PART 1 – GENERAL

## 1. RELATED DOCUMENTS

The Pinellas County School Board Bidding and General Requirements as well as all Contractual Conditions shall apply to all work hereunder.

## 2. REQUIREMENTS OF REGULATORY AGENCIES

1. Comply with Federal, State, Local and other duly constituted authorities and regulatory agencies, without additional cost to the Owner in matters pertaining to codes, safety, and environmental matters.
2. Any permits for the installation or construction of any of the work included under the contract, which are required by any of the legally constituted authorities having jurisdiction, shall be arranged for by the contractor and paid for Directly by the Owner each at the proper time.

## 3. SCOPE

1. Work required under this Section consists of providing all necessary services, tools, equipment, material, and labor required to provide and install and care for all planting material, lawn material, fertilizers, mulch, plant beds, bracing, root balling, watering, and other work essential to a proper landscaping job.
2. The extent of landscape development work as shown on Drawings and Schedules.
3. Subgrade elevations: Excavation, filling and rough grading required to establish elevations shown on Drawings are specified to be provided under other Sections to within 0.10 foot of finished grade.
4. After irrigation system has been installed and grading returned to acceptable condition, before preparation of final grading for landscaping and lawns, the installing subcontractor shall inspect the grading work and call the Contractor’s attention to deficiencies. Commencement of work shall constitute acceptance.
5. Work under this Section shall include final grading and raking preparing the site ready for placing of sodding, sprigging, seeding, in a neat, workmanlike condition so finished lawn or playing field will appear even and uniform, will drain adequately, and will comply with the intent of the landscape drawings and civil engineering Drawings. Before sodding or sprigging or seeding, the surfaces shall be neatly raked and shall be free of rocks, sod clumps and foreign matter.
6. Finish fill material shall be placed by Installer under this Section so finish grade surface of grass sod occurs at elevations indicated on Drawings. Areas found settling below indicated elevations, within one year period, shall be brought up to proper grade by the Installer with approved fill, and shall be replanted.

## 4. QUALITY ASSURANCE

A. The term Project Architect shall include the Project Architect’s Landscape Architect.

B. Landscape work, sodding and grass work shall be done by an experienced and properly equipped firm specializing in landscape work. At least one experienced supervisory person shall be present at all times during execution of the Work and shall be thoroughly familiar with the type of materials being installed and the best methods for installation. This person shall direct all work performed under this Section.

C. Source quality control:

1) General: Deliver landscape, sodding and grass materials with certificates and tags of inspection as provided by governmental authorities. Comply with governing regulations applicable to landscape materials.

2) Do not make substitutions. If specified landscape material is not available, submit Project Architect proof of it being non-available. In such event, if the Project Architect designates an available source, such shall be acquired from designated source. No substitutions shall be considered without approval by the School Board Architect. When authorized, adjustment for Contract amount will be made for substitute material, if authorized by Change Order.

3) The following applicable standards form part of these Specifications:

a) The Florida State Plant Board Grades and Standards latest edition Florida Nurserymen and Growers Association Approved Planting Methods.

b) Standardized Plant Names Dictionary, American Joint Committee on Horticultural Nomenclature (latest edition).

c) Standard Encyclopedia of Horticulture, L. H. Bailey (latest edition) American Standard for Nursery Stock.

4) Trees and shrubs: Provide trees and shrubs, grown in a recognized nursery, in accordance with good horticultural practice. Provide healthy, vigorous stock grown under climatic conditions similar to conditions in locality of project, and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, or disfigurement. Any tree with weak, thin trunk not capable of supporting itself when planted in open ground, will not be accepted. Plants shall have normal, well developed branches and rigorous fibrous root system.

a) Sizes: Provide trees and shrubs of the sizes shown or specified. Trees and shrubs of larger size may be used if acceptable to Project Architect and if sizes of roots or balls are increased proportionately. Trees over three (3”) inch caliper and ten (10) feet or more in height, shall be guyed to prevent tipping.

b) Consistency: Plants used as individual specimens, where balanced symmetry is required, shall be matched as nearly as possible.

c) Measurement: Height and/or width of trees; measured from ground or across normal spread of branches with plants in their normal position. This measurement shall not include immediate terminal growth. Plants in plant list shall generally follow Code of Standards currently recommended by American Standard for Nursery Stock.

d) Provide balled and burlap plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the “American Standard for Nursery Stock”. Cracked or mushroomed balls are not acceptable.

e) Container-grown stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.

f) Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.

