

APPENDIX D - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Trees.
2. Shrubs.
3. Ground Cover.
4. Plants.
5. Herbicide.
6. Planting Fertilizers.
7. Erosion Control Matting.
8. Mulches.
9. Root Barriers.
10. Tree Stabilization.
11. Edgings.
12. Planting Accessories.

B. Related Sections:

1. City of Albany Code 7.98.215 "Protecting residual trees" and Standard Construction Specifications, Division 2, Section 210 "Tree Protection" for protecting trees remaining on-site that are affected by site operations.
2. City of Albany Standard Construction Specifications, Division 2, Section 204 "Excavation, Backfill, and Other Site Work" for excavation, filling, rough grading, aggregate, and drainage backfill materials.
3. Appendix C "Soil Preparation" for preparation of planting soils.
4. Special Provisions Section III "Hydroseeding" for lawn planting.
City of Albany Standard Construction Specifications, Division 2, Section 210 "Street Tree Standards" for tree stock quality, placement, planting procedures, and establishment period requirements.
5. City of Albany Standard Construction Specifications, Division 2, Section 209 "Cleanup and Site Restoration" for restoration of areas affected by temporary construction activities and damage to planting outside of the limit of work.

1.2 REFERENCES

A. Standards: Comply with botanical names, sizes, and conditions provided in:

1. Botanical Names: American Joint Committee on Horticultural Nomenclature, "Standardized Plant Names."
2. Sizes and Conditions: ANSI Z60.1 "American Standards for Nursery Stock", (latest edition).
3. Perennials: "Perennial Plant Association Standards."

4. Native Species: Hitchcock, C.L. and A. Cronquist, "Flora of the Pacific Northwest," 1973.

1.3 QUALITY ASSURANCE

- A. Contractor: Provide one person who shall: Be present at all times during execution of work in this section; be familiar with the materials and best methods for installation; direct work performed under this section.
- B. Government Inspection: All plants and planting material shall meet or exceed the specifications of Federal, State, and County laws requiring inspection for plant disease and control.
- C. Secure plant material and maintain in a climate similar to that of the project site.
- D. All plant material to be grown from cuttings or seed. Collected plants are not acceptable.

1.4 SUBMITTALS

- A. Within 30 days after Contract award, submit:
 1. A list of local/regional suppliers for each plant species to be installed. List to include plant quantities, sizes and root conditions. Certify in writing, confirmed orders for plants by submitting a Bill of Sale for each plant to be installed. Each plant species shall be supplied by a single grower only, unless otherwise approved by Owner's Representative. The Contractor shall warrant all plant material to be true to botanical name and specified size.
 - a. Submit a separate list of tree suppliers having ample quantities of each species in their specified sizes, with accompanying photos for review by Landscape Architect. Photos shall meet requirements indicated in Section 1.4 - D 2.
 - 1) Landscape Architect may elect to tag trees in the field following review of this tree submittal. Contractor shall coordinate tree tagging with Landscape Architect prior to purchase of any trees.
 - b. Requests for substitutions of plants not available in size, quantity or type specified must be made within 30 days after Contract award. Submit a written summary of specified plants which cannot be obtained.
 2. Plant Material Inspection Certificates for all plant material shipped from out of state.
 3. 1/2 cubic foot sample of bark mulch for approval prior to delivery.
- B. Provide all Product Data submittals simultaneously in a single package for review.
 1. Submit product data for the following:
 - a. Mulch.
 - b. Anti-desiccant.
 - c. Post-emergent herbicide.
 - d. Erosion control matting.
 - e. Tree stabilization products.

