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**Invitation for Sealed Bids**

<b>Solicitation Name and Number</b>	Landscaping Services for the Right of Way / Infrastructure at First Creek C22010
<b>Responses Must Arrive No Later Than</b>	11:00 a.m. on October 29, 2021 (as KCDC's clocks indicate)
<b>Email your responses to</b>	<a href="mailto:procurementinfo@kcdc.org">procurementinfo@kcdc.org</a>
<b>Site Visit</b>	Interested parties can visit the work site on Thursday October 21 <sup>st</sup> from 10:00 to 12:00.
<b>Site Visit Confirmation</b>	To attend the site visit, email <a href="mailto:procurementinfo@kcdc.org">procurementinfo@kcdc.org</a> .
<b>Questions About This Solicitation</b>	<b>KCDC will not accept questions via telephone.</b> Submit questions to <a href="mailto:procurementinfo@kcdc.org">procurementinfo@kcdc.org</a> by 6:00 p.m. on October 21,2021.
<b>Bid Opening</b>	This bid will be "opened" electronically and interested parties may attend via Zoom only. To obtain the Zoom link, email <a href="mailto:procurementinfo@kcdc.org">procurementinfo@kcdc.org</a> .  Note however that the bid tabulation is normally posted to KCDC's webpage within four hours of the bid opening time.
<b>Award Results</b>	KCDC posts the award decision to its web page at: <a href="http://www.kcdc.org/procurement/">http://www.kcdc.org/procurement/</a> .
<b>Open Records/Public Access to Documents</b>	All document provided to KCDC are subject to the Tennessee Open Meetings Act (TCA 8-44-101) and open records requirements.
<b>Plans &amp; Detail Sheets</b>	Available on KCDC's webpage
<b>Check KCDC's webpage for addenda and changes before submitting your response</b>	



## General Information

### 1. Background and Intent

- a. Knoxville's Community Development Corporation (KCDC) is the public housing and redevelopment agency for the City of Knoxville and for Knox County in Tennessee. KCDC's affordable housing property portfolio includes 20 sites with approximately 3,525 dwelling units.
- b. KCDC uses "supplier" as inclusive of various words describing interested parties often called "supplier," "bidders," "contractors" and "proposers."
- c. This solicitation is to provide landscaping services at KCDC property named First in Knoxville, Tennessee. The selected supplier shall furnish and install all necessary equipment and materials for the following scope for work. The supplier shall provide and install specified planting soils and nutrient additives, shrubs, groundcover plantings, mulch, bed edge and all appurtenances as noted in the contract documents. All trees in the plant schedule shall be purchased and delivered to the project site and temporarily heeled-in. Tree installation is not included in this scope of work. However, all other installation for shrubs, groundcover, and lawns shall be provided and installed. The trees only will be installed under a separate scope of work and shall not be included.

The limit of work as shown in the bid documents includes soil and planting installation as noted above within the right of way along Burge Drive, the boulevard named Road 'A', South Bell Street, the roundabout and median. The supplier shall be responsible for the scope of work included herein included damage to any existing conditions during this work.

The supplier shall coordinate all construction activities including schedules for delivery and work with the Owner's Representative. The First Creek/Austin Homes project site has multiple suppliers concurrently installing phases of work therefore it is imperative that this scope of work is well coordinated with other construction activities.

See the Scope of Work section for the technical details.

### 2. Bonds

Bid, payment and performance bonds are required if the total bid exceeds \$100,000 in value. The supplier will include all bonding costs in the base bid. Bonding requirements include:

- a. A bid **bond** from each supplier equivalent to 5% of the bid price. Such bid bond must accompany the bid. Bid bonds will not be returned until a contract is signed.
- b. Performance and payment **bonds** for 100% of the contract price.
- c. All bonding companies must be listed in the "Federal Register, Department of the Treasury Fiscal Service, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies; Notice." Companies licensed to do business in the State of Tennessee must issue all required bonds.

**3. Changes after Award**

It is possible that after award KCDC will need to revise the requirements specified in this document. KCDC reserves the right to make such changes after consultation with the supplier. Should additional costs arise, the supplier must document increased costs. KCDC reserves the right to accept or reject and negotiate these charges. Generally, such changes will not be of a “cardinal” nature.

**4. Codes and Ordinances**

All work covered is to be done in full accord with national, state and local codes, ordinances and orders that are in effect at the time the work is performed.

**5. Contact Policy**

**Only** contact KCDC’s Procurement Division about this solicitation from the issuance of this solicitation until award. Information obtained from an unauthorized officer, agent, or employee will not affect the risks or obligations assumed by the supplier or relieve the supplier from fulfilling any of the conditions of the resulting award for the purpose of this project. Such contact can disqualify the supplier from the solicitation process.

**6. Contract Approval**

The resulting contract is subject to KCDC’s Board’s approval (if it reaches \$100,000 in value).

**7. Contract Documents**

KCDC has posted a prototype of the standard contract and rider that will be used to its webpage. Please review these documents before submitting a bid. If the awarded cost is less than \$100,000, typically KCDC issue a purchase order for the work instead of a formal contract.

**8. COVID-19 Special Requirements**

If COVID requirements are in effect, all workers assigned to work on this project must follow the same health and safety standards that KCDC employees do and agree to the following:

a. General:

- Workers will wash and/or sanitize his/her hands periodically throughout the workday.
- Worker will maintain six feet of spacing and social distancing between himself and others.
- Worker will wear a face mask if other persons are present.

b. Worker will not enter the building or be on the premises if he/she answers "yes" to the existence of the any of the below symptoms or circumstances and will contact his/her supervisor immediately.

c. Worker will leave the premises immediately if any of the below symptoms appear during the workday and will contact his/her supervisor of why he/she had to leave.

d. Symptoms:

- Fever of 100 degrees or greater
- New onset of cough
- New onset of shortness of breath
- New onset of sore throat
- New onset of body aches

- Diarrhea
- New onset of headache
- New onset of loss of taste or smell

**9. Damage**

The supplier is responsible for all damage to buildings, equipment, grounds, premises and all other types of potential damage resulting from the provision of the services requested herein.

**10. Employees**

Supplier will:

- Allow only personnel thoroughly trained and skilled to work on the job. Employees are not to be accompanied in their work area by acquaintances, family members, assistants or any person unless said person is an authorized employee of the supplier.
- Have sufficient personnel to complete the work in a timely manner.
- Provide adequate supervision and adequate discipline among his/her employees.
- Provide at least one employee on every job assignment with the ability to speak, read, write and understand English so owner's staff can communicate effectively with them.
- Ensure that employees have proper identification displayed while on the job site. Employees, while on site, must wear a company uniform or have photo identification displayed.
- Employees parking vehicles (whether corporately or privately owned) must ensure that company identification is on the vehicles. This may be by placards on the vehicle's side, laminated paper with the company name placed on the dashboard or other means.

**11. Equipment**

Supplier shall provide all necessary equipment, materials, supplies, et cetera needed for the work. Include the cost for such equipment, materials and supplies in the price quoted.

**12. Evaluation**

KCDC will evaluate this as a formal sealed bid and the award is to the "lowest and best." KCDC alone determines (using NIGP's definition and other relevant sources as appropriate) the supplier's "responsive" and "responsible" status prior to award. Responsible means a business with the financial and technical capacity to perform the requirements of the solicitation and subsequent contract. A responsive bid is one that fully conforms in all material respects to the solicitation document and its requirements, including all form and substance. KCDC reserves the right to request additional information to assist in the evaluation process; this includes references and business capacity information.

### 13. General Instructions to Suppliers

KCDC's General Instructions to Suppliers are at [www.kcdc.org](http://www.kcdc.org). Click on "Procurement" and the link to the instructions. The supplier's submittal means acceptance of the terms and conditions set forth in KCDC's "General Instructions to Suppliers." The following paragraphs in the General Instructions to Suppliers do not apply: 1, 16, 44a, 44c, 44d, 52, 57 and 65.

### 14. Insurance

See Appendix 1. These insurances and levels are required and not optional. KCDC suggests you discuss the requirements with your agent prior to the bid due date. If you or your insurance agent have concerns or believe that some coverages are not necessary, email [procurementinfo@kcdc.org](mailto:procurementinfo@kcdc.org) detailing any requested changes before this solicitation's due date. The supplier will include all insurance costs in the base bid.

### 15. Licensure

- a. Suppliers must possess and maintain proper licensure from the State of Tennessee and all other authorities having jurisdiction throughout the term of this award.
- b. In addition to any City or County licenses that may be required, all suppliers must be licensed as required by the State of Tennessee's "Contractor's Licensing Act of 1994."
- c. The Executive Director of the State Contractor Licensing Board says one of these licenses is required:
  - BC
  - BC-B
  - BC-b(sm)
  - BC-29
- d. Any subsequent rulings by the State Licensing Board automatically revise these specifications-irrespective of the timing of the notice from the State and irrespective of the status of this solicitation.
- e. Additional information is at <https://www.tn.gov/commerce/regboards/contractors.html>.

### 16. Measurements and Drawings

Complete responsibility for the final determination of dimensions lies with the supplier. The supplier shall verify all dimensions with the actual on-site conditions. Where the supplier's work is to join another trade, the supplier's shop drawings shall show actual dimensions and the method of joining the work of those trades.

### 17. Permits

The supplier (and/or any subcontractors) shall obtain and pay for all permits required to complete authorized work.

### 18. Representations

By submitting a response, the supplier certifies:

- a. That the supplier is financially solvent and that it is experienced in and competent to perform the type of work, and/or to furnish the personnel, plans, materials, supplies, or equipment to be performed or furnished by it; and
- b. That the supplier is familiar with all federal, state, municipal and county laws, ordinances and regulations, which may in any way affect the work of those employed therein, including but not limited to any special acts relating to the work or to the project of which it is a part; and
- c. That the supplier carefully examined the plans, specifications and the worksite and that from its own investigations, has satisfied itself as to the nature and location of the work, the character, quality, quantity of surface and subsurface materials likely to be encountered, and character of equipment and other facilities needed for the performance of the work, the general and local conditions and all other materials which may in any way affect the work or its performance.

**19. Safety/OSHA Guideline Compliance**

- a. The supplier is responsible for providing and placing barricades, tarps, plastic, flag tape and other safety/traffic control equipment to protect the public, surrounding areas, equipment and vehicles.
- b. The supplier shall ensure that its employees exercise all necessary caution and discretion to avoid injury to persons or damage to property.
- c. Supplier shall use caution signs as required by OSHA Regulation 1910.144 and 1910.145 at no cost to KCDC. Caution signs shall be on-site at commencement of contract.
- d. Supplier shall comply with all other OSHA and TOSHA safety standards that apply.

**20. Schedule of Values**

After KCDC issues a notice of award, the successful supplier may be required to provide a standard Schedule of Values within 10 calendar days.

**21. Security**

The successful supplier is responsible for providing any necessary security to equipment, materials, personnel, tools and the site that are required for this job. KCDC is not responsible for damage or losses to equipment, materials, personnel, tools or the site.