(1) Single stemmed or thin plants will not be accepted.

(2) Side branches shall be generous, well-twigged, and the plant as a whole, well-bushed to the ground.

(3) Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.

(4) Provide tree species that mature at heights over 25’ - 0” with a single main trunk. Trees that have the main trunk forming a “Y” shape are not acceptable.

(5) Trees requiring root pruning shall be root pruned not less than six weeks before being moved to the site. Appropriate pruning of the plant crown shall be accomplished at the time of root pruning.

(6) The following are minimum sizes for root balls of specified trees:

# MINIMUM DIAMETER

 CALIPER IN INCHES IN INCHES

 1-1/2” - 2” 24”

2-1/2” - 3” 30”

 3-1/2” - 4” 36”

 4-1/2” - 5” 46”

 5-1/2” - 6” 60”

The following are minimum sizes for root ball depth ratios:

 DIAMETER OF PERCENTAGE OF

 ROOT BALLS DIAMETER

 24” 75% OR GREATER

 30” 68% “ “

 36” OR GREATER 60% “ “

5) Backfill and fill material: In organic soil of low plasticity equivalent to clean bank sand of quality which will compact to the requirements of the Excavation, Backfill and Fill specifications.

6) Plants: Florida No. 1 Grade, healthy, and vigorous, in accordance with Standards set up by the Florida State Plant Board Grades and Standards; Nursery Growth. All plants shall be nursery grown except where approved by the Project Architect.

7) Topsoil: Sandy loam typical of the locality. Soil must be taken from ground that has never been stripped. There must be a slight acid reaction to the soil with no excess of calcium or carbonate. Topsoil shall be delivered in a loose friable condition. Do not use topsoil beneath sodding, seeding, or springing, or in lawn areas.

8) Planting soil for shrubs and trees: Made up of three (3) parts stockpiled topsoil, and one (1) part Florida peat. Add twelve (12) pounds of the above specified commercial fertilizer to each cubic yard of soil and peat and thoroughly mix prior to planting. When required by the Project Architect, the Contractor shall indicate the source of his topsoil.

9) Cypress logs: 6” to 10” diameter rounds varying in length from 14” to 24” in length, sound stock, free from sap, shakes and/or other defects which may impair the appearance, utility or strength of the materials.

10) Boulders: Samples of lime stones, boulders, rocks and other materials of this type shall be submitted for review and approval to the Project Architect. Size shall be as indicated on the Drawings.

11) Cross ties: 6” x 10” (minimum) by 8’-0” (minimum), creosoted.

12) Tree stakes: Unless otherwise indicated on the Drawings, tree stakes shall be redwood, construction heart grade, rough-sawn, 2” x 2” by 8’ long.

13) Other materials, not specifically described but required for a complete and proper planting installation, shall be as selected by this Installing Subcontractor subject to the review and approval of the Project Architect.

14) Sod, general:

a) Before being cut and lifted, sod shall have been mowed at least three (3) times, with the final mowing not more than seven days before the sod is cut.

b) Sod shall be carefully cut into uniform dimensions.

c) Sod shall be freshly cut and delivered to the site in such quantity that it may be planted immediately and not stockpiled nor left stored on trucks.

d) Unacceptable plant materials shall be removed immediately from the Project site.

e) Sod shall be of firm, tough texture having a compact growth of grass with good root development, relatively free of weeds, other variety of grass, and any other objectionable vegetation.

f) Soil embedded in the sod shall be good clean earth, free from fungus, vermin and other diseases including mole crickets.

15) Inspection: The Project Architect shall have the right to inspect and approve or reject trees, shrubs, plants and grass materials either at place of growth or at site before planting or after planting, for compliance with requirements for name, variety, size and quality. Approval at growing site does not preclude right to reject at Project site.