- f. Tree wrap.
 - g. Mycorrhizal inoculum.
 - h. Root barriers.
- C. Submit copy of herbicide applicator's Commercial Applicator's License to Owner's Representative before application of herbicides (includes pesticides). Submit a copy of the application record to the Owner's Representative immediately after each herbicide or pesticide application.
- D. Shrub and Tree Samples:
- 1. Typical samples, three each of all varieties and sizes (#5 and under for shrubs, #15 and under for trees) of all plant materials shall be submitted for inspection & approval at the site a minimum of fifteen (15) days prior to planting operations. Approved samples shall remain on site and shall be maintained by the Contractor as standards of comparison for plant materials to be furnished. Approved samples shall be incorporated into the work.
 - 2. Tree Photographs: For all trees over #15, submit photographs of each specific tree to be purchased (minimum 2 photos per plant showing differing sides), a minimum of sixty (60) days prior to planting.
 - a. Format: Digital, high resolution, color jpeg
 - b. Scale: Include a yardstick in each photograph to provide scale.
 - c. Background: Ensure form and condition of plant is clearly distinguishable from background.
 - d. Identification: On the back of each print and/or as an email attachment, provide the following information:
 - 1) Name of Project & Owner.
 - 2) Name & address of Grower.
 - 3) Date photograph was taken
- E. Upon completion of the Work, submit:
- 1. Written notification to Owner's Representative requesting review for Substantial Completion.
 - 2. Written notification to Owner's Representative of Punch List Completion.
- F. With application for final payment, submit:
- 1. Duplicate copies of delivery invoices, labels, or other acceptable proof of quantities of materials used.
 - 2. Copies of delivery invoices, labels, or other proof of quantities of plant materials and fertilizers.

1.5 SITE OBSERVATION

- A. Site observations herein specified shall be made by the Owner's Representative. The Contractor shall provide a minimum of three (3) days notice before Observation is required.
- 1. Pre-Construction Meeting: Explain Owner Representative's role to Contractor, review construction sequence.

2. Incorporation of soil conditioning and fertilizers into the soil.
3. Application of pre-emergent herbicide.
4. Soil testing after soil preparation for approval to plant.
5. Upon the completion of grading prior to planting.
6. Approval of samples of plant materials delivered to site.
7. When trees and shrubs are spotted in place for planting, but before planting holes are excavated.
8. Plant installation: Check size of planting holes and backfill mix.
9. Verification of finish grades.
10. After planting and all other specified work has been completed.
11. Substantial Completion Inspection and preparation of a Punch List.
12. Maintenance observation after thirty (30) days to coincide with fertilizer application.
13. Final Acceptance Inspection at completion of the Establishment Period.

- B. No site observation visits shall occur until all soil submittals have been made and approved. Construction Observation visits shall be made in proper sequence with the installation of work. The Landscape Contractor shall be responsible for reimbursement of time and travel expenses at current billing rates, incurred by the Architect due to out of sequence site visits.
- C. Contractor shall be on site during each site observation visit. Contractor shall speak English.
- D. No site visits shall occur until all items in previous Observation Reports have been completed or remedied unless the Owner has waived such compliance in writing.
- E. Upon completion of planting and ancillary landscape work, the Contractor shall notify the Owner's Representative in accordance with the procedures outlined in the Substantial Completion Section of this specification.

1.6 QUALITY CONTROL

- A. Inspection: Plants shall be subject to inspection by the Owner's Representative at the job site upon delivery to the site. Plants not conforming to specifications shall be rejected and removed immediately from the site.
- B. The presence of noxious weeds in plant balls or plant containers shall be cause for rejection of any or all plants from that source.

1.7 DELIVERY

- A. Deliver packaged materials to site in original unopened containers bearing manufacturer's guarantee chemical analysis, name, trade name, and trademark.
- B. Remove unacceptable plant material immediately from project site.
- C. Plant Materials:

1. Deliver trees and shrubs after preparations for planting have been completed, and plant immediately.
2. Do not prune prior to delivery unless otherwise approved by Owner's Representative.
3. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches, or disfigure natural shape.
4. Provide protective covering during delivery.
5. Protect plants during delivery to prevent damage to root ball or desiccation of leaves.
6. Apply anti-desiccant using a pump sprayer to provide adequate film over trunks, branches, stems, twigs and foliage of plants.
7. If deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving, and sprayed again 2 weeks after planting.
8. Label one of each tree and shrub species with securely attached waterproof tag bearing botanical name and supplier's name.