**22. Site Examination**

- a. Suppliers are required to visit the site and become fully acquainted and familiar with conditions, as they exist and the required operations. The supplier shall make such investigations as necessary so that they may fully understand the scope of the work and related facilities and possible complexities when executing the work.
- b. The failure or omission of the supplier to receive or examine the solicitation document or any part of the specifications, or to visit the site(s) and acquaint themselves as to the nature and location of the work, the general and local conditions and all matters which may in any way affect performance shall not relieve the supplier of any obligation to perform as specified herein.

Supplier understands the intent and purpose hereof and its obligations hereunder and that it shall not make any claim for, or have any right to, damages resulting from any misunderstanding or misinterpretation of the resulting agreement, or because of any lack of information.

- c. By submitting a response to this solicitation, each supplier is certifying that they have inspected the site and have read the solicitation and all appendices and addenda. The failure or omission of any supplier to receive or examine any form, instrument, or document shall in no way relieve the supplier from any obligation in respect to its bid.

### 23. **Small Business Outreach**

KCDC requires the successful supplier to reach out to small businesses, minority owned businesses and woman owned businesses for goods and subcontracted services to fulfill this award. In addition to the successful supplier reporting on dollars spent with such businesses each January, KCDC expects outreach that results in actual subcontracting arrangements with such suppliers.

### 24. **Smoke Free Policy**

- a. KCDC's Smoke Free policy is applicable to you, your employees and subcontractors. The policy mandates:
- No smoking on owner's property
  - No e-vape or similar usage on owner's property
  - The Smoke Free policy applies in personal or corporate vehicles on owner's property

- b. Applicable definitions include:

- "Smoking" means inhaling, exhaling, burning or carrying any lighted or heated cigar, cigarette or pipe, or any other lighted or heated tobacco or plant product intended for inhalation, including hookahs and marijuana, whether natural or synthetic, in any manner or in any form.

"Smoking" also includes the use of an electronic smoking device which creates an aerosol or vapor, in any manner or in any form.

- "Electronic Smoking Device" means any product containing or delivering nicotine or any other substance intended for human consumption that can be used by a person in any manner for the purpose of inhaling vapor or aerosol from the product. The term includes any such device, whether manufactured, distributed, marketed or sold as an e-cigarette, e-cigar, e-pipe, e-hookah or vape pen or under any other product name or descriptor.
- Property means all buildings, parking lots, streets, structures and **land** owned by KCDC. Should the supplier's staff be observed violating these requirements, KCDC's Procurement Division will notify the supplier about the problem. Should there be recurrences, KCDC may ask the supplier to not send the employee to KCDC's property. Repeated offenses may result in forfeiture of your awarded "contract."

**25. Solicitation Requirements**

Caution: Requirements in the solicitation are not optional. If you have concerns or issues with any of the stated requirements, raise them **before** the bid due date. Examples of past issues where suppliers made faulty assumptions include insurance requirements and subcontractor outreach expectations.

**26. Storage**

KCDC sites have very limited storage space for suppliers to access. Accordingly, suppliers are responsible for the storage of materials and their security. If possible, KCDC will allow suppliers to use space but the safety and security of the items stored is solely the supplier's responsibility.

**27. Storm Water and Street Ordinances**

The City of Knoxville's Storm Water and Street Ordinances apply to this solicitation. The successful supplier will comply with the City's ordinances. Compliance includes but is not limited to:

- a. Retaining all sediments on the project site using structural drainage controls. Drainage control costs are incidental to the work.
- b. Not discharging any construction or demolition related materials, wastes, spills, or residues from the project site to streets, drainage facilities, or adjacent properties by wind or runoff.
- c. Containing non-storm water runoff from equipment and vehicle washing and any other activity at the project site.
- d. Additional information about NPDES, BMPs and the Land Development Manual at <http://www.cityofknoxville.org/engineering/stormwater/npdes.asp>.
- e. The successful supplier is responsible for all work, remediation, repair and monetary penalties or fines arising out of a Notice of Violation of the City of Knoxville's Storm Water and Street Ordinances. The supplier will be charged costs KCDC incurs to install structural drainage controls or remedy a Notice of Violation. KCDC shall also charge a \$50 fee per violation for related administrative costs.
- f. KCDC will prepare, submit and pay the permitting fees. Upon award, the successful supplier will be required to sign onto the permit and be responsible for implementing and maintaining all erosion control measures as required on the SWPPP.

**28. Subcontractors**

Subcontractors must:

- a. Be approved by KCDC prior to beginning work.
- b. Carry the insurance coverages as outlined herein.
- c. Not be on the general federal government, HUD's nor the State of Tennessee's debarment lists.
- d. Not be changed without owner's permission.



**29. Time for Completion**

Supplier will achieve substantial completion of each project within 150 calendar days from the date of the Notice to Proceed.

**30. Weather**

KCDC provides allowances for excessive inclement weather since this solicitation calls for liquidated damages-provided the supplier exceeds the guaranteed number of days for completion.

a. Extensions of Contract Time

If the basis exists for an extension of time in accordance with this solicitation, then an extension of time based on weather may be granted only for the number of weather delay days exceeding the number of weather days listed as the Standard Baseline for that month.

b. Standard Baseline for Average Climatic Range

The Standard Baseline is the normal and anticipated number of calendar days for each month during which adverse weather will prevent activity. Suspension of activity for the number of days each month as listed in the Standard Baseline is to be included in the work and not eligible for an extension of the contract time. The baseline is:

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
12	11	8	7	7	6	7	5	4	5	6	11

c. Adverse Weather and Weather Delay Days

1. Adverse weather is the occurrence of one or more of the following conditions which prevents only exterior activity or access to the site within a twenty-four-hour period:

- a. Precipitation (rain, snow or ice) exceeding one-tenth inch (0.10”) liquid measure.
- b. Temperatures which do not rise above 32 degrees Fahrenheit by 10:00 a.m.
- c. Standing snow exceeding one inch (1.00”).

2. Adverse weather may include, if appropriate, “dry-out” or “mud” days when all the following are met:

- a. For rain above the Standard Baseline.
- b. Only if there is a hindrance to site access or site work or excavation and supplier has taken all reasonable accommodations to avoid such hindrance.
- c. At a rate, no greater than one make-up day for each day or consecutive days of rain beyond the Standard Baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by the KCDC.

3. A weather delay day occurs only if adverse weather prevents work on the project for 50 percent or more of the supplier's scheduled workday, including a weekend day or holiday if the supplier has scheduled construction activity that day.

d. Documentation and Submittals

1. Submit Daily Jobsite Work Log each month showing which and to what extent activities were affected by weather.
2. Submit actual weather data to support a claim for the time extension obtained from nearest NOAA weather station or other independently verified source approved by the KCDC at the beginning of the project.
3. Maintain a rain gauge, thermometer and clock at the jobsite. Keep daily records of precipitation, temperature and the time of each occurrence throughout the project.
4. Use the Standard Baseline data provided in this section when documenting actual delays due to weather more than the average.
5. Organize claim documentation on calendar month periods and submit in accordance with the procedures for claims established by the KCDC.

e. Approval by KCDC

1. If the extension of the contract time is appropriate, it will occur in accordance with the provisions of this solicitation.
2. KCDC shall not incur extra costs for any extra time increase to the contract.

## Scope of Work/Specifications

**SECTION 32 91 00**  
**PLANTING PREPARATION**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Carefully examine all of the Contract Documents for requirements that affect the Work of this Section.

**1.02 SECTION INCLUDES**

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to excavate for planting soils and supply and place planting soils as indicated on the Contract Documents and as specified. Supplying and placement of planting soils shall include, but not be limited to:
  - 1. Sampling and testing of planting soils.
  - 2. Supplying, placing, spreading and grading of planting soils.
  - 3. Providing all other sampling, testing, supplying, placing, spreading and grading of planting soils as required by this Section.
  - 4. Excavation of soils on site to prepare for planting
  - 5. Testing of subgrade for sufficient percolation rates as specified herein.

**1.03 REFERENCES**

- A. The following standards shall apply to the work of this Section:
  - 1. Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction, latest addition.
  - 2. American Society for Testing and Materials (ASTM):
    - D 75 Practice for Sampling Aggregates
    - D 422 Test Method for Particle-Size Analysis of Soils
    - D698-00a Standard Test Methods for Laboratory Compaction (lb/ft<sup>3</sup>)
    - D1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10-lb Rammer and 18-in. Drop
  - 3. A.O.A.C.: Association of Official Agricultural Chemists

**1.04 RELATED WORK UNDER OTHER SECTIONS**

- A. The following items of related work are specified and included in other Sections of the Specifications:
  - 1. Section 32 9200 TURF AND GRASSES
  - 2. Section 32 9300 PLANTS

**1.05 SUBMITTALS**

- A. At least 30 days prior to ordering materials, submit for approvals representative samples, certifications, manufacturer's product data and certified test results for materials specified below. No materials shall be ordered or delivered until the required submittals have been reviewed and approved. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Landscape Architect reserves the right to reject, on or after delivery, any material that does not meet these Specifications.

1. Planting soils: provide a one cubic foot representative sample per 1,000 cubic yard stockpile of proposed, blended planting soils and horticultural subsoil for testing. All stockpile sampling shall be per ASTM D75 and Appendixes for securing samples from stockpiles.
  2. Planting soil delivered to the site shall be sampled and tested for conformance to these specifications. Take samples in locations as directed by the Landscape Architect.
- B. From USDA NRCS County Soil Survey, submit name of off-site, proposed base topsoil, County of origin, Detailed Soil Map Unit, and Tables 13, 15, and 16 for the named soil.
- C. Testing of proposed planting soils shall be at the Contractor's expense. Contractor shall deliver all samples to testing laboratories via overnight courier and shall have the testing report sent directly to the Landscape Architect. Perform all tests for gradation, organic content, soil chemistry and pH by A&L Analytical laboratories, Inc., 2790 Whitten Road, Memphis, TN, 38133 (901) 213-2400 or approved equal. Submit A&L Turf & Landscape Soil Sample Information Sheet with specific crop codes indicated. Testing reports shall include the following tests and recommendations. Testing reports shall include the following tests and recommendations.
1. Mechanical and chemical analysis shall be conducted in accordance with the current "standards" of the Association of Official Agriculture Chemists.
  2. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by ignition.
  3. Mechanical gradation (sieve analysis) shall be performed and compared to the USDA Soil Classification System. Sieve analysis shall be by combined hydrometer and wet sieving using the following sieves:
    - a. #10 (> 2 mm)
    - b. #18 (>1 mm)
    - c. #35 (>0.5 mm)
    - d. #60 (>0.25 mm)
    - e. #140 (>0.10 mm)
    - f. #270 (>0.05 mm)
    - g. Silt (>0.002 mm)
    - h. Clay (<0.002 mm)
  4. Soil Fertility Testing: S3M (S1M: Soil pH, Buffer pH, Calcium, Magnesium, Potassium, Phosphorous and Percentage Organic Matter, calculated CEC, Base Sat.% + Boron, Copper, Iron, Manganese, Sodium, Sulfur, and Zinc).
  5. Individual Analysis for Soluble Salts using a Conductivity Meter in a 1:2 soil/water (v/v), Nitrate Nitrogen, Ammoniacal Nitrogen, Exchangeable Aluminum.
  6. Toxins including but not limited to lead, cadmium, arsenic and mercury.
  7. Saturated hydraulic conductivity per ASTM D5856.
  8. Soil analysis tests shall show recommendations for soil additives to correct soils deficiencies as necessary, and for additives necessary to accomplish the work as specified.
    - a. Test results: test data and recommendations for soil amendments including but not limited to: nitrogen, phosphorus, potassium and limestone.
  9. Testing for Organic Amendment Materials
    - a. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by ignition.
    - b. Test for agricultural suitability analysis as defined in Article 2.02 – Organic Amendment Materials (Compost).

