



City of Cleveland
Justin M. Bibb, Mayor

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Division of Purchases & Supplies
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July 8, 2025

ADDENDUM 1

BID TITLE: File No. 82-25 Removal and Installation of Landscaping of Voinovich Park

BID DUE: Wednesday, July 16, 2025 at 12 o'clock noon (Eastern Time)

Attention Bidders:

We have been requested to issue the addendum for the following:

Please ensure that a copy of this addendum is included and returned with the bid specifications furnished to you by this office, as it will have the same force and effect as if it were part of the specifications originally issued.

1. Answer questions received by the last day for questions.
2. Addition of Document, Section 32 91 13 – Soil Preparation
3. Addition of Document, Section 32 93 00 – Plants
4. Addition of Page to Bid Items Sheet, Mulch

If you have any questions regarding the attached, please contact Steven Decker at sdecker@clevelandohio.gov. Thank you for your prompt attention and assistance in this matter.

Also, please ensure that copy of this addendum is included and returned with the bid specifications furnished to you by this office, as it will have the same force and effect as if it were part of the specifications originally issued.

Signature of Potential Bidder & Name of Company

Today's Date

Thank you,
Donia Patterson, Assistant Administrator
Purchases & Supplies
CC:

BID - SCHEDULE OF ITEMS City of Cleveland Division of Purchases And Supplies 128 City Hall Cleveland, Ohio 44114				BID PAGE Addendum	
				BIDDER MUST COMPLETE & SIGN BELOW	
				NAME OF FIRM	
				AUTHORIZED SIGNATURE	
DESCRIPTION					
		Depth	Quantity *	UNIT PRICE	TOTAL
	Mulch		cu yd	Below: (Quantity x Unit Price= Total)	
a.	Natural Brown (triple shredded) covering all identified planting areas	2-3 inches			
	*Cubic yards required to be determined by bidder				
<small>ALL QUANTITIES ARE APPROXIMATE AMOUNTS. THE CONTRACT, IF ANY, SHALL BE FOR A PERIOD OF TWO YEARS, WITH TWO ONE-YEAR OPTIONS TO RENEW.</small> <small>ALL OF THIS BOUND INFORMATION MUST BE KEPT INTACT AND TOGETHER WITH ANY ADDENDA ISSUED, AND MUST BE RETURNED WITH THE BID. OTHERWISE, THE BID MAY BE CONSIDERED INFORMAL.</small>					
BIDDER MUST SIGN AND DATE THIS SHEET					

SECTION 32 91 13 – SOIL PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Turf topsoil.
- B. Related Requirements:
 - 1. Section 31 10 00 "Site Clearing" for topsoil stripping and stockpiling.
 - 2. Section 32 92 00 "Turf and Grasses" for placing amended topsoil for turf and grasses.

1.3 DEFINITIONS

- A. CEC: Cation exchange capacity.
- B. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.
- C. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."
- D. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- E. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include test data substantiating that products comply with requirements.
 2. Material Certificates: For each type of soil amendment and fertilizer before delivery to the site, according to the following:
 - a. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
 - b. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.
- B. Amended Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
- 1.6 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For each testing agency.
- 1.7 QUALITY ASSURANCE
- A. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- 1.8 PRECONSTRUCTION TESTING
- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction soil analyses on existing, on-site soil.
1. Notify Architect seven days in advance of the dates and times when laboratory samples will be taken.
- B. Preconstruction Soil Analyses: For each unamended existing topsoil to be used for the re-spreading of amended topsoil, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.
- 1.9 SOIL-SAMPLING REQUIREMENTS
- A. General: Extract soil samples according to requirements in this article.
- B. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of Architect under the direction of the testing agency.

1. Number and Location of Samples: Minimum of three representative soil samples from varied locations for topsoil to be used or amended for landscaping purposes.
2. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
3. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

1.10 TESTING REQUIREMENTS

- A. General: Perform tests on soil samples according to requirements in this article.
- B. Physical Testing:
 1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
 - a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
 - b. Hydrometer Method: Report percentages of sand, silt, and clay.
- C. Chemical Testing:
 1. Soil pH Level.
 2. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
- D. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
- E. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
 1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. for 6-inchdepth of soil.
 2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. for 6-inchdepth of soil.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Regional Materials: Soil amendments and fertilizers shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

2.2 AMENDED TOPSOIL

- A. Amended Topsoil: Existing, on-site surface soil, with the duff layer, if any, retained; and stockpiled on-site; modified to produce amended topsoil for new lawns. Amend existing, on-site surface soil with soil amendments and fertilizers to meet the following requirements:

1. Loose, friable, natural, fertile soil, free of stones, clay lumps, roots, and foreign or toxic matter.
2. Classified in the "Sandy Loam" portion of the U.S.D.A. Soil Textural Triangle. The fraction passing the #10 sieve shall meet the following mechanical analysis:
 - a. 10 to 20% clay (less than 0.002 mm particle size).
 - b. 50 to 60% sand (2.0 to 0.05 mm particle size).
 - c. 20 to 30% silt (0.05 mm to .002 mm particle size).
3. Contain neither less than 6%, nor more than 15%, organic matter as determined by loss on ignition of samples oven-dried to constant weight at 212° F.
4. Have a pH level of between 6.8 and 7.3.
5. All topsoil shall be screened through a 1-1/4" screen.