1.8 STORAGE

- A. Contractors shall schedule and conduct planting operations to minimize storage of plant materials on the project site. The location and conditions of storage shall be reviewed for approval by the Contractor, Owner, and Owner's Representative.
- B. Plants that cannot be planted within 24 hours after arrival shall be "heeled-in" in accordance with accepted horticultural practices and the following requirements:
 1. Protect root ball of balled and burlapped plants with moist earth, sawdust or other acceptable material.
 2. Protect plants at all times from injury, extreme weather conditions, and keep moist.
 3. Store plants in shade at all times and protected from wind until planted.
 4. Store plants in upright position and allow sufficient ventilation between plants.
- C. All plants that are to be stored longer than one month shall be planted in nursery rows and irrigated using a temporary irrigation system, plants shall be maintained at the Contractor's expense.

1.9 HANDLING

1. Do not drop plants. Do not free-fall, drag, roll or abuse the tree or put a strain on the crown (bud area) at any time.
- B. Do not pick up container or balled plants by stems, trunk, or foliage. Handle balled & burlapped plants by the ball of earth.

1.10 NOTIFICATIONS

- A. Notify Owner's Representative a minimum of 48 hours in advance of plant material delivery so that plants may be inspected upon site delivery. Unapproved materials are to be immediately removed from the job site.

- B. Notify Owner's Representative a minimum of one week in advance for request of Substantial Completion and Final Acceptance inspections.

1.11 SITE CONDITIONS

- A. Existing Improvements to Remain: Locate underground utilities prior to start of work.
- B. Protect existing improvements from damage, soiling or discoloration. Repair or replace damaged, soiled or discolored improvements as directed by Owner's Representative.
- C. Planting Conditions: Planting is not permitted during the following conditions, unless otherwise approved:
 - 1. Cold weather: less than 32 degrees Fahrenheit.
 - 2. Hot weather: greater than 90 degrees Fahrenheit.
 - 3. Wet weather: saturated soil or standing water.
 - 4. Windy weather: wind velocity greater than 20 m.p.h.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

- A. Provide plant materials as scheduled on Drawings.
- B. Quantities indicated are for Contractor's convenience only. Contractor to verify and provide number of plants required to complete work graphically shown on Drawings.
- C. Sizes and grade quality are maximums as listed. Larger sizes are not acceptable.
- D. Plants shall be full foliated when in-leaf, showing no signs of prolonged moisture stress or over watering as indicated by wilted, shriveled, or dead leaves.
- E. Christmas tree stock shall not be used for conifer, evergreen material.
- F. Conform to ANSI Z60.1, with additions and exceptions noted:
 - 1. Groundcover Plants: Well-established root systems, and grown in flats or removable containers.
 - 2. Containerized Plants: Grown in container in which delivered for at least 3 months, but not root-bound.
 - 3. Greenhouse Grown Plants: Acclimated outdoors for 360 days prior to delivery.
 - 4. Bare-root Stock: Well-branched, fibrous root system.
 - 5. Balled and Burlapped Plants and Containerized Trees: All evergreen trees and deciduous trees over 1-1/2 inch caliper to be balled and burlapped with hemp burlap and twine only or grown in container in which delivered for 9 months minimum. Soil balls to be a minimum of 10 inches in diameter per caliper inch of tree.

G. Trees shall meet the following requirements in addition to City of Albany Standard Construction Specifications Division 02, Section 210 "Street Tree Standards":

