SECTION 32 92 00

TURF AND GRASSES

Part 1: GENERAL

1.01 DESCRIPTION

Restore all disturbed grass and landscaped areas to conditions equal to or better than before the work began and to the satisfaction of AW.

1.02 SUBMITTALS

A. Manufacturer's product data:

1. Complete materials list of all materials proposed to be furnished and installed under this section

2. Specifications and other data required to demonstrate compliance with the specified requirements.

B. Pre-Construction Photos

1. Provide pre-construction photos of the existing conditions prior to disturbance of proposed areas of construction.

1.03 GUARANTEE

A. If a satisfactory stand of lawn/grass has not been produced, the Contractor shall renovate and reseed the lawn and unsatisfactory portions thereof immediately or during the next planting season if proper weather conditions do not exist for germination. A satisfactory stand is defined as a section of lawn that has:

1. No bare spots larger than 3 square feet.

2. Not more than 10 percent of total area with bare spots larger than 1 square foot.

B. Disturbed areas that will be exposed in excess of 10 days shall be temporarily mulched until proper weather conditions exist for establishment of permanent vegetative cover.

1.04 All areas disturbed will have erosion controls in place during and after all construction efforts and until permanent restorations are completed and approved. BMPs to be maintained daily and modified as site conditions change. SWPP reports logging

changes in BMP controls, bi-weekly and weather driven inspections and modifications are to be submitted with daily reports. Refer to the Oklahoma Department of Environmental Quality OKR10, for requirements applicable for ground stabilization methods.

1.05 All areas that have been disturbed by construction activities shall be returned to equal or better conditions by the use of Solid Slab Sod, Seeding, or Hydro-Mulching to achieve substantial 70% coverage over the entire disturbed area to the satisfaction of AW, State, and other Local Authorities.

1.06 Restore and replace shrubbery, fencing, or other disturbed surfaces or structures to conditions equal to or better that before the work began and to the satisfaction of AW.

PART 2: PRODUCTS

2.01 TOPSOIL

Topsoil shall not contain more than 40 percent clay in that portion passing a No. 10 sieve. Topsoil shall contain between 4 percent and 20 percent organic matter as determined by loss on ignition of samples oven-dried to constant weight at 212°F.

2.02 FERTILIZER

Provide a commercial fertilizer consisting of the standard materials of the grade required by Contract and by recommendation of the grower for the season and climate. Fertilizer grade refers to the percentage of total nitrogen, available phosphate, and soluble potash, in accordance with the Oklahoma Department of Agriculture, Food and Forestry. Provide fertilizer in standard, factory-sealed containers, labeled in accordance with the Oklahoma Department of Agriculture, Food and Forestry. Broadcast dry fertilizer in a pellet or other granular form.

Fertilizer for Solid Slab Sod shall be composed of a ratio of 17-6-6.
Fertilizer for Seeded Areas shall be composed of a ratio 10-20-10

Or as by recommendation of Oklahoma Department of Agriculture, the grower and approved by AW.

2.03 SOD and SEED

A. Sod

Provide a dense source of Bermuda grass sod, or other acceptable type as approved by AW, containing a deep-rooted stand of fertile topsoil. Ensure the source for sod is free of weeds classified as “Prohibited Noxious” and legally

"Restricted Noxious" plant materials in accordance with Oklahoma Department of Agriculture Seed Law.

Sodding consists of the roots (stolon and rhizome) and the visible stem and blades. Ensure grass vegetative parts exist throughout the slab. Provide slabs of dense vegetative growth capable of being transported in its original state. Insure that slabs are a minimum of 16 inches in width.

B. Seed

In the growing season, seed all disturbed areas with Bermuda Seed using the seed type "Cynodon Dactylon". In the non-growing months mix the Bermuda (Cynodon Dactylon) with Rye Grass (Gulf) to stabilize area. Other stabilization methods may be required until 70% growth has been achieved.

2.04 SOIL EROSION CONTROL BLANKETS

When or if required for use, soil erosion control blankets shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers, covered on one side with either plastic netting or twisted Kraft paper cord netting. Soil erosion control blankets shall not be installed on flat surfaces and sloped surfaces up to and including 10:1 slopes. Soil erosion control blankets shall be used on surfaces with a slope greater than 10:1 as per the manufacturer's installation guidelines.

2.05 MULCH

Mulch shall be straw reasonably free of weed seed and foreign materials which may affect plant growth. Other materials may be used if approved by AW.

