balls with moist sawdust, wood chips, shredded bark, peat moss, or other approved mulching material(s).
  - Place plants in a trench or group plants together on ground surface
  - Fill around all roots and root balls with mulch
  - Water (as needed)

B. Layout for Planting and Transplanting

- Ensure the proposed locations are staked or marked out by the Contractor, then approved by the Department before plant pits or beds are dug. The Contractor shall coordinate with all utilities as necessary (§107-07).
- Verify the layout reflects exact dimensions when required by the contract documents (e.g. offset from built features, mowing clearances, tree stem centered in tree pit, etc).
- Check that adjustment of planting areas and pits are done at this time to respond to unanticipated conditions:
  - Avoid rock outcrops,
  - Avoid drainage ditches and/or drains,
  - Meet clear recovery area requirements,
  - Allow for room to mow (especially when the tree is fully grown),
  - Avoid placement over or under utilities (See Figure 2), or
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- Avoid impervious or wet soil conditions.
- Other adjustments (field changes affecting offsets from built features, etc.)

Notes:
1. When laying out shrub and groundcover beds, the appearance of the perimeter may be critical to the context of the area (e.g. a flowing line that clearly outlines the bed border in a highly visible setting). Concerns should have been communicated by the designer.

2. The layout of plants in wetlands is critically important to their success. Many plants have exact water requirements and will not thrive or even survive if planted in water too deep or too shallow. Adjustments may be required to the planting layout due to final grading.

3. If excessive moisture is encountered, planting may need to be adjusted, species substitution may be considered, or if adjustments are not possible the planting in this location may need to be eliminated.

Figure 2: Do not place trees where they can interfere with underground or overhead utilities.

C. Site Preparation for Planting and Transplanting
- Ensure that prior to installing plant materials; the following preparation is completed according to the contract documents.
  - Planting pits or beds are excavated to the required size, depth and spacing. Measure root ball depth and width for accurate plant pit sizing. Check the 611 Standard Sheets; in general the depth will be the same measurement as the depth of the root ball.
  - Existing vegetation is removed from the entire bed area.
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- Verify the soil removed from the plant pits and beds is re-used (this is the default) or removed from the contract site. The Contractor may need to plan for stockpiling the planting soil until needed.

- Check that no planting holes have been left open without properly securing them for public safety. An option may be to backfill with the specified planting soil. There is no separate payment for this operation; it is part of the 611 item.

- Ensure the sides and bottoms of the plant pits and beds are shaped according to the Standard Sheet (especially in drilled holes). This means that the faces of pit walls will be friable and loosened to break all “glazing”. This promotes moisture transfer between different soils (existing and backfill).

D. Installation for Planting and Transplanting

1. Plant installation
   - Verify that planting installation is completed in conformance with contract documents, including ANSI A300.
     - A good practice in mixed planting areas is to plant trees first followed by the larger shrubs, low shrubs and finally with ground cover plants. This prevents damage to the smaller plants; however the Contractor is responsible for sequencing.
   - Check that plants are moist at the time of planting.
   - Verify that trees or shrubs if marked with compass orientation are planted in the same compass orientation. If not marked, aesthetics may be considered, especially if in a viewer sensitive location (e.g.: rotate plant for best appearance prior to placing in ground).
   - Check that the root flare (point where the first structural roots emerge from the trunk) is visible and level with the surrounding soil. (See Figure 3)

![Figure 3: Root flare begins at the bottom of the tape. Note excess soil in this picture. Often excess soil will be present at the top of the root ball. This soil should be brushed away to make sure that the tree is planted at the right height to ground level. Look for the flare of the trunk of the tree to be at ground level. forestkeepersofcapecod.com](image-url)
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2. Backfilling
   • Verify planting soil is per the contract documents (default is un-amended existing soil excavated from plant pit or bed).
   • Ensure that frozen or saturated backfill is not used.
   • Check that planting pits are carefully backfilled in layered sections and each layer watered to limit future settling and prevent air pockets.
   • Check that enough water is applied to bring the backfill to “field capacity”, which means all voids in the soil are filled with water but not to the point of soil saturation and standing water. When water stops draining freely field capacity has been reached. Soil turns to mud above field capacity and is unworkable. After the drainage has stopped, the large soil pores are filled with both air and water while the smaller pores are still full of water. At this stage, the soil is said to be at field capacity. At field capacity, the water and air contents of the soil are considered to be ideal for growth.
   • This initial watering is included in the pay items.

