

SECTION 02950

TREES, PLANTS AND GROUNDCOVERS

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Landscape Planting.
- B. Retaining Wall.
- C. Steps.
- D. Roadside Landscaping.

1.2 RELATED SECTIONS

- A. Section 02110 - Site Clearing.
- B. Section 02222 - Excavation.
- C. Section 02223 - Backfilling.
- D. Section 02218 - Landscape Grading.
- E. Section 02936 - Seeding.

1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Landscape Planting:
 - 1. Basis of Measurement: At the lump sum price bid as stated in the proposal.
 - 2. Basis of Payment: Includes labor, equipment, and material necessary to prepare soil, install plantings, trees, shrubs, etc. as indicated on the plans, including mulching, staking, backfilling, etc. Also includes seeding of disturbed areas, watering and maintenance as indicated in the plans to provide for uniform growth at the completion of the Project and up to one-year period after completion. Includes all Work necessary to install the plantings as shown on the plans or described in the specifications.
- B. Retaining Wall:
 - 1. Basis of Measurement: At the lump sum price bid as stated in the proposal.
 - 2. Basis of Payment: Includes labor, equipment, and material necessary to prepare subgrade, install wall, grading, backfilling, etc. as detailed in the plans, according to the manufacturer's instructions, and as directed by the Engineer.
- C. Steps:
 - 1. Basis of Measurement: At the lump sum price bid as stated in the proposal.
 - 2. Basis of Payment: Includes labor, equipment, and material necessary to prepare subgrade, install steps, install handrail, grading, backfilling, etc. as detailed in the plans, according to the manufacturer's instructions, and as directed by the Engineer.

- D. Roadside Landscaping:
 - 1. Basis of Measurement: At the lump sum price bid as stated in the proposal.
 - 2. Basis of Payment: Includes labor, equipment, and material necessary to prepare soil, install plantings as indicated on the plans, seeding of disturbed areas, watering and maintenance as indicated in the plans to provide for uniform growth at the completion of the Project and up to one-year period after completion.

1.4 REFERENCES

- A. ANSI Z60.1 – Nursery Stock.

1.5 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.
- B. Plants: Living trees, plants, and ground cover specified in this section and as described in ANSI Z60.1.

1.6 PROTECTION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect existing structures, fences, roads, sidewalks, paving, mailboxes, curbs, etc.
- C. Coniferous trees, shade trees, and ornamental trees in leaf shall be fully protected by applying an anti-desiccant per manufacturer's directions.
- D. Contractor shall protect all plants and lawns from damage at all times during planting and until acceptance by Owner. If plants or lawns are damaged, they shall be replaced or repaired by the Contractor at his own expense.

1.7 QUALITY ASSURANCE

- A. Acceptability of plants will be determined by Engineer.
- B. Plants must be clearly labeled according to species.
- C. The Contractor shall make arrangements to obtain plant materials with nurseries within 30 days after he/she is awarded contract and provide a list of nursery Suppliers to the Engineer.
- D. The Contractor will provide a final list of all species and number purchased to the Engineer 90 days prior to planting.

1.8 SUBMITTALS

- A. Submit under provisions of Section 01300 - Submittals.
- B. Submit shop drawings and product data for all items to be installed and/or constructed within this Section.

1.9 REGULATORY REQUIREMENTS

- A. Plant Materials: Certified by the State Department of Agriculture as described by ASTM Z60 to be free of disease or hazardous insects.
- B. Comply with regulatory agencies for fertilizer and herbicide composition.
- C. Comply with state agencies for plant material certification and inspection.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to Site under provisions of Section 01600 – Material and Equipment.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Deliver plant life materials immediately prior to placement.
- D. At all times the planting stock shall be kept moist and protected from the wind and sun.
- E. The Engineer may reject injured plants.

1.11 COORDINATION

- A. Coordinate work under provisions of Section 01039 – Coordination and Meetings.

1.12 MAINTENANCE SERVICE

- A. The Contractor shall assume that the Owner will give the planting NO care during the construction period. Care and maintenance deemed necessary by the Contractor to insure the survival of his plant material shall be furnished by himself/herself and shall include watering, cultivating, spraying and all other Work required for the satisfactory growth and development of the plant.
- B. For a period of one year after notice of substantial completion, at no additional cost to the Owner, the Contractor shall replace any plant materials that are dead or that are, in the opinion of the Engineer, in an unhealthy or unsightly condition, or that have lost their natural shape due to dead branches, excessive pruning or inadequate or improper maintenance. All plant materials rejected by the Engineer shall be removed from the Site and legally disposed of by the Contractor at no additional cost to the Owner.
- C. Replacement plants and planting operations shall be in accordance with the original specifications. All costs for such replacements shall be considered to be included in the bid price. Replacement planting guarantees shall also be for a one-year period from date of replacement. All areas damaged by replacement operations shall be fully restored by the Contractor to their original and/or specified condition.
- D. The Contractor shall assume responsibility for maintaining his/her work to the completion of planting and acceptance by Owner.

2. PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil:
 - 1. Reused - free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter.
 - 2. Topsoil - Imported, friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (ph) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter.
 - 3. Topsoil furnished from outside the project limits shall be approved by the Engineer.
- B. Planting Mixture Topsoil:
 - 1. The material which is used for tamping around the balls and roots in the process of planting shall be prepared on the site by mixing 4 parts topsoil to 1 part peat, adding pounds of superphosphate to each cubic yard of the mixture. Planting mixture shall also include 4 parts of native subsoils.
- C. Peat: Shall be granulated raw peat or baled peat, containing not more than 9 percent mineral on a dry basis.
- D. Superphosphate: Shall contain 20 percent of phosphoric acid.
- E. Mulch: To be 100 percent shredded bark fiber.
- F. Water: The Contractor shall provide suitable water as determined by the Engineer for the execution of this Work and maintenance.
- G. Anti-Desiccant: Anti-desiccant shall be "Wilt Pruf" or Engineer approved equal, delivered in manufacturer's containers and used according to the manufacturer's instructions.
- H. Accessories:
 - 1. Root pruned and balled wrapping material: Shall be burlap.
 - 2. All materials shall conform to MDOT Section 917 – Turf and Landscaping Materials.

2.2 PLANT MATERIALS

- A. Quality and Size: Plant materials shall conform to the sizes given in the list on the plans and shall be sound, healthy, vigorous and free from plant diseases and insect pests or their eggs and shall have healthy root systems. All measurements such as spread, ball size, number of cones, quality designations, etc., shall be in accordance with the latest edition of AMERICAN STANDARDS FOR NURSERY STOCK, by the American Association of Nurserymen. Trees shall be calipered SIX INCHES above the ground. Trees planted in rows shall be uniform in size and shape.
- B. Substitutions: These will be permitted only upon submission of proof that specified plants are not obtainable, and with the authorization of the Engineer, provide for the use of the nearest equivalent, size and variety of plants. All requests for price adjustments due to substitutions will be submitted in writing to the Engineer for approval along with a request for use of the substitution.

- C. Root Protection: Plants which are balled and burlapped shall be dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding systems necessary for full recovery of the plant. Balls shall be securely wrapped with burlap and bound with cord. No balled and burlapped plant shall be planted if the ball is cracked or broken. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet moss, or other acceptable material. Container Grown Stock shall have well established roots in the soil mass and shall have grown in the container for at least one growing season. Over-established plants, as evidenced by "pot bound" root ends, will not be accepted. Bare root plants shall be handled in a manner that the roots are protected at all times.

- D. Protection During and After Delivery: ALL PLANT MATERIAL is to be delivered in closed vehicles or in open vehicles with the entire load properly covered in transit for protection from drying winds. They shall be planted immediately upon delivery. No plant shall be bound with rope or wire in a manner that would damage the bark or break the branches. If deciduous trees and shrubs are moved in full leaf, spray with anti-desiccant at the nursery BEFORE transporting and again two weeks after planting.

3. PART 3 EXECUTION

3.1 EXAMINATION

- A. Planting shall be performed as other construction allows. Winter planting shall be done only with approval by Engineer.

- B. Landscape Planting - Verify that prepared soil base is ready to receive the Work of this Section. See Section 02218 - Landscape Grading.

- C. It shall be the responsibility of this Contractor to stake out plant locations in close conformity with the locations designated on the plans. After the staking has been completed, the Contractor shall contact the Engineer for approval and/or adjustment of the staked locations.

3.2 PREPARATION

- A. Tree pits shall be excavated as shown in details. Excess subsoil dug from pits, trenches and beds shall be graded to existing contours.

3.3 PLANTING

- A. Plant trees and shrubs after final grades are established and prior to lawn installation. The Contractor is responsible for planting to correct grades and alignment and all plants shall be set so that, when settled, they will bear the same relation to finish grade as they did before being transplanted. No filling will be permitted around trunks or stems. When the plant is set, the pit shall be backfilled with planting mixture, gradually filling, tamping and settling with water. No soil in a frozen or muddy condition shall be used for backfilling. A ring of soil, or saucer, shall be formed around the edge of each plant to hold water.
 - 1. Balled and burlapped stock shall be set plumb. Care should be exercised to prevent damaging the root ball during the tamping operation. When the plant hole has been backfilled and compacted to one-half depth, the burlap and lacing shall be removed from the upper half of the ball. The backfilling of the hole with prepared soil should then continue to an elevation which, after compaction, will be flush with the ground line.

2. Container grown stock. When plants are furnished in non-plantable containers, the containers shall be removed at the time of planting. When plants are furnished in plantable type containers, the sides of each container shall be severed in several places, and during planting, the upper half of the container shall be removed, leaving the root and soil mass intact.

3.4 SHRUBS

- A. Plant on centers indicated, using specified quantity of plants. Hedge plants may be planted in a continuous trench, rather than in separate pits.

3.5 MULCHING AND WATERING

- A. All planting shall be mulched with bark mulch. Plant pits and beds shall be completely covered with a 4inch layer of mulch. All plants shall be thoroughly soaked after planting. After each watering, all beds shall be raked and left in a complete finished manner. Ground cover beds shall be mulched and then plants placed in the soil at spacing as indicated on the plans.

3.6 PRUNING AND REPAIR

- A. Upon completion of planting, all trees and shrubs shall be pruned, limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots from transplanting. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant. All cuts shall be made flush, leaving no stubs. Paint all cuts over $\frac{3}{4}$ inch in diameter with tree paint. All pruning shall be done by workmen experienced in this type of work. Hedge shears will not be permitted for pruning.

3.7 MAINTENANCE

- A. The Contractor shall assume responsibility for maintaining his work to the completion of planting and acceptance by Owner.

3.8 ACCEPTANCE

- A. Inspection of planting will be made jointly by the Contractor, Engineer, and the Owner's representative at the COMPLETION OF PLANTING. All plants not in a healthy, growing condition shall be removed and replaced with plants of like kind, size and quality as originally specified before the close of the next planting season.

END OF SECTION