

CSI SPECIFICATIONS FOR TURFFALO BRAND TECH TURF

SECTION 02920 – LAWNS AND GRASSES

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Plugging.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.4 SUBMITTALS

- A. Product Data: For Turffalo brand Tech Turf plugs.
- B. Certification of Grass Plugs: Certification of Tech Turf's genetic identity from the Texas Department of Agriculture, with the name Tech Turf I, identifying Frontier Hybrids, Inc. as the source and including the name and telephone number of supplier. Turffalo brand Tech Turf is a hybrid of turfgrass that utilized buffalograss (*Buchloe dactyloides*) in its breeding.
- C. Qualification Data: For qualified landscape Installer.
- D. Product Certificates: For soil amendments and fertilizers, from manufacturer.

- E. Material Test Reports: For existing surface soil and imported topsoil.
- F. Planting Schedule: Indicating anticipated planting dates for each type of planting.
- G. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required initial maintenance periods.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.
 - 1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
 - 2. Maintenance Proximity: Not more than two hours normal travel time from Installer's place of business to Project site.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt and clay content; cation exchange capacity; deleterious material; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
 - 1. Report suitability of topsoil for lawn growth. State-recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.
- D. Preinstallation Conference: Conduct conference at Project site.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Plugs: Deliver Turffalo brand Tech Turf plugs in original, labeled and undamaged containers. Trays must be watered daily enough to keep roots moist and kept in an area where the plants can receive at least 50% sunlight.

1.7 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
 - 1. Spring Planting: After the last normal freeze date.

2. Winter Planting: Thirty days prior to the first normal freeze date.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.
- C. Growing Zones: Turffalo brand Tech Turf may be grown in Zones 5-11, States: Texas, Oklahoma, New Mexico, Kansas, Nebraska, Colorado, Arizona, Utah, Nevada, California, Iowa, Illinois, Missouri, Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Georgia, and Florida.

1.8 MAINTENANCE SERVICE

- A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
 1. Plugged Lawns: Thirty days from date of planting completion.
 - B. Continuing Maintenance Proposal: From installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions and terms for agreement period and for future renewal options.

PART 2 – PRODUCTS

2.3 PLUGS

- A. Plugs: Turffalo brand plugs, certified by the Texas Department of Agriculture as Tech Turf I, grown in individual cells with uniform density, color and texture, strongly rooted and capable of vigorous growth and development when planted; of the following turfgrass species and plug size.
 1. Turfgrass Species: Buffalograss (*Buchloe dactyloides*)
 2. Plug Size: 2 inches (50 mm) deep and 1.5 inches square at the top.

2.6 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 6 to 8.5, a minimum of 2 percent organic material content, free of stones 2 inches (50 mm) or larger in any dimension and other extraneous material harmful to plant growth.
 1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps and other extraneous material harmful to plant growth.

- a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from agricultural land, bogs or marshes.

2.7 INORGANIC SOIL AMENDMENTS

- A. Lime: If pH is below 6, use ASTM C 602, agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 1. Provide lime in form of dolomitic limestone.

2.8 ORGANIC SOIL AMENDMENTS

- A. Compost: If there is too much sand for the soil to facilitate rapid lawn establishment, use compost with well-composted, stable, and weed-free organic matter, pH range of 6 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through a 1-inch (25-mm) sieve; soluble salt content of 5 desisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 1. Organic Matter Content: 50 percent of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Peat: If there is too much sand for the soil to facilitate rapid lawn establishment, use peat with finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat or reed-sedge peat and having water-absorbing capacity of 1100 to 2000 percent.

2.9 PLANTING ACCESSORIES

- A. Selective Herbicides: After installing plugs, use EPA registered and approved, of type recommended by manufacturer for application:
 1. After installing plugs, prior to establishment, to control pre-emergence of weeds or other grasses, use either dithiopyr (Dimension) or oxadiazon (Ronstar) turf herbicide at manufacturer's recommended rate.
 2. After establishment, to control broad leaf weeds: use a 2-4-D herbicide that is approved for buffalograss at manufacturer's recommended rate.
 3. After establishment, to control grassy weeds: use monosodium methylarsonate (MSMA) herbicide at manufacturer's recommended rate.

