



325 North St Paul #3100

Dallas, Texas 75201

(972) 463- 4251

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Landscape Specifications

SECTION 02900 - LANDSCAPE

PART 1 - GENERAL

1.01 RELATED:

General Requirements Division 1 В. Section 02810 Irrigation

1.02 UNIT PRICES:

Provide unit prices for work and materials. Unit prices shall be net for completed work in place and include labor, material, equipment, applicable taxes, insurance, overhead and profit, bed preparation, guarantee and maintenance. Unit prices shall govern for additions and deductions in connection with work. Omission of a unit price does not release contractor from requirement to provide, install and warranty any item(s).

1.03 REFERENCES:

A. American Standard for Nursery Stock published by American Association of Nurserymen:

B. American Joint Committee on Horticultural Nomenclature: Latest Edition.

1.04 SUBMITTALS:

A. Guarantee: Submit three (3) copies of written guarantee in the terms specified under "Guarantee" provisions of these specifications, and sign.

B. Samples: . Submit for approval sufficient representative quantities of organic soil, sand and topsoil. Landscape Architect will approve samples before use on project.

2. If soil mix is delivered in bulk form, submit complete laboratory analysis for Landscape Architect's approval.

3. Submit three (3) samples each of ornamental trees, shrubs, groundcover and vine plants for Landscape Architect's approval. When approved, tag and maintain as representative samples for finally installed plant materials. Samples may be used to complete installation provided they remain tagged until final acceptance.

1.05 QUALITY ASSURANCE:

A. General: Comply with applicable Federal, state, county, and local regulations governing landscape materials and work.

B. Personnel: Employ only experienced personnel who are familiar with the required work. Provide full-time supervision by a qualified foreman acceptable to Landscape Architect.

C. Quality Control: 1. Contractor shall be responsible for material shown on plans. Submit documentation to Owner with bid that plant material is available. Substitutions due to unavailability must be requested in writing and submitted with bid. Plants shall be subject to inspection and approval by Owner at place of growth or upon delivery to site for conformity to specifications. Such approval shall not impair the right of inspection and rejection

during progress of the work. 2. Submit specifications of any item being used on-site upon request of Owner. 3. At least one plant of each species delivered to the site will have an identification tag

from the supply nursery showing common and botanical plant names. Do not remove tag until after final inspection.

4. Comply with applicable Federal, State County and local regulations governing landscape materials and the work.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Preparation for Delivery 1. Balled and Burlapped (B&B) Plants

a) Dig and prepare for shipment in manner that will not damage roots, branches,

shape, and future development after planting. b) Ball with firm, natural ball of soil.

c) Wrap ball firmly with burlap. d) Ball sizes and ratios.

Conform to AAN standard sizes and plant list

2) If conflict occurs, notify the Owner. 3) Collected plants shall be 20% greater in root ball diameter than nursery

2. Pack plant material to protect against climatic, seasonal, and breakage injuries during

3. Securely cover plant tops with tarpaulin or canvas to minimize wind whipping and

drying. Use anti-desiccant only upon approval of Owner.

4. Pack and ventilate to prevent sweating of plants during transit by rail. Give special attention to insure prompt delivery and careful handling to point of delivery at planting

5. Do not place stress on or handle trees or plants by the trunks, branches or stems. Use proper root ball cradles and straps.

B. Delivery 1. Deliver fertilizer and soil amendments to site in original unopened containers bearing manufacturer's quaranteed chemical analysis, name, trademark and conformance to

2. Furnish Owner with two (2) copies of receipts for amendments specified herein.

3. Deliver plants with legible identification labels. 4. Protect plant material during delivery to prevent damage to root ball or desiccation of

5. Notify Owner ten (10) days in advance of delivery of plant materials and submit an

itemized list of plants in each delivery. C. Storage

1. Protect roots of plant material from drying or other possible injury with soil or acceptable material.

2. Store plant material in an area that is shaded and protected from the weather.

3. Maintain and protect plant material not to be planted immediately upon delivery in a healthy, vigorous condition.

4. Erect temporary fence and store material inside in manner approved by Owner. A. Handling 1. Contractor is cautioned to exercise care in handling, loading, unloading and storing of

plant materials. Plant materials that have been damaged in any way will be

discarded and if installed, shall be replaced with undamaged materials at the Contractor's expense.

