

## SECTION 2810

### LANDSCAPING

#### PART 1 - GENERAL

##### 1.01 REQUIREMENT, CODES

- A. All applicable portions of the site work and general conditions, specifications and requirements are to be considered as included with this section.
- B. The following are minimum requirements and shall govern except that all local, state and/or federal codes and ordinances shall govern when their requirements are in excess hereof.
- C. The landscaping shall be installed by a licensed Landscape Contractor.

##### 1.02 SCOPE

- A. Provide all labor, materials, equipment and services necessary and incidental to the completion of all landscaping where shown or indicated on the drawings and specified herein.
- B. Work included consists of, but is not limited to, the following:

###### LAWN INSTALLATION:

Fertilizer and lime application.  
Final soil preparation.  
Seeding of new lawn areas.  
Placement of slope ground cover.  
Mulch application.  
Maintenance of seeded areas.  
Replanting of unsatisfactory or damaged turf.

###### PLANT MATERIAL INSTALLATION:

Furnishing, delivering, and unloading of plant materials at site.

Preparation of planting pits and beds and related excavation, backfilling, and disposal of surplus and unsuitable excavated material.

Planting of trees, including fertilizing, mulching, and if necessary pruning, guying and/or staking.

Guarantee and replacement of plant material.

Maintenance of lawns and trees, as specified in Section 2820, Landscape Maintenance.

1.03 OTHER DOCUMENTS INCLUDED OR RELATED TO THIS CONTRACT

- A. Annual Maintenance Manual - Section 2820
- B. Landscape Plan and Details - Sheets C-1 through C-13.

1.04 SUBMITTALS

- A. CERTIFICATION OF QUALIFICATION: Prior to bid acceptance, submit certification of insulator's experience identifying a minimum of four (4) projects to the Owner's representative. Include the following information for each project: Owner, Landscape Architect, project location, type and size of contract.
- B. WORK SCHEDULE:
  - 1. Submit a proposed work schedule to City of Chattanooga's Construction Representative at least 30 days prior to start of work under this Section. After approval, no modification shall be made to this schedule without written authorization by City of Chattanooga's Construction Representative.
  - 2. All landscape work must be completed by \_\_\_\_\_, 2001.
  - 3. Complete erosion control and turf establishment must be completed by \_\_\_\_\_, 2001.
  - 4. The Landscape Contractor shall carefully correlate his work with that of other site Contractors.

1.05 INSPECTION OF CONDITIONS

- A. EXAMINATION OF SITE: This subcontractor will have examined the site personally to ascertain the state thereof and to understand the complexities of the work. This subcontractor will be held to have satisfied himself as to the condition of the premises, the actual elevation, existing obstructions, areas of work, and other conditions that would affect the completion of the work.
  - 1. The bidder must acknowledge that he has examined the site, plans and specifications, and the submission of a quotation shall be considered evidence that examinations have been made.
  - 2. The bidder shall verify availability of stockpiled topsoil prior to submittal to bid.
  - 3. The Contractor shall verify the accuracy of all finish grades within the work area.

- B. FIELD CONDITIONS: The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. The Contractor shall report to the City of Chattanooga's Construction Representative all conditions which prevent proper execution of this work.
- C. The exact location of all existing utilities, structures, and underground utilities, which may not be indicated on the drawings, shall be determined by the Contractor, and he shall conduct his work so as to prevent interruption of service or damage to them. The Contractor shall protect existing structures and utility services and be responsible for their replacement if damaged by him. Any required removal, repair, or replacement of this work caused by unsuitable conditions shall be done at no additional cost to the City of Chattanooga or Owner.

#### 1.06 PRECONSTRUCTION CONFERENCE

Schedule a preconstruction conference with City of Chattanooga's Construction Representative at least 7 days before beginning work under this Section. The purpose of this conference is to review any questions Contractor may have regarding the work, administrative procedures during construction and project work schedule.

#### 1.07 SUBSTITUTIONS

- A. Specific reference to manufacturers' name and products specified in this Section are used as standards, but this implies no right to substitute other material or method without written approval of the City of Chattanooga's Construction Representative.
- B. Installation of any approved substitution is Contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the City of Chattanooga's Construction Representative and without additional cost to the City of Chattanooga.