1. Trunks:
 - a. Straight-trunked not varying from plumb more than 6 inches over 6 feet; No fresh cuts over 1 inch diameter, and not "topped" or sheared.
 - b. Trees shall have a single, dominant central leader unless a different form is specified in the plant list or drawings. Leader shall have an intact tip and terminal bud at highest part of tree. Main branches shall be 2/3 or less than diameter of the central leader, measured 1" above the branch union.
 - c. No flush cuts, sunscald or branch stubs
 - d. No open trunk wounds
 - e. Trees with visible suckers or lower shoots or, evidence of suckers and lower shoots removed are not acceptable.
2. Branches:
 - a. Well-branched, with no cross branches, vertical branches, large branches directly above another, or co-dominant leaders.
 - b. Trees shall not have dead, diseased, broken, distorted, or otherwise injured branches.
 - c. Main branches shall be radially and vertically distributed along the central leader and not clustered together. They shall form a balanced crown appropriate for the cultivar/species.
 - d. Shoot growth (length and diameter) throughout the crown shall be appropriate for the age and size of the species or cultivar.
3. Canopy and Leaves:
 - a. Tree canopy shall be full with healthy foliage evenly distributed around the tree.
 - b. Tree leaves free of spotting, blotching, chlorosis and die back inconsistent with seasonal change.
4. Roots:
 - a. Root collar (flare) within 2" above soil surface for B&B trees.
 - b. Root collar within 1" of soil mass for containerized trees.
 - c. Structural roots (roots over 1/10 diameter of trunk) shall radiate in all directions and reach the side of the rootball. No circling, kinked, or bottom-matted structural roots.
 - d. At time of delivery and inspection, rootball shall be moist throughout.
5. Grafted Trees: Base grafted or budded only.
6. Trees in formal arrangements and rows:
 - a. Provide trees matched in height and spread with less than 1' of variation.
 - b. Trees shall have less than 6" in variation in clear branching height.
 - c. Coordinate tagging of trees in the fall to confirm coordinated fall color.
 - d. Confirm desired characteristics of formal tree arrangements with Landscape Architect.

2.2 HERBICIDES

- A. Post-Emergent Herbicides: EPA registered and approved, of type recommended by manufacturer for selective herbicide application. "Round-Up," or approved equal.

2.3 PRE-PLANT FERTILIZER

- A. (1-10-10) shall be a combination of natural organic and inorganic granular fertilizers, free-flowing, and shall contain the following minimum available percentage by weight of plant food:

Nitrogen	1.0% minimum
Phosphoric Acid	10.0% minimum
Potash	10.0% minimum

2.4 POST-PLANT FERTILIZER

- A. (7-9-4) shall be a long-lasting, organic and controlled release plastic-coated, uniform in composition, free-flowing and shall contain the following minimum available percentages by weight of plant food.

Nitrogen	7.0% minimum
Phosphoric Acid	9.0% minimum
Potash	4.0% minimum

2.5 MULCH

- A. Provide standard, commercially produced, medium-course, dark brown, bark mulch. Bark shall be ground Fir or Hemlock bark of uniform color, free from weeds, seed, sawdust, and splinters and shall not contain resin, tannin, or other compounds detrimental to plant life. All material shall pass a 1 inch mesh screen.

2.6 ANTI-DESSICANT

- A. Emulsion type, film-forming agent designed to permit plant transpiration but retard excessive loss of moisture from plants. "Wilt-Pruf" or equal.

2.7 PLANTING SOIL MIXES

- A. Refer to Division 32 Section "Soil Preparation."

2.8 EROSION CONTROL MATTING

- A. Erosion Control Blanket shall be 100 percent coir twines with no seams. Matting shall be sisal jute mesh of uniform open weave, single jute yard. The blanket shall be Ludlow 'Soil Saver'; Belton Industries; 'Geojute' Geocoir/DeKoWe 700 or equal with the following minimum average roll properties:

1. Thickness 0.35 inches (ASTM D1777).
2. Average Tensile Strength 1450 lbs/ft (ASTM D4595).
3. Weight 14.7 oz/sy (ASTM D3776).
4. Open Area 60percent (measured).
5. Warp 78 per width, minimum. Weft 42 per linear yard, minimum.

6. Roll Width 6.5 and 9.8 feet (measured).
7. Roll Length 165 feet minimum (measured).
8. Color natural earth tone .

- B. Wooden Stakes: Untreated Douglas fir 3/4 x 1/2 x 18 inch wood stakes.
- C. Staples: Manufacturer's recommended steel wire staples, 6 inches long, 11 gage galvanized steel.

2.9 TREE STAKING AND GUYING

- A. Deciduous Tree Tie: Black plastic chain-type, minimum 1 inch wide by 1/8 inch thick.
- B. Evergreen Tree Guy Wire: 12 gauge galvanized wire with 1/2 inch rubber hose collar, black color, to protect tree trunk.
- C. Stakes: 2 inch x 2 inch x 8 feet Douglas fir for staking of deciduous trees; and 2 inch x 2 inch x 36 inch Douglas fir for guying of coniferous trees. Stain brown with water-based commercial wood stain prior to installation.
- D. Provide miscellaneous hardware, wire, and accessories as shown on the Drawings.
- E. PVC Flags: 1/2 inch or 3/4 inch diameter x 36 inches long PVC pipe.