## 5. ABBREVIATIONS

1. The following abbreviations are found on the Drawings:

o.a. or ht True overall or height of plant from plant base to top of foliage, not to include

 terminal growth. Palms will be measured from base to center of crown.

c.t. Clear trunk; areas of plant which indicates no foliage growth from plant base to

 foliage.

spr. Spreading; branches measured in natural untied position.

br. Branch

s.t. Straight trunk without staking

min. Minimum

ga. or gal. Gallon container size

plt. Plant

o.c. On center; distance between plant centers

dia. Diameter

lvs. Leaves

(12) calp. - caliper Outside diameter of caliper of up to 4 inch tree shall be measured at 6 inches

 above original grade line. Trees over 4 inches diameter shall be measured 12

 inches above original grade line.

(13) B & B Balled and burlapped in accordance with horticultural standards of American

 Association of Nurserymen.

(14) P.P.P. Plants per pot

(15) D.B.H. Diameter breast high (considered 4’6” above original grade)

Peat Shall be pulverized Canadian or Florida Brown Peat

Ball Solid earth ball, cohesive earth around roots

## 6. SUBMITTALS

Maintenance Instructions, Landscape Work: This Installing Subcontractor shall submit instructions recommending procedures to be established by Owner for maintenance of landscape work for one full year, and thereafter. Submit prior to expiration of required maintenance period. The Contractor shall include such in the Closeout Documents. Instructions shall be provided on electronic media shush as a thumb drive to allow for storage, printing, and emailing.

## 7. PRODUCT DELIVERY, STORAGE AND HANDLING

1. Packaged materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer or producer. Protect materials from deterioration, dampness, or damage during delivery and while stored at the site.
2. Plant Materials:

1) This Contractor shall be responsible for materials stored on site, and shall provide care and maintenance of his materials at the site.

2) Protect materials during delivery to prevent damage to the root ball and desiccation of leaves. Protect trees shall be protected during transport by tying in and covering exposed branches. Do not bend or bind-tie trees and/or shrubs in such manner as to damage bark, break branches or destroy the natural shape. Protect palms protected during transport by tying fronds together in an upright manner. If necessary, use 2” x 2”+ wood stakes to keep palm fronds in an upright position.

3) Handle plants so roots are adequately protected at all times from drying out and from other injury. Root balls of balled plants which cannot be planted immediately on delivery, shall be well protected with soil or other material acceptable to the Project Architect. Plant materials, including those in containers, shall be kept in a moist condition, appropriate for the plant species, until planted.

4) Handle balled and burlapped plants carefully to avoid cracking or braking of earth ball. Balled and burlapped plants shall not be handled by the trunk or stems. Protect during transportation from the storage site to the planting site.

5) Trees moved by winch or crane shall be thoroughly protected from chain marks, girdling, or other bark slippage, by means of burlap, wood battens or other methods approved by Project Architect.

6) The Contractor shall be responsible for the protecting of all plant materials and non-plant materials during the preparation, delivery, storage and execution of the work under this Section.

7) Sod: Time delivery so that sod will be placed within twenty four (24) hours after stripping. Protect sod against drying and breaking.

8) Trees and Shrubs: Provide freshly dug trees and shrubs. Do not use trees or shrubs which have been in cold storage or heeled-in. Do not prune prior to delivery. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.

9) Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than six (6) hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.

10) Do not remove container grown stock from containers until planting time.

11) Label at least one (1) tree and one (1) shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

## 8. JOB CONDITIONS

1. The Contractor and Installing Subcontractor shall be held to have examined the premises and site during bidding so as to compare same with Specifications and Plans, and to have satisfied himself as to the conditions of the premises and any obstructions, actual levels and all excavating or filling-in necessary for carrying out the work before the delivery of his proposal. No allowance shall subsequently be made to the Contractor by reason of his failure to have made such examination or of any error on his part.
2. Installer must examine subgrade, verify elevations, observe conditions under which work is to be performed, and notify Contractor of unsatisfactory conditions. The Installer shall not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer. The Contractor shall respect this responsibility.
3. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.
4. No planting shall be done in soil that is too wet or otherwise in a condition not satisfactory for planting (from an agricultural standpoint), as determined by the Project Architect. All planting done in soil that is too wet or not properly conditioned as specified, will not be accepted.
5. Utilities: Determine location of underground utilities and perform work in manner which will avoid possible damage. Hand excavate, as required, to minimize possibility of damage to underground utilities. The cost of repair of utilities damaged by this Installing Subcontractor shall be borne by him. Maintain grade stakes set by others until timely removal, unless mutually agreed upon by all parties concerned.
6. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions or obstructions, notify Project Architect for direction before planting.
7. Coordination of landscaping with lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Project Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns.

