

## SECTION 32 90 00

### PLANTING

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing landscape planting, including soil preparation, planting, guying and clean-up as indicated and required by Code and the County and City of Los Angeles.

##### 1.02 QUALITY ASSURANCE

- A. Plants shall be subject to inspection of County's Representative upon delivery for conformity to specifications. Such review shall not impair the right of inspection and rejection during progress of the work.

##### 1.03 SUBMITTALS

- A. Plant List: Furnish list of plant materials to be furnished and sources of materials.

##### 1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery:
  - 1. Deliver fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade mark, and conformance to California State Law.
  - 2. Deliver plants with legible identification labels.
    - a. Label trees, evergreens, bundles of containers of like shrubs, or groundcover plants.
    - b. State correct plant name and size on plant list.
    - c. Use durable waterproof labels with water-resistant ink which will remain legible for at least 60-days.
  - 3. Protect plant material during delivery to prevent damage to root ball or desiccation of leaves.
  - 4. Sod: Harvest, deliver, store, and handle sod according to the requirements of the American Sod Producers Association's (ASPA) "Specifications for Turfgrass Sod Materials and Transplanting/Installing."
  - 5. Notify the County's Representative 7-days in advance of delivery of plant materials and furnish an itemized list of the plants in each delivery.
- B. Storage: Store plant material in shade and protect from weather.
- C. Handling: Exercise care in handling, loading, unloading and storing of plant materials. Plant materials that have been damaged will be discarded and if planted, shall be replaced with undamaged materials at the Developer Design/Builder's expense.

##### 1.05 JOB CONDITIONS

- A. Perform planting when weather and soil conditions are suitable in accordance with locally accepted practice.

##### 1.06 SAMPLES AND TESTS

- A. Owner reserves the right to take and analyze samples of materials for conformity to specifications at any time. Remove rejected materials immediately from the site. Cost of testing of materials not meeting specifications shall be paid by the Developer Design/Builder.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Materials shall be of standard first-grade quality and shall be in prime condition when planted and accepted.

### 2.02 ORGANIC AMENDMENT

- A. Organic amendment shall be nitrogen stabilized wood residual containing 0.56% to 0.84% N based on dry weight.
- B. Particle Size:
  - 95% - 100% passing 0.35 mm standard sieve.
  - 80% - 100% passing 2.33 mm standard sieve.
- C. Salinity: The saturation extract conductivity shall not exceed 3.5 millimhos/centimeter at 25 degrees centigrade as determined by saturation extract method.
- D. Iron Content: Minimum 0.08% dilute acid soluble Fe on dry weight basis.
- E. Ash: 0-6.0% (dry weight).

### 2.03 SOIL AMENDMENTS

- A. Soil Sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).
- B. Iron Sulfate: 20% Iron (expressed as metallic iron), derived from ferric and ferrous sulphate, 10% sulfur (expressed as elemental).
- C. Calcium Carbonate: 95% lime as derived from oyster shells.

### 2.04 FERTILIZER

- A. Planting Fertilizer: Pelleted or granular form shall consist of the following percents by weight and shall be mixed by commercial fertilizer supplier:
  - 6% nitrogen
  - 20% phosphoric acid
  - 20% potash
- B. Planting Tablets:
  - 1. Shall be slow-release type with potential acidity of not more than 5% by weight containing the following percentages of nutrients by weight:
    - 20% nitrogen
    - 10% phosphoric acid
    - 5% potash
    - 2.6% combined calcium
    - 1.6% combined sulfur
    - .35% iron (elemental) from ferrous sulfate
  - 2. Shall be 21 gram tablets as manufactured by Agriform or approved equal, applied in accordance with manufacturer's instructions.
- C. Sulphate of potash: 0-0-50.
- D. Single Super-Phosphate: Commercial product containing 18-20% available Phosphoric Pentoxide, or equal.
- E. Urea Formaldehyde: 38-0-0.

## 2.05 IMPORT TOP SOIL

- A. Silt plus clay content of the import soil shall not exceed 20% by weight with a minimum 95% passing the 2.0 millimeter sieve. The pH shall be between 5.5 and 7.5, the sodium absorption ratio (SAR) shall not exceed 6, and the electrical conductivity (ECe) of the saturation extract of this soil shall not exceed 3.0 millimhos per centimeter at 25 degrees centigrade. The boron content shall be no greater than 1 part per million as measured on the saturation extract. Soil used in planters shall have a wet bulk density not to exceed 120 pounds per cubic foot.