Do not drop plants. 3. Do not pick up container or balled plants by stem or trunks. 4. Lift and handle balled plants from bottom of ball.

1.07 JOB CONDITIONS

A. Inspect site prior to commencing work and report any discrepancies to Owner.

B. Protection: Before the work commences and excavations are made, take precautionary measures to protect existing improvements, pavements, irrigation systems and lawn

A. Determine locations of underground utilities and perform work in a manner that will avoid possible damage

B. Scheduling 1. Perform planting and bed preparations only when weather and soil conditions are suitable in accordance with locally accepted practice.

1.08 SAMPLES AND TEST

A. Owner reserves the right to take and analyze samples of materials for conformity to specifications at any time.

Install trees, shrubs and ground cover plants prior to lawn installation.

3. Coordinate special scheduling with Landscape Irrigation Contractor.

B. Furnish samples upon request by Owner. Rejected materials shall be immediately removed from the site at Contractor's expense. Contractor shall pay cost of testing of materials not meeting specifications.

1.09 GUARANTEE AND MAINTENANCE

A. Final Acceptance 1. The Contractor shall request final acceptance in writing 10 days before the

2. Planting beds, plant type, size and number shall be approved by the Owner as being

in accordance with the plans and specifications.

3. Any plant required under this contract that is dead, injured, diseased, or not true to its name or size as determined by the Owner shall be immediately removed from the site and replaced at no additional cost to the Owner.

B. Guarantee and Replacement

1. Guarantee all plant materials to be in a healthy, vigorous and attractive growing condition for a period of 1 year for shrubs and ground cover and 1 year for trees.

Guarantee shall begin immediately upon final acceptance by the Owner. 2. During the guarantee period, replace plants that die, become diseased or unhealthy, or are otherwise found to be in poor condition, as determined by the Owner, at no

additional expense to the Owner.

3. The guarantee will not apply to damage or injury to plant materials caused by vandalism, severe storms or accidents beyond the control of the Contractor. 4. Replace guaranteed plants within 15 days of written notification by the Owner or at an

agreed later date if seasonal conditions would be unfavorable to the replacement

C. Maintenance Period 1. Maintain all planting areas until receipt of written final acceptance by Owner. Once all

plantings have been accepted, the one year of contracted maintenance shall begin. 2. All replacement of plant material during maintenance and guarantee period shall be

with original size and planting mixture as shown on the plans. 3. Repair all damages to plants, lawns, or irrigation equipment at no additional expense

to the Owner

4. Maintenance shall consist of but not be limited to: a) Weeding.

b) Trash removal.

c) Watering. d) Pruning (as directed by Owner).

e) Spraying. 5. Fertilizina.

6. Repair of bed grades and edging alignment.

Final Inspection: At this inspection, all plants must be in a healthy growing condition,

A. weed free, pruning complete and staking and guying secure. Acceptance shall follow upon meeting these requirements.

PART 2 - PRODUCTS

A. Plant Material (See Plans for Type and Size) 1. Plants shall conform to AAN and State of Texas Regulations for nursery inspections, rules and rating. All plants shall have a normal habit of growth and shall be sound healthy, vigorous and free of insect infestations, plant diseases, sunscalds, windburn, knots, injuries, 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 that are not root-bound or pot-bound. PART 3 - EXECUTION In the event of disagreement as to condition of root system, the root conditions of the plants furnished by the Contractor in containers will be determined by removal of 3.01 INSPECTION earth from the roots of not less than two plants nor 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 Owner reserves the right to reject the entire lot or lots of plants represented by the defective samples. The Owner is the sole judge as to