## 9. WARRANTY AND GUARANTEE

1. Requirements of Paragraph No. 17 are pertinent to the Warranty.
2. Written warranty and written guarantee, in five (5) originally executed copies, shall be signed by this Installing Subcontractor and the Contractor, and submitted as part of the Close-Out Documents.
3. This Installing Subcontractor and the Contractor shall Guarantee all materials employed in the landscaping, sodding, and grass installations, and related work, is installed as specified and is in accordance with best trade practices. This Guarantee shall also state there are no unauthorized substitutions of materials.
4. The Installing Subcontractor and the Contractor shall notify the Project Architect and his/her Landscape Architect immediately upon installation of each type and/or area of planting, and the Project Architect with the Landscape Architect shall inspect the installed material within one week.
5. This Installer and the Contractor shall Warrant the work for the following minimum periods of time, and shall replace trees, shrubs, plants, grass, sodding, and/or sprigging found to be dead or in unhealthy condition during the Warranty period, without expense to the Owner or Project Architect. Also, if materials are judged by the Project Architect to be in doubtful condition at the end of the Warranty period, such shall be replaced, unless, in the opinion of the Project Architect, it is advisable to extend the Warranty for specific items for one full growing season. The Project Architect, in such event, shall make another inspection at the end of the extended Warranty period, to determine acceptance or rejection. The Project Architect shall be the final authority on this determination. Replacement for each unacceptable item will be required at the end of the Warranty period or extended warranty period. The warranty period for each replaced item shall commence again.
6. Trees and palms shall be Warranted for the following period of time:

By the Contractor and the Installing Subcontractor, from completion of installation (and its acceptance by the Project Architect) for a period of one year.

1. Shrubs and plants shall be Warranted for the following periods of time:
	1. By the Installing Subcontractor and the Contractor, from completion of installation (and its acceptance by the Project Architect) for a period of 105 days
	2. By the Contractor from the end of the above 105 days until the Date of Final Substantial Completion.
	3. By the Contractor from the Date of Final Substantial Completion of the Project, for a period of 90 days.
2. Lawns shall be Warranted for the for the following periods of time:
	1. By the Installing Subcontractor and the Contractor, from completion of installation (and its acceptance by the Project Architect) for a period of 60 days.
	2. By the Contractor from the end of the above sixty (60) day period until the Date of Final Substantial Completion.
	3. By the Contractor, from the Date of Final Substantial Completion of the Project, for a period of 45 days.
3. The intention of the above is to provide the Owner with landscaping in healthy, attractive condition keeping such under the Contractor’s care long enough to establish that a healthy installation has been accomplished. If the Contractor schedules the work of the Installing landscaping subcontractor properly and timely and completes his own construction work timely, all of the Warranty and Maintenance obligations may be satisfied by the Installing Subcontractor under his original Contract sum. Otherwise, the Contractor shall be liable for additional cost as a result thereof.

# PART 2 – MATERIALS

## 10. TOPSOIL OR FILL

1. Topsoil or fill for planting beds shall be fertile, friable, natural sandy loam topsoil typical of Project locality and capable of sustaining vigorous plant growth. It shall be of uniform composition throughout without admixture of subsoil or slag and shall be free of stones, lumps, weeds, plants or their roots, sticks, and other extraneous matter. When required to be delivered to the Project, topsoil shall be delivered in loose and friable condition.
2. No topsoil shall be used beneath sodding, seeding, sprigging, or lawns.

