

SECTION II - SCOPE OF WORK

A. Objective

The City of Ann Arbor, Michigan, is requesting proposals from firms able to provide all supervision, material, labor, equipment, service operations, and expertise required to acquire, deliver, plant, maintain, and guarantee for one year, street trees and park trees, as specified herein. These specifications, including drawings, tree locations, and plant materials list, apply to those items necessary for and incidental to the execution and completion of tree purchase, delivery, and planting.

B. Contract Implementation

The City will prepare Work Orders through CityWorks. The Contractor shall download the CityWorks app for iPad/Android device. All work will be assigned through CityWorks.

C. Scope of Work

To provide all supervision, material, labor, equipment, service operations and expertise required to acquire, deliver, plant, maintain and guarantee for one year, street trees, as specified herein. These specifications, including drawings, tree locations and plant materials lists, apply to those items necessary for and incidental to the execution and completion of tree purchase, delivery, and planting. Contractor has responsibility to:

- A. Furnish, transport and plant trees.
- B. Contact Miss Dig/local utility for verification of all underground utility lines in the area of the work prior to the planting of any street trees.
- C. Exercise reasonable care during excavation, tree delivery, planting, filling, grading, and cleanup, to protect from damage all existing trees, shrubs, vegetation, and other site features, improvements, structures, and utilities.
- D. Work safely and adhere to all applicable standards and permit requirements.
Note: Permissible working hours for all activities within this bid are 7:00 a.m. to 7:00 p.m. Monday through Friday. Contractor shall notify the City of intended work hours prior to commencement of work. Saturday work will not be permitted unless prior authorization is granted by the city. Sunday or holiday work is not permitted.
- E. Take all precautions to ensure the safety of the public.
- F. Interact with the public in a professional and courteous manner.
- G. Any work incidental to above.

Specifications

Section 1: Materials

A complete list of trees, including species and sizes, is included on the Bid Forms.

The Contractor shall furnish a written list of the proposed sources (i.e. grower, not broker) of nursery stock. City may reject a proposed source if their stock is grown in a hardiness zone

greater than USDA Zone 5.

Hardiness zones provide the average annual low temperature for the area and are used to assist in plant selection based on a plant's cold hardiness. The Hardiness Zones in Tennessee, Kentucky and North Carolina (6b, 7a, 7b and 8a) all have an average low temperature higher than Ann Arbor, which may lead to trees that are unable to tolerate the winter/early spring climate of Ann Arbor. Stock from Tennessee, North Carolina and Kentucky will not be permitted.

All plant material shall conform to ***American Standard for Nursery Stock***. Plants shall be true to species and variety specified and nursery grown in accordance with good horticultural practices under climatic conditions like those in the locality of the project for at least 2 years. They shall have been freshly dug (during the most recent favorable harvest season). Plants shall be so trained in development and appearance as to be unquestionably superior in form, compactness, and symmetry. They shall be sound, healthy, vigorous, well branched and densely foliated when in leaf, and free of disease and insect adults eggs, pupae or larvae. They shall have healthy, well-developed root systems and shall be free from physical damage or other conditions that would prevent thriving growth.

- A. Trees with multiple leaders, unless specified, will be rejected. Trees with a damaged, cut, or crooked leader, included bark, abrasion of bark, sunscald, disfiguring knots, insect damage, mold, prematurely opened buds, or cuts of limbs over 3/4 inch (2 cm) diameter that are not completely callused are cause for rejection.
- B. Root collar/trunk flare shall be visible or within the top one-inch (1") of the soil ball. Trees may be rejected if root collar/trunk flare is buried and/or not visible.
- C. Balled and burlapped trees shall be dug with solid balls of standard size, the balls securely wrapped with non-synthetic, untreated, biodegradable burlap, and tightly bound with non-synthetic, biodegradable rope or twine. Alternatively they may be placed in wire basket lined with non-synthetic, untreated, biodegradable burlap and tightly bound with non-synthetic, biodegradable rope or twine.
- D. Bare root trees shall have a healthy, well branched root system characteristic of the species and with adequate spread.
- E. Bare root and balled and burlapped trees in full leaf prior to planting may be rejected by the City.
- F. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the City. Use of larger plants shall not increase the contract price nor allow the Contractor to use smaller than specified material on other plants. If larger plants are approved, the root ball, root spread, or container shall be increased in proportion to the size of the plant.
- G. Caliper measurements shall be taken on the trunk 6 inches (15 cm) above the root collar for trees up to 4 inches (10 cm) in caliper, and 12 inches (30 cm) above the root collar for trees over 4 inches (10 cm) in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position. If a range of size is given, no

