

# LANDSCAPING SPECIFICATION

## LANDSCAPING

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. The work covered in this section consists of soil preparation, fine grading, lawns, trees, shrubs and ground cover plantings, their protection and maintenance of planted areas until acceptance.

#### 1.2 RELATED WORK

- A. See Civil and Landscape plans and specifications.

#### 1.3 QUALITY ASSURANCE

- A. Qualifications of Workmen: Contractor shall provide at least one person present at all times during execution of work that is thoroughly familiar with the type of materials being installed and proper equipment and methods for their installation and who shall direct all work performed under this section.
- B. Standards: All seed, sod, trees, shrubs, and ground covers shall meet or exceed the specifications of Federal, State, County and / or Municipality laws requiring inspection for disease and insect control.
- Plants and planting methods shall conform to the latest edition of American Standard for Nursery Stock, American Nursery & Landscape Association, 1000 Vermont Avenue, NW, Suite 300, Washington, DC 20005
  - Plants shall be true and representative of their genus, species, cultivar, or variety. Nursery stock shipped in accordance with the required specifications shall be deemed to be acceptable within the terms of this section if it is typical in size and habit for the species in the region of the country in which it is grown unless the specifications include additional details.
3. Prior to ordering any plant material, representative photos of each species shall be provided for review and acceptance.
4. One of each bundle or lot shall be tagged with name and size of the plant in accordance with American Nursery & Landscape Association standards. In all cases, botanical names shall take precedence over common names. Landscape Architect should be consulted in the event questions arise about nomenclature of plants to be used and their availability.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages are not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Deliver sod on pallets.
- D. Handling of plants shall be by lifting the root mass or container and not by lifting plant by trunk or branches. Handling of plants in an improper fashion shall be cause for rejection of plant materials. Care must be taken during all phases of the location and planting procedures not to damage root system, trunk or branches. All plant materials shall be planted as soon after arrival at the site as possible. Contractor is responsible for keeping plants safe from injury by the construction activity and watered to prevent drying out before planting. Balled and burlapped plants shall be "healed-in" and protected with burlap or other accepted material if they cannot be planted upon delivery. Plants with broken major branches, badly bruised or damaged bark are not acceptable and will be rejected.

#### 1.5 PLANTING DATES

- A. The planting season for trees, shrubs and groundcovers is between October 1st and June 1st of the following year. Do not plant if temperature is below freezing or above 90 degrees. Planting at any other time other than the planting season is the Contractor's option and full responsibility and without additional compensation. Planting may, at the option of the Contractor, be postponed into the following planting season but without additional compensation provided the Owner and local governing jurisdiction have approved.
- C. Planting dates for sod, sprigging or seeding shall be per the grassing specification.

#### 1.6 MEASUREMENT AND PAYMENT

- A. Measurement - The items listed in the proposal shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not listed in bid form, but required to complete the work, shall be deemed to be a part of the item with which it is associated and shall be included in the cost of the unit shown on the bid form.
- B. Payment - Payment for the unit shown on the bid form shall be considered to cover the cost of all labor, material, equipment, and performing all operations necessary to complete the work in place. No payment will be made for any material wasted, used for the convenience of the Contractor, unused or rejected.
- Trees, Shrubs, and Groundcovers - Will be paid for at the contract unit price for planted/installed and accepted trees, shrubs, and groundcovers.
  - Payment for grassing will be made per the grassing specification.
  - Clearing - Will be paid for at the lump sum price for clearing.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Contractor shall, at time of delivery, furnish Owner and / or Landscape Architect with samples of all materials received in order the quality and source of materials may be reviewed.