acceptability. Any plants rendered unsuitable for planting because of this inspection will be considered as samples and will be provided at the expense of the Contractor. 2. The size and shape of the plants will correspond with that normally expected for species and variety of commercially available nursery stock or as specified on plans. 3.02 PLANT LOCATIONS AND MEASUREMENTS The overall shape and the minimum acceptable size of all plants measured before pruning with the branches in normal position shall conform to the AAN Standards. Plants larger in size than specified may be used with the approval of the Owner, but the use of larger plants will cause no change in contract price. If the use of larger plants is approved, the ball of earth or spread of roots for each plant will be increased

proportionately. 3. Plants not conforming to the requirements herein specified shall be considered

defective and such plants, whether in place or not, shall be marked as rejected and 3.03 FINAL GRADES immediately removed from site and replaced with new plants at Contractor's expense. 4. Pruning: Trees or plant materials shall be pruned or trimmed prior to delivery. Any alteration of their shape shall be conducted only with the approval and when in the presence of the Owner. In no case will the removal of branch leaders (TIPS) be

5. Plant material shall be true to botanical and common name and variety. 6. Nursery Grown and Collected Stock

a) All plant material shall be nursery grown stock except as noted on the drawings or

as approved in writing by the Owner b) Grown under climatic conditions similar to those in locality of project. c) Container-grown stock in vigorous, healthy condition, not root-bound or with root

system hardened off.

d) Use only liner stock plant material that is well established in removable containers or formed homogeneous soil sections. e) If required, provide proof that material was nursery grown. All rejected stock shall

be replaced at Contractor's expense. 7. Trees

a) Single straight trunks unless indicated otherwise. b) Trees with weak, thin trunks not capable of support will not be accepted. a) Trees, with a specified trunk caliper of 3" or more shall not branch less than 4 feet above finish grade, unless specified as multi-trunk.

b) Method Options

1) Container-grown in lieu of balled and burlapped. 2) Balled and burlapped in lieu of bare-root. 3) Nursery-grown in lieu of collected.

 Lawn Sod a) Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully and otherwise maintained from planting to

b) Sod shall be Common Bermuda Grass.

c) Sod shall have a minimum fully rooted moist soil thickness of 1" with a max.

thatch of ¼" and a consistent thickness and blade height. d) Sod blocks shall be minimum 12" x 18" of consistent dimension and strong enough to support their own weight when grasped in the upper 10% suspended

e) Harvesting, delivery and planting shall all occur with a 36-hour period. f) Sod shall be free of any other grasses, weeds diseases, nematodes, insects or any other objectionable materials.

g) Sod that has either dry soil, wilted blades, yellowed, or exhibits any other condition indicating less than ideal sod, shall be culled by Contractor immediately. B. Imported Topsoil for Prepared Soil Mixtures

1. Sandy loam from a source approved by the Owner. 100% passing through a 1" Sand (2,000 mm to 0.50 mm) 40% - 50% 30% - 40%

10% - 30% Clay (0.005 mm and smaller) 2. Free of subsoil, brush, stumps, roots, organic litter, objectionable weeds, clods, shale, stones 1" minimum dimension or larger, or other material harmful to grading, planting, plant growth, or maintenance operations.

3. Presence of vegetative parts of Bermuda grass, Johnson grass, nut grass (Cyperus rotundus), and other hard to eradicate weeds or grass will be cause for rejection of

C. Fertilizer

1. Organic composition

Silt (0.050 mm to 0.005 mm)

2. Fertilaid, Garden-Ville Plant Food or approved equal. D. Organic Soil Conditioner: Acid Gro Premix as manufactured by Soil Building Systems,

Inc. (972)831-8080 E. Sharp Sand: Clean, washed sand, fine to coarse sizes, free of clay lumps or other

objectionable materials. F. Root Activator: Carl Pool Root Activator, or an approved equal.

G. Water: Potable, available on site. Contractor shall furnish temporary hoses and

connections as required. H. Tree Paint: Morrison Tree Seal, Cabot's Tree Paint, or equal. I. Tree Trunk Protectors: Tree wrap shall be 4" min. standard burlap strips; Trunk-flare

Boots shall be ARBOR-GUARD by Deep Root Corp. (714) 898-0563, sized to fit each trunk of all newly planted trees.