plant shall be less than the minimum size, and no less than 50 percent of the plants shall be as large as the maximum size specified. Plants that meet measurements but do not possess a normal balance between height and spread shall be rejected.

- H. Substitutions of plant materials will not be permitted unless authorized in writing by the City. If proof is submitted, substantiated in writing, that a plant specified is not obtainable, consideration will be given to the nearest available size or similar variety, with a corresponding adjustment of the contract price.
- I. All plants shall be labeled by size and scientific plant name. Labels shall be attached securely to all plants, bundles, and containers of plant materials when delivered. Plant labels shall be durable and legible, with information given in weather-resistant ink or embossed process lettering.
- J. Mulching material shall consist of aged or composted wood chips or shredded bark and shall be free of material injurious to plant growth. Mulch will be placed on the soil surface over the rootball of the tree, but not directly adjacent to the tree trunk. The mulch depth is to be no less than 3" and no more than 4".
- K. Water shall be provided by the Contractor and be suitable for irrigation and free from ingredients harmful to plant life. City may provide water filled at the City's nursery, but there is no guarantee of its availability. Trees shall be thoroughly watered at the time of installation. A minimum of twenty gallons of water shall be applied to installed trees at time of planting and then every-other week throughout growing season. Growing season is approximately mid-April to mid-November.

Based on growing season, it is estimated that trees would be watered 16 times from April- November. Watering schedule shall begin no later than May 15. Exact start and end dates of watering schedule will be dependent on weather conditions and will be determined by City. Watering bags (ex: Gator bags) may be used to accomplish watering; however, they must be removed at the end of the growing season, November 15.
- L. No trunk wrapping material shall remain on the tree after planting.
- M. Staking and guying materials, if specified, shall be as follows: Stakes shall be 6' to 8' long sections of unflanged metal or 2" x 2" hardwood. Support ties shall be 2-3" wide bands of polypropylene, elasticized or webbed strapping. All staking materials must be removed after one (1) year unless discussed with and authorized by the City.

Section 2: Certification

All plant materials, shipments, and deliveries shall comply with state and federal laws and regulations governing the inspection, shipping, selling, and handling of plant stock. A certificate of inspection, or a copy thereof, for injurious insects, plant diseases, and other plant pests shall accompany each shipment or delivery of plant material. The certificate shall bear the name and address of the source of the stock.

Section 3: Selection and Tagging

Plants shall be subject to inspection for conformity to specification requirements and approval by the City.

Plants shall be inspected by City Forestry Staff upon delivery, and the City reserves the right to reject any plants that do not meet the standards or that have been damaged during shipment. Such approval shall not impair the right of the City to inspect and reject plant material during progress of the work. A Contractor's representative shall be present at all inspections. The City shall be the sole judge of acceptability of stock at any time during the course of this contract.

Section 4: Digging and Handling Plant Materials

Balled-and-burlapped and bareroot stock shall be of sufficient depth to include fibrous and feeding roots. B&B stock shall be dug with firm, natural balls of earth of diameter not less than that recommended in the current edition of *American Standard for Nursery Stock*. **The root collar shall be visible or within the top one-inch (1") of the soil ball.** Balled and burlapped plants with manufactured balls or balls that are dry, cracked, or broken before or during planting operation will not be accepted.