- c. Stability assessed by the Solvita procedure, with protocols as specified by the Solvita manual (version 4.0). Stability tests shall be conducted by Woods End Research Laboratory, Mt. Vernon, Maine, Soil Control laboratory of California, or approved equal.

**1.06 EXAMINATION OF CONDITIONS**

- A. The Contractor and any sub-Contractor responsible for the execution of the Work of this Section shall confirm by email to the Landscape Architect that the subsoil elevations have been brought to the proper subgrade elevations prior to proceeding with the spreading of the planting soils.
- B. Carefully review the requirements of this Section to understand the requirements of percolation testing, compaction, slope and absence of debris of the subgrade prior to spreading of the planting soils.
- C. The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to sampling and testing of on-site stockpiles of delivered off-site planting soils prior to final planting installation.

**1.07 DEFINITIONS**

- A. The following definitions shall apply to the work of this Section.
- B. The following size distributions of mineral particles by diameter and sieve size shall apply to the following conventional names of soil types:

Conventional Name	Retained on U.S. Sieve No.	Diameter (mm)
Very coarse sand	#18	1 - 2
Coarse sand	#35	0.5 - 1
Medium sand	#60	0.25 - 0.5
Fine sand	#140	0.10 - 0.25
Very fine sand	#270	0.05 - 0.10
Silt	by hydrometer	0.002 - 0.05
Clay	by hydrometer	Less than 0.002

**1.08 PROJECT/SITE CONDITIONS**

- A. Environmental Requirements: do not deliver or handle soils when overly dry, wet, or frozen. Soils that fail the Field Test below, are too wet for delivery or handling.
  - 1. Field Test
    - a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
    - b. If the soil will not retain shape it is too dry and should not be worked.
    - c. If the soil retains shape and will not crumble, it is too wet and should not be worked.
    - d. Lightly pat the soil in palm of hand, if free water becomes visible or soil glistens, it is too wet and shall be not be worked.

## **PART 2 – MATERIALS**

### **2.01 PLANTING SOIL COMPONENTS**

- A. Planting soils for turf and planting shall be manufactured from 3 components: 1) base topsoil, 2) coarse and medium sands, and 3) compost.

### **2.02 ON-SITE TOPSOIL**

- A. This contract does not stipulate the presence of on-site, existing topsoil that meets this specification for gradation and fertility and in volumes sufficient to fulfill the requirements of this Contract or both. Contractor may use on-site topsoil for planting soil component only if it meets the requirements of this specification.
- B. On-site, existing topsoil that has been contaminated by incorporation of subsoil shall not be acceptable for use and shall be replaced with imported topsoil meeting specification requirements at no cost to be owner.
- C. On-site topsoil shall be free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots or other objectionable, extraneous matter or debris. Base topsoil shall also be free of quack-grass rhizomes, Agropyron Repens, and the nut-like tubers of nutgrass, Cyperus Esculentus, and all other primary noxious weeds. Base topsoil shall not be delivered or used for planting while in a frozen or muddy condition.
- D. On-site topsoil shall be a named soil identified in a County Soil Survey, published by the United States Department of Agriculture, Natural Resources Conservation Service. Soil shall be the top horizon as identified in Table 15 – Engineering Index Properties of the Soil Survey. The soil shall be silt loam, loam, fine sandy loam or sandy loam classified under the USDA texture classification as described in Table 15 of the Soil Survey.
- E. On-site topsoil as required for blending with other components shall be a naturally occurring soil formed from geologic soil forming processes without admixture of sand or organic matter sources (composts).
- F. Maximum size shall be one-inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
- G. The organic content shall be between 3.0 and 8.0 percent.
- H. The ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 8 or less. (D80/D30 < 8).

### **2.03 PLANTING SOIL FOR LAWN AT GRADE**

- A. Base Topsoil, Sand and Compost, each as specified above, shall be combined to create a uniform blend which meets the following requirements. The contractor shall have lawn planting soil tested and have test results submitted to the Landscape Architect for review and approval.
- B. Loam borrow for planting turf, lawn, and grasses shall be one of the following sandy loams; “course sandy loam”, “sandy loam”, and “fine sandy loam”: determined by mechanical analysis (ASTM D 422) and based on the "USDA Classification System" and as defined in this Section. It shall be of uniform composition, without admixture of subsoil.
  - 1. Loam borrow shall be free of stones greater than 0.75 inches, lumps, plants and their roots, debris, and other extraneous matter as determined by the Landscape Architect.
  - 2. Loam borrow shall be free of plants and their roots, debris and other extraneous matter. It shall be uncontaminated by salt water, foreign matter and substances harmful to plant growth. The electrical conductivity (EC2) of a 1:2 soil-water suspension shall be equal to or less than 1.0 milliohms/cm. (Test minus sieve #4 material.) Loam borrow shall not have levels of Exchangeable Aluminum greater than 200 parts per million except for acid-loving plants. Cation Exchange Capacity (CEC) shall be greater than or equal to 8.

- C. Gradation for Material Passing the Number 10 Sieve:
  1. Coarse and medium sands in proportion of 60 to 70 percent by weight.
  2. Maximum particle size shall be one-inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
  3. Ratio of the particle size for 70% passing (D80) to the particle size for 20% passing (D30) shall be 4.5 or less. (D70/D20 <4.5)
- D. Saturated hydraulic conductivity of the mix: not less than 2.5 inches per hour according to ASTM D5856-95 (2000) when compacted to a minimum of 88% Standard Proctor, ASTM 698.
- E. Organic content: between 3.0 and 6.0 percent by weight.
- F. The pH shall be between 6.0 and 7.0.

#### **2.04 PLANTING SOIL FOR TREES, SHRUBS AND GROUNDCOVERS, and PERENNIALS**

- A. Base Topsoil, Sand and Compost, each as specified above, shall be combined to create a uniform blend which meets the following requirements. The contractor shall have planting soil tested and have test results submitted to the Landscape Architect for review and approval.
- B. Loam borrow for planting trees, shrubs, groundcover and vines, and perennials shall be one of the following sandy loams; "course sandy loam", "sandy loam", and "fine sandy loam": determined by mechanical analysis (ASTM D 422) and based on the "USDA Classification System" and as defined in this Section. It shall be of uniform composition, without admixture of subsoil.
  1. Loam borrow shall be free of stones greater than 0.75 inches, lumps, plants and their roots, debris, and other extraneous matter as determined by the Landscape Architect.
  2. Loam borrow shall be free of plants and their roots, debris and other extraneous matter. It shall be uncontaminated by salt water, foreign matter and substances harmful to plant growth. The electrical conductivity (EC2) of a 1:2 soil-water suspension shall be equal to or less than 1.0 milliohms/cm. (Test minus sieve #4 material.) Loam borrow shall not have levels of Exchangeable Aluminum greater than 200 parts per million except for acid-loving plants. Cation Exchange Capacity (CEC) shall be greater than or equal to 8.
- C. Gradation for Material Passing the Number 10 Sieve:
  1. Coarse and medium sands in proportion of 55 to 65 percent by weight.
  2. Maximum size shall be one inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
  3. Ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 6.5 or less. (D80/D30 <6.5)
- D. Saturated hydraulic conductivity of the mix: not less than 2 inches per hour according to ASTM D5856-95 (2000) when compacted to a minimum of 86% Standard Proctor, ASTM 698.
- E. Organic content: between 3.0 and 6.0 percent by weight.
- F. The pH shall be between 6.0 and 7.0.

#### **2.05 SOIL ADDITIVES**

- A. General: Soil additives shall be used to counteract soil deficiencies as recommended by the soils analysis and as supplements for lawn construction as specified herein.
- B. Acidulant for adjustment of planting soils pH shall be commercial grade flours of sulfur, ferrous sulfate, or aluminum sulfate that are unadulterated. Acidulants shall be delivered in unopened containers with the name of the manufacturer, material, analysis and net weight appearing on each container.
- C. Ground limestone for adjustment of planting soils pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100



mesh sieve and 95 percent will pass through a 20 mesh sieve. Contractor shall be aware of planting soils pH and the amount of lime needed to adjust pH to meet the requirements of the testing lab recommendations.

- D. Commercial fertilizer shall be a product complying with the State and United States fertilizer laws. Deliver fertilizer to the site in the original unopened containers bearing the manufacturer's certificate of compliance covering analysis and which shall be furnished to the College's Representative. Fertilizer shall contain not less than the percentages of weight of ingredients as recommended by the soil analysis.
  - 1. Fertilizer for planting shall be formulated for top-dressing, soil surface application to plants. Fertilizer shall be designed and certified by the manufacturer to provide controlled release of fertilizer continuously for not less than 9 months. One hundred percent of the nitrogen content shall be derived from organic materials. Nitrogen source shall be coated to ensure slow release. Fertilizer percentages of weight of ingredients shall be as recommended by the soil testing and analysis specified, performed, and paid for under this Section 32 91 00.

### **PART 3 – EXECUTION**

#### **3.01 TEST AND MODIFY EXISTING, AT GRADE, SUBSOILS AND PLACED FILLS TO DRAIN**

- A. Perform percolation tests on existing subsoils or placed fill prior to placing and spreading planting soils, including lawn planting soil and planting soil for plant beds. **DO NOT MODIFY OR EXCAVATE SUBSOIL WITHIN DRIP LINE OF EXISTING TREES.**
  - 1. Perform percolation testing of existing subsoil to determine whether or not the subgrade will drain properly. Perform percolation tests as specified in this Section.
  - 2. In the event that percolation testing indicates that the existing subsoil does not drain and the results of testing for saturated hydraulic conductivity indicate the soil is too fine to meet a minimum percolation rate of one inch per hour, then the contractor shall loosen up and remediate the existing subsoil as follows:
    - a. Spread to a depth of 4 inches a layer of coarse uniform sand as specified herein over the entire subsoil area deemed to compacted or too fine to meet percolation rates.
    - b. Loosen the subsoil with a ripper, excavator bucket or equivalent equipment to a depth of 12 inches from surface of subsoil.
    - c. Fine grade sand-modified soils to re-establish a uniform subgrade.
    - d. Re-compact sand-modified subsoil with two perpendicular passes of a wide tracked dozer CAT D-5 or smaller.
    - e. Additional compaction of the subgrade shall be prohibited unless as directed by the Landscape Architect. Wheeled vehicles or heavy equipment larger than a CAT D-5 are prohibited from driving over the sand-modified subgrade after acceptance by the Landscape Architect. Low ground pressure wheeled vehicles will be permitted after review and approval of equipment specifications by the Landscape Architect. LGP vehicles shall have ground pressure no greater than 4 pounds per square inch.
    - f. Immediately after establishing subgrade elevations, spread planting soil with dozer without additional compaction of the subgrade.
    - g. The work of placing sand and loosening the top 12 inches of soil and recompacting the soil shall be paid for under the Section EARTHWORK, of this Specification.
  - 3. In the event that placed fills have been over compacted and will not drain, loosen up the top 12 inches of the subgrade to be by ripping or other mechanical means as noted above without amendment with sand. Recompact by bulldozer as noted above.