## 2.06 PLANT MATERIAL

- A. Plants shall be in accordance with the California State department of Agriculture's regulation for nursery inspections, rules and rating. Plants shall have a normal habit of growth and shall be sound, healthy, vigorous and free of insect infestations, plant diseases, sunscalds, fresh abrasions of the bark, excessive abrasions, or other objectionable disfigurements. Tree trunks shall be sturdy and have well "hardened" systems and vigorous and fibrous root systems which are not root or pot-bound. In the event of disagreement as to condition of root system, the root conditions of the plants furnished by the Design/Builder in containers will be determined by removal of earth from the roots of not less than two plants or more than two percent of the total number of plants of each species or variety. Where container-grown plants are from several sources, the roots of not less than two plants of each species or variety from each source will be inspected. In case the sample plants inspected are found to be defective, the County's Representative reserves the right to reject the entire lot or lots of plants represented by the defective samples. Any plants rendered unsuitable for planting because of this inspection will be considered as samples and will be provided at the expense of the Design/Builder.
- B. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock. If the use of larger plants is accepted, the ball of earth or spread of roots for each plant will be increased proportionately.
- C. Tree Sizes:
  - 1. Shade Trees: 24-inch box.
  - 2. Palm Trees: 18-inch box.
- D. Plants not conforming to the specified requirements shall be considered defective and shall be immediately removed from the site and replaced with new plants at the Design/Builder's expense.
- E. Pruning: Do not prune, trim or top small trees or plant materials prior to delivery.
- F. Nursery Grown and Collected Stock:
  - 1. Grown under climatic conditions similar to those in locality of Project.
  - 2. Container-grown stock in vigorous, healthy condition, not root-bound or with root system hardened off.
  - 3. Use only liner stock plant material which is well established in removable containers or formed homogenous soil sections.

## 2.07 GRASS MATERIALS

- A. Sod: Certified turfgrass sod complying with ASPA specifications for machine-cut thickness, size, strength, moisture content, and mowed height, and free of weeds and undesirable native grasses. Provide viable sod of uniform density, color, and texture of the following turfgrass species, strongly rooted, and capable of vigorous growth and development when planted.
  - 1. Species: Provide sod of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed.

## 2.08 GUYING AND STAKING MATERIALS

- A. Pipe Tree Stakes: Sch. 40 steel pipe, 1-1/2" diameter with cap, primed and painted before installation with two coats flat black exterior enamel. Touch up in field to match shop condition.
- B. Ties: 36" corded rubber tie.
- C. Guying Hardware:
  - 1. Wire: Pliable 9 gauge galvanized.

2. Hose: 1/2" new rubber hose.
3. Turnbuckles: Galvanized or dip-painted, size as required.
4. Cable Clamps: Galvanized, size as required.

#### 2.09 TREE PAINT

- A. Morrison Tree Seal, Cabort Tree Paint, or approved equal.

#### 2.10 WATER

- A. Water shall be clean and potable.

#### 2.11 MULCH

- A. The mulch shall consist of fibrous, woody bark mixture of varied particle size such that:

| <u>Percent Passing</u> | <u>Sieve Size</u> |
|------------------------|-------------------|
| 90-100                 | 25.4 mm (1")      |
| 80-100                 | 12.7 mm (1/2")    |
| 20-60                  | 6.35 mm (1/4")    |

#### 2.12 SAND

- A. Washed silica sand.

#### 2.13 SOIL SEPARATOR

- A. Soil separator fabric shall be mirafi 140N nonwoven drainage fabric by Mirafi Inc. (415) 924-6036.

#### 2.14 PLANTER DRAINAGE ROCK

- A. Drainage rock to be 1/4" pea gravel and shall be clean, hard, should, durable, uniform in quality, and free of any detrimental quantity of soft, friable, thin, elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance.

#### 2.15 DRAINAGE MAT

- A. Drainage mat shall be a compression-resistant nylon matting with polyester nonwoven filter fabric heatp bonded to matting: "Enkadrain" by American Enka Company, (704) 667-7608.

#### 2.16 PERFORATED DRAIN PIPE

- A. Perforated drain pipe shall be corrugated polyethylene tubing wrapped in nylon filter cloth: ADS pipe with 'Drain Guard' by Advanced Drainage Systems, (614) 457-3051.

### PART 3 - EXECUTION

#### 3.01 INSPECTION

- A. Verify that final grades to + or - 0.10' have been established prior to commencing planting operations. Provide for inclusion of amendments, and settling.
- B. Inspect trees, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning.
- C. Do not begin planting of trees until deficiencies are corrected or plants replaced.