2.10 TREE WRAP

- A. Corrugated or crepe paper, designed specifically to resist insect infestation and sun scald.

2.11 MYCORRHIZAL INNOCULUM

- A. Available Products:
 1. 'MycoApply All Purpose Granular' granular mycorrhizal inoculum. Available from: Mycorrhizal Applications, Inc., Grants Pass, OR (541) 476-3985.
 2. 'PHC Plant Saver' blend of ecto and endomycorrhizal fungal spores, beneficial rhizospere bacteria, 4-7-4 fertilizer, organic amendmets, and micronutrients. Available from Plant Health Care, Inc. (800) 421-9051.
 3. Or equal.

2.12 ROOT BARRIERS

- A. Refer to City Standard Specification

2.13 EDGINGS

- A. Shovel Cut: As shown on Drawings.

2.14 DRAINAGE ROCK BACKFILL

- A. 1-1/2 to 1/2 inches round washed river rock; no fines for non-percolating soil.

2.15 FILTER FABRIC

- A. Non-woven filter fabric to cover drain rock: Mirafi 140N as available from TenCate, (360) 699-1426; Propex 451 as available from A.C.F. West Inc., (503) 771-5115; or equal.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify finish grades are properly achieved and soil preparation has been completed in accordance with the specifications; start of Work denotes acceptance by the Contractor and Contractor assumes responsibility for final results.

3.2 SOIL PREPARATION

- A. As specified in Division 32 Section "Soil Preparation".

3.3 HERBICIDE APPLICATION

- A. Spray pre-emergent herbicide as required to eradicate and prevent emergence of noxious weed growth.
 - 1. Apply a mixture of pre-emergent and post-emergent herbicides over all areas of weed or grass growth within landscaped area to eradicate weed growth. Apply in single application at manufacturer's maximum recommended rate, as follows:
 - a. Apply after soil preparation has been completed and approved by Owner's Representative.
 - b. Do not till pre-emergent herbicide into soil.
 - c. Observe manufacturer's recommended period prior to working and planting in treated areas.

3.4 LAYOUT

- A. Mark locations of lines between the planting areas and the lawn areas on the finish with paint, chalk or equal material for approval by the Owner's Representative. The method of marking shall be approved by the Owner's Representative.
- B. Mark locations of trees and shrubs for approval by the Owner's Representative prior to digging. The method of marking shall be approved by the Owner's Representative. After approval of layout, field place trees and shrubs in locations shown on Drawings. Owner's Representative may request rotation or slight movement of tree to give a better appearance with respect to adjacent plants and structures. Placement must meet approval of Owner's Representative prior to excavating planting pits.

3.5 EXCAVATION FOR TREES AND SHRUBS

- A. Excavate planting holes, with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
- B. For trees and shrubs, make excavations at least 2 times wider than root spread; equal to the rootball height directly beneath the rootball; and 1-1/2 times deeper than rootball height around the perimeter of the planting pit, as indicated in the Drawings.
- C. If non-percolating soils are encountered, fill excavations for trees and shrubs with water and allow to percolate out before planting. If plant holes do not drain: Auger drill holes 36 inches deep by 8 inches wide and fill with drainage backfill. Cover top with filter fabric. Notify Owner's Representative to observe prior to planting.
- D. If conditions detrimental to plant growth are encountered, such as rubble fill, or obstructions, notify Owner's Representative and resolve before planting.
- E. Scarify bottom and sides of hole with shovel to eliminate "glazed" surfaces.
- F. Set plants on native soil where possible.

