

Modify subsections .02 and .03 in Section 32 90 00 PLANTING per the following (deletions are shown struck through and additions are double underlined). Remainder of section is unchanged.

32 90 00 PLANTING

.02 Lawns and Grasses

A. General

1. Intent:
 - a. The work in this section specifies the labor, materials, and installation methods necessary to establish the highest quality turf areas.
2. Protection of Existing Utilities
 - a. Prior to any work being performed the Contractor shall insure that all existing utilities within and surrounding the project site have been clearly marked in accordance with the Pennsylvania Underground Utility Line Protection Act, Act 287 as amended by Act 199.
3. Submittals:
 - a. ~~Prior 3 months prior~~ to the start of any seeding activity, the Contractor shall have the existing soil tested by ~~an approved soils testing laboratory. Copies of the soil~~ the Penn State University Agricultural Analytical Services Laboratory. ~~Soil test results report to be a full physical property analysis and shall be furnished to include tests for the University Representative prior to any grading, seeding, or sodding following:~~
 - i. Standard Fertility Test (pH, phosphorus, potassium, calcium, and magnesium)
 - ii. Total nitrogen
 - iii. Organic matter
 - b. The Contractor shall submit a Percolation Rate Test prior to the commencing of any seeding activity. This test is intended to determine the rate of percolation of the existing subgrade.
 - c. The Contractor will provide an inspection certification indicating the origin and health of seed and/or sod material.
 - i. Seed must be Blue Tagged Certified Seed and must contain requirements indicated in PART B.7 – LAWN SEED. The Contractor shall submit seed breakdown tags to the University Representative for approval. Tags will show percentage of seed varieties, weed seed, inert matter, and date of “Germination Test” done within a nine-month period prior to sale of the seed.
 - ii. Sod must be certified and must contain requirements indicated in PART B.8 – LAWN SOD.
 - d. The Contractor shall provide submittals indicating the type and application rates of fertilizers as recommended in accordance with the soil test.
 - e. Chemical Spraying Program: No spraying of herbicides, insecticides, fungicides, nematicides, fumigants, or other chemicals shall be done without first submitting a spray program to the University Representative. Application of herbicides will only be permitted by ~~licensed-certified~~ applicators. Applicators

should follow all notification requirements of the University and consult any Chemical Hypersensitivity Registries for the area.

4. Delivery, Storage, and Handling:
 - a. Seed
 - i. Each seed container shall be in sealed bags labeled by manufacturer and/or grower and indicating weight and analysis.
 - ii. Bulk deliveries of seed shall be accompanied with delivery tickets specifying percentage of germination, purity, and noxious weed content.
 - iii. Seed shall be kept in dry storage away from contaminants, insects, and rodents.
 - b. Sod
 - i. All sod shall be reviewed by the University Representative at the job site prior to installation. The University Representative reserves the right to reject any sod they deem unacceptable.
 - ii. All sod delivered from the supplier shall be installed on the same day as delivery.
 - iii. Each palette, flat, or specified group of sod shall be labeled by the grower or manufacturer as separate items.
 - iv. During delivery and storage, sod materials shall be protected from any drying or contamination by detrimental material.
 - v. Sod shall not be dropped or dumped from vehicles.
 - c. Fertilizer and Lime: Each container of fertilizer and/or lime shall be labeled by manufacturer as separate items indicating weight and analysis of the container.
 - d. Topsoil: Topsoil shall not be muddy or frozen at time of grading.
5. Job Conditions:
 - a. Turf areas will be free of waste or debris developed by other trades. Any discrepancy from such conditions shall be reported to the University Representative before beginning any installation.
6. Grading and Topsoil:
 - a. The Contractor shall grade all turf areas indicated on the drawings. In the event there are discrepancies between the construction drawings and on-site conditions, the Contractor shall notify the University Representative before beginning any installation.
 - b. The Contractor shall remove all topsoil and stockpile it on site. All topsoil is the property of the University. Excess topsoil removed and not required for finished grading shall be removed by the Contractor and stockpiled as directed by the University Representative at a location on University property.