4. Remediation of existing subsoil or placed fills at locations for tree planting (coordinate this work with the work described in Section PLANTING, of this Specification):
  - a. After tree pits have been excavated and prior to placement of trees in lawn areas, excavate shallow trenches a minimum of four feet long, minimum 18 inches wide and 18 inches deep with the tree pit.
  - b. Fill trenches with a minimum of 18 inches of coarse uniform sand meeting the gradation requirements noted in this Section.
  - c. Using the bucket of a backhoe, loosen soils to a minimum depth of three feet below subgrade (18 inches of sand plus eighteen inches of underlying soil) and incorporate the sand through the soil matrix in a coarse manner. Soils within the three foot mixing depth shall not be homogenized but shall be roughly mixed such that veins of sand run through the tree foot depth.
  - d. After loosening and mixing, the soils shall be compressed with the bucket of the backhoe to a firm consistency, approximately 86 to 88 percent Standard Proctor maximum density.
  - e. Trenches shall not be excavated nor sand placed, mixed or compacted when soils are in a wet conditions, nor during periods of rain.
  - f. Prior to placing trees in tree pits, the top four inches of the entire tree pit area, including the loosened and compressed soils, shall be scarified with the teeth of the backhoe bucket or by raking. The Planting Soil shall be placed and compacted or compressed to approximately 84 to 86 percent Standard Proctor.
5. Perform sufficient percolation tests in areas of poorly draining or compacted subsoil or compacted placed fills as directed by the Landscape Architect to ensure that these underlying soils drain. Likewise, perform sufficient percolation tests after ripping and loosening to ensure that the soils are no longer too compact to drain.

### **3.02 FILLING AND COMPACTION**

- A. Subsoil or ordinary borrow shall have been excavated and filled as required by the Contract Documents and specified and paid for under Division 31 EARTHWORK, of this Specification, or as modified and remediated by sand and ripping as described in Division 31 EARTHWORK. Do not damage the work previously installed. Maintain all required angles of repose of materials adjacent to the loam as shown on the Contract Documents. Do not over excavate compacted subgrades of adjacent pavement or structures during loaming operations.
- B. Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Subgrade elevations shall slope parallel to the finished grade and or toward the subsurface drain lines as shown on the Contract Documents. Provide a written report to the Landscape Architect that the subgrade has been placed to the required elevations and that the subgrade drains water at the rates specified under the required percolation tests specified, performed and paid for under this Division 31 EARTHWORK. Perform no work of placing and spreading loam until elevations have been confirmed and written report has been accepted by the Landscape Architect.
- C. Clear the subgrade of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Such construction debris, trash, rubble and foreign material shall be removed from the site and disposed of in a legal manner. Fill any over excavation with approved fill and compact to the required subgrade compaction levels.
- D. Do not proceed with the installation of planting soils until all utility work in the area has been installed.
- E. Protect adjacent walls, walks and utilities from damage or staining by the planting soils. Use 0.5-inch plywood and or plastic sheeting as directed to cover existing concrete, metal and

masonry work and other items as directed during the progress of the work. Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

### 3.03 PLACING PLANTING SOILS FOR LAWNS, TREE PITS AND PLANTING BEDS

- A. Immediately prior to dumping and spreading planting soils in lawn areas, tree pits or planting beds, the subgrade shall be cleaned of all stones greater than 2 inches and all debris or rubbish. Such material shall be removed from the site, not raked to the edges and buried. Notify the Landscape Architect that the subsoil has been cleaned and request his/her attendance on site to review and approve subgrade conditions prior to spreading planting soils.
- B. Planting soils delivered to the site shall be protected from erosion at all times. Materials shall be spread immediately. Otherwise, materials that set on site for more than 24 hours shall be covered with tarpaulin or other soil erosion system acceptable to the Landscape Architect and surrounded by silt fence.
- C. No planting soils shall be handled, planted, or seeded in any way if it is in a wet or frozen condition. A moist planting soil is desirable.
- D. Planting soils shall be sampled and tested as specified, performed and paid for under the work of this Section, to verify application and incorporation of limestone, fertilizer and other soil amendments.
- E. The Contractor shall install planting soils in successive horizontal lifts no thicker than 6 inches to the desired compaction as required by the Contract Documents. The Contractor shall install the soil at a higher level to anticipate any reduction of planting soils volume due to compaction, settling, erosion, decomposition, and other similar processes during the warranty period. The Landscape Architect will ensure that the full depths of planting soils for lawn and plant beds are obtained by digging holes in the planting soils at the same frequency as for compaction testing. DEPTH OF PLANTING SOIL VARIES WITHIN DRIP LINE OF EXISTING TREES. SEE PLANTING DETAILS.
  - 1. Compact planting soils to the required density as specified herein.
  - 2. Maximum dry density for soils shall be determined in accordance with ASTM D698. The following percentages of minimum to maximum dry densities shall be achieved for fill materials or prepared subgrades.  
In lawn, tree pits and plant beds:

a. Fills within lawn and planting areas in top eighteen inches of finished grade	Minimum	Maximum
	80%	83%
  - 3. The surface area of each lift shall be scarified by raking prior to placing the next lift.
  - 4. In addition to the compaction range cited above, compact each lift sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The planting soils in each lift should feel firm to the foot in all areas and make only slight heel prints. At completion of the planting soil installation, the soil should offer a firm, even resistance when a soil sampling tube is inserted from lift to lift.
- F. Soil additives shall be spread and thoroughly incorporated into the layer of planting soils by harrowing or other methods reviewed by the Landscape Architect. The following soil additives shall be incorporated:
  - 1. Ground limestone or acidulant as required by soil analysis to achieve the required pH as described in this Section.
  - 2. Fertilizer at the rate and of analysis recommended by the soil analysis.
  - 3. For plant beds and tree pits, spread approved compost across limits of bed or pit to a depth of 4 inches.

- G. After planting soils and required additives have been spread to depths required by the Contract Documents, carefully prepare the planting soils by scarifying, harrowing, or tilling the topsoil to integrate soil additives into the top 6 inches of the loam. Remove all large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. Remove from unscreened soils all stones over 1 inch in diameter from the top 6 inches of the loam bed. Planting soils shall also be free of smaller stones in excessive quantities as determined by the Landscape Architect.
- H. Sufficient grade stakes shall be set for checking the finished grades of landforms. Stakes must be set in the bottom and at the top of slopes. Deviation from indicated elevations that are greater than one-tenth of a foot shall not be permitted. Connect contours and spot elevations with an even slope. Finish grades shall be smooth and continuous with no abrupt changes at the top or bottom of slopes.
- I. During the compaction process, all depressions caused by settlement or rolling shall be filled with additional planting soils and the surface shall be regraded and rolled until presenting a smooth and even finish corresponding to the required grades.
- J. Select equipment and otherwise phase the installation of the planting soils to ensure that wheeled equipment does not travel over subsoil, placed fills or ordinary borrow or already installed soil. Movement of tracked equipment over said soils will be reviewed and considered for approval by the Landscape Architect. If it is determined by the Landscape Architect that wheeled equipment must travel over already installed soil, provide a written description of sequencing of work that ensures that compacted soil is loosened and re-compacted as the work progresses or place one-inch thick steel plate ballast (or equivalent ballast approved by the Landscape Architect) over the length and width of any travel way to cover planting soils to protect them from compaction.
- K. Disturbed areas outside the limit of lawn work shall be graded smooth and spread with a minimum of 6 inches of planting soils to the finished grade.

### **3.04 PERCOLATION TESTING FOR PLANTING SOILS FOR LAWNS, LAWNS AT FIRE LANE, TREE PITS AND PLANTING BEDS**

- A. After the placement of each lift, perform percolation tests to determine if the soil has been over compacted. Perform the following percolation test procedure in presence of landscape architect and field engineer:
  1. Dig a hole in the installed soil that is a minimum of 4 inches in diameter. Holes in 6-inch lift in turf areas shall be 4 inches deep. Holes in 12-inch lifts in plant beds shall be 8 inches deep. Do not penetrate through the lift being tested.
  2. Fill the hole with water and let it drain completely. Immediately refill the hole with water and measure the rate of fall in the water level.
  3. In the event that the water drains at a rate less than 6 inches per hour for lawns at fire lane, till the soil to a depth required to break the over compaction.
  4. In the event that the water drains at a rate less than one inch per hour for all other planting soils, till the soil to a depth required to break the over compaction.
  5. Perform a minimum of one soil percolation test per each 10,000 square feet area of turf area and each 2,500 square feet of tree and shrub planting area as directed by the Landscape Architect.

### **3.05 ACCEPTANCE**

- A. Confirm that the final grade of the planting soils is at the proper finish grade elevations. Adjust grade as required to meet the contours and spot elevations noted on the Plans. Request the presence of the Landscape Architect to inspect final grade.

**END OF SECTION**

**SECTION 32 92 00**  
**TURF AND GRASSES**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Carefully examine all of the Contract Documents for requirements that affect the Work of this Section.

**1.02 SUMMARY**

- A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform all lawn and seeding installation and fine grading work and related items as indicated on the Contract Documents and/or as specified in this Section and includes, but is not necessarily limited to, the following:
  - 1. Preparation for sod
  - 2. Sodding
  - 3. Maintenance and protection

**1.03 RELATED WORK UNDER OTHER SECTIONS**

- A. The following items of related work are specified and included in other Sections of the Specifications:
  - 1. Section 32 9100 PLANTING PREPARATION
  - 2. Section 32 9300 PLANTS

**1.04 REFERENCES**

- A. The following standards shall apply to work of this Section:
  - 1. Rules for Tennessee Department of Agriculture Plant Industries Regulations for Turfgrass Certification

**1.05 SUBMITTALS**

- A. Submittals shall be made in accordance with ADMINISTRATIVE REQUIREMENTS.
- B. Submit proof of landscape contractor's experience to the Owner's Representative in accordance with QUALITY ASSURANCE paragraph of this Section.
- C. At least 30 days prior to intended use, the Contractor shall provide sod sample.

**1.06 EXAMINATION OF CONDITIONS**

- A. All areas to be improved shall be inspected by the Contractor before starting work and any defects such as incorrect grading, or drainage problems shall be reported to the Owner's Representative prior to beginning this work. The commencement of work by the Contractor shall indicate his acceptance of the areas to be improved, and he shall assume full responsibility for the work of this Section.
- B. The Contractor shall be solely responsible for judging the full extent of work requirements involved.

