

**SECTION 32 92 00 – TURF AND GRASSES****PART 1 GENERAL**

## 1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.02 SUMMARY

A. Section Includes:

1. Hydromulch Lawn.
2. Solid Sod.

B. Related Sections:

1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
2. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.
3. Division 32 Section "Planting Irrigation" for turf irrigation.
4. Division 32 Section "Plants" for border edgings.

## 1.03 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of topsoil.
- B. Imported Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- D. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

- E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete or top surface of a fill or backfill before planting soil is placed.
- F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- G. Existing On-site soils: Salvaged and stockpiled topsoil that is tested and suitable for use in growing proposed grasses or plants. Soil must be tested and pass or be amended per the soil test. In addition to amendments and / or fertilizers the contractor shall process the soil by raking the soil until it is free of rocks larger than 1" in any direction or any other deleterious materials. Contractors shall not count on only using on-site soils. Imported soils shall be used to supplement or completely replace on-site soils. It is the contractor's responsibility to estimate the amount of soil available on site.

#### 1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.
- B. Product Certificates: For soil amendments and fertilizers from manufacturer.
- C. On-Site Soil: Laboratory test results clearly stating the existing on-site soils are acceptable for turf and grass growth, and the fertilizers / amendments to add to on-site soils to achieve an acceptable condition.
  - 1) Laboratory reports from Wallace Laboratories, LLC or approved equal. (310) 615-0116
  - 2) Provide 1 test sample and report for each 5 cubic yard of on-site stock piled top soil to be used on site. Samples to be taken from various areas in the stock piled material.
- D. Schedule of planting that includes delivery of sod and plant material to the site, layout of beds, layout of plant material, bed prep, application of herbicides, pesticides and fertilizers, planting of each bed (or areas of the site), staking, maintenance and all landscape/irrigation/site related items or events. The schedule shall also provide the overall master construction schedule and how the landscaping fits into the master construction schedule and critical path.

#### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Landscape Contractor shall have a permanent office located within an 50-mile radius of the project site.
- B. Pesticide Applicator: State licensed for commercial application.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants or near or under existing trees.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

#### 1.07 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

#### 1.08 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide maintenance by skilled employees of landscape Installer continuously after sod and/or hydromulch is installed and continue until final completion and acceptance by the Landscape Architect and Owner. Maintain as required in Part 3.
- B. After receipt of final completion and acceptance, Landscape Contractor shall maintain the project for an additional 60 days as part of this scope of work. Maintain as required in Part 3.
- C. Upon termination of 60-Day Maintenance period, Landscape Contractor shall notify the Landscape Architect of request for final inspection. At this time all defective work shall be corrected by Landscape Contractor and 1 year guaranty period shall begin.

### **PART 2 PRODUCTS**

#### 2.01 NATIVE GRASS AND WILDFLOWER SEED

#### 2.02 TURF GRASS SEED / SOD

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B Turfgrass Species: State-certified seed of grass species as follows:

1. Sahara Bermuda (Cynodon dactylon ‘Sahara’) – hydro mulch per COA 609S standards.
2. TIF 419 Bermuda Grass (Cynodon dactylon ‘TIF 419’) – solid sod per COA 609S standards

### 2.03 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Non-asphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

### 2.04 IMPORTED TOPSOIL

- A. Imported topsoil for sod and hydromulch lawns shall be Coleman Turf Mix as supplied by Organics by Gosh, 512/947-2645, or approved equal, and installed per COA 601S standards.

### 2.05 TOPSOIL FOR HYDRO SEED AREAS

- A. Stockpiled, on-site topsoil may be used for all hydro seed areas.
- B. Topsoil shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. Only the top 12 inches of earth shall be removed and used. It shall not be excessively acid or alkaline or contain toxic substances that may be harmful to the plant growth. Topsoil shall be without admixture of subsoil and shall contain a minimum of lumps, stones, stumps, roots, or similar substances one inch or more in diameter.

### 2.06 FERTILIZERS

A.Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

### 2.07 PESTICIDES

A.General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
  3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by the Landscape Architect and replace with new topsoil.

#### 3.02 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydromulching overspray.
  2. Protect grade stakes set by others until directed to remove them.

#### 3.02 BERM CONSTRUCTION

- A. Bottom of Berm shall be constructed using on-site soils. On-site soils shall be free from stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter. Top 6" of berm shall be imported topsoil for sod areas. Reference specification section 32-93-00 for planting mix depth for shrub and groundcover planting areas.

### 3.04 TURF AREA PREPARATION (BERMUDA SOD AND HYDRO-MULCH)

- A. Limit turf subgrade preparation to areas to be planted.
- B. Loosen existing subgrade to a minimum depth of 2 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Spread imported topsoil to a minimum depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
- D. Finish Grading: Grade turf areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Islands in parking lot shall have a minimum 6" crown. Roll and rake, remove ridges, and fill depressions to meet finish grades. Contractor shall be responsible for providing positive drainage in all lawn areas. Limit finish grading to areas that can be planted in the immediate future.
- E. Moisten prepared area before installing sod or hydromulch if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before installing hydromulch, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.05 HYDROMULCH

- E. Hydromulch: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydromulch application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 1. Mix slurry with tackifier.
  - 2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than **1000-lb/acre** dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
- F. Saturate hydromulch area with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

### 3.06 TURF MAINTENANCE

- E. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

F. Watering: Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

G. Mowing: Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.

### 3.07 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Hydromulch Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with a minimum grass height of 2", coverage exceeding 95%, and bare spots not exceeding 5 by 5 inches.
2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

### 3.08 PESTICIDE APPLICATION

E. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

F. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

G. Contractor shall notify Owner 48 hours prior to all pesticide applications. Notification shall include place of application as well as products being applied.

### 3.09 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove non-degradable erosion-control measures after grass establishment period.
- D. Repair any areas disturbed by or not vegetated under erosion control devices. Repair shall include fine grading the area, installing topsoil, hydromulching and irrigating for establishment.

**END OF SECTION 32 92 00**