~~7. Planting Season:~~

- ~~a. Seeding: The planting of turf seed specified on the drawings shall be performed during the following timeframe: Between April 1st and May 15th or between September 1st and October 15th.~~
- ~~b. Sodding: The planting of turf sod specified on the drawings shall be performed during the following timeframe: April 1st to October 31st.~~

B. Materials

1. Quality Assurance:
 - a. Seed

- i. Seed Producer: Manufacturer specializing in grass seed production with minimum of 5 years' experience and certified by the Pennsylvania Department of Agriculture as outlined in Title 3 (Agriculture) of the Pennsylvania Consolidated Statutes.
 - ii. Seed: Must comply with all Commonwealth of Pennsylvania seed certifications.
 - b. Sod
 - i. Sod Producer: Manufacturer specializing in sod production and harvesting with minimum of 5 years experience and certified by the Pennsylvania Department of Agriculture as outlined in Title 3 (Agriculture) of the Pennsylvania Consolidated Statutes.
 - ii. Sod: Minimum age of 1812 months with root development that will support its own weight, without tearing, when suspended vertically by holding upper two corners.
 - iii. Sod type to be approved by the University Representative.
- 2. Commercial Fertilizers: In accordance with the soil test recommendations, fertilizer shall be in bags showing weight, analysis, and manufacturer's name.
- 3. Lime: In accordance with the soil test recommendations, lime shall be high magnesium ground limestone containing not less than 85 percent total carbonates, 95 percent passing a 20-mesh sieve, 40 percent passing a 60-mesh sieve and a minimum of 30 percent passing a 100-mesh sieve.
- 4. Organic Amendments: In accordance with the soil test recommendations, organic matter shall be recycled composted leaf mulch, ~~reed sedge peat and/or peat moss.~~
- 5. Topsoil: Topsoil will be provided in accordance with Section 2.13 – Stockpiling, Furnishing, and Placing Topsoil.
- 6. Herbicides: Non-selective herbicide shall be Round-Up as manufactured by Monsanto or approved equal and shall only be applied in accordance with the Chemical Spraying Program.
- 7. Lawn Seed:
 - a. Shall be clean and fresh, packed in sealed bags showing net weight, composition of mix, date of germination tests and supplier's name.
 - b. Seed must be Blue Tagged Certified and must not contain more than 0.1% by weight weed seed, no more than 1.5% inert matter, no more than 0.1% other crop seed and no noxious weed seed or undesirable grass species.
 - c. Composition of seed blend shall be 4 different varieties of perennial ryegrass, with a blended ratio of 25% of each variety for a total of 100%. Varieties shall be approved by the University Representative prior seeding.
 - ~~c. Composite of the mix shall contain 60% bluegrass, 20% fine fescue, and 20% ryegrass. The varieties are stated as follows and no substitutions of mixes and/or percent of mixes is allowed.~~
 - ~~Bluegrass: A maximum of 20% of each variety to total 60%. (Three different varieties)~~
 - ~~-America ————— Langara~~
 - ~~-Award ————— Midnight II~~
 - ~~-Awesome ————— Nudestiny~~
 - ~~-Beyond ————— Nuglade~~
 - ~~-Freedom II ————— Quantum Leap~~

~~Fine Fescue: A maximum of 10% of each variety to total 20%. (Two different varieties)~~

~~-Banner III ——— Reliant II
-Bridgeport ——— Rescue 911
-Brittany ——— Shadow II
-Jasper II ——— Treasure
-Longfellow II ——— Victory II~~

~~Perennial Ryegrass: A maximum of 10% of each variety to total 20%. (Two different varieties)~~

~~-Applaud ——— Hawkeye
-Cadence ——— Jet
-Caddieshack ——— Mach I
-Cutter ——— Manhattan III
-Fiesta III ——— Topgun~~

8. Lawn Sod:

- a. Sod type to be a Kentucky bluegrass blend consisting of 3 different varieties.
- b. Sod shall be field grown in same climatic conditions as that of the project site.
- c. Sod shall be strongly rooted, not less than 18 months old, free of weeds and undesirable native grasses. Sod must be capable of growth and development when planted.

d. Sod shall be free of pests.

~~d.e.~~ Sod shall be installed within 36 hours from the time it is cut.