Section 5: Transportation, Unloading and Storage of Plant Material

- A. Fresh dug material is given preference over plant material held in storage. Plant material held in storage will be rejected if excessive growth or dieback of branches has occurred in storage.
- B. Branches shall be tied with rope or twine only, and in such a manner that no damage will occur to the bark or branches.
- C. During transportation of plant material, the Contractor shall exercise care to prevent injury and drying out of the trees. Should the roots be dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the City may reject the injured tree(s) and order them replaced at no additional cost to the City.
- D. The root systems of each load of bare root stock sent from the storage facility shall be adequately covered with wet soil, sawdust, wood chips, moss, peat, straw, hay or other acceptable moisture-holding medium, and shall be covered with an open-mesh tarpaulin or canvas. Shredded newspaper is not an acceptable medium. Loads that are not protected in the above manner may be rejected. *Note: tight-woven tarps and canvas can cause a load of trees to overheat on a sunny day, resulting in serious damage.*
- E. Contractor is responsible for unloading delivered trees using Contractor equipment and labor. Care must be taken to prevent damage to any part of the tree including bark, roots, buds or branches during unloading and storage of trees.
- F. Plants must be protected at all times from sun or drying winds. Those that cannot be planted immediately upon delivery shall be kept in the shade, well protected with wood chips or other acceptable material, and kept well watered. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled with suitable support of the soil ball to avoid damaging it.

- G.** Trees and equipment may be staged in the City of Ann Arbor Nursery (1035 Ellsworth Rd, Ann Arbor) as arranged with Contract Administrator, for the duration of the planting project. Water and wood chips for storing trees, but not City equipment, are available for Contractor's use at this site. The Nursery gate is to remain locked whenever City Staff/Contractors are not present. A lock and chain must be provided by the Contractor.

Section 6: Delivery

- A.** Bid prices shall include delivery to the City's receiving site located at 1035 Ellsworth Road, Ann Arbor, MI. All trees shall be delivered to the specified site at least one day before planting.
 - a.** Delivery to the City Nursery at 1035 Ellsworth Road must occur between the hours of 7:30 a.m. to 1 p.m. A City representative and contractor representative must be present at delivery.
- A.** Plant materials shall not be shipped C.O.D., and any shipment so made will be refused by the City.
- B.** The Contractor shall give the City notice of delivery time 3 to 5 days prior to delivery.

Section 7: Excavation of Planting Areas

- A.** Contractor is responsible for contacting Miss Dig/local utility for verification of all underground utility lines in the area of the work prior to the planting of any street trees. Contractor shall be responsible for all damage resulting from planting operations, neglect or failure to comply with this requirement.

NOTE: Gas lines often are buried under the extension between road and walk. These lines are much deeper than planting operations, with the exception of home service lines. It is the responsibility of the contractor to locate, by hand digging, marked gas lines.

- B.** The Contractor will be held responsible for the preservation of all public and private property along and adjacent to the work area, and will be required to exercise due caution to avoid and prevent any damage or injury as a consequence of their work. All turf, trees, shrubs, groundcovers, fences, irrigation systems utilities and other site amenities shall be adequately protected.
- C.** Should any direct or indirect damage or injury result to any public or private property by or on account of any act, omission, neglect or conduct in the execution of the work of the Contractor or any employees or agents, such property shall be restored by, and at the expense of the Contractor, to the condition equivalent to that existing before the damage or injury occurred, by repairing or rebuilding the same or by otherwise making good such damage or injury in an acceptable manner.
- D.** The Contractor shall excavate planting areas as shown on the City of Ann Arbor Tree Planting Detail (Appendix B). Excavation may be done by shovel, backhoe, stump grinder or soil auger. The glazing of the sides must be broken up and the surrounding

soil loosened. Contractor is required to hand dig planting locations according to Miss Dig requirements.

- E. The soil pad on which the soil/root ball or bare root trees will be placed shall be of undisturbed soil. The depth of the pad shall correspond to the distance from the bottom of the soil ball or roots to the root collar, or slightly less. Glazed planting hole surfaces shall be sufficiently roughened prior to backfilling.

