

SECTION 02950 TREES, SHRUBS AND GROUNDCOVER

PART 1 - GENERAL

1.1. SUMMARY

- A.** This work shall include, but not necessarily be limited to, the excavation of tree pits, planting pits, and beds; placement of topsoil and soil additives; the furnishing of all materials; and the planting of all trees, shrubs, and ground cover shown on the drawings.
- B.** Plant names referred to on the drawings conform to The Standardized Plant Names, Second Edition, adopted by the American Joint Committee on Horticultural Nomenclature, 1942, as amended. In cases not covered therein, follow the custom of the nursery trade.
- C.** Plant specifications such as height, spread, shape, caliper, or size of ball for plants specified shall conform to the "American Standard for Nursery Stock," ANSI Z60.1, adopted by the American Association of Nurserymen.
- D.** All work shall be performed by fully qualified plantsmen. Use good horticultural practices to keep all plants and plant material installed in a living, healthy condition up to the date for termination of the Subcontractor's responsibility for care.
- E.** The plants delivered to the project site shall be planted as soon as site conditions permit. Take care in scheduling plant deliveries and the size of deliveries so that long periods of storage are avoided. Adequately protect plants placed in temporary storage from the sun and wind; water the plants so as to maintain their appearance and health. Plants that have not been properly maintained during temporary storage may be rejected by the CM.
- F.** The Subcontractor shall be responsible for all inspections of plant material that may be required by the state and federal authorities and shall secure and have executed any permits and certificates that may be necessary. All plants shall be subject to the approval of the CM and may be inspected by him at any place or at any time and before any plant is dug. Plants shall be inspected for size and quality only; variety, species, sex, and flower color shall be the responsibility of the Subcontractor.
- G.** The optimum time for planting is from October 1 to April 1. Scheduling for planting at other times must be approved in writing by the CM.
- H.** Set all plant material to the required grade so that it bears the same relationship to the surrounding grade as it had before transplanting. Plant each tree and shrub in topsoil in the center of the pit unless otherwise specified or shown on the drawings.
- I.** Refer to other sections for work affecting the landscape planting of trees, shrubs, and ground cover. Coordinate this work with that specific sections for timely execution. The Subcontractor shall be wholly responsible for the coordinating, scheduling, ordering, receiving, storing, and installing of plant material as specified herein.
- J.** Subcontractor shall provide CM with soil analysis of soil taken six inches to 12 inches below finish grade at a tree location. Soil analysis shall be from a certified soil testing laboratory and include recommended soil amendments for approval by CM prior to start of planting. Soil amendments stated herein and on drawings may be adjusted based on soil analysis. Each tree location shall also be tested for adequate percolation of the subsoil in the planting pit.

1.2. RELATED DOCUMENTS

- A. Drawings and general provisions of this contract, including General and Supplementary Conditions apply to this Section.