Technology Co. or approved equal.

J. Soil Erosion Netting: "Soil Saver" or an approved equal. K. Guying and Staking Materials: Refer to Tree Planting Detail Drawings. L. Mulch: Premium grade shredded hardwood bark mulch as supplied by Living Earth

Controlled Release Fertilizer Tablets Agriform tablets as manufactured by Sierra B. Chemical Co.; 21 gram tablets with the following percentages of available nutrients by

1. Nitrogen - 28% 2. Phosphorus - 8%

3. Potassium - 4% C. Water Release Crystals: Agrosoke as manufactured by Grosoke International (817/831-2161) or an approved equal. Water release crystals shall be prepared anionic

copolymers of acrylamide, capable of absorbing water 30 to 40 times its dry weight. D. Compost: As supplied by Soil Building Systems, Inc., (972)831-8080 or approved equal. E. Deep Root Barrier: Polyethylene interlocking panels N. UB 48-2 as manufactured by Deep Root Corporation (714) 898-0563.

A. Verify that established grades and soil conditions are correct and determine locations of

B. Contractor shall see that all planting areas are free of all weed and foreign material prior to beginning planting.

C. Contractor shall inspect trees, shrubs, and ground cover plants for injury, insect infestation, and trees and shrubs for improper size and shape. D. Contractor shall not begin planting until deficiencies are corrected, or plants replaced. To

A. Stake outline of planting beds on ground.

B. Stake locations of trees.

begin work indicates acceptance of site conditions.

underground utilities prior to beginning planting.

C. Place shrubs and ground cover in indicated locations. D. Notify Owner of discrepancies between plants indicated on the plans and the actual conditions prior to planting.

E. Owner will approve plant locations prior to planting.

A. Modifications to grade may be required to establish the final grade. B. Fine grading shall insure proper drainage of the site as determined by the Owner. C. All areas shall be fine graded so that the finished grades will be 1" in lawn and 2" in shrub, below adjacent paved areas, sidewalks, headers, manholes, etc., or as indicated

D. Surface drainage shall be away from all building foundations at a 3% minimum, for 5'

E. All erosion scars shall be filled and compacted prior to planting installation. F. Disposal of any unacceptable or excess soil shall be done at location approved by Owner at the expense of the Contractor.

3.04 EXCAVATION FOR PLANTING

A. Tree and Shrub Pits

1. Shape

a) Rough vertical sides and crowned bottom.

 b) Planting pits to be circular. 2. Size for Trees: 3 times wider than the root ball diameter and 12" deep (see detail). 3. Size for Balled and Burlapped Shrubs: 1 foot wider and 3" deeper than root ball.

Ground Cover Beds: Excavate existing soil to the depth noted in Section 3.05 of these

A. specifications.

B. Obstructions Below Ground

1. Remove rock or underground obstructions to depth of 6" below bottom of plant ball or root, measured when plant is properly set at the required grade.

2. If underground obstructions cannot be removed, notify Owner for new instructions. 3. Avoid damaging underground utility lines.

4. Repair damage to existing utilities at no additional expense to Owner. C. Disposal of Excess Soil 1. Use acceptable excess excavated topsoil for filling holes, pits, and beds as directed

by the Owner. 2. Dispose of unacceptable or unused excess soil at an off-site location as directed by

3.05 SOIL PREPARATION

A. Soil Preparation for Shrub and Ground Cover Beds

the Owner at the expense of the Contractor.

 Pre-Plant Weed Control a) If live perennial weeds exist on-site at the beginning of work, spray with a nonselective systemic contact herbicide, as recommended and applied by an approved licensed landscape pest control advisor and applicator. Leave sprayed plants intact for at least 15 days to allow systemic kill. Apply herbicide in strict accordance with manufacturer's instructions.

b) Clear and remove these existing weeds by scraping or grubbing off all plant parts at least 1/2 inch below the surface of the soil over the entire area to be planted.