## 11. PLANTING SOILS

* 1. Planting Soil for shrubs and trees: Made up one (1) part topsoil and one (1) part existing soil, and one (1) part peat. Add minimum of one (1) pound per shrub and five (5) pounds of processed cow manure per tree.
1. Planting soil for lawns and playing field surfaces: “Scalp away” the top two (2) inches, fill and compact with two (2) parts clean bank sand in compliance with paragraph 4C-(6), above, and one (1) part by volume, of specified soil amendment. Do not use topsoil for lawns or filling beneath lawns.
2. Planting soil for planters and planting beds:
	* 1. Backfill shall be a mixture consisting of two (2) parts top soil and one (1) part specified soil amendment, by volume.
		2. Place backfill mixture in layers not exceeding eight (8) inches in uncompacted thickness.
		3. Compact each layer by thorough saturation with water to prevent future settlement.

## 12. MULCH

Mulch: Finely shredded pine straw or pine bark, Grade B or better, to cover planting bed.

## 13. SODDING/GRASS

1. Lawn, playfield, and athletic field surfaces: Comply with American Sod Producers Association (ASPA) classes of sod materials. Provide sand grown sod. Provide well-rooted, healthy sod, free of nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weds, undesirable grasses, stones, roots thatch and extraneous material; viable and capable of growth and development when planted.

* 1. For playfields and outfields: Argentine Bahia
	2. For football fields, baseball infields and soccer fields: Tiffway 419 (a type of Bermuda)
	3. Otherwise (assuming irrigated):

a) Heavy traffic areas (very rare): Argentine Bahia

b) Light traffic areas:

### (1) Shaded, either:

### Floratine St. Augustine

Del Mar St. Augustine

Seville St. Augustine

### (2) Unshaded, either:

Del Mar St. Augustine

Floratam St. Augustine

D. Areas to receive sodding shall be determined as follows:

1) All areas which may be indicated on the Drawings to receive sodding.

2) All ground areas not specifically noted on the Drawings to be paved, covered by building or sidewalks, nor to be sprigged nor seeded nor to have planting beds.

E. Areas to receive “sprigging” or “seeding” shall be only areas specifically designated on the Drawings.

## 14. FERTILIZERS

A. Commercial Fertilizers: Uniform in composition, free flowing and delivered to site in full, labeled, unopened bags bearing name, trade name, or trade mark and guarantee of the manufacturer. If delivered to site in bulk, accompanying each load shall be a ‘Certificate of Guarantee’ as to contents by quantity signed by the manufacturer or his authorized representative. Each container or load of fertilizer shall bear manufacturer’s statement of analysis and shall contain following minimum percentages of available plant food by weight:

1) 8% Nitrogen

25% of the Nitrogen shall be from natural organic source

 8% Phosphoric Acid

 8% Pot-ash

2) Minor elements to be as follows:

 1% ZN as Zinc Sulfate

 2% MNO as Manganese Sulfate

 3% FE as Iron Sulfate

3) Other Minor Elements:

Apply Dolimite immediately, prior to application of fertilizer at rate of 20 lbs./1000 sq. ft.

B. Five (5) days before seeding, apply above specified commercial fertilizer at rate of 30 lbs./1000 sq.ft. Water fertilized areas thoroughly after fertilizing.

C. Apply second application of commercial fertilizer at rate of 25 lbs./100 sq.ft. as grass begins uniform growth. Water grass areas thoroughly after fertilizing.

# PART 3 – EXECUTION

## 15. METHODS AND EXECUTION

A. Grading: Grades on the areas to be treated that have been previously rough graded as shown on the Drawings shall be maintained in a true and even condition. Maintenance shall include finish grading and making necessary repairs to previously graded areas. Where the grades have not been established, the areas shall be left at the prescribed grades in an even and properly compacted condition so as to prevent the formation of depressions where water will stand. The work shall be performed at the direction of the Project Architect. When conditions are such that satisfactory results are not likely to be obtained, the work will be stopped and resumed again when conditions are satisfactory. Undulations or irregularities in the surface that would or inhibit drainage or be unattractive or interfere with further construction operations or maintenance, shall be leveled before the next specified operation.

B. After completion of the above operations the top three (3) inches of surface shall be reasonably cleared of subsoil, clay lumps, brush, objectionable weeds and other litter, and shall be free from stones, stumps and other objects larger than one (1) inch in diameter, and from roots and toxic substances, and from other material or substance that might be harmful to plant growth or a hindrance to grading, planting and maintenance operation or appearance.