#### 1.08 WARRANTY

- A. All Plant material, lawns, and related work and material shall be warranted for a period of not less than one year from the date of acceptance of the landscape installation. See Section 3.07, completion and acceptance.
- B. All replacement stock shall be subject to the same warranty requirements as the original stock. Any damage due to replacement operations shall be repaired by the Landscape Contractor at no expense to the City of Chattanooga or Owner.

1. During the last month of the Guarantee Period, the City of Chattanooga's Construction Representative will inspect the planting to determine the number and type of plants to be replaced. A count and description of the dead plants shall be made and submitted to the Contractor in writing. The Contractor shall replace these during the first thirty (30) days of the next earliest planting season.

2. Plants which have lost over 33 percent (33%) of their branches shall be considered dead and shall be replaced. When replacements have been made and installed in compliance with these specifications, the requirements for planting under this contract shall be considered fulfilled.

3. All replacements under the guarantee shall be plants of the same kind, size, and quality as specified in the Plant List. They shall be furnished, planted, and mulched as specified herein.

#### 1.09 FINAL ACCEPTANCE

Work under this Section will be accepted by the City of Chattanooga's Construction Representative upon satisfactory completion of all work. Upon Final Acceptance, and after one year maintenance period, City of Chattanooga will assume responsibility for the maintenance of the work. Said assumption does not relieve Contractor of obligations under Warranty.

#### 1.10 APPROVAL

Wherever the terms "approve," "approval," "approved" are used in the Specification, they mean approval of the City of Chattanooga's Construction Representative, in writing.

### PART 2 - PRODUCTS

#### 2.01 STANDARDS

Comply with the provisions of the latest editions of the following specifications and standards, except as otherwise shown or specified herein.

- A. AMERICAN STANDARD FOR NURSERY STOCK, 1986 Edition, American Association of nurserymen (ANSI.1-1986)
- B. PLANT HARDINESS ZONE MAP, 1965 Edition, Miscellaneous Publication No. 814 Agricultural Research Service, U. S. Department of Agriculture.
- C. U.S.D.A. TRIANGULAR SOIL TEXTURE CHART, Bureau of Plant Industries, Soils and Agricultural Engineering, U. S. Department of Agriculture.

#### 2.02 TOPSOIL

- A. Topsoil shall be fertile, natural topsoil, typical of the locality, obtained from well-drained areas. Stockpiled topsoil may be used. It shall be without admixture of subsoil or slag and shall be free of stones, lumps, sticks, plants or their roots, toxic substance or other extraneous matter that would be harmful to plant growth or would interfere with future maintenance. Topsoil pH range shall be 5.3 to 6.0.

- B. If the supply of stockpiled topsoil is insufficient, the Landscape Contractor shall supply additional topsoil to meet all landscaping needs.
- C. SOIL TESTING: The Contractor shall be responsible for having topsoil tested. Topsoil shall be tested by the local county extension office. The Contractor shall furnish one (1) copy of the soil analysis and recommended amendments prepared (to meet the desired pH, nutritional and organic levels determined to be adequate for the area) by the county extension agent, to the City of Chattanooga's Construction Representative's satisfaction prior to application of any amendments or fertilizer.

## 2.03 SOIL CONDITIONERS AND AMENDMENTS

- A. Agricultural limestone shall contain not less than 95 percent calcium carbonate equivalent and shall be ground to such a fineness that at least 98 percent will pass a 20-mesh sieve and at least 50 percent will pass a 100-mesh sieve. Other liming material shall have a minimum calcium carbonate equivalent of 80 percent and shall be crushed to such a fineness that 98 percent will pass a 20-mesh sieve and at least 50 percent will pass a 100-mesh sieve.
- B. Aluminum sulfate shall be horticultural grade.
- C. Peat shall be a natural product of sphagnum moss peat (peat moss), derived from a freshwater site conforming to ASTM D2607 except as otherwise specified. Peat shall be shredded and granulated to pass a 1/2 inch mesh screen and conditioned in storage piles for at least 6 months after excavation. Peat shall be measured in a dry condition, containing not more than 35% moisture by weight.
- D. Sand shall be clean and free of toxic materials.
- E. Vermiculite shall be horticultural grade and free of any toxic materials.
- F. Manure shall be well-rotted, unbleached stable or cattle manure not less than 8 months or more than 2 years old, containing not more than 25 percent by volume of straw, sawdust, or other bedding materials, and containing no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds.
- G. Rotted sawdust shall have 7.5 pounds of nitrogen added uniformly to each cubic yard and shall be free of chips, stones, sticks, soil, and toxic substances.
- H. Gypsum shall be 90 percent pure, free of any toxic materials, and at least 95 percent by weight shall pass a 4-mesh sieve.
- I. Other amendments as recommended by the county extension agent.