3. Staking, Guying or Anchoring
   Staking, guying or anchoring the plants is not required unless specified. Installation is included in the pay item for planting. Check 611 Standard Sheet for details. (See Figure 4)
   • Ensure that commercial tree support systems are installed per the manufacture’s specifications.
   • Check when staking is specified, that the stakes are driven solidly into the ground and oriented as shown on Standard Sheets.

4. Soil Planting Saucer
   • Ensure that a berm of soil is formed around the perimeter of the pit. The berm creates a saucer to facilitate watering and retention of rain water as shown on the 611 Standard Sheets.

5. Mulching
   • Verify that plants are mulched per the contract documents and in accordance with the Standard Sheets (See Figure 5).
     • Check that the mulch is to the specified depth with approved mulch material.
     • Ensure care is given to mulching ground covers; plants are not to be buried with mulch.
     • Verify mulch completely covers the designated area to the depth specified, tapering down to leave the root flare of trees exposed. Check that mulch is not in contact with tree trunks, low branches and plant stems. Improper mulching can vector disease and/or cause root rot, which in turn may stunt the tree growth or result in tree mortality.

Figure 4: Tree planted without stakes or support system.
E. Care Until Acceptance for Planting and Transplanting

- Verify the Contractor waters, weeds and maintains mulch at no cost to the State until plants are accepted for payment. (Once accepted, separate pay items are required to water or care for the material.)

F. Conditions of Acceptance for Planting and Transplanting

- Accept plants when all plants meet the following conditions:
  - Plant species has been verified and plant is in its designated location.
  - Planted or transplanted in accordance with ANSI A300, Part 1, 2, 3 and 6.
  - Planted or transplanted in accordance with 611 Standard Sheets.
  - The plant is in a living, healthy, unimpaired and undamaged condition. Healthy growing condition means an absence of:
    - Disease, insects, eggs, larvae,
    - Sun-scald, wind-burn,
    - Cuts, bruises, abrasions, punctures, holes,
    - Dead or broken leader or major branches,
    - Visible wilting.

- The standard specifications call for all plants to be accepted at one time. Reasons include:
  - Contractual efficiencies
  - One start and end date for any included Post-Planting Care
  - Community expectations
  - Permitting Conditions

Figure 5: Examples of improper and proper mulch application.
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- Contract schedule or safety concerns may necessitate a phased acceptance of plant material. For example:
  - A portion of the material is planted in the fall and spring only plants cannot be planted at the same time. The Engineer may accept the fall planting provided all conditions of acceptance are met.
  - The majority of the planting is completed, but the schedule prohibits the planting in an area (e.g., staging area) phased acceptance would be appropriate.
  - Other situations may occur and the Regional Landscape Architect is available to assist.
  (Note: Phased acceptance of the planting may affect the Post Planting Care item).

- Ensure that plants that die after acceptance are removed by the Contractor and the surface area restored at no additional cost to the State. Questions concerning the health or vigor of plants should be referred to the Regional Landscape Architect.

- Damage caused by animals (i.e., deer, rodents) should be brought to the attention of the Regional Landscape Architect.

G. Payment
The four conditions of acceptance are part of “satisfactory completion of the work”.

Materials
A. Water
  Water used must comply with § 712-01. Water applied to plants or planted areas shall:
  - Be free from oil,
  - Have a pH not less than 6.0 nor greater than 8.0 and
  - Be free from impurities injurious to vegetation.

  Municipal water supplies are considered acceptable sources. Other sources of water require sampling by Department representatives and a determination by the Materials Bureau as to suitability for use.