C. Fertilizer shall be delivered to the site in original unopened containers bearing manufacturer’s guaranteed chemical analysis, name, trade name, trademark, and conformance to state law.

D. Project Architect shall be notified of delivery schedule in advance so plant material may be inspected upon arrival at job site.

E. Insofar as is practical, plant material shall be planted on day of delivery. In the event this is not possible, this Installing subcontractor and Contractor shall protect plant stock from sun or drying winds. Plants shall not remain unplanted for longer than two (2) calendar days after delivery.

F. Tree protection: This Installer and the Contractor shall be responsible for protection of tops, trunks and roots of existing trees on Project site that are to remain. Existing trees subject to construction damage shall be removed when so designated on the Drawings. Heavy equipment or stockpiles shall not be permitted within branch spread. Thoroughly protect trees moved by winch or crane from chain marks, girdling or bark slippage, by means of burlap, wood battens or other approved methods.

G. Preparation: After irrigation system is installed, this landscaping subcontractor shall remove all trash such as rocks, sticks, concrete and asphalt pieces, lumber, foreign materials and roots. This landscape subcontractor shall thoroughly water soak spots (where loose fill dirt has been added) to settle them. This landscape subcontractor shall finish grade, level and rake the soil.

H. Initial fertilizer: Incorporate one of the following fertilizer mixes into the mixing of the amendments:

1) Either colloidal phosphate amendment is employed, use a 15-0-15 or similar analysis fertilizer at the rate of 7-10 lbs. per 100 s.f.,

-- or—

2) If rock phosphate amendment is employed, use a 10-10-10 fertilizer applied at the rate of 10-15 lbs. per 1000 s.f.

I. Fertilize areas to be sodded, sprigged, or seeded with the specified commercial fertilizer at rate of 30 lbs. per 100 s.f. immediately prior to sodding, sprigging, or seeding. Thoroughly water and soak area.

J. Installation of sod: Install sod in one (1) foot by two (2) foot size pieces. Lay sod to form a solid mass with closely abutting joints, “green side up”. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs. Do not lay dormant sod. Do not install sod on saturated soil. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row. Immediately press sod into contact with bedding surface with light-weight turf roller so as to eliminate air pockets and provide a well-supported, true and even surface and insure knitting without displacement of soil or deformation of sod surface. Following compaction, apply clean yellow builder’s sand to fill joints. Tamp entire lawn or playing surface, and roll. Plant sod edge in a neat, clean manner, to the edge of sidewalks, curbs, paving, and planting areas.

K. After the sodding operation has been completed, the edges of the area shall be smooth and shall conform to the grades indicted. On slopes steeper than 3 to 1 (and elsewhere when so shown), the sod shall be fastened in place with suitable wooden pins or by other approved methods. The sod shall be watered immediately after placement. Sufficient water shall be applied to wet the sod thoroughly and to wet the sod bed at least two (2) inches deep. Watering shall be done in a manner that will avoid erosion due to the application of excessive quantities, and the watering equipment shall be of a type that will prevent damage to the finished surface.

L. Installation of sprigging: Cut sod into three (3) inch by three (3) inch squares for sprig positions at intervals of twelve (12) inches center to center in each direction. Install each sprig square into soil to a depth covering a portion of each sprig.

M. Installation of grass seeds: Apply water sufficient to soak prepared surface to receive seeding. Sow seeds at a rate of 5-10 lbs. per 100 s.f. Gently hand rake after seeding to partially cover a quantity of the seeds from birds.

N. The Contractor and this Installing Subcontractor shall do all watering of lawns and landscaping up until the time set forth in the Maintenance and Warranty paragraphs of this specification whereupon the Owner will commence a watering program. Until the permanent irrigation and water supply system is complete and functioning, this Contractor shall provide whatever hoses, sprinklers or other equipment necessary. All necessary watering shall be included within the original Base Bid. Adequate watering shall be done each day unless adequate rainfall occurs that day before 3:00 o’clock P.M.