2.04 SEED

- A. Seed shall be the best blend of certified lawn grass and/or ground cover. Plant seeds common to the site location. Provide fresh, clean, new-crop seed complying with established tolerances for germination and purity in accordance with the U. S. Department of Agriculture Rules and Regulations under the latest edition of the Federal Seed Act. Seed shall be mixed by the dealer and shall be delivered to the site in sealed containers which shall bear the dealer's guaranteed analysis. Seed mixture and seeding rate shall be specified on the drawings and on the following table:

	MIN%	WT %	RATE/AC
Purity/Germination			
1. WARM SEASON, TEMPORARY BLEND (See Plan For applicability)			
Tall Fescue Grass (Festuca Arundinacea)	98%/85%	100%	40 lbs./ac.
Annual Ryegrass (Lolium Multiflorum)	98%/85%	100%	15 lbs./ac.
2. WARM SEASON, PERMANENT BLEND (See plan for applicability)			
Bermuda Grass "Tifton 419" (Cynodon Dactylon "Tifton 419")	98%/85%	100%	40 lbs./ac.
3. STEEP BANK GROUND COVER BLEND (See plan for applicability)			
Tall Fescue Grass (Festuca Arundinacea)	98%/85%	100%	40 lbs./ac.
Sericea Lespedeza (Lespedeza Cuneta Var. Sericia)	98%/85%	100%	70 lbs./ac.

2.05 FERTILIZER

- A. All fertilizers shall be complete formula fertilizers and shall conform to the applicable State Fertilizer Laws. All fertilizers shall be uniform in composition, free-flowing and suitable for application with approved equipment. Fertilizers shall be delivered to the site in the manufacturer's original unopened containers, fully labeled according to the applicable State Fertilizer Laws and shall bear the name, trade name, trademark, and warranty of the producer.
- B. PLANT STOCK: Fertilizer shall be "Agriform" slow release fertilizer tablets.

- C. LAWN AREAS: Shall be high phosphorus starter fertilizer. Fertilizer formula and application rate shall be as recommended by the County Extension Agent based on soil test results.

#### 2.06 PLANTING MIXTURE

Planting mixture shall consist of a uniform mixture of the following materials in respective proportions: three parts topsoil, one part peat moss, and one part manure. The mixture must be thoroughly ground up and mixed so that there is no visible segregation of material.

#### 2.07 HERBICIDES

- A. Herbicides must comply with all applicable State and Federal Laws and be registered with the U. S. Environmental Protection Agency.

##### 1. HERBICIDE CONTROL SHALL BE:

- a. Pre-emergence application of "Treflan 5% Granules" or equivalent, applied according to manufacturer's recommendations and incorporated into soil as specified.
- b. Post-emergency application of "Roundup" or equivalent, applied as specified by manufacturer. Spray with extreme care to avoid contact with landscape plants and lawns to remain.

- 2.08 Water shall not contain elements toxic to plant life. It shall be obtained from on-site water source.

#### 2.09 TREE PROTECTANTS

- A. Trees shall not be staked.

#### 2.10 MULCHES

- A. MULCHES FOR PLANT STOCK: Shredded hardwood bark mulch common to the locality shall be specified. Bark shall be of a relative uniform particle size with a median size of one and one-half inches (1-1/2") and shall be free of sticks, stones, leaves and any other debris.

- B. MULCHES FOR LAWN AREAS:

1. SEEDED AREAS 3:1 OR LESS: shall be clean, dry, weed-free straw suitable for placing with mulch blower equipment or by hand.