## **1.07 QUALITY ASSURANCE**

- A. Qualification of Landscape Contractor: The work of this Division 32 Section, TURF AND GRASSES, shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years experience. Proof of this experience shall be submitted per SUBMITTALS paragraph of this Division 32 Section, TURF AND GRASSES.
- B. The ratio of laborers to certified landscape professionals or certified horticulturist shall not exceed twelve to one. Certified Landscape Professional or Certified Horticulturist shall be on the project site throughout the day-to-day performance of the work described in this Section.

## **PART 2 – PRODUCTS**

### **2.01 PLANTING SOIL**

- A. Loam borrow shall be specified, provided, installed and paid for under the work of Division 32, Section, PLANTING PREPARATION, of this Specification.

### **2.02 SOIL ADDITIVES**

- A. Soil additives shall be specified, provided and paid under Division 32, Section, PLANTING PREPARATION, of this Specification except for additional applications of fertilizer that shall be specified, provided and paid for under this Division 32 Section, TURF AND GRASSES based upon recommendations from soil analysis and testing as specified, performed and paid for under Division 32 Section, PLANTING PREPARATION, of this Specification.

### **2.03 SOD**

- A. Sod shall be turf-type southern US drought tolerant fescue blend. Sod shall be Bullseye, Talladega, or Wolfpack II nursery grown sod supplied by Mid Tenn Turf as indicated in the Plant Schedule.
- B. Sod shall be machine cut from an established sod farm specializing in the production and harvesting of top quality, grass turf products. Sod shall be machine cut at a uniform soil thickness of 3/4-inch +/- 1/4 inch, at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable. Sod shall be at least one year old from time of original seeding.
- C. Sod shall be free of grass species other than those specified in this Division 32 Section, TURF AND GRASSES. Sod shall be free of weeds.
- D. Sod shall be furnished and installed in rectangular sod strips measuring 12 inches or 16 inches in width and from 4 feet to 6 feet in length, stored in rolls with the grass top side inverted so that the topsoil is to the exterior.
- E. Sod shall be harvested, delivered and installed within a period of 36 hours. Soil on sod pads shall be kept moist at all times.
- F. Stakes: Stakes for pegging the sod shall be sound hardwood approximately one inch by 2 inches and of sufficient length to penetrate the mat, the seed bed and to a minimum depth of 2 inches of subsoil. Stakes shall be free from insects and fungi and capable of remaining in the ground at least 2 years.
- G. Sod delivered to the construction site which does not conform to the requirements of this Division 32 Section, TURF AND GRASSES, will be rejected by the Owner's Representative and shall be removed from the site by the Contractor at no additional cost to the Owner. The Owner's Representative will reject sod found to contain unacceptable levels of unspecified

grass species, or weed species, at any time up to and including Final Acceptance. Contractor shall remove such sod from the site at no additional cost to the Owner. Contractor shall replace unacceptable sod with new, approved sod at no additional cost to the Owner. The Owner's Representative shall be the sole judge of what constitutes acceptable or unacceptable levels of unspecified grass species or weed species.

#### **2.04 FERTILIZERS – FOR GENERAL USE AREAS**

- A. Fertilizer shall be a commercial product complying with the State and United States fertilizer laws. Deliver to the site in the original unopened containers that shall bear the manufacturer's certificate of compliance covering analysis. Fertilizer shall contain not less than the percentages of weight of ingredients as recommended by the soil analysis specified, performed and paid for under the Division 32 Section, PLANTING PREPARATION, of this Specification.

#### **2.05 LIMESTONE**

- A. Ground limestone for adjustment of loam borrow pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100 mesh sieve and 95 percent will pass through a 20-mesh sieve. Contractor shall be aware of loam borrow pH and the amount of lime needed to adjust pH to specification in accordance with testing lab recommendations.

#### **2.06 HERBICIDES, CHEMICALS AND INSECTICIDES**

- A. Provide chemicals and insecticides as needed for fungus or pest control. All chemicals and insecticides shall be approved by the Tennessee Department of Agriculture for the intended uses and application rates. Application of herbicides, chemicals and insecticides shall be done by personnel licensed to do so in the state of Tennessee and in accordance with the manufacturer's instructions on the label.
- B. Provide post emergent crab grass control throughout the maintenance period to ensure a germinated and mown lawn free of crab grass.

#### **2.07 WATER**

- A. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner shall furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor shall be responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.

### **PART 3 – EXECUTION**

#### **3.01 FILLING AND COMPACTION**

- A. Filling and compaction of loam shall be specified, performed and paid for under the work of the Section 32 91 00, PLANTING PREPARATION, of this Specification.

#### **3.02 FINE GRADING**

- A. Fine grading shall be specified, performed and paid for under the work of the Section 32 91 00, PLANTING PREPARATION, of this Specification.

### **3.03 SOIL PREPARATION**

- A. Preparation for seeding:
  - 1. Apply 100% strength isopropylamine salt of glyphosate to all seeding areas 2 weeks before compost manufactured topsoil (CMT) and seed mix applications to deter weed germination.
  - 2. Apply pre-emergent across entire site, during the fall planting window specified herein, 3 months prior to seeding if seeding is done in the fall season.

### **3.04 SODDING**

- A. The season for sodding shall be from October 1 through May 21. Do not lay sod when weather reports indicate approaching freezing temperatures. Do not lay sod on frozen ground. The actual lawn construction work shall be done, however, only during periods within this season that are normal for such work as determined by weather conditions and by accepted practice in this locality.
- B. Immediately prior to sodding operations, the loam bed shall be lightly scratched with a fine toothed harrow or hand rake to provide a slightly roughened surface to accept the sodding application.
- C. The soil on which the sod is laid shall be reasonably moist and shall be watered, if necessary. The sod shall be laid smoothly, edge to edge, and where continuous or solid sodding is called for on the plans sod shall be laid with the longest dimension parallel to the contours. Sodding shall start at the base of slopes and progress upwards in continuous parallel rows. Vertical joints between sods shall be staggered. Immediately after laying, press the sod firmly into contact with the soil bed by tamping, rolling, or by other approved methods so as to eliminate all air pockets. Provide true and even surfaces, insure knitting and protect all exposed sod edges, but without displacement of the sod or deformation of the sod surface.
- D. In all swales, and on all slopes steeper than or equal to three to one (3:1) and elsewhere as specified or as directed by the Owner's Representative, sods shall be held in place by stakes. Stakes shall be untreated wood one inch by two inches by twelve inches long. Staking shall be done immediately after tamping. At least one stake shall be driven through each sod to be pegged and the stakes shall be not more than two feet apart. Stakes shall have their flat sides against the slope and be driven flush.

### **3.05 ACCEPTANCE**

- A. Following the minimum required maintenance periods for lawn construction, the Contractor shall request the Owner's Representative in writing for a formal inspection of the completed work. Request for inspection shall be received by the Owner's Representative at least 10 Days before anticipated date of inspection.
- B. Acceptance Requirements:
  - 1. Seeded areas shall have a close stand of grass as defined above with no weeds present and no bare spots greater than 3 inches in diameter over greater than 5 percent of the overall seeded area. At least 90 percent of the grass established shall be permanent grass species. If seeded areas are deficient, the Contractor's responsibility for maintenance of all seeded areas shall be extended until deficiencies are corrected. Seeded areas to be corrected shall be prepared and reseeded in accordance with the requirements of this Division 32 Section, TURF AND GRASSES.
  - 2. At least 90 percent of the stand of species established shall be permanent grass and forb species. If seeded areas are deficient, the Contractor's responsibility for maintenance of all seeded areas shall be extended until deficiencies are corrected. Seeded areas to be corrected shall be prepared and reseeded in accordance with the requirements of this Section.



3. Sodded areas shall be in vigorous growing condition with no discolored, dead or otherwise unacceptable areas. Sod will have knit firmly to the loam subgrade and no weeds shall be present.
  4. At the time of acceptance, the Contractor shall remove temporary barriers used to protect lawn areas.
- C. Owner's Representative's inspection shall determine whether maintenance shall continue in any part.

### **3.06 CLEAN UP**

- A. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Owner's Representative, at no cost to the Owner.

**END OF SECTION**

**SECTION 32 93 00  
PLANTS**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Carefully examine all of the Contract Documents for requirements that affect the Work of this Section.
- B. All trees will not be installed under this scope of work. The contractor shall purchase deliver and project trees. Trees will be planted by City of Knoxville horticultural crews.

**1.02 SUMMARY**

- A. The work of this Section includes all labor, equipment, and materials, necessary to perform the following:
  - 1. Planting shrubs and groundcover
  - 2. Providing and placing backfill mix.
  - 4. Steel edging.
  - 5. Riverstone and Hardwood mulch.

**1.03 RELATED WORK UNDER OTHER SECTIONS**

- A. The following items of related work are specified and included in other Sections of the Specifications:
  - 1. Section 32 9100 PLANTING PREPARATION
  - 2. Section 32 9200 TURF AND GRASSES

**1.04 REFERENCES**

- A. The following standards shall apply to the work of this Section.
  - 1. American National Standards for Tree Care Operations, ANSI A300. American National Standards Institute, 11 West 42nd Street, New York, N.Y. 10036.
  - 2. American Standard for Nursery Stock, ANSI Z60.1. American Nursery and Landscape Association, 1250 Eye Street. NW, Suite 500, Washington, D.C. 20005.
  - 3. Hortus Third, The Staff of the L.H. Bailey Hortorium. 1976. MacMillan.

**1.05 SUBMITTALS**

- A. Submittals shall be in accordance with ADMINISTRATIVE REQUIREMENTS.
- B. At least 30 days prior to ordering materials, the Contractor shall submit to the Landscape Architect the following. The Landscape Architect reserves the right to reject, on or after delivery, any material that does not meet these Specifications.
- C. Material Sampling and Testing:
  - 1. Planting Mulch: Submit a one cubic foot sample.
    - a. Shredded hardwood mulch
    - b. Riverstone mulch
  - 2. Organic Matter: Submit a one cubic foot sample and manufacturer's certification of contents.
  - 3. Inoculants:

- a. Submit manufacturer's product data certifying that inoculant being supplied conforms to these Specifications.
- b. Submit proof of purchase.
- 4. Soil Additives: Submit manufacturer's product data for all soil additives needed to amend a specific soil.
- D. Submit proof of landscape contractor's experience to the Landscape Architect.

#### **1.06 EXAMINATION OF CONDITIONS**

- A. All areas to be planted shall be inspected by the Contractor before starting work and any defects such as incorrect grading or inadequate drainage shall be reported to the Landscape Architect to beginning this work.

#### **1.07 QUALITY ASSURANCE**

- A. Qualification of Landscape Contractor: The work of this Section shall be performed by a landscape contracting firm which has successfully installed work of a similar quality, schedule requirement, and construction detailing with a minimum of five years experience. Submit proof of this experience for approval.