O. Later Fertilizer: Beginning two (2) weeks after lawn is planted, apply ammonium nitrate at the rate of three (3) lbs. per 1000 s.f. (1 lb. of nitrogen per 1000 s.f.) and repeat the application every four (4) weeks until three (3) applications have been made. Other nitrogen carriers may be employed if evidence is provided that such provides one (1) lb. of nitrogen per 1000 s.f. Water thoroughly after this fertilizing.

P. See Maintenance paragraphs No. 17

Q. Excavation:

1) All plant pits shall have straight vertical sides and flat horizontal bottoms. The diameter of a plant pit shall not be less than twice the diameter of the root ball, nor less than 24 inches greater than the root ball, whichever is smaller. The depth of a plant pit shall not be less than one and one-half (1 ½) time the depth of the root ball or six (6) inches greater than the root ball, whichever is smaller. The space under and around the root ball, within the plant pit shall be filled with the above specified planting soil.

2) For shrubs in one gallon containers, a hole twelve (12) inches in diameter and twelve (12) inches deep shall be dug.

3) For shrubs and trees in five gallon containers, a hole twenty (20) inches in diameter and 18 inches deep shall be dug.

4) For trees in fifteen (15) gallon containers, a hole thirty (30) inches in diameter and thirty (30) inches deep shall be dug.

R. Planting of plants, trees, shrubs:

1) Place plants with six (6) inches of Planting Soil loosely but uniformly spread over bottom of pit and fill balance of the pit with Planting Soil.

2) Plant balled plants with Planting Soil carefully washed around and under base of each plant to fill void.

3) Carefully remove plants for planter boxes from pits, cans, boxes and other containers in manner not to break away from roots, the ball of soil formed by container and set in plant pit with Planting Soil carefully washed around and under base of each plant to fill voids.

4) Set balled and burlapped stock, and container grown stock in planting pits, plumb, in center of pits with the top of the root ball at the same elevation as the adjacent finished grades. Remove burlap, rope, and wire from the top and sides of the root balls; retain on the bottoms. Place planting soil around the base and sides of the ball. Carefully tamp to eliminate voids and air pockets. When the pit is approximately 2/3 full, water thoroughly before placing the remainder of the planting soil. Form a ring of soil around the edge of the planting pit to retain water. Water again after placing final layer of planting soil mix.

5) Space ground cover and shrubs in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Place the first row of plants along the edge of the planting bed. Place plants no closer than six (6) inches from edge of bed.

6) Grade of plant pits, beds and lawn area when completely settled shall either be level or uniformly sloped to points no higher than, nor more than one (1) inch lower than the adjoining paving or curb levels.

7) Completion of work shall mean full and exact compliance and conformity with provisions expressed or implied in Drawings and Specifications and removal from the site of all rubbish, debris and excess soil connected with the Work.

8) Shipments or orders of plant materials shall be properly inspected at nursery or at growing site by this Installing Subcontractor. This Installing Subcontractor shall be responsible for all certificates of inspection of plant materials that may be required by these Specifications and by Federal, State, or other authorities will accompany shipment of plants.

S. Shrub material shall be planted three (3) feet on centers unless otherwise indicated on Drawings. Trees and specimen plants shall be set at location shown on Drawings. Minor location adjustment may be made by this Installing Subcontractor or the Contractor if Drawing locations cause interference with utility, structural drainage, or pavement elements. All plant materials shall be placed a minimum of two (2) feet from any curb, wall, building or any other site structure. Location adjustments shall be approved by the Project Architect.

T. Space around and under root ball within plant pit shall be filled with topsoil or soil amendments.

U. No burlap shall be pulled out from under balls. Roots shall be spread in their normal position. Cut off broken or frayed roots cleanly. Place planting soil and compact thoroughly, avoiding injury. Settle by watering ground around plants, (except ground cover), beds, after planting shall be basin-shaped to hold and retain water. No filling around trunks will be permitted. In event the ground settles, additional planting soil shall be filled in to level off the finished grade.

V. Plants shall be centered in pits and set so that finished grade level of plant after settlement will be same as that at which plant was grown. Planting soil shall be placed and compacted thoroughly, avoiding injury and be settled by watering to eliminate any pockets of air.