2. SEEDED AREAS OVER 3:1: Hay or straw as specified above with binder and wood cellulose fiber.

a. MULCH BINDER: RMB Plus by Reinco Mulch Binder Corporation (800) 526-7687, applied per manufacturer's specifications.

b. WOOD CELLULOSE: Wood cellulose fiber for use with hydraulic application of grass and seed and fertilizer shall consist of commercially prepared natural wood cellulose fiber or wood pulp processed to contain no growth or germination-inhibiting factors and dyed any appropriate color to facilitate visual metering of the application. On an air-dry weight basis, the wood cellulose fiber shall contain a maximum of 12 percent moisture, plus or minus 3 percent at the time of manufacture. The pH range shall be from 3.5 to 5.0. The wood cellulose fiber shall be manufactured so that the fibers disperse readily and uniformly as a homogeneous slurry, so that when hydraulically sprayed on the ground, the material will form blotter like cover impregnated uniformly with grass seed, and so that moisture and rainfall will absorb and percolate the underlying soil.

## 2.11 TREE ROOT CONTROL SYSTEMS

### A. TYPAR BIOBARRIER

DowElanco, 9002 Purdue Road, Indianapolis, Indiana, 46268-1189, Phone 1-800-352-6776.

Typar biobarrier is a multi-year root control system, consisting of herbicidal time release nodules permanently attached to a permeable geotextile fabric, which will inhibit plant root encroachment.

### B. DEEP ROOT

Deep Root Corporation, 15040 Golder West Circle, Westminster, California, 92683, Phone 1-714-898-0563.

Deep Root products are a multi-year root control system, consisting of a rigid plastic barrier which will direct the growth of root systems down, away from surface rooting.

### C. Any substitution must be approved in writing and must be equal to the above mentioned products.

Refer to Section 1.07, Substitutions.

## 2.12 PLANT STOCK

A. The Contractor shall notify the City of Chattanooga's Construction Representative of the source of his materials and the inspection certificates required for their transportation to the job site, prior to tagging plant materials.

B. Plant sources are subject to approval by the City of Chattanooga's Construction Representative.



- C. Plant Material shall be first quality stock and shall conform to the code of standards set forth in the current edition of the American Standards for Nursery Stock sponsored by the American Association for Nurserymen, Inc.
- D. Species and variety as specified on the drawings and delivered to the site shall be certified true to their genus, species and variety as specified on the drawings and as defined within the current edition of International Code of Nomenclature for Cultivated Plants, issued by the International Union of Biological Sciences.
- E. Planting stock shall be well branched and well formed, sound, vigorous, healthy, free from disease, sun-scale, windburn, abrasion, and harmful insects or insect eggs, and shall have healthy, normal unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed, or uniform habit of growth, with straight trunks or stems, and free from objectionable disfigurements. All trees shall be branched as street trees.
- F. Plant materials shall be provided in the quantity, size and species as shown and/or scheduled under this contract. All stock shall be balled and burlapped or container grown stock. Bareroot stock of any kind is unacceptable.
- G. Plant material shall be nursery grown in accordance with good horticultural practices and shall have been grown for at least two years in the same plant hardiness climate zone as the planting site, under climatic conditions similar to those in the locality of the project. Plant materials shall be typical of their species and variety and shall have been grown under proper cultivation with appropriate wide spacing of the plants to produce healthy, balanced and sturdily developed branches and densely foliated plants.
- H. Plant materials shall be freshly dug and vigorous plants. No heel-in plants or plants from cold storage will be accepted.
- I. Plants shall conform to measurements as shown on the drawings and/or specified in schedules except that plants larger than specified may be used if approved by the City of Chattanooga's Construction Representative prior to planting. Use of such plants shall not increase the contract price. If larger plants are approved, the root ball and planting pits shall be increased in proportion to the size of the plant.
- J. All plant material measurements, i.e., caliper, height, branching, level, number of canes, ball sizes, etc., shall be in strict accordance with the latest edition of the American Standard for Nursery Stock. Minimum acceptable sizes are:

Trees 2 – ½” to 3”
- K. Plant materials shall be measured when branches are in their normal position. Height and spread dimensions, when specified, refer to the main body of the plant and not from branch tip to branch tip.