1.3. SUBMITTALS

- A. Submit shop drawings for all products specified in this section in accordance with the requirements of General and Supplementary Conditions.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. **FERTILIZER:** commercially manufactured; furnished in unopened standard containers that are clearly marked with the name, weight, and guaranteed analysis of the contents and that ensure proper protection in transportation and handling; and in compliance with all local, state, and federal fertilizer laws; Milorganite by the Milorganite Division of the City of Milwaukee, Peters Slow Release Fertilizer by W. R. Grace and Company, Agreform Planting Tablets by Agreform International, or approved equal.
- B. **SAND:** from an approved source derived from naturally occurring materials and not manufactured from limestone.
- C. **AGRICULTURAL LIMESTONE:** containing a minimum of 85% calcium carbonate and magnesium carbonate combined, 85% of which passes a No. 10 mesh sieve.
- D. **MULCH:**
 - 1. Wood mulch: natural, shredded or chipped hardwood bark mulch manufactured by the Burroughs-Ross-Colville Company, Mulch Division, McMinnville, Tennessee, or approved equal.
 - 2. River cobble mulch: from an approved source ranging in size from a minimum of three inches in diameter to a maximum of six inches diameter; whole stones; free of soil, seeds and plant parts.
- E. **PEAT MOSS:** packaged in substantial commercial containers of the type, size, and kind commonly used for the purpose and marked with the name of the manufacturer; sampled and tested in accordance with the Federal Specification for Peat Moss, Reed and Sledge, Q-P-166, Section F, dated November 28, 1947:
 - 1. Sphagnum Peat: partially decomposed fibrous or cellular stems and leaves of several species of sphagnum mosses conforming to the following requirements:
 - a. Texture and Composition: may vary from porous-fibrous to spongy-fibrous; either crumbly or compact; fairly elastic and substantially homogenous; free from decomposed colloidal residue, wood sulfur, and iron; brown in color; finely shredded material suitable for horticultural purposes, shredded particles not to exceed 1/4 inch in size.
 - b. pH Value: not less than 3.5 or more than 5.5.
 - c. Moisture Content: furnished in air dry condition, containing not more than 35% moisture by weight.
 - d. Water Holding Capacity: than 100% by weight on an oven dry basis.
 - e. Ash: not more than 3%.
 - 2. Sledge Peat: pure black domestic peat native to the area, consisting of partially decomposed vegetable matter of natural occurrence, free of weeds, clean, low in content of mineral and woody material, pH range of 6.0 to 6.2, either granulated or shredded.
- F. **TREE WRAPPING MATERIAL:** waterproof, six inches in width, and of the type manufactured by Chase Bag Company, Sisal Kraft, or approved equal.

- G. PLANT MATERIALS:** conforming to the following requirements for the types shown on the drawings and specified herein:
1. Condition: sound; healthy; vigorous; free from plant diseases, abrasions, insect pests, and insect eggs; and with healthy, normal root systems. Stock that is freshly dug and not heeled in or that is from cold storage will not be accepted.
 2. Origin: grown under climatic conditions similar to those in the locality of the project site, acclimated to the conditions of the locality of the site for at least two years, or as approved by the CM.
 3. Pruning: not to be pruned prior to delivery except as authorized by the CM; dressing for pruned plants to be Treekote or equal tree wound dressing.
 4. Symmetry: symmetrical, typical of the variety and species, conforming to all minimum measurements shown on the drawings. Match plants for groups or where symmetry is required as nearly as possible or as approved by the CM.
 5. Height and Spread: Measure height and to foliage line with the branches in their normal position.
 6. Multi-Stemmed or Clumps: to be a minimum of three leaders or trunks and a maximum of six.
 7. Specimen Stock: to be nursery grown but not the ordinary nursery-run grade, fully developed, bushy, and better branched than is typical of the species.
 8. Stakes for Bracing and Anchoring: sound, sturdy, new lumber suitable for the intended use.
 9. Wire: malleable, galvanized 12 gauge wire; or, for trees over four inches in caliper, nine gauge.

H. Plant Lists

Sym.	Quantity	Common/Botanic Name	Size/Condition
Trees			
TP	160	Tulip Poplar/ <i>Liriodendron tulipifera</i>	2" cal. B&B Specimen
RM	90	Autumn Flame Red Maple/ <i>Acer rubrum</i> "Autumn"	2" cal. B&B Specimen
WO	21	Willow Oak/ <i>Quercus phellos</i> "Flame"	2" cal. B&B Specimen
WP	40	White Pine/ <i>Pinus strobus</i>	5-6' B&B Unsheared
RB	35	Heritage River Birch/ <i>Betula nigra</i>	8-10' B&B Clump
SB	37	Autumn Brilliance Serviceberry/ <i>Amelanchier arborea</i> "Autumn Brilliance"	6-8' B&B Clump
CSB	54	Carolina Silverbell "Rosea" <i>Halesia carolinia</i> "Rosea"	6-8' B&B Specimen
YW	6	Yellowwood/ <i>Cladrastis lutea</i>	6-8' B&B Specimen
DW	48	White Dogwood/ <i>Corrus florida</i>	5-6' B&B
Shrubs			
OH	*	Oakleaf Hydrangea/ <i>Hydrangea quercifolia</i>	24-30" B&B or C, 5' OC
VS	*	Virginia Sweetspire <i>Itea virginica</i> "Henry's Garnet"	2 gal., 3' O.C.
Ground Covers			
GC-A	*	Groundcover mix: -Periwinkle/ <i>Vinca minor</i> -Siberian Iris/ <i>Iris siberica mixed cvs.</i>	Qt. Pot/ plant 18" OC BR Hvy Cl. Plant 36"OC
Crown Vetch *		Crown Vetch/ <i>Coronilla varia</i> Annual Ryegrass Crown Vetch	Large Crowns@36"OC 3 lbs/1000 SF 2 lbs/10,000 SF