PART 3: EXECUTION

3.01 PREPARATION OF SEED BED

A. Topsoil Areas

Topsoil shall be replaced with adequate amounts of topsoil material to restore the disturbed area to its original pre-disturbance grade and depth of topsoil but not less than 4 inches.

Topsoil shall be placed where excavation and backfill operations have left soil unsuitable for sod or seed establishment. Topsoil must be free from weeds, rocks, roots, and other debris. When available, topsoil can be segregated from the excavation and re-used. If the existing area is void of topsoil, then topsoil must be imported. Remove, store, and use suitable topsoil available from the excavated material to backfill the top 4 inches of the excavation. Remove and dispose of all imported granular fill, grass, weeds, roots, sticks, stones, and other

debris 1-inch or greater in diameter. Prepare the topsoil to a smooth surface devoid of pits or bumps in a manner that matches surrounding grades, slopes and drainage by means of hand raking. Ensure slopes will allow proper cut angles for mowing equipment.

When there is insufficient topsoil available from the site excavated materials, furnish 4 inches of topsoil to be used as a seed bed as described in, Paragraph Part 3.01.A of this Section.

B. Non-Topsoil Areas

The trench backfill may be used as a seed bed, where excavated soil may be classified as topsoil, or when approved by AW. After the backfill has been given a reasonable time to settle, bring to finished grade and harrow to a depth of 3 inches. Remove and dispose of all grass, weeds, roots, sticks, stones and other debris 1 inch or greater in diameter. Carefully smooth the topsoil to match surrounding slopes, grades and drainage by hand raking. Ensure slopes will allow proper cut angles for mowing equipment.

C. Hydromulch/Hydroseed

In the appropriate growing season Hydroseed disturbed areas with an approved seed mix as recommended by local conditions and meeting regulatory requirements. Fertilization to be determined by installer for best results. Topsoil and maintenance per Part 3 Execution; 3.01 and 3.06.

3.02 FERTILIZING

Apply fertilizer uniformly to all areas to be seeded at the rate of 1 pound per 100 square feet in topsoil and 2 pounds per 100 square feet in non-topsoil. Disk, harrow, or rake the fertilizer thoroughly into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, rework the surface until it is a fine, pulverized, smooth seed bed varying not more than 1 inch in 10 feet.

3.03 SEEDING

Seed immediately after preparation and fertilization of the seed bed. Mix the seed thoroughly and sow it evenly over the prepared areas at the rate of 3 pounds per 1,000 square feet. Sow the seed dry or hydraulically. After sowing, rake or drag the area to cover the seed to a depth of approximately 1/4 inch. Sod all areas with slopes greater than 10%.

3.04 SODDING

Sod all areas disturbed by construction activities. At a minimum, sod shall be fibrous, well rooted approved grass type. The grass shall be cut to a height of less than three (3) inches. Edges of sod shall be cleanly cut, either by hand or machine, slab is to a uniform thickness of not less than one (1) inch (plus or minus ¼"), to a uniform width of not less than sixteen (16) inches, and in strips of not less than three (3) feet in length. Sod shall be free from all primary noxious weeds. Keep the sod moist from harvesting at the source until planting.

DO NOT USE SOD THAT IS COMPLETELY DRIED OUT OR HAS LESS THAN 1/2" OF SLAB.

Lay sod with tight staggered joints. On slopes, start placement at the foot of the incline. Use wood pegs driven flush to hold sod in place on slopes 4:1 or greater. Use two wood pegs per strip of sod. Roll the sod lightly after placement. Fill any open joints with topsoil and/or sod. When installed, all sod edges must be slightly excavated and tucked to mitigate any potential trip hazards. Provide rolling equipment of a size and weight capable of firmly compacting the sod into the topsoil and removing air voids. In non-growing months, Rye grass (Gulf) can be used to stabilize Bermuda grass until rooted.

Around walkways, driveways, grass or other existing borders, remove sufficient soil so that the surface of the sod will be level with the existing surfaces and won't pose a tripping hazard,

3.05 MULCHING

Place mulching material evenly over all seeded areas within 48 hours of seeding. Place mulch at the rate of approximately 2 tons per acre, when seeding is performed in recognized growing season and at the approximate rate of 3 tons per acre when seeding is performed in a recognized non-growing season if applicable.

3.06 MAINTENANCE

Carefully maintain, tend, and water all seeded and sodded areas necessary to secure a good, well-established turf, matching adjacent areas. As needed, fill, grade, re-seed or re-sod and maintain all areas where remediation efforts are deficient or otherwise fail. Maintain the condition of seeded and sodded areas until area meets final stabilization requirements per OKR10, Part 9.12.1. and AW approval.

END OF SECTION 32 92 00