- L. Trees shall be labeled with a durable waterproof label and weather-resistant ink. Labels shall state the correct plant name and size as specified in the plant list of required plants. Labels shall be securely attached to plants and shall be legible for 60 days after delivery to the planting site. Wire identification tags shall not be used.
- M. Caliper measurements shall be taken at a point on the trunk, six inches (6") above natural ground for trees up to and including four inch (4") caliper size material and at a point twelve inches (12") above the natural ground line for larger trees.
- N. Where a range of sizes is specified in the schedule, no plant shall be less than the minimum size, and not less than 50 percent of the plants shall be as large as the average size specified.
- O. All plants shall be free from disease, insect infestations, defects and physical damage that would prevent the plant from thriving with the desired quality, appearance and growth characteristics.
- P. All plant materials shall be matched specimens from a single block source.
- Q. Plants shall not be pruned before delivery. Trees which have a damaged or crooked leader, or multiple leaders, unless specifically requested, will be rejected. Damaged trees such as trees with abrasions of the bark, sun-scald, disfiguring knots, or cuts of limbs over 1/4 inch which have not completely callused, will be rejected.
- R. No change in quality, quantity, species, variety, or sex of plants from those specified will be permitted without the written approval of the City of Chattanooga's Construction Representative. The Contractor may suggest alternative available plants which conform to the requirements of the contract as to size, type, and function. In no case shall the price for the substitution exceed the bid price of those replaced.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Prior to beginning the work of this section, verify that site grading and preparation have been properly completed. At this point, rough grades should be 6" below the finish grade levels for all landscape and turf areas.
- C. The Landscape Contractor shall proceed with the installation work as soon portion of the site becomes available.
- C. UNDERGROUND OBSTRUCTIONS TO PLANTING: If underground utilities, construction or solid rock ledges are encountered, other locations for planting may be selected by the City of Chattanooga's Construction Representative. Damage to utility lines shall be repaired at the Contractor's expense at no additional cost to the City of Chattanooga or Owner.

- D. PROTECTION OF EXISTING VEGETATION: If lawns have been established prior to planting operations, the surrounding turf shall be covered in a manner that will protect turf areas before excavations begin.
- E. MATERIALS STORAGE AND CLEANUP: The Contractor shall keep the premises free from rubbish and all debris at all times and shall arrange his material storage so as not to interfere with the operation of the project. All unused materials, rubbish, and debris shall be removed from the site.

### 3.02 APPLICATION OF TOPSOIL

- A. The Landscape Contractor shall place a six-inch (6") compacted layer of topsoil over all areas to be established in turf, shrubs or groundcover, except planter islands as specified below. The topsoil layer shall bring all landscape areas to finish grade.
- B. PREPARATION OF PLANTER ISLANDS
  - 1. The Landscape Contractor is to remove 36" of sub-grade from all planter islands and backfill with topsoil.
  - 2. Planter islands shall be bermed to a high point of six inches (6") above adjacent curb, or higher as necessary to ensure positive drainage (a minimum of 2% slope). (See Detail Sheet).
- C. Prior to topsoil placement, areas to receive topsoil shall be cleared of all debris. Clearing shall consist of the satisfactory removal and disposal of brush and rubbish occurring within all lawn and planting areas. Any collected debris shall be removed from the site.
- D. Topsoil shall be tested and evaluated by the local county extension office. See Item 2.02, Paragraph C of this section.
- E. Fertilizer and soil amendments as recommended shall be thoroughly tilled in before placing into planter areas. To assure that soil, organic matter and fertilizer are properly blended, several passes with the tiller in opposite directions shall be made.
- F. After soil amendments have been thoroughly tilled in to soil, all areas are to be rolled with a hand roller weighing not more than 100 pounds per foot of width. (Compact at 85% Standard Proctor). During the rolling, all depressions caused by settlement of rolling shall be filled with additional topsoil and the surface shall be re-graded and rolled until presenting a smooth and even finish to the required finish grade.
- G. Finish grading shall be done just prior to seeding or sodding. The entire area shall be carefully raked to a smooth surface free of all clods, roots or stones 1/2" or larger.
- H. Final grades shall drain and conform to finish grades and contours indicated on site drawings. Grades shall not vary more than one-tenth of a foot from true surface grade when tested with a 12 foot straight edge.