9. Wood Cellulose Fiber Mulch:

a. No straw or hay mulch will be accepted.

b. In areas with slopes >3:1 erosion control matting shall be used as approved by the University Representative

~~a-c.~~ Shall consist of especially prepared wood cellulose processed into a uniform fibrous physical state.

~~b-d.~~ Shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

~~c-e.~~ Shall contain no germination or growth inhibiting factors.

~~d-f.~~ Shall be manufactured and processed in a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with other additives to form a homogeneous slurry.

~~e-g.~~ Shall form a blotter-like groundcover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

~~f-h.~~ Shall not contain elements or compounds at concentration levels that will be phyto-toxic.

~~g-i.~~ Must conform to the following physical requirements.

- i. Fiber length to approximately 10 mm. Diameter approximately 1 mm.
- ii. pH range of 4.0-8.5
- iii. Ash content of 1.6% maximum
- iv. Water holding capacity of 90% minimum

C. Execution

1. Site Preparation

- a. Grading:
 - i. Prior to commencing any finished grading the Contractor shall notify the University Representative allowing enough time for a thorough inspection of the subgrade.
 - ii. Prior to any work the Contractor shall have all utilities located by calling PA One-Call at (800)242-1776.
 - iii. Prior to grading, apply Round-Up or other approved herbicide as per the manufacturer's directions to eliminate any existing weeds. Allow sufficient time for the herbicide to take effect.
 - iv. Perform all finished grading necessary to bring site to required finished elevations indicated on the grading plan.
 - v. If the general area is hard pan, the sub-grade shall first be rototilled or chisel plowed at least 12 inches deep to permit proper loosening, drainage, and preparation of the ground. The sub-grade shall be loosened and graded by harrowing, discing, or dragging, as dictated by the condition of the sub-grade. The entire sub-grade shall then be raked and all stones over 1 ½ inches, grade stakes, rubbish, and general debris removed. A final inspection of the sub-grade by the University Representative is required before topsoil is spread.
- b. Topsoil:
 - i. Use topsoil stockpiled on the site during earthwork operations and provide any additional topsoil, at no additional cost to the University, as required on the Grading Plan and as outlined in Section 2.13 – Stockpiling, Furnishing and Placing Topsoil.
 - ii. Topsoil shall be spread with approved equipment to a minimum depth of 6 inches to permit 1 inch settlement. Any surface irregularities shall be corrected to prevent the formation of low spots and pockets that would retain water.
 - iii. Topsoil shall not be placed when the subgrade is frozen, excessively wet, or extremely dry, and no topsoil shall be handled when in a frozen or muddy condition.
 - iv. During the preparation for seeding and/or sodding all stones over ½ inch in any dimension or any other rubbish, debris, or other materials which would be detrimental to seeding, sodding, or turf maintenance will be removed.
 - v. After completion of topsoil placing and approval of finish grading, remove any excess topsoil from the site and deliver to location determined by the University Representative.
 - vi. Leave finish graded area clean and well raked, ready for lawn work.
- c. Preparation of Surface for Seeding and Sodding:
 - i. Apply lime and basic fertilizer if required by the soil test at the recommended rate.
 - ii. Immediately after lime and fertilizer application go over the entire area with a rototiller, or other approved piece of equipment and loosen surface at least 3 inches deep and then hand rake to a smooth even surface.
 - iii. Spread starter fertilizer uniformly at the rate determined by the soil test for new lawns.