#### 2.2 TOPSOIL

- A. TOPSOIL SHALL BE FERTILE, FRIABLE SOIL CONTAINING LESS THAN 5% TOTAL VOLUME OF THE COMBINATION OF SUBSOIL, REFUSE, ROOTS LARGER THAN 1 INCH DIAMETER, HEAVY, STICKY OR STIFF CLAY, LIMES LARGER THAN 1/2 INCHES IN DIAMETER, NOXIOUS SEEDS, STICKS, BRUSH, LITTER, OR ANY SUBSTANCES DELIBERIOUS TO PLANT GROWTH. THE PERCENT (%) OF THE ABOVE OBJECTS SHALL BE CONTROLLED BY SOURCE SELECTION NOT BY SCREENING THE SOIL. TOPSOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND THE SUPPORT OF VEGETATIVE GROWTH. IMPORTED TOPSOIL SHALL NOT CONTAIN WEED SEEDS IN QUANTITIES THAT CAUSE NOTICEABLE WEED INFESTATIONS IN THE FINAL PLANTING BEDS. IMPORTED TOPSOIL SHALL MEET THE FOLLOWING PHYSICAL AND CHEMICAL CRITERIA:
- SOIL TEXTURE: USDA LOAM, SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NOT GREATER THAN 55%.
  - PH VALUE SHALL BE BETWEEN 5.5 AND 7.5.
  - PERCENT ORGANIC MATTER (OM) SHALL BE 5.0% BY DRY WEIGHT.
  - SOLUBLE SALT LEVELS SHALL BE LESS THAN 2 MG/LG/CM.
  - SOIL CHEMISTRY SUITABLE FOR GROWING THE PLANTS SPECIFIED.
- B. IMPORTED TOPSOIL SHALL BE HARVESTED SOIL FROM FIELDS OR DEVELOPMENT SITES. THE ORGANIC CONTENT AND PARTICLE SIZE DISTRIBUTION SHALL BE THE RESULT OF NATURAL SOIL FORMATION. MANUFACTURED SOILS WHERE COARSE SAND, COMPOSTED ORGANIC MATERIAL OR CHEMICAL ADDITIVES HAS BEEN ADDED TO THE SOIL TO MEET THE REQUIREMENTS OF THIS SPECIFICATION SECTION SHALL NOT BE ACCEPTABLE. RETAINED SOIL PEDS SHALL BE THE SAME COLOR ON THE INSIDE AS IS VISIBLE ON THE OUTSIDE.
- C. IMPORTED TOPSOIL FOR PLANTING SOIL SHALL NOT HAVE BEEN SCREENED AND SHALL RETAIN SOIL PEDS OR CLODS LARGER THAN 2 INCHES IN DIAMETER THROUGHOUT THE STOCKPILE AFTER HARVESTING.
- D. STOCKPILED EXISTING TOPSOIL AT THE SITE MEETING THE ABOVE CRITERIA MAY BE ACCEPTABLE.
- E. PROVIDE A ONE GALLON SAMPLE FROM EACH IMPORTED TOPSOIL SOURCE(S) WITH REQUIRED SOIL TESTING RESULTS OF ALL EXISTING TOPSOIL TO BE USED. THE SAMPLE SHALL BE A MIXTURE OF THE RANDOM SAMPLES TAKEN AROUND THE SOURCE STOCKPILE OR FIELD.

#### 2.3 SEED

- A. See grassing specification.

#### 2.4 SPRIG

- A. See grassing specification.

#### 2.5 SOD

- A. See grassing specification.

#### 2.6 PLANT MATERIALS

- A. Provide all plant materials as indicated on the plans. In the event of any discrepancies between quantities of plants indicated on the plant schedule and those indicated on the plan, plan quantities shall govern.
- B. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae, and shall have healthy, well developed root systems. Plants shall be from a nursery within 300 miles north or south of the project location and shall have been grown under climate conditions similar to those in the locality of project. Trees for planting in rows shall be uniform in size and shape.
- B. Plants shall possess a normal balance between height and width. Plants shall be measured when branches are in their normal position. Height and spread dimensions specified refer to the main body of plant and not from branch tip to tip. Plants larger in size than specified may be used with no change in contract price.
- C. Plants shall be dug with firm natural balls of earth, of diameter not less than recommended by American Standard for Nursery Stock and of sufficient depth to include fibrous and feeding roots. Plants will not be accepted if ball is cracked or broken before or during planting operations.
- D. Trees specified for Street Tree Grade shall conform to standards of the A.N.L.A.:
- Suitable for planting as street trees.
  - Free of branches to approximately 50% of height from ground.
  - Crown of tree shall be in good balance with the trunk.

#### 2.7 FERTILIZER

- A. Commercial fertilizer shall be slow release 5-10-10 or 6-12-12 (or as recommended by soil test), uniform in composition, free flowing, and suitable for application with appropriate equipment. Deliver to site unopened in manufacturer's standard containers showing weight, analysis and name of manufacturer. If stored on site, protect from the elements.

#### 2.8 PEAT MOSS

- A. Peat moss shall be finely shredded, 90% organic mass peat, brown in color and suitable for horticultural purposes. Peat shall be measured in air dry condition, containing not more than 35% moisture by weight. Ash content shall not exceed 10%.

#### 2.9 MULCH FOR TREES, SHRUBS, AND GROUND COVERS

- A. Mulch for non bio-retention areas shall be as shown on plans.
- B. Mulch for bio-retention areas shall be shredded hardwood.

#### 2.10 STAKING EQUIPMENT

- A. Trees and palms shall be staked as shown in landscape plans.