- I. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

### 3.03 SEEDING

- A. Topsoil, fertilizer, lime and seed shall be applied to all areas to be seeded as specified herein and in accordance with standard horticultural practices.
- B. Any undulations or irregularities in the surface resulting from fertilizing, liming, tilling, or other causes shall be smoothed prior to application of seed. The final grade shall be reasonably firm but friable.
- C. CLEANUP: Prior to seed application, the surface shall be raked of all trash, debris and stones larger than 1 inch in diameter, and of all roots, brush, wire, grade stakes and other objects that would interfere with planting or maintenance operations.
- D. SEEDING DATES: The normal seasonal dates for permanent seeding shall be May 1 to September 1 and from the time the soil is workable in the Spring to May 1. Seeding of a specified grass variety at times other than the normal seasonal dates must be approved by the City of Chattanooga's Construction Representative. Seeding shall not be done during windy weather or when the ground is excessively wet, frozen or otherwise un-tillable.
- E. Seeding may be applied with a mechanical hand seeder or by hydroseeding as specified below:
  - a. SEEDING: Seed shall be spread in two (2) successive sowings with the second perpendicular to the first. The rate of each sowing shall be one-half of the total seed rate specified. Immediately after seeding, all areas shall be lightly rolled. If, due to slope conditions, rolling cannot be done, seed shall be raked unto top ¼" of soil. Mulch as specified below shall be applied immediately after seed has been sown.
  - b. MULCHING: All seeded areas shall be mulched immediately after seeding. Mulch may be either dry straw or wood cellulose fiber. Straw shall be applied at a rate of 100 pounds per 1,000 square feet. Straw shall be stabilized with specified mulch binders. Mulch binder shall be applied per manufacturer's specifications.
- F. All areas which do not show a satisfactory catch of grass shall be reseeded at intervals of 21 days until a dense lawn of permanent grasses, free from any bare spots, areas of washout or erosion damage has been established.
- G. WATERING: Seeded areas shall be watered daily to ensure good germination. Once seeds have germinated, irrigation may be decreased, but the seedlings must never be allowed to dry out completely. Frequent watering should be continued for approximately three (3) weeks after germination or until grass has become sufficiently established to warrant watering on an "as needed" basis.

- H. Seeded areas shall be maintained by the Landscape Contractor for the specified maintenance period (a minimum of one year) or longer if necessary to establish a dense cover as specified above (Paragraph F). See Section 2820 for complete maintenance requirements.
- I. The Contractor shall be responsible for repair of damage to turf areas until all work is accepted.

### 3.04 PLANTING OF TREES

- A. All planting shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.
- B. All planting is to be done as shown on drawings or as specified herein and in strict accordance with standard horticultural practices.
- C. The Contractor shall label for shipment and planting operations all trees and shrubs in each group of a similar species. Plant materials labels shall be durable, legible labels stating the correct plant name (botanical and common name from the contract documents) and size in weather resistant ink or embossed by a process capable of remaining readable at least two years. They shall be labels which can be tied securely to all plants in a manner that normal growth will not be restricted.
- D. No material shall be dug or transported after the leaf buds are open unless special conditions exist which may warrant a variance, subject to approval by the City of Chattanooga's Construction Representative.
- E. Trees may be planted in accordance with the time schedule outlined in these specifications, and in keeping with good horticultural practice.
- F. No digging or planting operations shall be conducted when the soil or plants are excessively wet, muddy, or in a frozen condition.
- G. When considered advisable and in keeping with proper horticultural procedures, the Contractor may request in writing permission to plant and transplant out of season. The City of Chattanooga's Construction Representative shall take under advisement the needs and requirements of the City of Chattanooga, weather factors, planting conditions and other factors to alter the planting seasons. Holes may be dug prior to these planting seasons as approved by the City of Chattanooga's Construction Representative.
- H. Location of trees shall be staked in the ground by the Contractor and approved by the City of Chattanooga's Construction Representative prior to beginning and planting work. The Contractor may accompany the City of Chattanooga's Construction Representative to review and approve all plant staking. Adjustments in locations and outlines shall be made as directed by the City of Chattanooga's Construction Representative.

I. OBSTRUCTIONS:

1. The Contractor may secure from the utility companies at his own expense all information and assistance needed and copies of layout drawings to identify the location of all utilities, electrical conduits, steam conduits, water lines, irrigation lines, sewer and gas lines, etc. Care shall be taken when excavating plant pits and placing stakes and anchors in the proximity of such utilities to avoid damaging them and to adjust the planting in harmony with work performed by other tradesmen.