3.6 PLACING TREES AND SHRUBS

- A. Set top of root ball 1 inch higher than finish grade. If hole for trees is too deep, fill hole with native soil only where applicable or prepared soil to correct levels.
- B. Set plants plumb and faced for best appearance.
- C. Remove wire baskets, burlap or fasteners from rootball completely if rootball will not be damaged. If damage is suspected, notify Owner's Representative for concurrence and remove tops and sides of baskets minimum. Use bolt cutters on wire if necessary to remove wire baskets. Bending back not acceptable. Remove all burlap and twine from planting pit.
- D. Remove metal cans or plastic containers completely from rootball.
- E. Neatly cut off broken, girdling, or frayed roots and any root growth growing in a circular manner conforming to its container.

3.7 BACKFILLING TREES AND SHRUBS

- A. Before mixing, clean topsoil of extraneous materials and other materials harmful or toxic to plant growth.
- B. Prepare planting backfill soil mix prior to backfilling. Stockpile on site.
- C. Planting backfill soil mix shall be as follows: [1/4] compost material, [1/4] amended topsoil and [1/2] soil excavated from planting pit.
 - 1. For the following group of plant materials, include peat moss as part of the backfill mix: Azalea spp., Camellia spp., Kalmia spp., Pieris spp., Rhododendron spp.

2. The modified backfill mixture schedule for these plants shall be of the following ratio:
 - a. [1/4] compost material, [1/4] topsoil, [1/4] peat moss and [1/4] soil excavated from planting pit.
- D. Add 3 ounces mycorrhizal inoculum per caliper-inch to backfill around trees. Add 3 tablespoons mycorrhizal inoculum per gallon planting size. Add 1 teaspoon mycorrhizal inoculum per ground cover plant.

3.8 PLANTING TREES AND SHRUBS

- A. Set roots or rootball on layer of compacted planting soil backfill mix or native suitable topsoil from planting pit, plumb and in center of pit or trench with top of rootball at 1 inch above elevation of adjacent finished grade.
- B. Place additional planting soil backfill mix around base and sides of ball and eliminate voids and air pockets. When backfill is approximately 2/3 complete, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill. Cut burlap from top of rootball and roll back to sides of planting hole; form watering basin; stake and guy immediately after planting.
- C. Complete backfilling per City of Albany Standard Construction Specifications, firming to surface grade.
- D. Form watering basin from site topsoil as shown on Drawings.
- E. Thoroughly hand water each plant and entire bed immediately after planting. Adjust rootball and soil as required if settlement of soil occurs.
- F. Remove plant tags and ribbons.
- G. After planting, apply fertilizer at the following rates:
 - 0-1 foot tall shrub = 0.4 oz.
 - 1-2 foot tall shrub = 0.8 oz.
 - 2-4 foot tall shrub or tree = 1.75 oz.
 - 4-8 foot tall shrub or tree = 4 oz.
 - 8+ feet = 4 oz. plus proportional amount per foot.

3.9 PLANTING GROUND COVER

- A. Space plants as shown or scheduled on Drawings. Dig holes 3 times the width and 1-1/2 times the depth of the rootball. Plant with planting soil backfill mix. Work soil around roots to eliminate air pockets. Water thoroughly after planting.
- B. After planting, apply fertilizer at the rate of 50 pounds per 1,000 square-feet, or apply 1 slow-release fertilizer tablet per plant during backfill.

3.10 ROOT CONTROL BARRIERS AT NEW PLANTINGS

- A. Provide linear and surround root barrier applications at trees within 5 feet of paving, curbs, walls, utility ducts or other appurtenances.
 - 1. For linear applications provide sufficient lengths of panels to equal mature width of tree canopy plus 2 feet, 10 feet minimum length. Provide on both sides of the tree trunk adjacent to curb and paving per manufacturer's recommendations.

3.11 LINEAR ROOT CONTROL BARRIERS AT EXISTING TREES

- A. Provide at locations shown on the Drawings and as approved by the Owner's Representative. Excavate 24 inches deep trench along edge of proposed pavement. Install trench and barrier prior to pouring concrete or laying of pavers. Re-compact pavement subgrades and bases encountered during installation of root barriers. Cut any existing roots squarely according to standard horticultural practices and root barrier manufacturer's recommendations.
- B. Install panels vertically, with ribs on tree side of barrier, to be flush against proposed paving, maximum 2 inches below top of paving, and 1/2 above finish grade. If panels cannot be installed immediately against paving formwork, backfill paving side of panel with 1-inch minus crushed rock to keep panel vertical and stabilized.
- C. Provide minimum 10-foot length of connected panels, centered on tree trunk or existing root, as directed by Owner's Representative. Backfill tree side of barrier with planting backfill soil mix. (See "Planting Trees and Shrubs" article above.)