#### 2.11 WATER

- A. Contractor shall provide water to the project via the installation of a new irrigation system for the area shown on the plans. For bidding purposes, the contractor shall assume clearing, new well, associated pumps and controls as needed for irrigation.

### PART 3 - EXECUTION

#### 3.1 FINE GRADING

- A. All areas within limits of construction shall be graded to the desired grades. All areas within limits of construction are to be fine graded, free of roots, debris and other objectionable material, before planting or grassing commence. Any additional fill material needed to fill low or uneven areas shall be provided by the Contractor. Positive drainage away from structures shall be provided in all areas so that water does not occur. Planting beds shall be raised above adjacent lawn areas to provide good drainage conditions.
- B. Planting and raised areas, if not loose, shall be loosened to a minimum depth of 3-inches before fertilizer, seed or sod is applied.

#### 3.2 FERTILIZER AND SOIL AMENDMENTS

- A. Contractor shall provide Topsoil Analysis Tests that has been performed by a State Agricultural Experiment Station, Soil and Water Conservation District, State University, or other qualified private testing laboratory, as approved by Landscape Architect

Apply fertilizer and soil amendments after fine grading and mix thoroughly into upper 2 inches of soil.

- C. Fertilizer and other necessary soil amendments shall be applied at the rate recommended by Topsoil Analysis Test.

#### 3.3 SODDING

- A. See grassing specification.

#### 3.4 SPRIGGING

- A. See grassing specification.

#### 3.5 SEEDING

- A. See grassing specification.

#### 3.6 SEED PROTECTION

- A. See grassing specification.

#### 3.7 LAYOUT OF TREES, SHRUBS, AND GROUND COVERS

- A. All plants shall be placed in the proper location as shown on construction plans, allowing Landscape Architect to review all plant locations prior to actual planting. Landscape Architect may make minor adjustments which shall not be cause for changes to the contract price.

#### 3.8 OBSTRUCTIONS BELOW GROUND

- A. Prior to excavating planting holes, Contractor shall determine the exact location of electrical, phone, or television cables or conduits, water, drainage or sewer lines, and any other subsurface structures and take precautions to protect them. Any damage to underground utilities shall be repaired immediately at the Contractor's expense.
- B. In the event rock, underground construction work, or other obstructions are encountered in any plant hole excavation under this contract, alternate locations may be selected. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3) feet below grade and not less than six (6) inches below bottom of ball or roots when plant's property set at the required grade. The Contractor shall be responsible for the removal of such rock or other underground obstructions encountered.

#### 3.9 PLANTING HOLES

- A. For trees, shrubs and ground covers the planting hole shall be as shown on planting details in the plans. Do not leave planting holes open overnight. In the event that plant holes are dug and not planted in a timely manner, install four (4) foot high orange safety fencing around all excavated areas.

#### 3.10 PLANTING TREES AND SHRUBS

- A. Shall be same as grown in the nursery and/or container soil level. Adjust bottom soil mix to insure proper planting level with the proposed surrounding grades. Check plants to insure proper vertical alignment.
- B. Fill holes to proper height to receive plant, and thoroughly tamp before setting the plant. Set plant in upright position in the center of the hole, and compact the backfill mixture around the ball or roots. Add soil amendments as required to improve fertility of existing soil and plant growing conditions.
- When balled or burlapped plants are set, compact topsoil around base of ball to all voids. All bindings shall be removed and the top half of burlap removed from around root ball. If burlap is made of natural fibers it can be laid back from the root mass or can be cut away. Remove all burlap if it is made of non-degradable material fabric. All weeds growing on the root mass shall be removed prior to planting.
  - Containerized plants shall have the container removed prior to planting. Care shall be taken to protect root mass from injury and the root mass intact. If root mass shows evidence of being wind or rotted, three vertical 1/2" deep cuts shall be made on alternate sides of the root mass and roots pulled away slightly to untangle roots which have begun to "circle" the root mass and to encourage new root growth. All weeds growing in the root mass shall be removed prior to planting.
  - Roots of bare root plants shall be straight out and tops carefully worked in among them. Remove with a clean cut, any broken or frayed roots.

#### 3.11 PLANTING GROUND COVERS

- A. Planting beds shall be thoroughly worked to a depth of twelve (12) inches incorporating fertilizer and other soil improvements at the recommended rates suggested by the soil test. Rake prepared planting bed until level, smooth and free from all soil, lumps, rocks, sticks and other debris. Mulch bed area should be neatly outlined. Space the plants evenly as indicated on the drawings. Only in soil that is moist, friable, and not wet or soggy. In the case of planting in the open on hot days, shorten the time between planting and watering.