### **PART 2 – PRODUCTS**

#### **2.01 LOAM BORROW**

- A. Loam borrow / Planting Soil for planting shall be specified, provided, installed and paid for under the work of the Section 32 9100 PLANTING PREPARATION, of this Specification.

#### **2.02 SOIL ADDITIVES**

- A. Soil additives shall be specified, provided, installed and paid for under Section 32 91 00 PLANTING PREPARATION, of this Specification.

#### **2.03 GRADES AND STANDARDS OF PLANTS**

- A. The Contractor shall furnish all plants shown on the PLANT SCHEDULE. No substitutions will be permitted, without written approval by the Landscape Architect.
- B. Unless approved by the Landscape Architect, plants shall have been grown at latitude not more than 200 miles north or south of the latitude of the project unless the provenance of the plant can be documented to be compatible with the latitude and cold hardiness zone of the planting location.
- C. Plants shall be in accordance with American Standard for Nursery Stock, ANSI Z60.1. Botanical plant names shall be in accordance with plant designations included in Hortus Third.
- D. All deciduous trees shall meet the following standards:
  - 1. Trees shall have a single, straight trunk, well formed, and sturdy. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety.
  - 2. Trees with multiple leaders shall conform to all standards noted in this Section for single leader trees.
  - 3. The bark of all trees shall be vigorous and healthy.
  - 4. Pruning scars shall be clean cut and shall leave no protrusion beyond the branch collar.
  - 5. All trees shall have healthy, vigorous leaves or needles of normal size, color, shape, and texture.
  - 6. Deciduous trees shall have fall color typical for their species and variety.

7. The height and spread of deciduous shade trees shown on the PLANT LIST shall be minimum requirements.
  8. No deciduous tree shall be pruned after selection in the nursery.
- E. All shrubs shall meet the following standards:
1. All shrubs shall be healthy and vigorous plants which are very well shaped, heavily branched, densely foliated, and true to form for the variety.
  2. Canes or trunk(s) and branches shall be well formed and sturdy, branching uniformly from the ground.
  3. No shrub with pest or mechanical damage will be accepted.
  4. Shrubs shall show no signs of frost or winter damage to the foliage. Foliage shall not be in a state of drought stress. Leaves or needles shall show no signs of wilt or desiccation due to weather stress at any season of the year.
- F. All ground cover plants and vines shall meet the following standards:
1. Ground cover plants and vines shall be of size, pot size, age, and condition listed in the PLANT LIST. When indicated on the PLANT LIST, the number of runners and the lengths of the runners of vines shall be minimums.
  2. Plants shall be healthy, free of insects, and diseases.

#### **2.04 ROOT SYSTEMS FOR ALL PLANTS**

- A. Trees designated balled & burlapped (B&B) shall be dug by hand or tree spade with firm, natural balls of soil retaining as many fibrous roots as possible, in sizes and shapes as specified in the American Standard for Nursery Stock, except as noted on PLANT SCHEDULE.

- B. Root balls shall be firmly wrapped with natural, non-synthetic burlap and secured with heavy, natural, non-synthetic twine. Wire baskets installed as part of the tree spade operations are acceptable provided the wire baskets are partially removed at the time of planting, in accordance with the requirements of this Section.
- C. Trees with loose or broken rootballs will not be accepted, except with special written approval by the Landscape Architect before planting.
- D. Trees and shrubs transported to the site with B&B root balls shall have root flares exposed prior to planting. Remove all excess topsoil from the top of the root ball to insure the root flare of the plants is exposed.
- E. The base of the tree trunks shall be wrapped with a protective burlap layer, surrounded by a cardboard trunk protector, and loosely tied with twine.
- F. Container Plants
  - 1. Refer to American Standard for Nursery Stock for sizes of containers for container grown plants. Plants shall be free of circling roots on the exterior and interior of the root ball. Roots shall not have grown out of the container, either over the lip or through drainage holes.
  - 2. Container plants shall have been grown in the container long enough to have established roots throughout the growing medium.

**2.05 INOCULANTS**

- A. Inoculants shall be manufactured by Horticultural Alliance, 1550 66th Avenue Drive East, Sarasota, FL 34243, (800) 628-6373; or approved equal.

**2.06 MATERIALS FOR PLANTING SOIL AMENDMENT**

- A. Pine Bark: Horticultural-grade milled pine bark, with 80 percent of the material by volume sized between 0.1 and 15.0 mm.
  - 1. Pine bark shall be aged sufficiently to break down all woody material. Pine bark shall be screened.
  - 2. pH shall range between 4 and 7.0.
  - 3. Submit manufacturer literature for approval.
- B. Organic Matter: Leaf matter and yard waste composted sufficiently to break down all woody fibers, seeds, and leaf structures, and free of toxic and nonorganic matter. Organic matter shall be commercially prepared compost. Submit one pound sample and suppliers literature for approval.
- C. Course Sand: Course concrete sand, ASTM C-33 Fine Aggregate, with a Fines Modulus Index of 2.75 or greater.

- 1. Sands shall be clean, sharp, natural sands free of limestone, shale and slate particles.
- 2. Provide the following particle size distribution:

Sieve	Percentage Passing
3/8 in (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 8 (2.36 mm)	80-100
No. 16 (1.18 mm)	50-85
No. 30 (0.60 mm)	25-60
No. 50 (0.30 mm)	10-30

No. 100 (0.15 mm) 02-10

- D. Lime: shall be ground, palletized, or pulverized lime manufactured to meet agricultural standards and contain a maximum of 60 percent oxide (i.e. calcium oxide plus magnesium oxide). Submit manufacturer literature for approval.
- E. Sulfur: shall be flowers of sulfur, pelletized or granular sulfur, or iron sulfate. Submit manufacturer literature for approval.
- F. Fertilizer: Agricultural fertilizer of a formula indicated by the soil test. Fertilizers shall be organic, slow-release compositions whenever applicable. Submit manufacturer literature for approval.

## 2.07 PLANTING SOIL MIX

- A. Planting soil shall be a mixture of silt loam or clay loam topsoil from off-site sources, course sand, and pine bark, mixed to the following proportion:

Component	% by volume
Pine bark	10% - 12%
Planting Soil (32 91 00)	88% - 90%
- B. Planting soil mix shall be manufactured with pH levels to meet the specific needs of the plants:
  - 1. For broad-leaved evergreens and plants of the Heath Family, Ericaceae, requiring an acid soil, planting soil mix shall have a true pH of 4.5 to 5.5.
  - 2. Planting soil mix for general planting of non-acid loving plants shall have a true pH value of 6.0 to 6.5.
  - 3. The amount of either sulfur or limestone required to adjust the planting soil mix to the proper pH range shall be approved by the Landscape Architect on the basis of soil tests as specified and paid for under this Section.
  - 4. Planting soil mix for use in groundcover, perennial, and bulb planting shall consist of pH adjusted loam which has been thoroughly premixed with organic material in the proportions of one part organic matter, with 4 parts of approved loam.
- C. Planting soil mix shall be thoroughly mixed, screened, and shredded.
- D. Protect the planting soil mix from erosion prior to installation.

## 2.09 MULCH

- A. Mulch: Mulch shall be high quality, premium shredded bark mulch free of dirt, debris and foreign matter. Pine straw shall not be used without Owner's approval.
- B. River Stone: Stone Mulch shall be water washed Mexican Beach Pebbles, black to grey in color, with rounded edges, free from organic materials, surface coatings, or other deleterious materials. Stone shall be between 3"-6" in size. River stone shall be chinked with pea gravel of matching color.

## 2.10 WRAPPING MATERIAL

- A. Wrapping material shall be first quality, 4-inch wide heavy waterproof crepe paper manufactured for this purpose. Tape for securing wrapping material shall be a durable, weatherproof tape of same color as wrapping material.

## 2.11 WATER

- A. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.

## **2.12 STEEL EDGING FOR PLANT BEDS**

- A. Edging shall be 12 gauge 6 inch wide steel commercial edging with standard black powder coat finish. Edging shall be furnished in 10-16 foot lengths. Edging shall be manufactured by Collier Metal Specialties, or approved equal. Stake per manufacturer recommendations.

## **2.13 ANTIDESICCANTS**

- A. Antidesiccants shall be emulsions or other materials which will provide a protective film over plant surfaces permeable enough to permit transpiration and specifically manufactured for that purpose.

## **PART 3 – EXECUTION**

### **3.01 PLANTING**

- A. Furnishing and planting of plant material shall include the digging of planting pits and plant beds, amendment of loam as required to produce planting soil mix, pH adjustment, furnishing the plants, and the labor of planting, fertilizing, and maintenance.
- B. Prior to spreading of loam, subgrades shall have been tested to determine if they are too compact to drain water as specified, performed and paid for under the work of Section 32 9100 PLANTING PREPARATION, of this Specification.
- C. Seasons for Planting:
  - 1. Plant when temperatures are between 35 and 60 degrees Fahrenheit and there are sufficient degree days (35 to 60 degrees F) before freeze or high temperatures threaten plant establishment. Plant only during days with temperatures suitable for planting. Do not plant when ground is frozen.
  - 2. Contractor assumes all responsibility for the timing of the planting operations and for planting during inclement weather.
- D. Plant Material Inspection:
  - 1. The contractor shall submit photographs of the plants to be installed at the project site prior to installation. The landscape architect shall review and approve of all plantings prior to installation. Plants that do not meet specification may be rejected after installation and the contractor shall remove and install new plant material at not charge to the owner.
- E. Trucking, transport and stockpiling of plant material at the construction site:
  - 1. Tie up branches of trees with rope or twine specifically manufactured to avoid abrasion of bark and branches. Do not damage bark or branches by tying operations.
  - 2. Cover all plants during transport. Plant material arriving at the construction site in open trucks or trailers without cover will be rejected immediately upon delivery. Plant material arriving on site in anyway damaged, with dry rootballs, branches broken or bark skinned or torn will be rejected and replaced at no additional cost to the Owner.
  - 3. Upon delivery, all plants shall be protected against drying out by excessive exposure to sunlight or wind. Plant material that cannot be planted within 24 hours of delivery to the construction site shall be healed in by covering with soil or wood chip mulch and watered daily until the time of planting. Plant material stockpile areas shall be protected against

theft and damage by construction equipment. Plant material that is not planted within 14 days of arrive at the construction site will be rejected and replaced with new plants at no additional cost to the Owner. Plants shall be lifted and handled with suitable support of the soil ball to avoid damaging it.

F. Planting:

1. Notify the Landscape Architect within ten working days prior to the proposed arrival of plant material on the site.
2. Plant pits dug by machine shall have the sides of the holes scraped with hand shovels to prevent glazing or compaction of the sides of the hole. Remove and discard soils dug from plant pits.
3. Plant pits shall be dug to the dimensions shown on the Contract Documents.
  - a. Plant beds for shrub massing shall be one large and continuous excavated bed. Extend bed no less than 3 feet beyond limits of shrub root balls on perimeter of bed.
  - b. Plant pits for trees and shrubs not planted in mass shall be dug to the depth of the rootball to be planted.
  - c. On-going cultural practice in nurseries will cause soil to be piled on top of root balls, burying the root flare. Remove all soil from around the root flare of the plant and from the top of the rootball to determine the true depth of the rootball. All plants that have been planted and have root flares that are buried will be rejected. All plants that have root flares set below finish grade will be rejected.
4. Prior to placing plants, spread a 4 inch thick layer of planting soil on the bottom of all planting beds, shrub pits and tree pits and rototill the planting soil into the subsoil.
5. All plant roots and earth balls must be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation, and at the site until the final planting.
6. Shrubs shall be placed plumb, with root flares exposed.