2. Soil Amendment for Ground Cover and Shrub Beds a) Prior to soil amending, the subgrades shall be 6" below finish grade to allow for the following amendments and fertilizer. The layer of soil amendments shall be 4" deep, leaving a finish grade 2" below the adjacent paved areas. Excavation

and/or fill may be required to achieve these grades. b) Application Rates (a) Organic Soil Conditioner - 2" Deep Layer

(b) Topsoil - 2" Deep Layer

(c) Fertilizer - 10 lbs. per 1,000 sq. ft. of bed area c) Amendments shall be uniformly spread and thoroughly cultivated, to a light and friable consistency, by means of a mechanical rototiller into the top 2" of sub-

grade that will make a bed of approximately 6" total depth of amended soil. 3. At time of planting, the top 2" of all areas to be planted shall be free of stones, stumps, or other deleterious matter 1" in diameter or larger and shall be free from all wire, plaster or similar objects that would be a hindrance to planting or maintenance.

B. Prepared Backfill for Trees and Large Shrubs: Planting mixture for trees and shrubs (5 gallons and larger) shall consist of the following materials:

. Topsoil -3 parts 2. Compost - 1 part

3. Water release crystals - thoroughly incorporate into all planting mixtures in accordance with the following rates: AGROSOKE RECOMMENDED APPLICATION RATES PLANT TYPE **VOLUME OF DRY CRYSTALS**

1/2 cup per inch if trunk caliper, measured 6"above the root ball. Shrubs 1-1/2 tsp. 1 gal. 1 tbsp. 3 gal. 1-1/2 tbsp.

2-1/2 tbsp.

5 tbsp.

2-1/2 lbs. per 100 s.f. rototilled 4"-6" deep into soil. Groundcover Beds

A. Soil Preparation for Lawn Sod 1. Areas to receive sod shall be graded to within 3" of final grade with a minimum of 4" of topsoil, receive a 1½" layer of Organic Soil Conditioner and 10# of fertilizer per 1000 s.f. and roto-tilled to 4" depth. Float drag, rake smooth and roll to lightly

2. Lawn Sod bed shall be slightly moist and firm enough to support the weight of installers without forming depressions.

5 gal.

3.06 PLANTING INSTALLATION A. General

compact sod bed.Remove objects larger than 1" diameter.

conditions are suitable and in accordance with locally accepted practice, or as approved by the Owner. 2. Only as many plants as can be planted and watered on that same day shall be

1. Planting operations shall be performed during those periods when weather and soil

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 herein specified immediately after removal from the containers.

Containers shall not be opened prior to placing the plants in the planting area.

4. Do not place stress on or handle trees or plants by the trunks or stems. 5. Set plants in pits at level shown on the details. 6. Set plants plumb and rigidly braced in position until planting mixture has been tamped

solidly around plant ball. 7. Thoroughly settle plant by watering and tamping planting mixture. 8. Rake planting beds level before and after planting.

9. Thoroughly water trees and shrubs. 10. Stake and guy all trees according to the details. B. Balled Plants 1. Do not place stress on or handle trees or plants by the trunks or branches.

2. Place in pit on planting mixture that has been hand-tamped. 3. Place with burlap intact so location of ground line at top of plant ball will be same as

4. Remove binding at top of ball and lay top of burlap back 6 inches. 5. Do not pull wrapping from under ball. 6. Do not plant if ball is cracked or broken before or during planting process or if stem is

7. Backfill with planting mixture.

deep, after settlement.

C. Container-Grown Plants 1. Cut cans on two sides with an acceptable can cutter.

2. Do not injure root ball. 3. Carefully remove plants without injury or damage to root balls. 4. After removing plant, superficially cut edge roots with knife on three sides.

5. Do not place stress on or handle trees or plants by the trunks, stems or branches.

6. Place in pit on planting mixture that has been hand-tamped prior to placing plant.

Backfill with planting mixture. D. Mulching 1. Cover watering basins or planting beds evenly with a layer of mulch a minimum of 2"

1. Areas on slopes designated to receive erosion control netting shall not be mulched. Water immediately after mulching.

3. Hose down planting area with a fine spray to wash mulch off of leaves of plants.

1. Prune minimum necessary to remove injured twigs and branches, deadwood,

2. Do not prune evergreens, except to remove injured branches. 3. Pruning shall not exceed 1/3 branching structure.

4. Make cuts flush leaving no stubs. 5. Paint cuts over 3/4-inch diameter with approved tree-wound paint. B. Root Activator: Use on all trees as recommended by the manufacturer.