- iv. Add organic matter at the rate required by the soil test.
2. Execution of Work for Seeding:
- a. As soon as the ground has been properly prepared and approved for seed by the University Representative, sow grass seed at the rate of 6 lbs. per 1,000 sq. ft., total, in two operations at right angles to each other, using a suitable mechanical seeder or sowing by hand for small areas.
 - b. Unless the seeder covers the seed with soil as it sows, rake to obtain a light covering of soil over the seed after sowing, then roll very lightly with an empty water roller.
 - c. Do no seeding in adverse weather or in wet conditions.
 - d. After seed application, wood cellulose fiber mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber mulch shall be mixed with water, and the mixture shall contain a maximum of 50 lbs of wood cellulose fiber per 100 gallons of water. In areas where erosion may be a problem, use an organic tackifier ~~such as CON-TACK™~~, erosion fabric, or approved equal in accordance with the manufacturer's instructions.
3. Execution of Work for Sodding:
- a. Lay sod on the same day as delivery to prevent dehydration.
 - b. Lay sod tight with no open joints visible, and no overlapping. Stagger end joints 12 inches minimum. Do not stretch sod pieces.
 - c. Lay smooth and align with adjoining grass areas. Place top elevation of sod even with or slightly above adjoining edging, paving, or curbs to allow for settling. ~~¼ inch below adjoining edging, paving, or curbs.~~
 - d. On slopes exceeding 2 horizontal to 1 vertical, lay sod perpendicular to the slope and secure every row with wooden pegs at maximum of 2 feet on center. Drive pegs flush with soil portion of the sod.
 - e. Water sodded areas immediately after installation, saturating the sod to 3 inches of soil.
 - f. After sod and soil have dried, roll sodded areas to ensure a good bond between sod and soil and to remove minor depressions and irregularities.
- D. Maintenance (Seed and Sod)
- ~~1.~~ ~~All lawn areas shall be maintained until August 31, 2007.~~
 - 2-1. All lawn areas shall be kept moist to maximize germination and root establishment. Water shall be applied frequently enough to keep the grass and soil from drying out. The University shall provide the water source. The contractor is responsible for all hoses, sprinklers or other watering devices and he/she shall ensure proper backflow protection on the water source.
 - ~~3-2.~~ All areas and spots which do not show a prompt catch of grass or signs of browning shall then be reseeded or re-sodded as required until complete coverage is obtained.
 - ~~4-3.~~ When the average height of the grass is 3 to 4 inches, grass shall be cut to 2 to 3 inches or 1/3 of the grass blade. Any depressions or irregularities in the lawn surface shall be leveled off and reseeded or re-sodded.
 - ~~5-4.~~ Maintenance shall cease after the third cutting and final acceptance by the University Representative, provided all grass areas are properly established and free of washouts, depressions, bare spots, weeds and large off-color areas. If seeding or sodding is

completed in the autumn, the Contractor shall complete the three cuttings in the following spring as required.

E. Final Inspection and Acceptance:

1. At the end of the maintenance period, an inspection will be made by the University Representative and the Contractor. Any lawn area under this contract that is not in satisfactory condition, as determined by the University Representative, shall be reworked as soon as conditions permit. All reworked lawn areas shall be maintained as previously specified in PART D – MAINTENANCE until final inspection and acceptance occurs.

.03 Trees and Shrubs Section 02955

A. Plants and Planting:

1.A. General

a.1. Intent:

i.a. The work in this section describes the labor, materials, and installation requirements necessary to complete tree, shrub, and groundcover planting with the highest possible quality standards.

b.2. Protection of Existing Utilities:

i.a. Prior to any work being performed the Contractor shall insure that all existing utilities within and surrounding the project site have been clearly marked in accordance with the Pennsylvania Underground Utility Line Protection Act, Act 287 as amended by Act 199.

c.3. Submittals:

i.a. Guarantee: Written guarantee warranting the plant material to be in healthy condition at the time of expiration of the 120 day "Landscape Establishment Period".

ii.b. Soil Test: Prior to the start of any planting activity, the Contractor shall have the existing soil tested by an approved soils testing laboratory. Copies of the soil test results shall be furnished to the University Representative prior to any grading or planting.

iii.c. Planting Schedule: Submit planting schedule showing dates for planting in each area of the project site.

iv.d. Plant Substitutions: Plant substitutions will be permitted only upon approval by the University Landscape Architect and/or their designee.

v.e. The Contractor shall submit, in writing, a plant list outlining the source for all plants, their estimated delivery date, and length of time plants are to be stored at an off-site location.

vi.f. Chemical Spraying Program: No spraying of herbicides, insecticides, fungicides, nematocides, fumigants, or other chemicals shall be done without first submitting a spray program to the University Representative. Application of herbicides will only be permitted by licensed applicators. Applicators should follow all notification requirements of the University and consult any Chemical Hypersensitivity Registries for the area.

d.4. Delivery, Storage, and Handling:

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~~i.a.~~ The Contractor shall contact the University Representative 24 hours prior to the delivery of any plant material.