B. Topsoil
  The contract documents may indicate the use of topsoil (§713-01). See CIM 610 for additional information.

C. Mulch for Landscape Bedding
  Type A Seasoned Wood Chips or B Recycled or Green Wood Chips (§713-05) shall be used unless otherwise specified in the contract documents. See CIM 610 VIII Mulch for Planting for additional information.

D. Protection of Plants (§713-08)
  1. Staking is only required when specified in the contract documents. Check 611 Standard Sheet for details.
     - Above ground support/stakes: Wooden stakes or a commercially available product/system developed and labeled for supporting trees.
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- Wooden stakes:
  - 8 – 10 feet long – minimum diameter of 2 – 2 ½ inches
  - 12 feet long – minimum diameter of 3 inches
  - Maximum diameter shall not exceed 4 inches
  - Pointed at one end
  - Sound and free from insects

- Underground support – commercially available product or system developed and labeled for supporting trees (See Figure 6)

2. Wire, Hose and/or Straps for protecting Tree Bark:
   Use with stakes or other tree support systems/products. See Planting Standard Sheets.
   Gauge for annealed steel wire is as shown on Standard Sheet 611-01

3. Anti-Desiccants:
   May be specified in the contract documents. The typical anti-desiccant spray creates a barrier on leaves that helps slow the loss of water. Anti-desiccants shall be labeled for vegetation (See Figure 7); with instructions for use. The directions on the label should be followed.

![Figure 6: Example of underground support system.](image)

![Figure 7: Example of a label from an anti-desiccant suitable for vegetation.](image)

E. Compost
The contract documents may indicate the use of compost (§713-15). See CIM 610 for additional information.
II. PLANTING

A. Plant Stock Inspection (§713-06)

The Department’s material requirement standard for trees, shrubs, vines and other plants is ANSI Z60.1 – American Standard for Nursery Stock.

Plant materials delivered to the construction site shall be accompanied by a Bill of Lading stating the species, size and quantity of plants delivered.

1. Inspection at the Nursery or Source

In general NYSDOT does not inspect planting stock at the nursery or other approved source. The contractor is required to provide quality planting stock that meets the standard specifications. However if requested the Department may provide an inspection at the nursery. Since all expenses related to this activity are the responsibility of the NYSDOT such inspections should only occur when approved by the EIC. Such inspection is for general acceptability of the stock and does not eliminate or take the place of inspection at the Construction Site.

2. Inspection at the Construction Site

Plants are inspected upon delivery to the project site for conformance with ANSI Z60.1 (e.g. growth habitat, size, etc.) and any other requirements in the contract documents (e.g.: street trees).

Inspection of stock includes ensuring that the plants are from an approved source, are in a healthy and undamaged condition, and conform to sizes, quantities, and standards called for in the specifications.

The Regional Landscape Architect or their designee typically assists with the inspections; however note that a licensed landscape architect is required by the Department to assess plant material for signs of disease and insect damage.

Before unloading the inspection at the construction site should include the following checks:

a. Transportation:
   - Check for the evidence of proper handling procedures such as:
     - On open vehicles tarpaulins or other covers are present and secured over plants upon delivery.
     - For closed vehicles ventilation system present; doors shut to prevent plants from drying out.
     - Heads of trees tied/wrapped carefully to prevent damage to branches and leaders.
     - Trunks and branches supported and padded to avoid scraping or bruising the plant.
     - Plants and rootballs protected from drying out and injury.

b. Documentation (Bill of Lading/Certificates):
   - Obtain Bill of Lading from the Contractor stating the point of origin, quantity, sizes and kinds (genus and species) of plants delivered. Bill of Lading must accompany the shipment.
   - Check that the plants have been grown in similar climatic conditions to the planting location.
   - Check that the Bill of Lading matches the contract documents. (e.g. correct species, quantity, etc).
   - Obtain from the Contractor all necessary current, valid quarantine or Federal, State, and/or Provincial nursery inspection certificates should accompany each shipment.

