

Section 2000

Clearing and Grubbing/Grassing/Sodding

PART 1: General

1.1 *General Description of Work* –

1.1.1 *Clearing and Grubbing* –

1.1.1.1 Clearing and grubbing on project site of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter within limits described in specifications or as shown on plans.

1.1.1.2 Clearing and grubbing shall be in advance of grading and trenching operations except that in cuts over 3 feet in depth, grubbing may be done simultaneously with excavation, provided objectionable matter is removed as specified.

1.1.1.3 Disposal of all debris resulting from clearing and grubbing work.

1.1.2 *Grassing* – Extent of grassing work is as specified or shown on the construction plans. Sodded areas disturbed during construction shall be re-sodded to match existing. All other areas disturbed during construction operations shall be seeded, unless noted otherwise on plans.

1.1.3 *Sodding* –

1.1.3.1 This work consists of sodding areas cleared during construction and not paved, or as otherwise shown on the Construction Plans. All material and construction methods shall be in accordance with Section 570 and 981 of the Florida Department of Transportation Standard Specifications, Latest Edition.

1.1.3.2 Areas noted on Construction Plans shall be sodded.

1.2 *Protection of Adjacent Work* – Protect existing improvements, adjacent property, utilities and other facilities, and trees and plants which are not to be removed from injury or damage.

1.3 *Protection from Erosion* – Contractor shall protect all disturbed areas from erosions, repair any areas damaged by erosion, and clean erosion sediment from affected areas.

1.4 *Quality Assurance* – All seed used shall be labeled in accordance with U.S. Department of Agriculture Rules under the Federal Seed Act in effect on the date of invitation for bids. All seed shall be furnished in sealed standard containers, unless exception is granted in writing by the Owner. Seed which has become wet, moldy, or otherwise damaged in transit or in storage shall not be used. Fertilizer shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes cake or otherwise damaged, making it unsuitable for use, shall not be used. Seed, fertilizer and other grassing materials shall be stored under cover and protected from damage which would make them unacceptable for use.

- 1.5 *Submittals* – Approvals, except those required for field installations, field applications, or field tests shall be obtained before delivery of materials or equipment to the project site. The results of laboratory tests performed on the topsoil material shall be submitted. The reports shall include the pH level, the amount of organic matter, and available phosphoric acid and potash of the soil intended for use in the work. Certificate of conformance will be required for the following:
 - 1.5.1 Grass seed shall be certified by registered, certified seed association or a registered testing laboratory not more than ten months prior to seeding.
 - 1.5.2 Sprigs
 - 1.5.3 Fertilizer
 - 1.5.4 Lime
 - 1.5.5 Mulching

PART 2: Products

- 2.1 *Clearing and Grubbing Materials* – Provide materials required to perform work as specified.
- 2.2 *Soil Amendments* –
 - 2.2.1 *Lime* – Ground limestone (Dolomite) shall contain not less than 85 percent of total carbonates, and shall be ground to such a fineness that 50 percent will pass a 100-mesh sieve and 90 percent will pass a 20-mesh sieve.
 - 2.2.2 *Fertilizer* – Fertilizer shall be a 16-16-16 formulation. The nitrogen shall be 60 percent urea-formaldehyde form. Fertilizer shall conform to the applicable Stat Fertilizer laws and shall be granulated so that 80 percent is held on a 16-mesh screen, uniform in composition, dry and free-flowing.
 - 2.2.3 *Mulch* – Clean hay or fresh straw mulch.

2.3 *Grass Materials* –

2.3.1 Grass Seed

Federal Specifications JJJ-S-18 and shall satisfy the following requirements:

Seed	Pure Seed	Hard Seed	Weed Seed
Argentine Bahia (Paspalum notatum)	85%	15%	0.25%

Seed failing to meet the purity or germination requirements by not more than twenty-five percent may be used, but the quantity shall be increased to yield the required rate of pure live seed. Seed failing to meet the weed seed requirements shall not be used.

- 2.4 *Sod Materials* – Use Argentine Bahia. The sod shall be live, fresh, and uninjured at the time of planting and shall have a thick mat of roots with enough adhering soil to assure growth. Sod shall be free of monofilament support netting prior to placement. No type of sod netting is acceptable.

Apply sod within 48 hours of cutting or stack and keep moist. Do not plant dormant sod if ground is frozen.

PART 3: Execution

3.1 *Clearing* –

3.1.1 Clear all areas covered by dikes, roads, structures and embankments within project limits unless otherwise shown in plans.

3.1.2 Remove all saplings, brush, down-timber, and debris unless shown or directed otherwise.

3.2 *Grubbing* –

3.2.1 Trees, stumps, root systems, rocks and other obstructions shall be removed to the depths shown when they fall within the construction boundary.

3.2.2 Blasting is not permitted.

3.3 *Removal of Debris and Cleanup* –

3.3.1 Burn as permitted by regulating agencies or the Engineer as work progresses.

3.3.2 Unguarded fires will not be permitted.

3.3.3 Permits will be obtained, where required, for necessary burning or disposal sites.

3.3.4 Dispose of all waste materials not burned by removal from site.

3.3.5 Materials cleared and grubbed shall be the property of the Contractor and shall be his responsibility for disposal.