~~ii.b.~~ All plant material shall be inspected by the University Representative at the job site upon delivery. Only plants approved by the University Representative shall be stored or planted. The University Representative reserves the right to refuse any plant material they deem unacceptable. Any and all rejected plant materials shall be removed from the job site on the day of rejection.

~~iii.c.~~ Each tree, shrub, groundcover flat, container of fertilizer or other construction material shall be labeled by grower or manufacturer as separate items.

~~iv.d.~~ Plant identification labels shall be durable and waterproof. Labels shall be securely attached to plants, bundlers, or containers of plants and shall state the correct botanical plant name and size. Labels shall not be removed from the plants until final acceptance.

~~v.e.~~ Bulk deliveries of mulch, topsoil, and inert material shall be accompanied with delivery tickets showing weight, origin, and composition and stored in such a manner as to prevent the inclusion of foreign materials.

~~vi.f.~~ Plant Storage: Trees, shrubs, and groundcovers not installed on the day of delivery to the site shall be stored and protected. NO PLANTS SHALL BE STORED ON THE SITE FOR A PERIOD GREATER THAN 5 BUSINESS DAYS. Storage locations shall be continually shaded and protected from the wind. Plants stored on the project site shall be protected from drying at all times, covering the balls or roots with moist woodchips, shredded bark, ~~peat moss~~ or other suitable heel-in material.

~~e.5.~~ Job Conditions:

~~i.a.~~ Planting areas shall be free of waste or debris developed by other trades. Any discrepancy from such conditions shall be reported to the University Representative before beginning any installation.

~~f.6.~~ Planting Season:

~~i.a.~~ General: No plants are to be planted when the ground is frozen or during days of extreme heat (~~?80 degrees~~)-(>80 degrees), unless approved by University Representative. ~~Plantings shall not be installed before March 1st or if the ground is frozen, and planting shall cease when the ground freezes in the fall. Plants shall be installed between March 1st and June 15th or from August 15th until the ground freezes. Any change from this planting season must be approved by the University Representative.~~

~~2.B.~~ Materials

~~a.1.~~ Quality Assurance:

~~i.a.~~ Plants shall be of the quantity and quality indicated, true to name, properly labeled with scientific name and in accordance with the sizes and grades specified. Plants shall be nursery grown, have a habit of growth that is normal for the species, and shall be sound, healthy, vigorous, free from insect pests, plant diseases and injuries, and shall have normal root systems. All plants shall equal or exceed the measurements specified in the plant list.

~~ii.b.~~ Plants shall be measured before pruning, with branches in normal position. Any necessary pruning shall be done at the time of planting.

~~iii.c.~~ Requirements for the measurement, branching, grading, quality, balling, and burlapping of plants shall follow the code of standards currently recommended

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by the American Association of Nurserymen, Inc., in the American Standard for Nursery Stock, ANSI Z60.1, current edition.

b-2. Commercial Fertilizers: In accordance with the soil test recommendations, fertilizer shall be in bags showing weight, analysis, and manufacturer's name.

c-3. Organic Amendments: In accordance with the soil test recommendations, organic amendments shall be compost, dark brown in color and humus like. Parent material should not be visible, particle size shall be less than or equal to ½ inch, and the pH range shall be 6.5-8.5. Peat moss is not an acceptable organic amendment.

d-4. Herbicides:

i-a. Non-Selective herbicide shall be Round-Up™ as manufactured by Monsanto or approved equal.

ii-b. The spraying of all herbicides must be done in accordance with the Chemical Spraying Program.

e-5. Staking and Guying: Tree stakes shall be two 2"xs" stakes, a minimum of 6 feet long with 2 feet in ground. Guying shall consist of nylon straps wrapped loosely around the trunk.

f-6. Plant Material: All plant material shall conform to ANSI Z.60.1.

i-a. Balled and Burlapped Plants: Shall have balls of earth of sufficient diameter to be in accordance with the size of the plant, of sufficient depth to include an adequate root system, and shall be properly balled, burlapped, and secured.

ii-b. Container Grown Plants: Shall be healthy, vigorous, well rooted, and established in the container in which they are sold. Plant development shall be sufficient so that they root mass will hold together when removed from the container. Remove plastic containers before planting.

g-7. Grading and Topsoil:

i-a. The Contractor shall furnish all grading and topsoil as required by the "Grading Plan" and in accordance with 31 20 00.02 – Stockpiling, Furnishing, and Placing Topsoil.

h-8. Mulch:

i-a. Organic Mulch: Shall be coarse, fibrous, shredded hardwoods, free of dyes, sufficiently aged to prevent adverse reactions to plant material and subject to approval by the University Representative.