2. In the event obstructions are encountered, the Contractor shall at once notify the City of Chattanooga's Construction Representative so that arrangements may be made to change locations of such planting. The Contractor shall assume the responsibility of repairing all utilities damaged in the performance of his work.

3. In the event that rock, tree stumps or underground construction work or other obstructions are encountered in any plant pit excavation work to be done under this contract, alternate locations shall be approved by the City of Chattanooga's Construction Representative. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than 3 feet below grade and no less than 24 inches from the edges of the plant pit.

J. Existing plants remaining on the site (as shown on the plans), shall be protected from soil compaction and other damages during the planting operations. Care will be taken by the Contractor to work in and from open areas to avoid contact with the existing trees and root feeding areas. The Contractor is responsible to repair all damages and in the case of extreme damages shall replace the plant with a specimen nursery grown plant as similar in size as possible to the destroyed plant. Compaction of soils caused by planting operations within root feeding areas will be loosened.

K. EXCAVATION OF PLANTING PITS:

1. Planting pits shall be excavated to produce vertical sides and flat bottoms. Scarify side walls to alleviate glazing and loosen any hard subsoil in the bottom of pit.

2. Dispose of subsoil (off-site) removed from planting excavations. Do not mix with planting soil or use as backfill.

3. If plant pits are prepared and backfilled with the planting mixture to grade prior to planting, their location shall be marked and recorded on the plans and marked clearly on the site so that when planting proceeds they can easily be located.

2. The Contractor shall not leave any hole unattended when an unsafe condition exists without proper protection, signals, barriers, etc., or when in any manner it presents a hazard to pedestrians or vehicles on the site.

3. Planting pits may be dug with a motorized augur provided the sides and bottom of the pits are cut at least 2 inches larger with a hand spade. This cutting shall be deep enough and of a method to assure natural subsurface water circulation after planting.

6. Mechanical "Tree Spade" transplanting equipment may be used to dig and install plants. Provisions shall be made to assure natural subsurface water circulation and surface water circulation and surface water absorption, the sides of the plant pits shall be cut at least 2 inches deep at 4 to 6 inch intervals with a hand spade to pierce the compacted wall surface of the tree pit.

L. DRAINAGE TESTING/DRAINAGE CHANNEL REQUIREMENTS:

Prior to planting, all pits selected for testing shall be tested in the following manner:

1. All material removed from the drainage channel shall be discarded.
4. When backfilling planting pits with planting mixture, care must be taken to keep the consistency of the soil mix and the same throughout the planting pit and drainage channel.

Note: Refer to vertical drain notes on the plans.

M. SETTING AND BACKFILLING:

1. Planting pit shall be filled with water and allowed to drain before backfilling.
2. Balled and burlapped and container-grown plants shall be handled and moved only the ball or container. Plants shall be set plumb and held in position until sufficient soil has been placed around roots or ball. Plants shall be set in relation to surrounding grade so that they are even with the depth as which they were grown in the nursery, collecting fields, or container.
5. All plants shall be planted in soil mixture as specified and backfilled in 6 inch layers to eliminate voids and air pockets. When planting pit is approximately two-thirds full, fertilize as specified below, and thoroughly water again before placing remainder of backfill. Soils which are in a frozen or muddy condition shall not be used for backfilling plant pits.
4. Balled and stock shall be backfilled with planting soil mixture to approximately half the depth of the ball and then tamped and watered. Burlap and tying materials shall be carefully removed or opened and folded back from top one-third of root ball. The remainder of backfill or planting soil mixture shall be tamped and watered.
5. Container-grown stock shall be removed from containers without damaging plant or root system. Planting shall be completed as specified for balled or burlapped plants.

6. A root ball cracked or broken before or during planting operations shall be cause for rejection of the plant material.
7. Fertilizer as specified herein shall be added at the time of backfilling. Delay addition of fertilizer if planting mixture will not be used within two (2) days.

N. PLANT TABLET INSTALLATION:

1. The rate of application of planting tablets shall be according to the manufacturer's instructions and as follows:
  - a. For balled and burlapped plant material use two 21-gram tablets per each 1/2 inch caliper.
2. Placement of the planting tablets shall be as follows:

Position the ball in the plant pit. Place the recommended number of tablets evenly around the perimeter of, and adjacent to, the root ball at a depth which is in the upper one-third of the settled backfill around the root area and in accordance with planting details.
3. Plant tablets shall be placed only during the Spring growing season.