### 3.02 PREPARATION

#### A. Soil Preparation:

1. After approximate finished grades have been established, soil shall be conditioned and fertilized by uniformly spreading and cultivating thoroughly into the top 6" of soil the following:

Application Rates: (Per 1,000 square feet)

- a. Nitrogen stabilized organic amendment - 3 cu. yds.
- b. Planting fertilizer - 15 lbs.
- c. Soil sulphur - 20 lbs.

2. At time of planting, the top 2-inches of areas to be planted shall be free of stones or other deleterious matter 1" in diameter or larger, and shall be free from wire, plaster, or similar objects that would be a hindrance to planting or maintenance.

#### B. Disposal of Excess Soil: Dispose of any unacceptable or excess soil at an offsite location.

#### C. Lawn Planting Preparation:

1. Limit subgrade preparation to areas that will be planted in the immediate future.
2. Loosen subgrade to a minimum depth of 4-inches. Remove stones larger than 1-1/2-inches in any dimension and sticks, roots, rubbish, and other extraneous materials.
3. Spread planting soil mixture to depth required to meet thickness, grades, and elevations shown, after light rolling and natural settlement.
  - a. Place approximately 1/2 the thickness of planting soil mixture required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil mixture.
  - b. Allow for sod thickness in areas to be sodded
4. Preparation of Unchanged Grades: Where lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare soil as follows:
  - a. Remove and dispose of existing grass, vegetation, and turf. Do not turn over into soil being prepared for lawns.
  - b. Till surface soil to a depth of at least 6-inches. Apply required soil amendments and initial fertilizers and mix thoroughly into top 4-inches of soil. Trim high areas and fill in depressions. Till soil to a homogenous mixture of fine texture.
  - c. Clean surface soil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
  - d. Remove waste material, including grass, vegetation, and turf, and legally dispose of it off the Owner's property.
5. Grade lawn and grass areas to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future. Remove trash, debris, stones larger than 1-1/2-inches in any dimension, and other objects that may interfere with planting or maintenance operations.
6. Moisten prepared lawn areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
7. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.

### 3.03 PLANTING INSTALLATION

#### A. General:

1. Planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice.
  2. Only as many plants as can be planted and watered on that same day shall be distributed in a planting area.
  3. Containers shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken and they shall be planted and watered as specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.
- B. Weed Control: Maintain planting areas weed free until final acceptance by Owner utilizing mechanical and chemical treatment.
- C. Planting of Trees and Shrubs:
1. Excavation for planting shall include the stripping and stacking of acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits and planting beds.
  2. Excess soil generated from the planting holes and not used as backfill or in establishing the final grades shall be removed from the site.
  3. Center plant in pit or trench.
  4. Face plants with fullest growth into prevailing wind.
  5. Set plant plumb and hold rigidly in position until soil has been tamped firmly around ball or roots.
  6. Excavated holes shall have vertical sides with roughened surfaces, of a size that is twice the diameter and one-half times the depth of the root ball for trees and shrubs.
  7. Trees and shrubs shall be backfilled with:
    - 2 parts by volume import topsoil
    - 1 part by volume organic amendment
    - 1 1/2 lb. iron sulphite per cu. yd. of mix
    - 1/2 lb. soil sulphur per cu. yd. of mix
  8. Plants which settle deeper than the surrounding grade shall be raised to the correct level. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half of the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.
  9. Can Removal:
    - a. Cut cans on two sides with a can cutter.
    - b. Do not injure root ball.
    - c. Do not cut cans with spade or ax.
    - d. After removing plant, superficially cut edge roots with knife on three sides.
  10. Box Removal:
    - a. Remove bottom of plant boxes before planting.
    - b. Remove sides of box without damage to root ball after positioning plant and partially backfilling.

11. Plant Tablets:

- a. After the water has completely drained, place planting tablets as specified.

One tablet per one-gallon container  
Three tablets per five-gallon container  
Seven tablets per 15-gallon container  
Ten tablets per 24" box  
Twelve tablets per 30" box  
Fourteen tablets per 36" box  
Sixteen tablets per 42" box  
Eighteen tablets per 48" and those box sizes which are larger

- b. Planting tablets shall be set with each plant on top of the root ball while the plants are still in their containers so the required number of tablets to be used in each hole can be easily verified.

12. Backfill:

- a. The remainder of the hole shall then be backfilled and tamped firm.