3-C. Execution

a-1. Protection of Existing Vegetation: All existing vegetation to remain shall be protected at all times in accordance with 23 90 00.01 – Tree Canopy / Tree Root Protection Zones.

b-2. Site Preparation:

i-a. Grading:

a-i. Prior to commencing any finished grading, the Contractor shall notify the University Representative allowing enough time for a thorough inspection of the subgrade.

b-ii. Perform all finished grading necessary to bring site to required finished elevations indicated on the grading plan and to allow for positive drainage.

ii-b. Topsoil:

a-i. Use topsoil stockpiled on the site during earthwork operations and provide any additional topsoil required.

b-ii. Topsoil shall not be placed when the subgrade is frozen, excessively wet, or extremely dry, and no topsoil shall be handled when in a frozen or muddy condition.

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e-iii. After completion of topsoil placing and approval of finish grading by the University Representative, remove any excess topsoil from the site and deliver to location determined by the University Representative.

d-iv. Leave finish graded area clean, well raked, and ready for planting.

e-3. Planting Layout:

i-a. Layout of plants prior to planting shall be verified by the University Representative. Any alterations to the planned planting layout must be approved by the University Landscape Architect and/or ~~the~~their designer.

d-4. Planting Bed Preparation:

i-a. The grouping of two or more plants shall constitute a planting bed or area. All unwanted vegetation shall be completely removed and hauled off site or sprayed with herbicide, in accordance with Part A.3.f – Chemical Spraying Program, to ensure that planting beds are completely weed free.

ii-b. If groundcover of a type normally specified in flats or pots of a 1 gallon size or smaller is specified, the soil in the entire planting bed area will be loosened by rototilling or similar means to a depth of 6 inches.

e-5. Planting Pit Excavation:

i-a. All planting pits shall be excavated to the depth of the existing root ball and planted on undisturbed soil. All construction debris such as plaster, concrete, stone, brick, wood, or other deleterious materials shall be removed.

ii-b. All tree pits shall be excavated circular with vertical sides. The diameter of pits for trees and B&B shrubs shall be at least 2 feet greater than the diameter of the rootball or spread of roots. Soil used in the planting shall be good grade topsoil, as specified, mixed with the surrounding existing soil. Poor soils, gravel, hardpan, or other soil injurious to plants shall not be used.

iii-c. If an impervious, hard pan layer remains in the bottom of the pit after excavation the University Representative shall be notified prior to any additional planting activities to inspect the excavation and develop an alternate course of action.

f-6. Planting:

i-a. General: The plant shall be set in its planting pit in such a manner that allows the bottom of the trunk flare to set 1 inch above finished grade. NOTE: THE TOP OF THE ROOTBALL IS NOT NECESSARILY THE BOTTOM OF THE TRUNK FLARE.

ii-b. Bare Root: Build a cone of soil in the bottom of the planting pit. Place the plant in the hole, spreading the roots around the surface of the cone of soil. Gently backfill, firming the soil as you go.

iii-c. Balled and Burlapped: Once the plant is set in its planting pit and at proper grade in relation to the surrounding soil, the Contractor shall remove all wire, twine and burlap or other deleterious material.

iv-d. Containerized: When the Contractor removes the root ball from its container he/she shall inspect the root ball thoroughly for circling or girdling roots. The root ball shall then be scored to discourage girdling and to promote the growth of feeder roots.

g-7. Backfilling:

i-a. Use specified backfill medium around the roots, filling the hole about two thirds full, and firm the soil around the root ball and/or roots.

ii-b. Water the plant well immediately after backfilling to insure proper settling of soil around the roots. Allow the water to soak down and fill the remainder of

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the hole with loose soil without further packing or tamping. A mound of soil shall be formed around the edge of each tree pit to form a shallow saucer.

h-8. Pruning:

i-a. Prune all dead or broken branches at the time of planting.

i-9. Mulching:

i-a. Mulch all plants and planting beds or areas with a 3 inch layer of specified mulch. It shall entirely cover the area of the planting pit, bed, or saucer around each plant. **DO NOT MULCH NEXT TO THE MAIN STEM OF THE PLANT.**

j-10. Staking and Guying:

i-a. Staking and guying shall be done immediately after trees are planted using specified staking materials.

ii-b. Trees shall stand plumb prior to staking.