2.10 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: Per 1000 sq. ft. use 2 lbs of actual nitrogen, 3 lbs of phosphorous, 3 lbs of potash, 0.1 lb of iron chelate and 0.1 lb of zinc chelate.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive Turffalo brand Tech Turf plugs for compliance with requirements and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- B. If project requirements result in Tech Turf plug spacing to exceed 17 inches, provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 3 inches (75 mm). Remove stones larger than 2 inches (50 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply fertilizer directly to subgrade before loosening.
 - 2. When applicable, thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. If required, mix lime with dry soil before mixing fertilizer.

3. Spread planting soil to a depth of 4 inches (100 mm) 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.
- C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
1. Remove existing grass, vegetation, and turf. Do not mix into surface soil. For Bermuda grass, allow it to grow 3 inches tall and then spray it with Round-Up. Wait 3 to 4 days, then mow it very short and spray it once more with Round-Up.
 2. Loosen surface soil to a depth of at least 6 inches (150 mm). Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches (100 mm) of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening
 3. Remove stones larger than 2 inches (50 mm) in any dimension and sticks, roots, trash, and other extraneous matter.
 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus ½ inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, restore areas if eroded or otherwise disturbed after finish grading.
- 3.4 PREPARATION FOR EROSION-CONTROL MATERIALS
- A. Prepare area as specified in "Lawn Preparation" Article.
 - B. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
 - C. For areas where spacing of Tech Turf plugs is to exceed 17 inches (425 mm), the areas should be seeded with annual ryegrass 35 days prior to plugging Turffalo

brand Tech Turf and then killed-out with Round-up after 30 days (5 days prior to plugging Tech Turf).

3.9 PLUGGING

- A. Plant plugs in holes or furrows spaced [12 inches (300 mm)] for coverage in 30 to 40 days [17 inches (425 mm)] for coverage in 60 days [2 feet (600 mm)] [2.5 feet (750 mm)] for full-season coverage.
- B. Compress the plugs into the holes or furrows with light rolling to facilitate adequate contact between the roots and surrounding soil.
- C. When complete, the top of the roots should be even with the surrounding soil.

3.12 LAWN MAINTENANCE

- A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
- B. Watering: Provide and maintain temporary piping, hoses and lawn-watering equipment to convey water from sources and keep lawn uniformly moist to a depth of 4 inches (100 mm).
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 - 2. Water lawn with fine spray at a minimum rate of ¼ inch per day for the first five days, or enough to keep roots moist. After the first five days, cut back to watering a minimum of ¼ inch every three days, taking rainfall, humidity and temperature into consideration.
- C. Mowing: If possible, delay mowing until Tech Turf has achieved complete coverage. If it must be mowed prior to covering the area, mow at the highest setting to avoid cutting runners. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf grown in initial or subsequent mowings. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain a grass height of 2 to 3 inches (50 to 75 mm).
- D. Lawn Postfertilization: Apply fertilizer after initial mowing and when grass is dry that will provide actual nitrogen of at least 2 lbs/1000 sq. ft. (0.90 kg/92.9 sq. m).
- E. Ongoing Herbicide and Insecticide Treatment: All 2-4-D type herbicides may be used on Tech Turf. DO NOT USE Atrazine, Banvel, Dicamba, Simazine or

Trimec. Once fully established, herbicides such as Treflan or Surflan may be used on Tech Turf. Once a year, in the spring, a grub worm killer, such as Merit by Bayer, must be applied to Tech Turf.

3.11 SATISFACTORY LAWNS

- A. Lawn installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Plugged Lawn: At end of maintenance period, the required number of plugs has been established as well-rooted, viable patches of grass; and areas between plugs are free of weeds and other undesirable vegetation.
- B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.16 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris, created by lawn 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 lawn is established.

END OF SECTION 02920