

DIVISION 2 - SITEWORK

Section 02900 - Landscaping

Introduction

Designers are encouraged to use plant material in energy conserving, climate ameliorating ways. Combinations of deciduous and evergreen shade trees can do much to mediate weather and climatic extremes.

Designers shall refer to site paving drawings and coordinate size of plant pits so as to not undermine hardscape.

The addition of new lawns is restricted due to University agreements with the Arizona Department of Water Resources.

Part 1 - General

- Plant materials shall be selected from the most current revision of the Low Water Use/Drought Tolerant Plant List published by the Arizona Department of Water Resources, Tucson Active Management Area.
- Water harvesting measures should be considered where available.

Part 2 - Products

- Imported topsoil shall be Mesa Red natural, friable loam. Submit written evidence of tests for pH and total dissolved salts (TDS) prior to delivery. pH shall be between 6.5 and 8.0, TDS shall not exceed 1000 parts/million.
- Mulch shall be "Forest Magic" brand or other approved nitrogen stabilized (nitrolized) fine ground fir bark.
- Fertilizer shall be commercial Ammonium Phosphate w/an NPK ration of 16-20-0; use Agriform 20-10-5 formula, 21 gram tablets for salvaged and replanted plants.
- Soil sulphur shall be agricultural grade, pilled or granulated, containing 99.5% active and 0.5% inert ingredients.
- Manure shall be composted, well rotted, free of refuse and containing not more than 25% straw or other bedding material.
- Soil mix for backfilling shall be three parts topsoil to one part mulch with one pound Ammonium Phosphate and two pounds soil sulphur added per cubic yard.
- Tree stakes shall be three (3) inch diameter by eight (8) feet long, pressure-treated Lodgepole Pine, free of any weakening knots or other defect. Stake trees up to 15 gallon size with two (2) stakes. Larger sizes shall be staked or guyed.
- Guy wire shall be new, 12 gauge, annealed, galvanized.
- Chafing guards shall be new, 3/4" dia. reinforced rubber or vinyl hose, 12" long (min) or as necessary to protect tree from guy wires.
- Decorative rock "Desert Gold" or "Wildcat Red" in color, from a local source and shall consist primarily of particles 1/2" to 3/4" in diameter.
- Boulders shall be native Santa Catalina Mountain rock.
- Pre-emergent herbicide shall be "Surflan" or approved equal.

- Palm tying twine shall be natural fiber.

Part 3 - Execution

- New and existing utilities shall not conflict with planting.
- Where plant material will be placed in soil beneath existing pavement, especially asphalt pavement, or other condition where soil sterilant or other treatment potentially harmful to plant material may have been applied shall be tested for the presence of any such chemicals or condition. Affected soils shall be treated and/or excavated and disposed of in accordance with local codes.
- Minimum planting pit sizes shall be as follows:
 - One (1) gallon size container: 18" in dia.
 - Five (5) gallon size container: 36" in dia.
 - Fifteen (15) gallon size container: 60" in dia.
 - Twenty four (24") inch box. 60" square.
 - Thirty six (36") inch box and larger. 18" clear on all sides.
 - Depth of all pits no deeper than the rootball to prevent settling.
- Plant pits shall not undermine hardscape nor shall hardscape elements be placed over plant pits.
- Areas to receive ground cover plants shall be excavated in their entirety to 18" below finish grade and backfilled with backfill mix described above.
- Planting pit percolation rates to be determined prior to planting in the presence of U or A representative.
- After water settling backfill, set plants lower than finish grade to create irrigation basins such that the crown of the root ball shall be 4" lower than surrounding finish grade. Basins shall be as wide as the plant pit. Top of rootball shall be flush with finish grade of the basin.
- 2" of mulch shall be incorporated into the top 3" of soil in irrigation basin areas.
- Root balls of existing palm trees to be transplanted shall have a minimum diameter of 4 feet plus the diameter of the trunk measure 12" above the ground. Vitamin B-1 shall be used per manufacturer's recommendations with the first watering.
- Salvage of existing trees from the project shall be performed by a firm approved by the University and with at least four years experience with this type of work. The work shall be guaranteed and conducted in a manner consistent with local practice. The University shall designate a holding area and source of irrigation for boxed or other wise temporarily stored trees.
- Restoration of turf operations shall include: loosening compacted soil to a minimum depth of 9", removing all rock and debris 1" and larger and adding approved topsoil to match original grade and compaction. 3" of composted, screened, weed free manure plus 2 pounds of Ammonium Phosphate (16-20-0) and 5 pounds of soil sulphur shall be added per 100 square feet and roto-tilled into existing soil to a depth of 6". Between the dates of May 15 and August 15, sow Cynodon dactylon (common Bermuda grass) seed at a rate of 3 pounds per 1000 square feet. Seed shall be 98% pure and have a germination rate of 75%. Between August 15 and May 15, contractor shall provide to the University, but not sow, the appropriate quantity of seed. Roll seeded areas with a 50 pound per linear foot roller then mulch with one-half inch of screened manure.
- The landscape contractor shall maintain all planting until accepted. Maintenance operations shall include: watering, mulching, tightening or adjusting of tree ties, resetting plants to proper grade, restoration of irrigation basins, fertilization and weeding. Replacement materials shall meet all specifications of original materials.

- Where existing lawns have been damaged by construction and are to be repaired by the contractor, follow these instructions:
 - Loosen compacted soil to a depth of 9" min.
 - Remove debris and rock larger than 1" and all contaminated soil.
 - Add topsoil to the level of original grade and allow for settlement.
 - Rototill into the top 6" a 3" layer of manure, 2 pounds Ammonium Phosphate (16-20-0) and 5 pounds of soil sulphur per 100 sf.
 - Broadcast Bermuda grass seed (98% pure, 75% germination) at the rate of three pounds per 1000 sf and cover with a thin layer of manure.
- Sod shall be cut, delivered and installed within a 24 hour period. Cultivate subgrade to a depth of 6" prior to placing topsoil and remove all stones and debris 1" and greater in dia. Place topsoil to a depth of 9" over cultivated subgrade. Topsoil shall consist of equal parts topsoil, sand and manure with 18 pounds soil sulphur, 50 pounds gypsum and 7 pounds Ammonium Phosphate fertilizer (16-20-0) added per 1000 sf.
- Maintenance for new or reestablished turf areas shall be as follows:
 - Maintenance period shall be for 90 days or a minimum of four mowings, whichever is longer, Turf shall be mowed to a height of 1/2" when a height of 1" is reached.
 - Spray heads shall be set 1" above finished grade, initially and reset once turf is established by the contractor at no additional cost. Irrigation shall not result in wilting, puddles or runoff.
 - After 3 weeks and again at the end of the maintenance period, fertilize with a fertilizer that provides one pound available Nitrogen per 1000 sf.
 - Final acceptance will occur with a satisfactory stand of grass (solid, healthy growth, without bare spots) at the end of the maintenance period.
- Palm ties, not broken naturally, shall be cut by contractor after 4 months.
- Berms and swales shall be formed as continuous, smooth landforms with no obvious top or bottom to slopes or grade change from berm to swale.
- Install decomposed granite (DG) 1-3/4" to 2" deep, rake smooth and tamp with a roller of 100 pounds per linear foot weight, minimum. Finish grade shall be 2" below top of adjacent walks, curbs or other pavement. Apply per emergent herbicide, per mfg, instruction, before and after placing the D.G.
- Provide positive drainage away from buildings and structures. Direct runoff water to planting areas.
- All plant materials shall be guaranteed for 1 full year following substantial completion or replacement.

End of Section 02900