4-D. Maintenance:

1. In advance of planting trees or shrubs the contractor shall submit to the University a post installation maintenance plan that outlines what maintenance practices the contractor plans to incorporate to insure the successful establishment of the planting. The plan shall be in accordance with those specifications listed above, and shall outline a schedule for the following:

- a. Pruning
- b. Fertilizing
- c. Watering
- d. Weed Control
- e. Rodent Damage

2. Watering (General)

- a. As part of the maintenance plan (.03.4.1) the contractor shall communicate to the University their plans for watering new plantings. This watering plan shall include the schedule, and manners with which the contractor anticipates watering. The watering plan shall respond to varying seasonal, and soil conditions to maintain adequate, but not excessive moisture
- b. If the contractor anticipates using a fire hydrant as their water source they must obtain a meter, and backflow preventer from the department of Utility Services at a minimal fee. The contractor is also responsible for all hoses, sprinklers, or other watering devices.
- c. The Contractor shall water in a manner that encourages even distribution of moisture over the entire rootball, and to a depth of 30 inches.
- d. Watering shall continue until the end of the 120 day establishment period, and final acceptance by the University
- ~~• The Contractor shall be responsible for providing the following maintenance on all newly planted trees, shrubs, groundcovers, and herbaceous perennials:~~
 - ~~a. Watering: During periods of inadequate rainfall, as determined by the University Representative, all plant material shall be watered to maintain a constant suitable moisture level for adequate plant growth. The Contractor shall be responsible for providing all watering hoses and other watering devices. The University will provide the water source.~~
 - ~~b. Insect, Disease, and Weed Control: Weed control shall be by mechanical or hand weeding. The use of herbicides, insecticides, fungicides, nematicides, fumigants or other chemicals are only acceptable upon~~

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~~approval by the University under the provisions in Part A.3.f – Chemical Spraying Program.~~

5.E. Establishment Period

~~a.1.~~ The Establishment Period will begin upon notice of substantial completion by the Contractor and inspection by the University Representative and will last for a total of 120 days during the growing season. The growing season is defined as the period between April 1st and November 1st. If planting occurs in the autumn, the Establishment Period will carry over to the next growing season until a total of 120 days have been established.

~~b.2.~~ Plants shall be guaranteed during the Establishment Period and shall be alive and in satisfactory growth at the end of that period. Plants which die within the establishment period will be removed by the Contractor within five (5) business days of notice or the University will remove the plants and bill the Contractor accordingly. Replacement plants may be installed during the next appropriate planting season for the species specified. All replacements shall be plants of the same ~~kind-species~~ and size specified in the plant list. They shall be furnished and planted according to all previous specifications noted and shall be guaranteed through an additional 120 day Establishment Period, as outlined above. The cost of replacement shall be borne by the Contractor, except for possible replacements resulting from removal, loss or damage due to vandalism, or act of neglect on the part of others.

~~c.3.~~ The Contractor is responsible for all maintenance activities, including watering, weeding, insect and disease control or other methods required to insure the overall health of the plants during the Establishment Period.

6.F. Final Inspection and Acceptance:

~~a.1.~~ At the end of the Establishment Period, an inspection will be made by the University Representative and the Contractor. Any plant determined to be of insufficient quality or unsatisfactory growth, as determined the University Representative, shall be removed from the site and replaced at the Contractor's expense, as outlined in Part E.2 – Establishment Period.

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END of revision

Update Commentary:

Section was updated primarily for the following reasons:

- 1) *To revise requirements for Planting Seasons*
- 2) *To revise maintenance requirements of trees and shrubs*
- 3) *To add/modify other miscellaneous requirements and corrections*