3.12 TRUNK WRAPPING

- A. Deciduous trees over 1-1/2 inch caliper when within five feet of pavement shall be wrapped promptly after planting to prevent sun scald, wrapping as approved by American Association of Nurserymen. Wrap spirally from ground line to the height of the first branch. Wrap in neat and snug manner and secure with tape similarly colored to tree wrap at bottom, top and in the middle. Wrap before staking or guying.

3.13 STAKING

- A. Deciduous Trees 1-inch caliper and larger: Provide 2 stakes per tree 180 degrees from each other in the direction of prevailing winds. Drive plumb outside of rootball as shown on Drawings. Place tree ties around tree trunk, approximately 4 feet from ground level, one from each side.
- B. Coniferous Trees 4 feet tall and larger: Provide 3 guys evenly spaced around trunk of tree. Set guys at a 60 degree angle to the trunk at 2/3 the height of the tree. Drive 2 by 2 inch wood stakes perpendicular to angle of cable. Secure guys taut at trees passing each guy wire through a collar and setting the collar at the tree trunk where contact is made. Secure a warning flag on each cable as shown on Drawings.

3.14 MULCH

- A. Place mulch by hand, blown-in mulch is not acceptable unless approved by the Owner's Representative. Place mulch 3 inches deep in all planting beds. Rake smooth. Mulch shall be pulled away from crowns of shrubs, perennials and groundcover plants. Mulch shall be flush with adjacent curbs and paving. Taper mulch thickness from full 3-inches depth to 2-inch depth over a 12-inch horizontal run at paving edges so mulch will be flush with adjacent curbs and paving.
- B. Tree Plantings in Lawns:
 - 1. Deciduous Trees: Cut away and remove lawn to establish a 4-foot radius circle from center of tree. Cut clean edge and fill with mulch.
 - 2. Coniferous Trees: Cut away and remove lawn to establish a circular ring 2 feet beyond the outside dimension of drip line of tree. Ring to be centered on tree minimum 4-foot radius. Cut clean edge and fill with mulch.
 - 3. For trees in pavement cut outs, provide minimum 3 inches depth of mulch.
- C. Ground Cover Plantings:
 - 1. After fertilizing, mulch areas between groundcover plants; place minimum 3-inch depth of specified mulch.

3.15 PRUNING

- A. Prune plant material if necessary and as directed by Owner's Representative to balance root and top growth. Prune, thin, and shape trees and shrubs in accordance with standard horticultural practices.
- B. Prune all dead and broken limbs.
- C. Prune without distorting basic form of the plant and only to the extent necessary for each plant except where directed by Owner's Representative. Do not prune plants into boxes or balls.

3.16 CLEAN-UP AND PROTECTION

- A. During landscape work, keep pavements clean and work area in an orderly condition.
- B. Sweep and wash paved surfaces to remove soil and soil stains.
- C. Clean all mud and debris from catch basins, which is caused by Work of this Section.
- D. Remove plant containers, trimmings, clippings, and all extraneous debris unearthed or resulting from any operations specified herein, from Project Site and dispose in a lawful manner.
- E. Protect landscape work and materials from damage.
- F. Maintain protection during installation and Establishment Period.

- G. Treat, repair or replace damaged Work as directed by Owner's Representative, at no additional cost to the Owner.

3.17 SUBSTANTIAL COMPLETION

- A. Notify the Owner's Representative in writing of the completion of planting and ancillary landscape work.
- B. Within 10 days of notification, the Owner's Representative will inspect the work and prepare a Notice of Substantial Completion with a Punch List identifying items which require completion or correction.
- C. Notice of Substantial Completion constitutes the commencement of the Establishment Period and the Warranty of all plants for a period of Two Years
- D. The Contractor is responsible for maintaining all plants prior to receiving Notice of Substantial Completion.