- B. If amended topsoil test results indicate the soil does not meet the requirements listed above, contractor shall amend the soil further, and retest the soil. Contractor shall repeat this process until the soil meets the specifications.

- C. Clay Infield Mix shall be:

1. Soil mixture consisting of the an approximate range of the following particle sizes: Gravel-(#4 (4.75 mm) and smaller)11.2%; Sand-54.3%; Silt-24.1%; Clay-10.4%.

2. Infield Conditioner-Turf Surface Athletics Turf MVP Clay, or approved equal.
3. Pitcher's Mound Clay-Turf Surface Athletics Turf Mound and Plate Clay or approved equal.

2.3 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 1. Class: T, with a minimum of 99 percent passing through a No. 8 sieve and a minimum of 75 percent passing through a No. 60 sieve.
 2. Class: O, with a minimum of 95 percent passing through a No. 8 sieve and a minimum of 55 percent passing through a No. 60 sieve.
- B. Sulfur, with a minimum of 99 percent passing through a No. 6 sieve and a maximum of 10 percent passing through a No. 40 sieve.
- C. Sand: Clean, washed, natural or manufactured, free of toxic materials, and according to ASTM C 33/C 33M.
- D. Turf Surface Athletics: Turf M.V.P. Infield Conditioner
 1. Supplier: Century Equipment, 26565 Miles Rd. Cleveland, Ohio 44128
 2. Drag field with a Harvey Rack, to uniformly spread and mix conditioner to fine grade infield areas and meet finished elevations as directed by Landscape Architect.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
 1. Feedstock: Limited to leaves.
 2. Reaction: pH of 5.5 to 8.
 3. Moisture Content: 35 to 55 percent by weight.
 4. Organic-Matter Content: 50 to 60 percent of dry weight.
 5. Particle Size: Minimum of 98 percent passing through a 1/2-inch sieve..

PART 3 - EXECUTION

3.1 GENERAL

- A. Place planting soil and fertilizers according to requirements in other Specification Sections.
- B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.

- C. Proceed with placement only after unsatisfactory conditions have been corrected.

3.2 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

- A. Excavation: Excavate soil from designated area and stockpile until amended.
- B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- C. Screening: Pass unamended soil through a 1-1/4 inch sieve to remove large materials.

3.3 PLACING AND MIXING TOPSOIL OVER EXPOSED SUBGRADE

- A. General: Apply and mix unamended soil with amendments on-site to produce amended topsoil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Subgrade Preparation: Till subgrade to a minimum depth of 4 inches. Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Mixing: Spread unamended soil to a minimum depth of 6", but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
 - 1. Amendments: Apply soil amendments evenly on surface, and thoroughly blend them with unamended soil to produce amended topsoil.
- D. Compaction: Compact each blended lift of amended topsoil to 85 percent of maximum Standard Proctor density according to ASTM D 698 and tested in-place.
- E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- F. Note: Contractor to assume a final raking and application of field conditioner within ten (10) days of field turnover will be required. Coordination with Parks Maintenance and Recreation Divisions will be established via a final field inspection prior to final acceptance.

3.4 PLACING CLAY INFIELD MIX OVER EXPOSED SUBGRADE

- A. Place clay mix over subgrade of skinned infield area to a depth of 5".
- B. Rough grade areas to approximately meet elevations of proposed spot elevations on site plan, minus +/- 1/2" for an application of infield conditioner.
- C. Install mound clay to build an appropriate mound base 9" above level of play.
- D. Install wooden mounting bases, pitcher's rubber and home plate equipment.

- E. Install 1/2" of infield conditioner over skinned infield areas. Drag field to uniformly spread and mix conditioner to fine grade infield areas and meet finished elevations as indicated on the Drawings.

3.4 FIELD QUALITY CONTROL

- A. Soil will be considered defective if it does not pass tests.
- B. Prepare test reports indicating amended topsoil, and planting soil is in compliance with requirements.
- C. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.5 PROTECTION

- A. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform seeding operations:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Vehicle traffic.
 - 4. Foot traffic.
 - 5. Erection of sheds or structures.
 - 6. Impoundment of water.
 - 7. Excavation or other digging unless otherwise indicated.
- B. If amended topsoil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the topsoil and contamination; restore the subgrade as directed by Architect and replace contaminated topsoil with new topsoil.

