NOTE TO CONSULTANTS: Edit with Track Changes turned on, any text in this section that appears in bold and italics then turn off the bold and italics for the final approved version. (Remove this Note).

PART 1 - GENERAL

1.01 Description: Provide spading, burlap & basketing, and storage of existing trees, soil preparation, planting, and staking of same.

1.02 Related Sections:

Section 01 56 39 - Temporary Tree & Plant Protection
Section 31 00 00 - Earthwork
Section 32 91 13 - Soil Preparation

1.03 Quality Assurance: Tree spading shall be accomplished with mechanical equipment designed specifically for the task, operated by trained personnel.

1.04 Submittals: Prior to mobilizing for the work, submit for approval a list of equipment to be used including owners name and address, and personnel who will operate the equipment and oversee the digging, moving, and planting operation described herein.

1.06 Project Conditions:

A. Work notification: Notify the Engineer at least 5 working days prior to digging of plant material by calling the **SPR Inspection Request Line @ (206) 684-7034 or by email at parksconstruction.inspection@seattle.gov** to make arrangements for inspection.

B. Protect existing vegetation, utilities, paving, and other facilities from damage caused by digging operations.

C. Do not install plant material when ambient temperatures may drop below 35°F or above 80°F.

D. Do not install plants when wind velocity exceeds 30 MPH.

E. Confine work to designated areas. Do not disturb existing vegetation outside project limits and protect all trees, shrubs and ground covers within project limits not designated to be removed. Do not permit vehicular traffic or materials storage under or around new or existing trees.

PART 2 - PRODUCTS

2.01 Plant Materials: Trees located on the Project Site for re-use.

2.02 Burlap and Basket: Biodegradable burlap and galvanized wire tree basket sized appropriately.

2.03 Soils: Refer to Section 32 91 13 - Soil Preparation for information about soils.

2.04 TransplantingFertilizers:

A. Fertilizers shall be according to the following:

1. ***<u>Use (20-10-5+ minors) TURFGRO, "GROPACS" Fertilizer Packets</u> (or, approved equal) with the following characteristics:***

Total Nitrogen (N)	***20.0%***
(18% Urea Nitrogen)	
(2.0% Ammoniacal Nitrogen)	
Available Phosphate ($P_2 0_5$)	***10.0%***
Soluble Potash ($K_2 0$)	***5.0%***
Calcium (Ca)	***3.0%***
Magnesium (Mg)	***2.0%***
Sulfur (S)	***3.0%***
Boron (B)	***0.04%***
Copper (Cu)	***0.20%***
Iron (Fe)	***1.0%***
Manganese (Mn)	***0.10%***
Zinc (Zn)	***0.10%***

(Or)

2. ***<u>Use Planting Fertilizer (7-4-9) 'Rainy Pacific NW Blend</u>', shall be 100% Organic Fertilizer as manufactured by Walt's Organic Fertilizer Co., or approved equal, and shall be composed of the following:***

Total Nitrogen* (N)	***7%***
(0.5% nitrate nitrogen (N))	
(6.5% water insoluble nitrogen (N))	
Available Phosphoric Acid (P_2O_5)	***4%***
Soluble Potash (K_2O)	***9%***
Calcium	***7%***

****Shall be derived from fish meal, crab meal fines, kelp meal, fish bone meal, and agricultural gypsum.***

B. Acceptable Fertilizer Sources:

1. <u>PROSOURCE ONE</u>, 2920 - 142nd Avenue East, Suite 105, Sumner, WA 98390, Ph. (253) 826-9100, Fax. (253) 826-9110, Contact: Shane Riley (425) 327-0489 or sriley@prosourceone.com.
2. <u>HORIZON DISTRIBUTION</u>, Bellevue, WA, Ph. 425-828-4554, Fax 425-822-0419.
3. <u>WILCO AGRILANCE</u>, LLC, Sumner, WA, Ph. 253-826-9100, Fax 253-826-9110.
4. Or, approved equal. (Provide manufacturer's written analysis by way of substitution request, for approval by the Engineer, prior to delivery).

2.05 Mulching: Arborist Wood Mulch per Section 32 93 00 - Landscape Planting, or approved equal).

2.06 Tree Staking: Staking shall be per SPR Standard Details (whichever applies to the type of trees being transplanted).

PART 3 - EXECUTION

3.01 Inspections:

A. Finish grading shall be inspected and approved by the Engineer prior to planting.

B. Plant material shall be inspected and approved by the Engineer prior to digging, upon arrival at storage location, following installation, and periodically during the warranty period.