#### 3.12 WATERING

- A. Thoroughly water each plant when the hole is 1/3 full, again at 2/3 full and then complete backfilling. Once backfilling is complete, water again, then tamp the soil in place until the surface of the backfill is level with the surrounding area and the plant bears the same relation of finished grade as it bore to existing grade before being dug.
- B. Earth saucers shall be constructed around the perimeter of planting holes of all trees and all single planted shrubs. Earth saucers shall be minimum 3" high and compacted to retain water. Earth saucers shall not be installed in areas where the subsoil is very poorly drained or around mass shrub / groundcover plantings.
- C. All trees and shrubs to be hand watered on a regular basis as necessary during the warranty period.

#### 3.13 SOIL MIX

- A. Shall be per existing soils on site with recommended amendments from soils test.

#### 3.14 STAKING OF TALL PLANTS

- A. Shall be done only if site / environment conditions make it required. If required, trees and palms shall be staked as indicated on the plans.

#### 3.15 MULCHING

- A. All plants shall be mulched with an evenly thick layer of clean mulch immediately after planting. Mass plant beds shall be completely mulched to the limits of the bed as shown on the plans. Limit of mulching for individual trees and shrubs shall be slightly beyond the saucer berm. The areas mulched shall be tidy and clean in appearance.

#### 3.16 PRUNING

- A. Remove dead, broken or bruised branches after planting using clean, sharp tools.

#### 3.17 WEEDING

- A. All planted areas shall be kept free from weeds and undesirable grasses until final acceptance by the Owner. See General notes on plans for additional information.

#### 3.18 INSECT AND DISEASE CONTROL

- A. All plant materials shall be disease or insect free upon arrival to the site, however, should any plants show signs of insect or disease infestation, Contractor shall identify nature of infestation and submit to Landscape Architect a proposed method of control. Contractor shall treat all infested plants at its expense. Should the infestation be wide spread and uncontrollable, plants affected shall be removed from site, fresh plants brought in and all other plants treated to prevent infestation of remaining plants at Contractor's expense.

#### 3.19 CLEAN UP

- A. Contractor is responsible for removing all trash, debris, rubbish and all other materials associated with the construction from site on a daily basis. All tags, flags, and labels will be removed from plants and trees. The site shall be left broom clean and tidy. Clean up of the site is a prerequisite to final acceptance by the Owner.

### PART 4 - MAINTENANCE AND WARRANTY

#### 4.1 MAINTENANCE

- A. Protect all plantings (grass, plants and trees) until accepted by Owner. All damage, regardless of cause, shall be immediately repaired and plants replaced if necessary. Erect temporary fences, barricades, signs and other protection as needed to prevent trampling. Contractor is not responsible for replacement of damaged or missing plants and plant materials due to vandalism or other acts beyond the control of the Contractor if proper barriers or other safeguards have been maintained.
- B. Maintenance shall include but is not limited to watering, weeding, cultivating, removal of dead material, mulch reapplication, resetting plants to proper grades or upright position, lawn mowing, fertilizing, and other necessary operations.
- C. The Contractor shall repair immediately any areas damaged as a result of construction operations or erosion.
- E. The Contractor shall maintain all proposed plantings until final acceptance is issued by the Owner.
- F. At the end of the maintenance period, all plants shall be in a healthy growing condition. During the maintenance period, should the appearance of any plant indicate weakness and probability of dying, immediately replace without additional cost to the Owner. Replacements required because of vandalism or other causes beyond the control of the Contractor are not part of this contract.

#### 4.2 WARRANTY

- A. All shrubs, ground cover, and trees shall be guaranteed by the Contractor to be alive and healthy for a one year period after substantial completion is issued by the Owner. A final inspection with the Owner shall be conducted at the end of the warranty period to determine if any plants will be required to be replaced.
- B. Any lawn, plant, or tree which is dead or not showing satisfactory growth shall be replaced at Contractor's expense at the end of warranty period. All replacements shall be of original quality and of a size equal to adjacent plants or trees of the same kind.

END OF SECTION

PRELIMINARY

NO.	REVISIONS	BY	DATE

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**PAVILION DEVELOPMENT COMPANY**  
 BERKELEY COUNTY, SOUTH CAROLINA

FIRESTONE SITE DEVELOPMENT

LANDSCAPING SPECIFICATIONS

JOB NO:	J-23390.8120
DATE:	10/04/19
DRAWN:	LNS
DESIGNED:	LNS
REVIEWED:	CAE
APPROVED:	SCG
SCALE:	NTS

L1.2

PERMIT SET - FOR REVIEW PURPOSES ONLY