Rebel III Turf-type Fescue

3 lbs/1,000 SF

* Quantities to be calculated by subcontractor based on areas shown on plans and verified in field and specified spacing. Submit to CM for verification.

J. REQUIREMENTS: Remove any plant material delivered to the site that does not satisfy all the requirements of these specifications, and replace with materials that do meet the requirements. No inspections or sealing of plant materials as herein specified shall be taken to change or modify these requirements in any way.

PART 3 - EXECUTION

3.1. INSTALLATION

- A.** Select and prepare all plant materials to conform to at least the minimum specifications established by the American Association of Nurserymen Standards, ANSI Z60.1. Plants marked as B&B on the itemized plant list shall be adequately balled and burlapped. Do not accept any plant if the ball of earth surrounding its roots has been cracked or broken preparatory to or during the process of planting or if the burlap, staves, ropes, or platforms required in connection with its use have been removed.
- B.** Set all balled and burlapped plants that cannot be planted immediately on the ground, and cover the balls well with soil, straw, or other acceptable material. Moisten such material periodically to prevent drying.
- C.** Take care when removing container grown plants from their containers so that the earth ball is not broken. Plants on which the ball has been loosened or broken will be rejected. No portion of a container shall be buried with the root system unless the container is made of material that will readily decompose (e.g., peat or paper).
- D.** Do not excavate or prepare planting areas until they have been staked on the ground and until the location and outline have been approved by the CM. Excavate all planting areas to the depths and sizes shown on the drawings and as called for in these specifications. If rock, impervious soil, or any other objectionable materials are encountered, notify the CM before proceeding.
- E.** Plant trees in individual pits two times the diameter of the plant ball. The depths of such pits shall be not less than three inches more than the depths of the ball of the plant materials. The pits shall have vertical sides and flat bottoms. Set trees so that the top of the ball at the trunk is at finished grade, unless trees are planted beneath grates, in which case set the ball in accordance with the detailed drawings.
- F.** Plant shrubs in individual pits one and one-half the diameter of the plant ball. The depths of such pits shall be not less than six inches more than the depths of the ball of the plant materials. The pits shall have vertical sides and flat bottoms. For shrubs planted in shrub beds, excavate the entire bed to a depth of 24 inches. Set shrubs so that the top of the ball at the trunk is at finished grade.
- G.** Plant ground cover in individual pits. Pit size shall be as indicated on drawings. The depths of such pits shall not be less than four inches more than the depths of the plant balls. Set plants so that the top of the ball at the trench is at finished grade.
- H.** Plant with a soil mixture of 25% peat moss and 75% topsoil, by volume, unless otherwise noted on the drawings.
- I.** The fertilizer type and application rate shall be as shown on the detailed drawings.