G. Installation of Planting Soil Mix

1. Review Section 32 19 00 PLANTING PREPARATION, to see full scope of planting soil work in this Contract.
2. Prior to backfilling plant beds or tree pits with planting soil mix, install subsurface drains, irrigation main lines, irrigation laterals and risers as shown on the Plans. Do not proceed with the installation of planting soil mix and amended topsoil until all utility work has been completed in the area and underneath the planting beds.
3. Backfill plant beds with planting soil mix in 6 to 8 inch lifts. Install soil higher than shown on the drawings, anticipating some amount of settlement of planting soil. Compact each lift sufficiently to reduce settling but not so much as to prevent movement of water and root growth. The soil in each lift should feel firm to the foot in all areas and make only slight heel prints.
4. A saucer shall be formed around each stand-alone tree and shrub at a depth of 3 inches.
5. Phase the installation of the planting soil such that wheeled and tracked equipment does not have to travel over already-installed topsoil or planting soil mix.
6. Maintain moisture conditions within the soil during installation to properly compact the soil. Stop planting operations with the start of steady rain or if the soils become wet. Indications of frozen soils, either subsoil, planting soil or topsoil, shall end the planting season.



7. Fertilizer shall be spread over the plant saucer or plant bed between the saucer and the edge of the rootball. Till the fertilizer into the soil to a depth of 4 inches prior to the placement of the planting mulch. Fertilizer shall be provided, spread and paid for under the Section 32 9100 PLANTING PREPARATION, of this Specification.
  8. All plants shall be inoculated with mycorrhizal fungi. Inoculant shall be added after the plants have been placed in their holes. Open the required number of packets for each plant and thoroughly mix the inoculant powder into the upper 10 inches (250 mm) of backfill soil.
    - a. Mycorrhizal fungal inoculant shall be added to the plant pits according to plant size.
    - b. The application rates for mycorrhizal fungal packets shall be in accordance with the manufacturer's recommendations.
  9. Immediately following the placement of the final lift of planting soil mix in shrub beds and individual tree pits and shrub pits, spread 4 inches of organic matter across the limits of the planting area and rototill into the planting soil to a depth of 4 inches into the soil.
  10. Allow the finished grades after tilling to remain higher than surrounding grades and as shown on the grading plans in anticipation of settlement over time.
- H. All plants shall be watered immediately following planting as necessary to thoroughly moisten rootball and plant pit loam and thereafter shall be inspected frequently for watering needs and watered, as required, to provide adequate moisture in the planting pit. The Contractor shall inspect tree pits 24 hours after initial watering to confirm that they are draining properly. If surface water or excessively saturated plant pit soils exist, the Contractor shall immediately notify the Landscape Architect. The Landscape Architect will recommend remedial measures based upon site conditions.
- J. Plant Bed Edging
1. Install edging at all plant bed locations, adjacent to gravel path and in locations shown on the Drawings. Fully bed the steel edging as shown on the Detailed Drawings, with 1"-2" min remaining above finish grade. Place edging prior to completely backfilling plant beds with specified planting soil. Set edging to the required alignment as shown in the drawings, curved and true and to the required elevation to ensure full mulch restraint.
  2. Steel edging shall be securely staked in required position. Stakes shall be driven per manufacturer recommendations. Installed edging shall be free of chipped paint, dinged or rough edges.
  3. Adjacent lengths shall be attached using manufacturer's standard connections according to manufacturer's published instructions.
  4. Edging shall be set plumb and vertical at required line and at grade as indicated in the Contract Documents. Straight sections shall not be wavy; curved sections shall be smooth and shall have no kinks or sharp bends.
  5. Set steel edge so that finished side without the stakes faces lawn or mulch area.
- K. Mulch material shall be placed over entire saucer areas of individual trees and shrubs and over the entire area of planting beds to a depth of 3 inches after settlement, not later than one week after planting. Do not apply mulch prior to the first watering of plant materials. Do not apply mulch prior to placement of surface applied fertilizer and verification of placement by the Landscape Architect.
- L. The trunks of all deciduous trees over 1-1/2 inches in diameter shall be wrapped by the Contractor immediately after the inspection of the trees by the Landscape Architect. Wrapping shall extend from the ground line to the height of the second branches or to the height directed. The specified wrapping shall be wound spirally, starting from the base and overlapping 1-1/2

inches in order to shed water. Wrapping shall be securely taped to prevent loosening and unraveling. If trees are planted in springtime, do not apply any tree wrapping. If deciduous trees are planted in the autumn, wrap the trees and then remove wrapping the following spring.

1. Trees delivered to the site wrapped for protection shall be unwrapped at the site for inspection of the trunk by the Contractor and Landscape Architect.

M. Pruning:

1. As directed by the Landscape Architect, each plant shall be pruned in accordance with the workmanship requirements of "Pruning Standards" for Class I, fine pruning, to preserve the natural character of the plant.
2. Tree pruning, as required, shall be undertaken to the full height of affected trees.
3. All dead wood or suckers and all broken or badly bruised branches shall be removed. Never cut a leader.

N. Protect existing lawns from damage. Any damage resulting from planting operations shall be repaired immediately at no cost to the Owner.

O. In the event that rock or underground construction work or obstructions are encountered in any plant pit or bed excavation work, alternate locations will be selected by the Landscape Architect. Relocation of plant pits or beds shall be provided at no additional cost to the Owner. Provide the Landscape Architect with no less than 48 hours notice of obstruction so that a site visit can be scheduled to establish new locations for plants.

P. Absolutely no debris may be left on the site. Repair any damage to site as directed by the Landscape Architect, at no additional cost.

### **3.03 ACCEPTANCE**

- A. Upon completion of all planting work, the Contractor shall request in writing that the Landscape Architect formally inspect the planting work.
- B. If plant materials and workmanship are acceptable, the Landscape Architect will issue a written Certificate of Conditional Acceptance to the Contractor.

### **END OF SECTION**

**Solicitation Document A: General Information about the Supplier****Note: Complete all cells even if the answer is "Does not apply"****Sign Your Name to the Right of the Arrow** →

If completing this document in Adobe, an electronic signature is acceptable to KCDC.

Your signature indicates you read and agree to "KCDC's General Instructions to Suppliers" ([www.kcdc.org](http://www.kcdc.org)) and that you are authorized to bind the supplier or are submitting the response on behalf of and at the direction of the suppliers' representative authorized to contractually bind the supplier. I represent that the supplier or its applicable representative(s) has reviewed the information contained in this Solicitation Package and that the information submitted is accurate.**Printed Name and Title** →**Legal Corporate Name** →**Street Address** →**City/State/Zip** →**Contact Person (Please Print Clearly)** →**Telephone Number** →**Cell Number** →**Supplier's E-Mail Address (Please Print Clearly)** →**Addenda**Addenda are at [www.kcdc.org](http://www.kcdc.org). Click on "Procurement" and then on "Open Solicitations" to find addenda. Please check for addenda prior to submitting a proposal.

Acknowledge addenda have been issued by checking below as appropriate:

None  Addendum 1  Addendum 2  Addendum 3  Addendum 4  Addendum 5 **Statistical Information (Check all the apply)****This business is at least 51% owned and operated by a woman** Yes  No **This business qualifies as a small business by the State of Tennessee** Yes  No   
*Total gross receipts of not more than \$10,000,000 average over a three-year period OR employs no more than 99 persons on a full-time basis***This business is owned & operated by persons at least 51% of the following ethnic background:**Asian/Pacific  Black  Hasidic Jew  Hispanic  Native American  White  Publicly Owned **Prompt Payment Discount**

A \_\_\_% prompt payment discount applies when KCDC makes payment in \_\_\_ days of accurate invoicing.

**Insurance Statement**I have reviewed the insurance requirements and will comply with them without exception. Yes  No

**Solicitation Document B Bid Form**

Pursuant to and in compliance with the solicitation documents, the supplier signing Solicitation Document A, having thoroughly examined the work to be performed, agrees to perform the work for the following total bid amount for the above referenced project. The prices quoted cover all the supplier’s expenses including, but not limited to, overhead, profit, insurance, subcontractors, supplies and bonding. The price is valid for 60 days after the bid opening.

***Complete all “blanks”-even if the amount is \$0.00.***

***Do not change KCDC pricing schematics***

<b>Total Project Cost</b>	\$
<b>Unit Costs</b>	
Specified planting soil	\$ per cubic yard

**Conflict of Interest:**

1. No commissioner or officer of KCDC or other person whose duty it is to vote for, let out, overlook or in any manner superintend any of the work for KCDC has a known direct interest in the award or the supplier providing goods or services.
2. No employee, officer or agent of the grantee or sub-grantee will participate in selection, or in the award or administration of an award supported by federal funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when the employee, officer or agent, any member of his immediate family, his or her partner, or an organization, which employs, or is about to employ, any of the above, has a financial or other interest in the supplier selected for award.
3. The grantee's or sub-grantee's officers, employees or agents will neither solicit nor accept gratuities, favors or anything of monetary value from suppliers, potential suppliers, or parties to sub-agreements.
4. By submission of this form, the supplier is certifying that no conflicts of interest exist.

**Drug Free Workplace Requirements:**

5. Private employers with five or more employees desiring to contract for construction services attest that they have a drug free workplace program in effect in accordance with TCA 50-9-112.

**Eligibility:**

6. The supplier is eligible for employment on public contracts because no convictions or guilty pleas or pleas of nolo contendere to violations of the Sherman Anti-Trust Act, mail fraud or state criminal violations with an award from the State of Tennessee or any political subdivision thereof have occurred.

**General:**

7. Supplier fully understands the preparation and contents of the attached offer and of all pertinent circumstances respecting such offer.
8. Such offer is genuine and is not a sham offer.

**Iran Divestment Act:**

9. Concerning the Iran Divestment Act (TCA 12-12-101 et seq.), by submission of this bid/quote/quotes, each supplier and each person signing on behalf of any supplier certifies, and in the case of a joint bid/quote/quotes, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each supplier is not on the list created pursuant to § 12-12-106.

**Non-Collusion:**

- 10. Neither the said supplier nor any of its officers, partners, KCDC, agents, representatives, employees or parties interest, including this affiant, has in any way colluded conspired, connived or agreed, directly or indirectly, with any other responder, supplier, or person to submit a collusive or sham offer in connection with the award or agreement for which the attached offer has been submitted or to refrain from making an offer in connection with such award or agreement, or collusion or communication or conference with any other supplier, or, to fix any overhead, profit, or cost element of the offer price or the offer price of any other supplier, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against KCDC or any person interested in the proposed award or agreement.
- 11. The price or prices quoted in the attached offer are fair, proper and not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the supplier or any of its agents, representatives, KCDC, employees, or parties in interest, including this affiant.