- b. After backfilling, construct an basin around each plant. Each basin shall be of a depth sufficient to hold at least 2-inches of water. The basins shall be constructed of amended backfill materials.

13. Pruning: Pruning shall be limited to the minimum necessary to remove injured twigs and branches, and to shape the plant material. Do not prune prior to delivery of plants. Cuts over 3/4" in diameter shall be painted with tree paint.

14. Staking and Guying: Stake trees immediately after planting. Install stakes plumb.

- D. Mulch Cover: All groundcover, perennial, and annual beds shall be dressed with 1" layer of mulch, where slopes are not steeper than 2:1.

3.04 SODDING NEW LAWNS

- A. Lay sod within 24 hours of stripping. Do not lay sod if dormant or if ground is frozen.

- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

- C. Saturate sod with fine water spray within 2 hours of planting. During first week, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2-inches below the sod.

3.05 CLEAN-UP

- A. After planting operations have been completed, remove trash, excess soil, empty plant containers and rubbish from the property. Remove trash at the end of each working day.

- B. Leave the site broom-clean. Walks and drives shall be left in a clean and safe condition.

3.06 OBSERVATION SCHEDULE

- A. Notify the County's Representative in advance for the following site visits:

1. Plant material review - 48 hours.
2. Plant layout review - 48 hours.
3. Soil preparation and planting operations. One tree with each type of specified staking shall be observed prior to planting of trees - 48 hours.
4. Pre-maintenance - 7 days.

- B. When observations are conducted by someone other than the County's Representative, show evidence in writing of when and by whom these inspections were made.

3.07 PLANTING LEGEND

TREES

| <u>SYM</u> | <u>BOTANICAL NAME</u>                           | <u>COMMON NAME</u>                             |
|------------|-------------------------------------------------|------------------------------------------------|
| A          | LAGERSTROEMIA INDICA 'WHITE'                    | CAPE MYRTLE                                    |
| B          | LAGERSTROEMIA INDICA 'LAVANDER'                 | CAPE MYRTLE                                    |
| C          | TRISTANIA CONFERTA                              | BRISBANE BOX                                   |
| D          | CHITALPA TASHKENTENSIS                          | CHITALPA                                       |
| E          | MELALEUCA QUINQUENERVIA                         | CAJEPUT TREE                                   |
| F          | PHOENIX CANARIENSIS OR<br>WASHINGTONIA FILIFERA | CANARY ISLAND DATE PALM<br>CALIFORNIA FAN PALM |

SHRUBS & VINES

|    |                                                           |                    |
|----|-----------------------------------------------------------|--------------------|
| 1  | AGAPANTHUS AFRICANUS                                      | LILY OF THE NILE   |
| 2  | BUXUS MICROPHYLA JAPONICA                                 | JAPANESE BOXWOOD   |
| 3  | DIETES VEGETA                                             | FORTNIGHT LILY     |
| 4  | HIBISCUS ROSA SINENSIS<br>(MIX OF 4' HEIGHT VARIETIES)    | HIBISCUS           |
| 5  | HIBISCUS ROSA SINENSIS<br>(MIX OF 6' HEIGHT VARIETIES)    | HIBISCUS           |
| 6  | LIRIOPE MUSCARI                                           | BIG BLUE LILY TURF |
| 7  | NANDINA DOMESTICA 'HARBOR DWARF'                          | HEAVENLY BAMBOO    |
| 8  | NANDINA DOMESTICA 'COMPACTA'                              | HEAVENLY BAMBOO    |
| 9  | PITTOSPORUM TOBIRA<br>'WHEELERS DWARF' OR 'CREAM DE MINT' | TOBIRA             |
| 10 | PITTOSPORUM TOBIRA 'VARIEGATA'                            | INDIA HAWTHORN     |
| 11 | RAPHIOLEPIS INDICA 'BALLERINA'                            | NEW ZEALAND FLAX   |
| 12 | PHORMIUM TENAX 'SUNDOWNER'                                | NEW ZEALAND FLAX   |
| 13 | PHORMIUM TENAX 'MAORI SUNRISE'                            | BIRD OF PARADISE   |
| 14 | STRELITZIA REGINAE                                        | NATAL PLUM         |
| 15 | CARISSA MACROPARPA 'BOXWOOD BEAUTY'                       |                    |

VINES

|    |                             |              |
|----|-----------------------------|--------------|
| AA | FICUS REPTENS               | CREeping FIG |
| BB | PARTHENOCISSUS TRICUSPIDATA | BOSTON IVY   |

END OF SECTION