W. Pruning shall be limited to minimum necessary to remove injured twigs and branches and to compensate for loss of roots during transplanting, but never to exceed 1/3 of branching structure. Cuts more than ¾” in diameter shall be painted with an approved tree wound paint. In no case shall any plant supplied under this Contract be pruned back to such an extent that it no longer meets specifications.

X. Tree staking shall be done in the following manner. Wires shall be encased in hose to prevent direct contact with bark of tree and shall be placed around trunk in single loop. Wires shall be tightened and kept taut with turn buckles. Three (3) guy wires shall be spaced equally about each tree. Each guy wire shall be attached to tree trunk at an angle of about 60 degrees at about 2/5 of height of tree and anchored at ground either to notched stakes which have been driven into ground at an angle away from the tree, so that tops of the anchor stakes are below finished grade, or (where underground utilities are within four (4) feet of finished grade) to “dead men” placed at least three (3) feet below finished grade. Plants shall be plumb after staking.

Y. Bracing of trees and tall plants: Trees and tall plants which are 7’0” or more in height, and/or more than 2 to 3 inches in diameter, shall be braced by this Contractor.

## 16. MAINTENANCE

* 1. Landscape subcontractor shall begin maintenance immediately after planting and continue for the number of days set forth in Paragraph No. 9 Warranty and Guarantee.
1. This Installing landscaping subcontractor and the Contractor shall maintain the sodding and grass from its installation until sixty (60) days after the completion and the acceptance of this work by the Project Architect.
2. The Contractor shall maintain the sodding and grass from the end of the above sixty (60) day period until the Date of Final Substantial Completion.
3. The Contractor shall maintain the sodding and grass from the Date of Final Substantial Completion for an additional period of forty-five (45) days.
4. This Installing landscaping subcontractor shall maintain the trees, shrubs and plants from installation until 105 days after the completion and the acceptance of this work by the Project Architect.
5. The Contractor shall maintain the trees, shrubs, and plants from the end of the above 105 day period until the Date of Final Substantial Completion.
6. The Contractor shall maintain the trees, shrubs and plants from the Date of Final Substantial Completion for an additional period of ninety (90) days.
7. To maintain shall mean the providing of full care including watering every day (unless substantial rain falls before 3:00 P.M. on that day).
8. Maintain trees, shrubs, lawn areas, and other plants for the full time limitations set forth in the Warranty and Guarantee paragraph 9. This Installing Subcontractor and the Contractor are responsible for timely and proper mowing of lawn areas during these maintenance period. Mowing shall be done on a weekly basis during the months of April, through September. In no event shall mowing exceed fourteen (14) day time intervals.
9. Maintain trees, shrubs and other plants by pruning, watering, cultivating, and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.
10. Maintain lawns by watering, fertilizing, and weeding and by other operations such as rolling, re-grading, and replanting as required to establish smooth and acceptable lawns, free of eroded or bare areas.
11. It is the intent of this Specification that the Contractor is obligated to deliver a satisfactory stand of perennial grass before final payment will be made for any of the Pay Items described. If it is necessary to repeat any or all of the work, including plowing, fertilizing, watering, rolling, and seeding, this Installing Subcontractor and the Contractor shall repeat these operations until a satisfactory stand is obtained.
12. For the purpose of sodding, a satisfactory stand of grass is here defined as a minimum of ninety-five (95) percent cover over the areas to be sodded, with grass that is alive and growing. Dead or brown grass, even in small patches, shall be replaced. If there are areas which do not show evidence of uniform growth at that time, such are to be resodded by the Contractor and this Installing Subcontractor in the original manner specified. Lawn areas will be acceptable to the Project Architect when good evidence of uniform, healthy growth is established throughout the areas.
13. The Project Architect shall be the sole judge of acceptability.

## 17. FINAL INSPECTION AND ACCEPTANCE

* 1. Final inspection for acceptance shall be requested at least ten (10) days before end of maintenance period.
	2. Rejected material shall be replaced with acceptable plant material as soon as possible within acceptable planting dates.
	3. “Completion of Work” means the full and exact compliance and conformity with the provisions expressed or implied in the Drawings and Specifications.

**END OF SECTION**