**Accuracy of Electronic Copies:**

- 12. If the supplier provides electronic copies of the bid/proposal/quote to KCDC, the supplier certifies that the information provided on paper and in the electronic format is identical unless specifically noted otherwise.

**No Contact/No Advocacy Affidavit**

- 13. After this solicitation is issued, any contact initiated by any supplier or proposer with any owner’s representative concerning this proposal is strictly prohibited-except for communication with the Procurement Division. My signature signifies that no unauthorized contact occurred.
- 14. To ensure the integrity of the review and evaluation process, respondents to this solicitation nor any firm representing them, may not lobby or advocate to owner’s staff or Board members. My signature signifies that no unauthorized advocacy occurred.

The undersigned hereby acknowledges receipt of these affidavits and certifies that the submittal in response to this solicitation is in full compliance with the listed requirements.

<b>Signed by</b> _____	
<b>Printed Name</b> _____	
<b>Title</b> _____	
<b>Subscribed and sworn to before me this date</b>	
<b>By (Notary Public)</b> _____	
<b>My Commission Expires on</b> _____	
<b>Notary Stamp</b>	

**Solicitation Document D Good Faith Compliance Affidavit**

The supplier **must** demonstrate a good faith effort to utilize Minority Owned Businesses (MOB) and Woman Owned Businesses (WOB). To assist in this effort, KCDC posts the web links of organizations, which can provide suppliers with a list of minority and women owned businesses, on its web site. These lists are useful in preparing a response to this solicitation.

Place a checkmark in either Section One or Section Two of this form. Provide the information in Section One if you check that box.

**Section One**  I certify that the following companies were asked for pricing for the attached bid and that they were provided with adequate time to prepare a response. Provided the listed companies meet the requirements and their pricing is competitive, it is our intent to use the companies listed. Attached hereto or to be provided to KCDC within five calendar days of solicitation opening is our Form of Commitment/Statement of Effort (failure to submit the Form of Commitment/Statement of Effort may result in **rejection** of your bid.)

Company Name	Person	Product/Service	MOB	WOB

**Section Two**  MOB/WOB's were not contacted because sub-suppliers/contractors will not be needed to complete the contract and all work will be completed by the supplier. **Other MOB/WOB's not shown above, will be considered during the duration of the contract in the event the supplier decides additional subcontractors or supplier will be used (to complete all or part of the contract).**

Signed by	
Print Name and Title	
Subscribed and Sworn to before me on this date	
By	
Notary Public (stamp/signature)	
My Commission Expires on	

**Solicitation Document E: Form of Commitment: Minority Owned /Woman Owned Business**

Place a checkmark in either Section One or Section Two of this form.

**Section One** Does not apply - Subcontractors will not be used.

(Stop Here)

**Section Two** Subcontractors will be used.

(Complete this page)

I certify this firm has or will enter into a formal agreement with the MOB/SBE/WOB businesses for work listed in this schedule.

Supplier Name	M O B	W O B	Contact Person	Type of Supplies to be Provided	Type of Work to be Performed	Dollar Value of Supplies or Service

**COMPLETE THE FOLLOWING BOXES IF BOX ABOVE WAS NOT COMPLETED**

The following companies were listed on the Good Faith Compliance Affidavit submitted with my bid.

Company Name	Person	Product/Service	MOB	WOB

Explain why each of the above companies could not be used to provide the needed products or services.

Company Name	Reason

Above information submitted by \_\_\_\_\_

Printed/Typed Name and Title: \_\_\_\_\_



## Appendix 1: Insurance Requirements

### 1. INSURANCE

The Supplier shall maintain, at Supplier's sole expense, on a primary and non-contributory basis, at all times during the life of the contract insurance coverages, limits, and endorsements described herein. All insurance must be underwritten by insurers with an A.M. Best rating of A- :VI or better. Upon award, the Supplier shall provide Certificate(s) of Insurance and amendatory endorsements to KCDC evidencing said insurance coverages. See paragraph "f" for exact naming of certificate holder and additional insured.

The Supplier agrees the insurance requirements herein as well as KCDC's review or acknowledgement, is not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Supplier under this contract. KCDC's failure to require a Certificate of Insurance, acceptance of a non-conforming certificate, or allowing the Supplier to commence work shall not operate as a waiver of these minimum insurance requirements or the liabilities and obligations assumed by the Supplier under this contract.

- a. Commercial General Liability Insurance: occurrence version general liability insurance including contractual liability with minimum limits of \$1,000,000 per occurrence and \$2,000,000 in the aggregate covering the following perils: bodily injury, personal injury, and broad form property damage including products/completed operations for one year after completion of the Project(s). Limits must apply separately to the work/location in this contract.

Such insurance shall contain or be endorsed to contain a provision that includes KCDC, its officials, officers, employees, and volunteers as additional insureds with respect to the Supplier's ongoing and completed operations, providing coverage at least as broad as CG 20 10 07 04 and 20 37 07 04 endorsements. The coverage shall contain no special limitations on the scope of its protection afforded to the listed insureds.

- b. Commercial Automobile Liability Insurance: in an amount not less than \$1,000,000 (combined single limit) for all owned, hired, and non-owned vehicles utilized by Supplier in connection with the Project. Coverage is to include coverage for loading and unloading hazards.

Such insurance shall contain or be endorsed to contain a provision that includes KCDC, its officials, officers, employees, and volunteers as additional insureds.

- c. Workers' Compensation Insurance and Employers' Liability Insurance: Workers' Compensation Insurance with statutory limits as required by the State of Tennessee or other applicable laws. Employers' Liability Insurance with a limit of not less than \$1,000,000.
- d. Inland Marine / Installation Floater: coverage in an amount at least equal to one-hundred percent (100%) of the projected completed value of the Work, as well as subsequent modifications of that sum due to Change Order(s). Supplier agrees to be responsible for reporting increases in the projected completed value of the work due to Change Order(s).

e. Other Insurance Requirements:

1. Upon award, Supplier shall furnish KCDC with original Certificate(s) of Insurance and amendatory endorsements effecting coverage required by this section.
2. Provide a waiver of subrogation for each required policy herein. When required by the insurer, or should a policy condition not permit Supplier to enter into a pre-loss agreement to waive subrogation without an endorsement, the policy should be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This waiver of subrogation requirement shall not apply to any policy which includes a condition specifically prohibiting such an endorsement, or voids coverage should supplier enter into such an agreement on a pre-loss basis.
3. A minimum 30-day cancellation notice for all insurances (by endorsement if necessary) is required.
4. Replace certificates, policies, and endorsements for any such insurance expiring prior to completion of services.
5. Maintain such insurance from the time services commence until services are completed or through such extended discovery/reporting/tail period as required. Failure to maintain or renew coverage or to provide evidence of renewal may be treated by KCDC as a material breach of contract.
6. Any deductibles and/or self-insured retentions greater than \$50,000 must be disclosed to and approved by KCDC prior to the commencement of services. Use of large deductibles and/or self-insured retentions will require proof of financial ability as determined by KCDC.
7. All policies must be written on an occurrence basis with the exception of Errors and Omissions Liability (E & O) / Professional Liability and Pollution Liability which may be claims made coverage.
8. Require all subcontractors to maintain during the term of the resulting contract commercial general liability insurance, automobile liability insurance, and workers' compensation insurance (unless subcontractor's employees are covered by Supplier's insurance) in the same manor and limits as specified for the Supplier. Employers' Liability Insurance with a limit of not less than \$500,000.

f. Certificate Holder and Additional Insured:

KCDC, its officials, officers, employees, and volunteers  
901 N Broadway  
Knoxville, TN 37917

- g. Right to Revise or Reject: KCDC reserves the right to revise any insurance requirement, including but not limited to, limits, coverages, and endorsements based on changes in scope of work/specifications, insurance market conditions affecting the availability or affordability of coverage.

- h. No Representation of Coverage Adequacy: The coverages, limits or endorsements required herein protect the primary interests of KCDC, and the Supplier agrees in no way should these coverages, limits or endorsements required be relied upon when assessing the extent or determining appropriate types and limits of coverage to protect the Supplier against any loss exposures, whether as a result of the project or otherwise.

Certificate Holder & Additional Insured	KCDC, its officials, officers, employees, and volunteers 901 N Broadway Knoxville, TN 37917
GL ( <i>Supplier &amp; Subcontractors</i> )	\$1M / \$2M
Auto ( <i>Supplier &amp; Subcontractors</i> )	\$1M (owned, hired, & non-owned)
WC ( <i>Supplier &amp; Subcontractors</i> )	Statutory limits
Employers' Liability ( <i>Supplier</i> )	\$1,000,000
Employers' Liability ( <i>Subcontractors</i> )	\$500,000
Inland Marine/Installation Floater ( <i>Supplier</i> )	100% of projected completed value
30-day cancellation ( <i>Supplier &amp; Subcontractors</i> )	Required– must indicate on COI
Primary non-contributory ( <i>Supplier &amp; Subcontractors</i> )	Required – must indicate on COI
Waiver of Subrogation ( <i>Supplier &amp; Subcontractors</i> )	Required all coverages – must indicate on COI

All limits indicated are minimums required.

**Solicitation Document F Envelope Coversheet**



State Law requires certain State license information on the front of your bid envelope. You are responsible for providing the correct information on the envelope front but KCDC provided this form to guide you. Failure to supply this information may invalidate your bid.

**Attach this completed page to the front of your bid envelope**

<b>Bid Due Date/Time</b>	10-29-21 at 11:00 a.m.		
<b>State of Tennessee License Holder Name</b>			
<b>State of Tennessee License Number</b>			
<b>Pertinent State of Tennessee License Classification</b>			
<b>State of Tennessee License Expiration Date</b>			
<b>Subcontractors to be used on this project</b> (If subcontract work is not required, write "none required")			
<b>Electrical Subcontractor Name on the State of Tennessee's License</b>		<b>State of Tennessee License Number</b>	
<b>State of Tennessee License Classification(s)</b>		<b>Expiration Date of State License</b>	
<b>HVAC Subcontractor Name on the State of Tennessee's License</b>		<b>State of Tennessee License Number</b>	
<b>State of Tennessee License Classification(s)</b>		<b>Expiration Date of State License</b>	
<b>Masonry Subcontractor Name on the State of Tennessee's License</b>		<b>State of Tennessee License Number</b>	
<b>State of Tennessee License Classification(s)</b>		<b>Expiration Date of State License</b>	
<b>Plumbing Subcontractor Name on the State of Tennessee's License</b>		<b>State of Tennessee License Number</b>	
<b>State of Tennessee License Classification(s)</b>		<b>Expiration Date of State License</b>	

**Advisements:**

1. KCDC will not consider notes changing the bid written on the bid envelope.
2. For the listed subcontractor types above, you may only list one firm.

3. State requirement information is at <https://www.tn.gov/commerce/regboards/contractors.html>