O. MULCHING AND WEED REMOVAL:

1. See Section 2: "Products" for the type of mulch to be used.
2. Mulch shall be applied after plants have been watered, backfilled, and allowed to settle, and shall be installed within 48 hours after planting.
3. Mulch for planting beds shall be installed to a minimum depth of four inches (4") in all areas specified on the drawings.
8. Mulch shall be kept out of the crowns of shrubs and off buildings, sidewalks, light standards, and other structures.
5. The top of all areas of mulch shall be 1" below the top of adjacent curb, walk or edge of pavement.
6. The mulched bed outline shall be continuous and cut vertically. Vegetation within bed outline shall be removed a minimum of 1 inch in depth to prevent re-growth. Planting beds shall be mulched as detailed on the drawings. The basin shall be maintained, as specified, within the plant beds.



7. Prior to the installation of mulch, all areas to be covered shall be weed free and shall be treated with a pre-emergent herbicide. Herbicide shall be used only on bedding plants which spread by rhizomes. DO NOT treat beds which contain surface rooting plants. The pre-emergent herbicide shall be evenly applied to the surface of all plant beds AFTER the mulch has been applied and firmed in place. All weeds and grasses existing within the beds and saucers shall be removed, after which the soil and mulch shall be smoothed and firmed in place. The pre-emergent shall be applied in accordance with the manufacturer's recommendation. The planting bed shall then be thoroughly watered.

P. PRUNING:

1. Plant materials shall be pruned following planting operations to remove broken or damaged branches and roots.
2. Pruning shall be performed by experienced plantsmen by using clean and sharp tools, after the plants have been inspected by the City of Chattanooga's Construction Representative.
3. Damaged or pruned tree leaders and otherwise excessively damaged and improperly pruned plants shall be cause for rejection.

3.05 ADJUST AND CLEAN

- A. Constant care should be exercised by the Contractor to maintain a safe and clean condition of the site for safe movement of pedestrians and vehicles. The ground shall be cleared of all debris and superfluous materials and all equipment shall be entirely removed from the public traffic-ways when not being used to the satisfaction of the City of Chattanooga's Construction Representative.
- B. At the completion of the work in an area or areas, or when work is stopped for a period of time due to weather conditions, etc., the work areas shall be cleaned of all superfluous soils, materials and equipment, in order to maintain a neat, clean and safe condition, to the satisfaction of the City of Chattanooga's Construction Representative.
- C. The Contractor shall be responsible for the repair of any damage to lawns, paved areas, roads, walks, curbs, or underground utilities which may result from his work. Such repairs shall be made swiftly in a thorough and workmanlike manner, with minimum inconvenience and at no cost to the City of Chattanooga.
- D. LAWN AREA: Where lawn areas have been damaged, the damaged lawn areas, ruts and/or depressions shall be cultivated, filled with topsoil and settled to proper grades, and replanted to the satisfaction of the City of Chattanooga's Construction Representative.

### 3.06 COMPLETION AND ACCEPTANCE

- A. The completion of the contract will be accepted and Notice of Completion recorded only when the entire contract is completed to the satisfaction of the City of Chattanooga's Construction Representative.
- B. Work under this section will be accepted by the City of Chattanooga's Construction Representative upon satisfactory completion of all work including "punch list" items.
- C. Acceptance of plant material by the City of Chattanooga's Construction Representative shall be for general conformance to the specifications, including size and character, and shall not relieve the Contractor of responsibility for full conformance to the contract documents including maintenance.
- D. The Contractor shall replace, without cost to the City of Chattanooga, and as soon as weather conditions permit within the next 30 days or within the first month of the next earliest planting season, whichever occurs first, all plants and all plants not in a vigorous thriving condition, as determined by the City of Chattanooga's Construction representative. The plants shall be free of dead or dying branches and branch tips, and shall bear foliage of normal density, size and color. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this specification.
- E. Upon completion of repairs and replacements by the Contractor, the City of Chattanooga's Construction Representative shall certify as to the completion for the initial acceptance of the project and recommendation for beginning the Guarantee Period.

END OF DOCUMENT