Note: The root collar is the area where the roots join the trunk. For most trees in native settings, the root collar is just below the soil surface, though it may be 1-5" lower for oak, hickory and pear. With bare root trees the root collar's location is obvious. With nursery grown B&B trees the root collar is rarely visible often being several inches below the surface of the soil ball. This depth can be determined by checking the depth in the nursery before the trees are harvested; or by using a wire and gently probing the ball to find the major roots; or by estimating, knowing that the roots will likely be about 4" below the swelling at the base of the trunk. This swelling is caused by either a graft union or cutting back of a rooted cutting. See Appendix B.

- F. Excavated planting holes that will pose an immediate and considerable hazard to pedestrians or vehicles shall be adequately barricaded with appropriate warning devices. All excavated planting holes must be planted or filled the day they are excavated. No excavated planting hole shall be left open after the work day is complete.
- G. The Contractor shall notify the City in writing, of soil conditions or other obstructions the Contractor considers detrimental to tree growth. Such conditions shall be described, as well as suggestions for correcting them. Proper water drainage must be assured.
- H. Where soil conditions or below ground obstructions, which cannot be remedied are encountered, the City shall designate alternate planting locations. The City shall bear any costs associated with such relocation.

Section 8: Planting Operations

- A. The City reserves the right to determine the tree species to be planted at each site.
- B. Plants must be protected from excessive vibrations. Plants shall not be thrown or bounced off a truck or loader to the ground. Plants shall not be dragged, lifted, or pulled by the trunk or foliage parts in a manner that will loosen the roots in the ball.
- C. Plants shall be set with the top of the root collar at or slightly above finished grade. Plants must be centered in the hole and set plumb. Plants shall be set so that they will be at the same depth 1 year after planting. *Note: planting depth is critical to long-term planting success. Research indicates that some species planted too deep will develop trunk diseases, girdling roots or be more susceptible to breakage in wind storms. These problems are not likely to develop until years after planting.*
- D. Bare root plants shall have their roots spread into a natural position, free of bunching, kinking, or circling. All broken or damaged roots shall be cut back to the point where they are clean and free of rot. No other root pruning shall be done.

- E.** For plants in plastic, metal or biodegradable containers, the container shall be removed before planting. If roots are crowded or coiled on the bottom, sides, or surface of the root ball, they shall be gently separated from the edges or surface.
- F.** For all plants moved with a tree spade, all holes and cavities between the ball and the surrounding soil shall be filled. Glazed planting hole surfaces shall be sufficiently roughened prior to backfilling. The ball shall be thoroughly soaked with water after planting.
- G.** Remove ropes, strings, wire baskets, burlap, and other wrappings from the root balls of B&B plants. After the plant has been set and one half of the backfilling completed to support the ball, ropes, strings, wire baskets, burlap, and other wrappings shall be removed from the top one-half of the ball. The balance of the wrappings may be left intact around the bottom half of the ball. After backfilling is complete, no portion of the ball wrapping shall be left exposed. If ball wrapping is waterproof, water repellent, or non-degradable it must be removed entirely from the ball. All removed ropes, strings, wire baskets, burlap and other materials must be disposed of properly by the Contractor. If the root collar is deep in the ball, remove excess soil away from the trunk using hands to avoid trunk injury.

Planting holes shall be backfilled with excavated soil. If excavated soil is unsuitable (i.e. rocky/gravelly, contains construction debris, too clayey or too sandy) clean topsoil may be used to backfill planting holes. When holes are approximately two-thirds full, they shall be thoroughly watered to eliminate air pockets. After this initial watering, excavated soil shall be installed to the top of the hole and watered. Prevent puddled soil conditions by avoiding compaction once the soil is wet.

- H.** Planting areas shall be finish-graded to conform to drawings (refer to Appendix I- Tree Planting detail) after full settlement has occurred.
- I.** All plants shall be mulched over the root system with a 3-4-inch layer of aged wood chips or bark immediately after planting. Mulch shall be kept away from the tree's trunk. Mulching material shall be pulled back no less than 3" and no more than 6" from the trunk.
- J.** Plants shall be thoroughly watered immediately after planting.
- K.** All twine, rope, transit guards or wrappings shall be removed after planting is completed and disposed of properly by the Contractor. Plant labels should remain secured to the tree and will be removed by the City.