3.02 Spading: Minimum diameter of tree spade to be used for this work is 42” and maximum is 96”. Size shall be determined by the Engineer. Setup spading equipment to center cut around base of tree. Following removal, burlap and basket with appropriately sized materials.

3.03 Healing In: Heal basketed trees in sufficient organic soil amendment to retain the trees in a plumb condition. Organic material shall be full depth from base of basket to top of basket to ensure consistent moisture retention. Alternatively, provide a base of up to 12” of sand for stability.

3.04 Transplanting Locations: Contractor shall locate trees by staking with stakes or flags as indicated on the Drawings or as approved in the field. If obstructions are encountered that are not shown on the drawings, do not proceed until alternate tree locations have been selected by Engineer.

3.05 Installation:

A. Excavation: Following acceptance of the final planting location by the Engineer, excavate tree planting pits 1.5x the diameter of the tree basket and to a depth that will allow planting with the base of the tree trunk approximately 2” above surrounding finished grade (averaged if irregular). Scarify sides and bottom of tree pit to allow positive interface of planting soil with surrounding undisturbed native soils.

B. Placement: Handle basketed trees mechanically with a sling or rigging, using the basket only to support the weight of the tree. While the tree is still mechanically supported, center within the tree pit and verify that the depth of the pit is appropriate. Use native soil to brace the base of the basket to stabilize the tree while removing the rigging.

C. Backfilling: Using a 50-50 mixture of native soil and planting soil as specified in Section 02920, amended with ½ cup of fertilizer (above), backfill a single 12" loose lift. Flood the remaining exposed excavation with 6-9" of water. Following percolation of the water into the initial lifts of planting soil, backfill approximately ½ of the remaining excavation and begin compacting by foot. Repeat watering procedure, using enough to top remaining excavation. Unwrap burlap from root collar and cut back to current fill limit using a sharp knife or utility blade without disturbing current fill. Following percolation of water into backfill, place remaining soil beginning 1" below the base of the root collar and sloping to a consistent point 1-2" below the top of the excavation cut-line.

D. Mulching: Apply 2-3" of approved chipped brush in a 4' diameter circle centered on the tree base, forming a lip approximately 4-6" deep around the outer 6-9".

E. Staking: Stake all trees immediately after transplanting.

F. Pruning: Prune as directed by the Engineer following acceptance of transplanting and staking operations.

3.06 Maintenance and Establishment:

A. Maintain planting for a period of at least ***60 days*** after completion of transplanting operations or until all plants are sufficiently recovered from transplanting and in a healthy growing condition acceptable to the Engineer.

B. Maintenance shall include cultivating, weeding, watering, pruning (only as directed), and application of appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.

1. Re-set settled plants to proper grade and position. Restore planting saucer and adjacent material and remove dead material.
2. Straighten, repair and adjust guy wires and stakes as required.
3. Correct defective work as soon as possible after deficiencies become apparent and weather and season permit.
4. Water trees within the first twenty-four (24) hours of initial planting, and not less than twice per week (including rain) until final acceptance.

3.07 Physical Completion:

A. Inspection to determine acceptance of trees will be made by the Engineer, upon Contractor's request. Provide notification at least ten (10) working days before requested inspection date. Planted areas will be accepted provided all requirements, including the maintenance period have been complied with and plant materials are alive and in a healthy, vigorous condition.

B. Upon completion of maintenance period, inspections and corrections, the Engineer shall write a letter to the Contractor establishing the Date of Physical Completion

and transferring the project to the Department of Parks and Recreation maintenance and operations personnel.

3.06 Cleaning: Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soil, debris, and equipment. Repair damage resulting from planting operations.

3.07 Warranty:

A. The Contractor shall provide a Warranty for the plant material to remain alive and be in a healthy, vigorous growing condition for a period of 1 year after the project's Substantial Completion Date. Inspection of plants will be made by the Engineer at completion of planting and at the termination of the warranty period.

B. Replace, in accordance with the drawings and specifications, all plants that are dead or, as determined by the Engineer, are in an unhealthy or unsightly condition, and have lost their natural shape due to dead branches, or other causes due to the Contractor's negligence. The cost of such replacement(s) is at the Contractor's expense. Warrant all replacement plants for 1 year after installation, unless otherwise specified.

C. Warranty shall not include damage or loss of trees, plants, or ground covers caused by fires, floods, freezing rains, lightning storms, or winds over seventy-five (75) MPH, winter kill caused by extreme cold and severe winter conditions not typical of planting area; acts of vandalism or negligence on the part of the Owner.

D. Remove and immediately replace all plants, as determined by the Engineer, to be unsatisfactory during the initial planting installation.

E. This warranty applies to existing trees that are to be removed and healed-in for later replanting on-site.

END OF SECTION 02952