3.18 MAINTENANCE

- A. After receiving notice of Substantial Completion, maintain all plant material in a vigorous condition 2 years according to the requirements outlined in City of Albany Standard Construction Specifications Division 02 Section 210.08.00 "Establishment Responsibilities" and through any extensions of the Establishment Period due to failure to supply written documentation of Punch List completion. Maintenance shall continue until Final Acceptance is granted.
- B. If plants are not installed before the dormant period, (November 15th to March 1st), maintenance shall recommence after the dormant period for 90 days following their installation or until Final Acceptance, whichever is later.
 - 1. Inspect plants at least once a week and perform maintenance promptly.
 - 2. Maintain trees, shrubs and ground covers by watering, pruning, spraying, cultivating, and weeding as required for healthy growth.
 - 3. Water when soil moisture is below optimum level for best plant growth.
 - 4. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required.
 - 5. Eradicate all weeds, grass, and other undesired vegetation growth from planting areas. Remove dead weeds and dispose of legally off-site. Remove all perennial weeds completely, including all underground parts.
 - 6. Restore all soil settlement to original grade.
- C. Immediately remove and replace plant material which is dead, not surviving or in poor condition during the Warranty Period at no cost to the Owner.
- D. Plants used for replacement shall be the same variety as originally specified. Replacement plant size shall match the physical size of the adjacent, healthy plants of the same species at the time of replacement. Replacement plants shall be furnished, planted and fertilized as originally specified.

- E. Should a dispute arise concerning plant vitality or viability, the Contractor shall provide at his expense, a timely written diagnosis of plant health by a Certified Arborist. The Arborist's report shall indicate reason for lack of vigor, potential remedies, if any, and estimated time required to regain vigor and specified size. Contractor shall repair at no additional cost to the Owner, all damage to vegetation, site improvements and property caused by replacement of plant materials during the Establishment Period.
- F. Store maintenance materials and equipment where directed by Owner's Representative.
- G. Keep pavements clean and work areas in an orderly condition.
- H. Fertilizing and Liming: Perform as recommended in the soil fertility analysis reports and as necessary to maintain cover crop in a healthy growing condition.
 - 1. Fertilize trees, shrubs and ground cover once at the end of the Establishment Period. Work the fertilizer thoroughly into the top 2 inches of soil.
 - 2. In March, within the first growing season, fertilize all planting areas with 1 application of each of the maintenance fertilizers, at the rate of 7 pounds per 1,000 square feet of soil surface.
- I. Water plant material as needed for healthy plant growth and establishment during the Establishment Period.

3.19 FINAL ACCEPTANCE

- A. Final inspection of all planting will be made by the Owner, Owner's Representative and the Contractor.
- B. Prior to executing a final inspection, the Contractor must furnish the Owner's Representative with written documentation identifying how each Punch List item has been corrected. If such written documentation is not provided to the Owner's Representative, all requirements of the Establishment Period shall remain in force indefinitely until the written documentation is provided. Any extension of the Establishment Period will be considered incidental to the Work, and performed by the Contractor at no additional cost to the Owner.
- C. Before Final Acceptance is granted, the following must be completed by the Contractor and receive approval from the Owner's Representative:
 - 1. Written documentation identifying how each item on the Punch List has been corrected.
 - 2. Replacement planting and correction of all items identified on the Punch List prior to expiration of the specified Establishment Period.
- D. The project site must meet all conditions stipulated within the "Maintenance" and "Clean Up and Protection" sections of the specifications.
- E. If Final Acceptance is not granted at the end of the specified Establishment Period, the Contractor shall continue maintaining plantings until Final Acceptance is granted, at no additional cost to the Owner.

F. Necessary Observations Beyond Final Acceptance:

1. If any of the items identified on the Notice of Substantial Completion and Punch List have not been fully corrected or repaired to the complete satisfaction of the Owner's Representative, the Contractor must schedule a field observation to substantiate claim of correction. The Contractor shall bear financial responsibility to reimburse the Owner for all time and travel costs incurred by the Owner's Representative to confirm Punch List compliance.

END OF APPENDIX D