Note: Have the Contractor remove tarp prior to the cursory check of the plants.
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c. Quality:
  • Each shipment of plants must be free of disease and insect infestation/damage. The Landscape Architect or their designee will perform a cursory check for obvious signs of disease and insect damage. The Landscape Architect will provide the results to the Inspector.

d. Cold storage plants: (e.g. plants arriving in a refrigerated truck, cooler or freezer) are unacceptable without prior written approval. Typically, cold storage plants would be a special specification.

Unloading: Individual plants are inspected as the material is being unloaded, or immediately thereafter. Unacceptable plants are set aside for removal from the project site.

e. Verification and labeling:
  • Verify the plant material is consistent with the shipment documentation (e.g.: Bill of Lading).
  • Check that plants are labeled in accordance with currently accepted nursery labeling practice.
    – All trees and a representative sample of shrubs should be legibly tagged with the correct botanical name, common name, and size to agree with the specifications and plant list. Bare-root plants should be shipped in bundles with each bundle properly tagged.
  • Prevent discarded plants from being submitted for acceptance on other Department projects by removing nursery flags, ribbons or other markers and by non-injurious means (e.g. paint dot on burlap, etc.).
  • Discarded plants are to be removed from the project site.
    – Do not permanently mark or mistreat discarded plants, as they are the property of the Contractor.

Note: Have the Contractor remove crown wrap/ties and any trunk protection material prior to final inspection of the plants.

f. Disease and Insect Damage:
  • The Landscape Architect will perform a final inspection for signs of disease and insect damage. The Landscape Architect will provide the results to the Inspector.

g. Quality, size, defects and plant problems:
  • Check individual plants for quality, size, defects, and plant problems.

  1) General:
    – Plants including root spread and ball size shall be in accordance with ANSI Z60.1.
    – Growth habit (shape or form -- e.g. upright, multi-stem, weeping, etc.) typical of the species. Refer to ANSI Z60.1 for plant silhouettes.
    – Plants of like species from the same grower should have similar silhouettes. (See Figure 8)
• Minimum size allowed: from the minimum size up to but not including the next larger size.
• No fresh pruning cuts. No cut back of crowns or leaders.
• Healthy growing condition:
  – Not wilted
  – Tops of good quality
  – Adequately hardened off before shipment. (Typically no soft shoots or soft buds. Thicker outer leaves and no early leaf out.)
  – No obvious damage to visible roots

2) Ball and Burlap (B&B):
• Processed balls are not to be accepted. A processed ball is a plant that is dug bare root while dormant and to which a growing medium is mechanically or manually formed around the roots to form a ball. A processed ball will lack a fibrous root system that has developed so that the root ball is firm and will retain its shape and hold together when removed from the burlap or container.
• Stem to rootstock grafts are healed.
• A good fibrous root system. Do not accept a plant with circling roots at the base of the trunk. (See Figure 9) Girdling roots will decrease the vigor of the tree and ultimately the tree will decline and die.

Figure 8: Plants of like species have similar silhouettes.

Figure 9: Pull away the burlap from the top of the root ball to inspect for circling roots.
• Firm soil ball, with trunk securely tied. Do not accept a plant with a cracked or broken ball. There may be some minor natural cracking however cracks large enough to cause ball to be unstable or fall apart are not acceptable.
• Ball is wrapped and tied with approved materials. Burlap or other suitable biodegradable material.
• Trunk or stem of the plant should be in the center of the root ball. A tolerance of 10% of the diameter is the maximum deviation allowed.
• Ball supporting devices, such as wire baskets, shall hold the ball in a firm, rigid condition.
• Root ball depth is measured from the top of the ball, which in all cases shall begin at the root flare. Soil above the root flare is to be removed.

3) Container Grown:
• Height and container size according to ANSI Z60.1
• Container sufficiently rigid to hold their shape and protect the root ball during handling and shipping.
• Plant grown in container long enough for new fibrous roots to have developed so that the root ball holds its shape when removed from the container.
• Plants are not rootbound, with no excessive root growth encircling the inside of the container.