3.6 CLEANING

- A. Protect areas adjacent to soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.
 - 1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

END OF SECTION 32 91 13

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SECTION 32 93 00 – PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Provisions of the Contract, including Part B - General Conditions, Part C- Supplemental General Conditions and Part D - Detail Specifications, apply to the Work of this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Plants.
 - 2. Tree stabilization.
- B. Related Requirements:
 - 1. Section 31 20 00 Site Grading
 - 2. Section 31 25 00 Erosion and Sediment Control
 - 3. Section 32 91 13 "Soil Preparation
 - 4. Section 32 92 00 "Turf and Grasses" for turf (lawn), hydro-seeding, and erosion-control materials.

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than sizes indicated; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than sizes indicated.
- D. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- E. Finish Grade: Elevation of finished surface of planting soil.
- F. Planting Soil: Manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 32 91 13 "Soil Preparation" for drawing designations for planting soils.
- G. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or

herbaceous vegetation.

- H. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- I. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- J. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 COORDINATION

- A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.5 PRE-CONSTRUCTION MEETINGS

- A. Pre-construction Conference: Conduct conference to review planting layout at the Project site.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
 - 1. Manufacturer's certified analysis of standard products.
 - 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Sample Warranty: For special warranty.

1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for

maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Three years' experience in landscape installation in addition to requirements in Section 01 40 00 "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Pesticide Applicator: State licensed, commercial.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
 - 1. Selection of plants purchased under allowances is made by Architect, who tags plants at their place of growth before they are prepared for transplanting.
- C. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk materials with appropriate certificates.
- B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- C. Handle planting stock by root ball.

- D. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 - 1. If deciduous trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.
- E. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
- F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 2. Do not remove container-grown stock from containers before time of planting.
 - 3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.11 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Planting: April 1 through June 15.
 - 2. Fall Planting: September 1 through November 30.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.12 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
 - b. Structural failures including plantings falling or blowing over.
 - 2. Warranty Periods: 1 year from date of planting completion or Substantial Completion, whichever is later.
 - 3. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

- c. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.
 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant. Labels are to be removed at end of warranty period.
- C. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

2.2 FERTILIZERS

- A. Planting Tablets: Tightly compressed chip-type, long-lasting, slow-release, commercial-grade planting fertilizer in tablet form. Tablets shall break down with soil bacteria, converting nutrients into a form that can be absorbed by plant roots.
 1. Nutrient Composition: 20 percent nitrogen, 10 percent phosphorous, and 5 percent potassium, by weight plus micronutrients.

2.3 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Triple shredded hardwood bark only. No compost fillers.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural.

2.4 WEED-CONTROL

- A. Pre-Emergent Herbicide: Apply at time of planting at recommended dosage by manufacturer. Avoid disturbing the soil after application. Water within 72 hours of application.

2.5 TREE-STABILIZATION MATERIALS

- A. Trunk-Stabilization Materials:
 - 1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood , free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
 - 2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch in diameter. Provide rubber hose guards where wires stabilize tree trunk.

2.6 TREE-WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip irrigation of plants and emptying its water contents over an extended time period; manufactured from UV-light-stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. BIO-PLEX.
 - b. Engineered Watering Solutions; PQ Partners, LLC.
 - c. Spectrum Products, Inc.
 - 2. Color: black.

2.7 MISCELLANEOUS PRODUCTS

- A. Anti-desiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
- B. Burlap: Non-synthetic, biodegradable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

- B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Lay out plants at locations directed by Architect. Stake locations of individual trees and shrubs and outline areas for multiple plantings.

3.3 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 91 13 "Soil Preparation."
- B. Placing Planting Soil: Amend existing soil with 1/3 leaf humus and mix in place.
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
 - 1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 - 2. Excavate approximately three times as wide as ball diameter for all stock.
 - 3. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 - 4. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 - 5. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 - 6. Maintain angles of repose of adjacent materials to ensure stability. Do not ex-

- cavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
- 7. Maintain supervision of excavations during working hours.
- 8. Keep excavations covered or otherwise protected.
- 9. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.
- C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
 - 1. Hardpan Layer: Drill 6-inch-diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.
- D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE, SHRUB, AND VINE PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare as per detail drawing.
 - 1. Installation as per detail.
- D. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare as per detail drawing.
 - 1. Installation as per detail.

3.6 TREE, SHRUB, AND VINE PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Do not apply pruning paint to wounds.

3.7 TREE STABILIZATION

- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization per detail.

3.8 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees, shrubs, and vines in even rows with triangular spacing, per drawings.
- B. Backfill per detail drawing.
- C. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.
- D. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.

3.10 INSTALLING SLOW-RELEASE WATERING DEVICE

- A. Provide one device for each tree.
- B. Place device on top of the mulch at base of tree stem and fill with water according to manufacturer's written instructions.

3.11 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.12 REPAIR AND REPLACEMENT

- A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Architect.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Architect.

3.13 CLEANING AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.
- C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- D. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

3.14 MAINTENANCE SERVICE

- A. Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
 1. Maintenance Period: Three months from date of Substantial Completion.
- B. Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
 1. Maintenance Period: Three months from date of Substantial Completion.

END OF SECTION 32 93 00