3.4 *Grassing* –

3.4.1 *Grading* – Areas to be grassed shall be graded to remove depressions, undulations, and irregularities in the surface before grassing.

3.4.2 *Tillage* – The area to be grassed shall be thoroughly tilled to a depth of four inches using a plow and disc harrow or rotary tilling machinery until a suitable bed has been prepared and no clods or clumps remain larger than 1-1/2 inches in diameter.

3.4.3 *Application of Lime* – The pH of the soil shall be determined. If the pH is below 5.0, sufficient lime shall be added to provide a pH between 5.5 and 6.5. The lime shall be thoroughly incorporated into the top three to four inches of the soil. Lime and fertilizer may be applied in one operation.

3.4.4 *Application of Fertilizer* – Fertilizer shall be applied at the rate of 6 pounds per 1,000 square feet and shall be thoroughly incorporated into the top three to four inches of soil.

3.4.5 *Planting Seeds* – All areas disturbed during construction shall be seeded as specified herein. Immediately before seeds are sown and after fertilizer and lime are applied, the

ground shall be scarified as necessary and shall be raked until the surface is smooth, friable, and uniformly fine texture. Areas to be grassed shall be seeded evenly with a mechanical spreader, raked lightly, rolled with a 200- pound roller, and watered with a fine spray.

3.4.5.1 *Seed Application* – Seed shall be applied at the following rate:

Seed	Rate of Application
Argentine Bahia grass (paspalum notatum)	6 lbs./1000 sq. ft. 260 lbs./acre

3.4.5.2 *Mulching* – Seeded areas shall be mulched at the rate of not less than 1-1/2 inch loose measurement over all seeded areas. Spread by hand, blower, or other suitable equipment. Mulch shall be cut into the soil with equipment capable of cutting the mulch uniformly into the soil. Mulching shall be done within 24 hours of the time seeding is completed.

3.4.6 *Rolling* – After seeding and mulching, a cultipacker, traffic roller, or other suitable equipment shall be used for rolling the grassed areas. Areas shall then be watered with a fine spray.

3.4.7 *Winter Cover* – All areas to be grassed shall be protected against erosion at all times. For protection during winter months (November 1st through March 31st) Italian rye grass shall be planted at the rate of four pounds per 1,000 square feet on all areas which are not protected by permanent grass.

3.4.8 *Clean-up* – All excess soil, excess grass materials, stones, and other waste shall be removed from the site daily and not allowed to accumulate.

3.4.9 *Maintenance* – Maintenance shall begin immediately following the last operation of grassing and continue until final acceptance. Maintenance shall include watering. Mowing, replanting, and all other work necessary to produce a uniform stand of grass. Grassing will be considered for final acceptance when the permanent grass is healthy and growing on 97 percent of the area with no bare areas larger than 12 inches square.

3.4.10 *Acceptance* – The Contractor shall submit to the Owner two copies of a written request for final acceptance of the grassing work. The request shall be submitted at least ten days prior to the anticipated date of acceptance. The condition of the grass will be noted, the Contractor will be notified if maintenance is to continue.

3.5 *Sodding* –

3.5.1 *Placement* – Prepare the ground by loosening the soil and raking. Place sod on the prepared soil to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to avoid a continuous downhill seam. Tamp or roll lightly to ensure contact with subgrade. Tamp the outer edges of the sodded area to produce a smooth contour. Work sifted soil into minor cracks between pieces of sod; remove excess in order to avoid smothering of adjacent grass, Water sod thoroughly with a fine spray immediately after planting.

- 3.5.2 *Watering* – Keep sod continuously moist to a depth below the root zone for three weeks after placement. If there is not water available to the site, the Contractor shall provide the water for the sod, and include cost of same in his bid.
- 3.5.3 *Maintenance* – Maintain sod by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, re-grading, and re-planting as required to establish a lawn free of eroded or bare areas and acceptable to the Architect/Engineer. Where inspected work and materials do not comply with requirements, replace rejected work and continue maintenance until re-inspected by Architect/Engineer and found to be acceptable. Remove rejected materials promptly from the project site. Contractor shall include costs for maintaining sod in their bid.

PART 4: Measurement and Payment

- 4.1 *Clearing and Grubbing* – Clearing and grubbing shall be measured for payment either in acres or by lump sum only for areas indicated on the plans, or as provided in the proposal and contract.
- 4.2 *Grassing/Sodding* – Grassing/Sodding shall be measured for payment either in square yards or by lump sum only for areas indicated on the plans, or as provided in the proposal and contract.
- 4.3 General –
- 4.3.1 When not listed as a separate contract pay item, clearing and grubbing shall be considered as incidental work, and the cost thereof shall be included in such contract pay items as are provided in the proposal contract.
- 4.3.2 Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

PART 5: Warranty

- 5.1 Contractor shall warranty all work and material for a period of 90 days beginning from date of acceptance of substantial completion.