4) Bare Root Material:
• Root spread in accordance with ANSI Z60.1.
• Well branched root system.
• Roots protected from injury and drying out.

5) Herbaceous Perennials, Ornamental Grasses, Groundcovers, & Vines
• Vigorous, well-developed plants with container and minimum plant size as specified in ANSI Z60.1, Section 13.
• Established in pots with sufficient roots to hold earth intact after removal from container. Roots should reach the side of the container.
• Plants are not rootbound, with no excessive root growth encircling the inside of the container.

6) Bulbs, Corms, Tubers & Rhizomes
• Sold under grade names related to size, see ANSI Z60.1, Section 12.

B. Planting Installation Inspection

1. Planting
   • Check that all nursery tags have been removed from plant material.

2. Balled & Burlap
   • Ensure that all twine, wire basket and burlap is cut away from the upper half and top of the root ball (the bottom portion may remain intact) and removed from planting pit. (See Figure 10)
3. Container Grown

- Ensure that the container is not removed by pulling or leveraging the trunk of the plant. See ANSI A300 Part 6 – Planting and Transplanting for addition information on removing the plant material from container.

- Verify that the container root ball has been “managed” according to ANSI A300 Part 6 prior to planting. Methods include but are not limited to slicing, shaving or re-directing. (See Figure 12)
4. Bare Root Stock

- Check for proper pit diameter and positioning of the plants per the 611 Standard Sheets (e.g. spread of the bare root system, depth, root flare relationship, etc.). When the plant’s root flare is lower than the finished grade it will decrease survival potential of the plant. This is not acceptable and should be corrected prior to placing backfill.

- Ensure that roots of bare root plants are properly spread out in a radial position and planting soil is carefully worked in among them. All dead, broken, frayed roots should be cleanly cut off and twisted roots should be straightened.
III. TRANSPLANTING (611.10 -611.16)

Transplanting involves the careful extraction of a tree or shrub, re-locating the plant to a new location, and replanting. Transplanting is in accordance with ANSI A300 Part 1, 2, 3 and 6 Standard Practices.

The most critical step in this process, and the step that requires the most experience, is the extraction, as preserving the plant’s critical root system intact is difficult.

Transplanting may occur close to the beginning of the project as the plants will need to be moved prior to other construction activities. The plants may be moved to their permanent location or temporarily stored until re-planting can occur.

The Department’s material specification for transplanting is based on the guidance for “Collected Plants” detailed in ANSI Z60.1. Inspection for transplanting includes:

- Check that the minimum ball sizes are equal to those specified in Table 6 for the next larger size nursery grown stock. (E.g. ball size for a two inch nursery grown tree is 24 inches, but for a two inch transplant tree, use 28 inches which would be the ball size for a two and one-half inch nursery grown tree.)

- Verify that the compass orientation is considered when extracting and replanting.

- Check that all broken, torn, or damaged roots greater than one inch in diameter are pruned, leaving a clean cut surface to help prevent rot and disease.

- Ensure that once a plant has been extracted from the ground, it receives the same treatment and care as a nursery-supplied plant.

A special specification is used to transplant material greater than 12 inches DBH, as it requires special measures for a tree of that size.

Figure 13: When transplanting smaller trees hand digging is common. Photo from buybigtrees.net

Figure 14: Example of tree spade. forestry.about.com
IV. PORTABLE DRIP IRRIGATION SYSTEM & REMOVAL (611.17 & 611.18)

Portable Drip Irrigation Systems (PDIS) provide a slow and deep application of water directly to plant roots.

Watering is performed according to §610-3.10 Watering Vegetation and is paid for separately.

PDIS may be reinstalled in spring for multi-season construction contracts.

The PDIS remains the property of the Contractor.

Note: Contractor is paid for each installation and each removal of PDIS.

- Verify that the product meets the Materials Specifications (§713-08)
  - Slow release watering system with accommodation for even watering.
  - Accommodate a standard hose.
  - Can be attached to trees.
  - Provide water from two (2) drip points (minimum).
  - Have a zipper or similar method to securely attach to tree. (See Figure 15)
  - UV treated reinforced polyethylene material.
  - Sized according to manufacturer’s recommendation for plant size and type.