Section 9: Guying, Staking, Wrapping, and Pruning

Only those plants designated by the City shall have trunk protection installed or be staked and/or guyed.

Only trees so designated by the City shall have approved trunk protection installed. The trunk protection shall be secured at the top and bottom of the trunk in a manner so as not to restrict or damage the bark). The Contractor will be responsible for removing trunk protection after a one year period.

Only trees so designated shall be staked and guyed. Ties made of approved material shall be attached directly to the stakes or may be attached to stakes by wire. In no case shall the wire extend around the tree trunk. Ties should be attached loosely enough to allow a small amount of play in the trunk. For drooping stems, ties shall be placed at the point on the stem at which the top can stand up on its own. Stakes shall be driven outside the root ball. The Contractor will be responsible for removing all stakes and straps after a one year period. These stakes and straps will be the property of the Contractor and should be figured into the bid.

Double leaders, dead branches and any branches damaged or broken during the planting process shall be the pruned. This shall be the only pruning allowed at planting. Pruning shall conform to ***American National Standard for Tree Care Operations, ANSI A300.***

Section 10: Cleanup

Soil, sod, branches, binding and wrapping material, rejected plants, or other debris resulting from any tree planting activities shall be promptly cleaned up and removed from the City street or right-of-way and disposed of properly. The work area shall be kept safe and neat at all times until the cleanup operation is completed. Under no condition shall the accumulation of soil, branches, or other debris be allowed upon a public or private property in such a manner as to result in a public hazard.

Section 11: Guarantee Period, Replacement and Maintenance

- A.** The Contractor shall guarantee all plants to be healthy and in flourishing condition for one year from the date of acceptance. Acceptable trees shall be sound, healthy, vigorous, with full crowns free of dead or dying branches and branch tips, and shall bear foliage of a normal density, size and color.
- B.** The Contractor shall remove and replace, without cost, and as soon as weather conditions permit, and within the first two months of the following growing season, all trees determined by the City to be unacceptable at any time during the guarantee period. Replacements shall be subject to all requirements stated in this specification.
- C.** The guarantee does not include vandalism, storm damage, or animal damage unrelated to contractor activities.
- D.** The Contractor shall be responsible for all maintenance of the trees during the guarantee period. Maintenance shall begin immediately after each tree is planted and shall continue until Final Inspection and Acceptance.
- E.** Maintenance shall consist of necessary watering, mulching, resetting of plants to proper grades or upright position, pruning or other items as are necessary to keep the plantings in thriving condition

Section 12: Planting Season and Work Hours

Planting shall be done within the following dates:

Fall planting: October 1 to December 1 or until ground freezes

Spring planting: April 1 to June 15

If special conditions exist that warrant a variance in the above planting dates, a written request shall be submitted by the Contractor to the City stating the special conditions and the proposed variance. Permission for the variance will be granted at the discretion of the City.

Permissible working hours are 7:00 a.m. to 7:00 p.m., Monday through Friday. The Contractor shall notify the City of intended work hours prior to the commencement of work. No weekend or holiday work will be permitted unless prior authorization is granted by the City.

Work on State Trunklines (Washtenaw Ave., Huron St., Jackson Ave, and Main Street) and major roads (including, Geddes, Stadium and Packard) must occur between 9 a.m. and 3 p.m.; work is not permitted on these roads outside of these times. No work is to be conducted near the University of Michigan Football Stadium on football game Saturdays, or during other major stadium events.

D. Requirements

1. Ability to work effectively with the City's Public Works Unit staff with respect to any of the tree planting services required by the City.
2. Provide all supervision, material, labor, equipment, service operations, and expertise required to acquire, deliver, plant, maintain, and guarantee for one year, street trees.

E. Standard Specifications

All work performed under this Contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Advertisement. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications provided during the implementation of individual tasks under this Contract.

Copies of the Standard Specifications can be downloaded from the following web link.

<https://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>