. Install where shown on plans, prior to planting ground cover. Install per manufacturer's recommendation.

D. Staking and Guying: Staking of all trees shall be completed immediately after planting as indicated in details. E. Trunk Protection: Wrap all Red Oak tree trunks starting from the base of the root flare up to the first branching limb using a inward top folded 4" standard weight burlap strip overlapping each lap by 25% to give a firm, but not tight and neat appearance. Secure at

shall be fitted with a trunk-flare boot approximately 2 times larger than the trunk diameter. F. Planting of Ground Covers 1. Ground cover shall be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals called out in the plans. Triangular spacing shall be used

the top and bottom with heavy-duty steel staples. All tree trunks smaller than 3" diameter

unless otherwise noted on the plans. 2. Plantings shall be immediately irrigated after planting until the entire area is soaked to

3. Care shall be exercised at all times to protect the plants after planting. Any damage to plants by trampling or other operations of this contract shall be repaired immediately. G. Controlled Release Fertilizer: Provide controlled release fertilizer tablets in accordance

with the manufacturer's instructions at the following rates: 1. Shrubs - less than 5 gallons: none

the full depth of each root ball.

C. Soil Erosion Netting

2. Shrubs - B&B, 5 gallons or larger: 2 each 3. Trees - 1 tablet per 1/2" of trunk caliper, measured 1 ft. above the top of root ball. H. Watering

watered with landscape irrigation system as well as those to be watered manually. 3.07 REMOVAL, DISPOSAL, AND TRANSPLANTING OF EXISTING PLANTING

A. See plans for identification of existing plants and trees to be removed and/or transplanted. B. Schedule and coordinate these operations with other contractors and when weather

1. Water as required when soil moisture is below optimum level for best plant growth.

2. Coordinate watering with owner and recommend watering schedule for areas to be

conditions will permit ideal and successful operations. C. Dig firm adequate root balls per specifications of AAN for the type and size of plants to be transplanted.

D. Heal-in, maintain and protect newly dug plants to be stored until re-planted in new E. Replant all plants noted to be transplanted using the same planting requirement specified for all new plants. Replace dead, dying or substandard growing transplanted plants with

3.08 SODDING

similar size materials to match the adjacent plant materials

A. Stake existing irrigation heads and valves and protect from damage and covering during B. Place sod blocks in rows parallel to the adjacent walks and beds with each subsequent rows staggered 50% of the previous row. Firmly abut each block to avoid gaps between

C. Lightly water and roll smooth with a lawn roller. D. Top-dress all joints, cracks and small uneven pockets lightly with finely screened topsoil. Avoid excessive top dressing smothering the sod.

E. Verify with appropriate surveying equipment that all final grades, as described on the plans, have been achieved. Record all of these surveyed grades on the As-Build drawings adjacent to the proposed spot and contour grades shown on the plans. F. All lawn areas shall be finished in a smooth continuous surface without irregular undulations and suitable for the use intended. Special attention shall be given to areas of minimal slope to assure even and positive drainage without depressions and low spots

holding water when completed and during the one year warranty period 309 CLEANUP A. Each day and after planting operations have been completed, remove all trash, excess soil, empty plant containers and rubbish from the property. All scars, ruts or other remarks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. Contractor shall pick up all trash resulting from this work daily. All trash shall be completely removed from the site to an approved

B. The Contractor shall wash down all paved areas daily, leaving the premises in a clean condition.

END OF SECTION

CRAIG DESIGN GROUP INC. Urban Design-Land Planning 325 North St Paul #3100 Dallas.Texas 7520 (972) 463- 4251 www.cdgland.com

LANDSCAPE **ARCHITECTS**

& PLANNERS

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