- Check that the Contractor has furnished and installed the number of PDIS(s) indicated in the contract documents.
  - At the locations indicated in the contract documents.

- Verify that damaged or missing PDISs are replaced (no added cost to the State).

- Verify that they are removed prior to first frost or at end of specified watering period, which ever is sooner.

Figure 15: PDIS with zipper that attaches the system to the tree.
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Note: Be aware that leaving PDISs past the first frost can result in damage to the plant material.

Figure 16: The above pictures show potential problems to watch for with PDIS installations. Clockwise from top left: 1. and 2. Mold and damage to trunk; 3. Insect Infestation; and 4. Damage from frozen PDIS.
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V. POST-PLANTING CARE (611.19 & 611.20)

Notes:
Replacement plants are not included in the standard pay item for Post-Planting Care.
“Watering Vegetation” is a separate pay item

- Verify that the Contractor has submitted a post-planting care work schedule and that it has been approved by the Department. This may require an Uncompleted Work Agreement (UWA) or a contract time extension.

- Check that the Contractor is following the work schedule and work is performed according to the contract documents.

The specification requires the Contractor to:
1. Mulch twice according to the approved schedule.
   a. Mulch used is to match that used in the initial planting.
      Note: It is unlikely tree removals will be occurring during the Post-Planting Care time period. The Inspector may allow the Contractor to provide Type B Recycled or Green Wood Chips or Type A Seasoned Wood Chips mulch.
   b. Mulch should be added to keep the depth at 3 inches.

2. Weed twice according to the approved schedule.
   a. Tree pits and planting beds should be reasonably free of weeds including their live roots.
   b. No specific weeding method is specified.
   c. § 713-13 has been included in the Material Section of these items because the Contractor may choose to use herbicides (though no separate payment is made).

3. Perform integrated vegetation and pest management.
   a. This includes:
      ▪ Looking for signs of insect infestations or plant disease during scheduled plant care.
      ▪ Selecting and undertaking control methods in the event of problems.
      ▪ Evaluating performance of all implemented Integrated Pest Management (IPM) measures and adjusting if necessary.
   b. § 713-13 has been included in the Material Section of these items because the Contractor may choose to use pesticides (though no separate payment is made).

4. Prune once according to the approved schedule.
   a. Performed according to ANSI A300 Part 1.
   b. Prune dead or damaged branches.

5. Maintain tree support system (if present) once every six months. This duration should be shown on the approved schedule.

And at the end of the post-planting care

6. Remove tree support system (if present).

7. Remove rodent guards (if present).
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Notes:
- Repositioning as a result of settlement, wind action, vandalism, etc. is beyond the scope of post-planting care.
- Damage caused by animals (i.e., deer, rodents) should be brought to the attention of the Regional Landscape Architect.
- Dead plants are removed under the §611 planting item.

Progress payment

A progress payment of up to 40% of the unit price bid may be paid at mid-point if the work is satisfactorily performed.

Figure 17: Properly cared for trees
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VI. RODENT GUARD (611.21)

The item is intended to place rodent guards around newly planted trees and other vegetation when indicated in the contract documents.

There are two common types of tree guards —tubes and those made of spiraling plastic. Both keep pests away from young trees.

Note: Tree shelters and rodent guards should be monitored and removed if insects infest or disease occurs.

- Verify the products (§713-13) are commercially available and labeled as rodent guards for vegetation.
- Check that rodent guards are installed according to the contract documents and/or manufacturer’s recommendations.
- Ensure that the rodent guards are installed at the locations indicated in the contract documents.

Figure 18: Spiral type rodent guard.  
Figure 19: Grow tubes also provide rodent protection
**Figure 20:** Plastic sleeve type rodent guard.

**Figure 21:** Rodent Guard

**Figure 22:** Rodent guard products should indicate that they are for horticultural use.

Fits Trees up to 4” Across
Expands with Tree Growth