- J.** After the plant is set in the center of the pit, backfill the pit to approximately 2/3 of the required topsoil depth. At this time, thoroughly saturate the tree pits with water. Soil saturation shall be considered complete when water begins to collect in the planting pit. Allow time for any water standing in the pits to be absorbed before completing the backfilling.
- K.** For shrubs planted in beds or individually, place a layer of hardwood bark mulch on the finished grade. The outline of the mulch for individual shrubs shall be circular and cover the limits of the planting pit with a circle no less than two times the ball diameter for each plant. When shrubs are planted in beds or mass planting, the entire bed shall be mulched. Mulch shall be three inches in depth.
- L.** For trees planted in beds or individually, place a layer of hardwood bark mulch on the finished grade. The outline of the mulch shall cover the limits of the planting pit with a circle no less than three times the ball diameter for each plant. The depth shall be three inches except adjacent to the trunk where no mulch or soil shall be placed.
- M.** Place a layer of hardwood bark mulch on the entire ground cover bed. The outline of the mulch shall be as shown on the drawings. The depth of the mulch shall be three inches.
- N.** After planting, wrap all deciduous trees with wrapping paper six inches wide. Begin the wrapping at the ground and proceed spirally to the lower part of the bottom branches. Each successive wrap shall overlap the preceding one by 1/2 the width of the paper.
- O.** Tightly secure the last wrap with biodegradable twine, winding in the direction opposite to the paper wrap and in 12 inches vertical spirals down the trunk. Tightly secure the end at the bottom wrap.
- P.** The Subcontractor shall be responsible for the condition of this wrapping throughout the life of the contract. Any damage resulting from the improper installation or maintenance of this wrapping shall be the responsibility of the Subcontractor, who shall replace trees with such damage at his own expense. Remove the wrapping immediately prior to final inspection unless the CM directs otherwise.
- Q.** Schedule the placement of topsoil to follow plant excavation so that no excavated areas are left unfilled for more than 24 hours.
- R.** Loosen and remove ropes and burlap from the top 1/3 of the ball, but do not pull burlap or ropes out from under the ball.
- S.** The Subcontractor shall be required to repair at his own expense any areas where settling may occur due to improper backfilling.
- T.** Methods of staking or guying shall be in accordance with the detailed drawings. Any deviation from these details shall be approved by the CM before work proceeds. Stakes, braces, and anchors must be in a horizontal or vertical position. Irregular or unsymmetrical staking will not be accepted.
- U.** At the direction of the CM, the Subcontractor shall replace or correct at his own expense any trees that sway excessively, move out of plumb, are blown down, or are otherwise injured due to settling or failure of bracing during the life of this contract and the guarantee period.
- V.** Trees and shrubs shall not be pruned prior to delivery except as authorized by the CM. All pruning on the planting site shall be as follows:

1. Prune the ends of all broken and damaged branches and roots with diameters of 1/4 inch or larger with a clean cut, removing only the injured portion; remove all broken branches and stubs; and
2. Treat all wounded or pruned surfaces of 1/2 inch or more in diameter with tree wound dressing.

W. The Subcontractor shall, at his own expense, remove from the site and dispose of any surplus and waste materials resulting from planting.

X. Install steel edging as shown on plans, details and per manufacturer's instructions.

Y. Install river cobble mulch as shown on plans and details.

3.2. INSPECTIONS

A. Subcontractor shall request CM inspection, for substantial completion, within 10 days after work is complete. Punch list will be prepared by the CM during substantial completion walk-thru.

B. Subcontractor shall notify CM after completion of punch list items for final inspection by CM.

C. CM shall conduct an additional inspection at the end of the warranty period.

D. Plants not conforming to the plant specifications outlined in the "American Standard for Nursery Stock," ANSI Z60.1, as adopted by the American Association of Nurserymen, will be rejected.

3.3. GUARANTEES

A. Establish the specified types of trees, shrubs, and ground cover in the locations shown on the drawings. These shall be in a live, healthy, and growing condition when inspected for acceptance by the Owner. At each inspection, the CM shall determine whether dead, degenerated, defective, or missing plants or any other plants not in compliance with the drawings and specifications must be replaced.

B. All plant materials and other landscape work including lawns shall be guaranteed by the subcontractor for a period of one year after substantial completion issuance by CM. Plant materials including trees, shrubs, grassed areas, and perennials shall have acceptable appearance, be alive and healthy, and exhibit vigorous normal growth. Upon notice, the contractor shall replace, without cost to the owner and as soon as weather conditions permit, all unacceptable plants.

1. Replacements shall closely match adjacent specimens of the same species and shall conform to the standards for plant materials specified. All replaced material shall immediately be removed from the site and all necessary repairs to plants, grades, lawn areas, paving, and other areas damaged during replacement shall be made at no cost to the owner.

2. Only one replacement per tree, shrub, or plant will be required at the end of the warranty period, except for losses or replacements due to failure to comply with the specified requirements.

3. Maintenance instructions: submit typewritten instructions recommending procedures to be established by owner for maintenance of landscape work for one full year. Submit prior to expiration of required maintenance period.

END OF SECTION 02950