

SECTION 230 SODDING AND SPRIGGING

230.01. DESCRIPTION.

This work shall consist of furnishing and planting viable Bermuda grass sod or sprigs in accordance with these Specifications and in reasonable close conformity with the areas and locations shown on the Plans or as established by the Engineer.

230.02. MATERIALS.

Materials shall meet the requirements specified in the following Subsections of Section 700 Materials:

Bermuda Grass Solid Slab Sod	735.02
Bermuda Grass Mulch Sod	735.02
Bermuda Grass Row Sprigging	735.02
Bermuda Grass Broadcast Sprigging	735.02

Make certain that the water is free from harmful quantities of toxic salts or other substances that might interfere with the establishment or future subsistence of turf or plants.

230.03. EQUIPMENT.

The Contractor shall furnish equipment in accordance with Subsection 108.06 and as prescribed herein.

- (a) **Rolling Equipment.** Unless otherwise approved by the Engineer, the machine for compacting mulch sodding shall be equipped with a single or tandem axle corrugated roller. It shall weigh not less than 125 or more than 300 pounds per foot (186 or more than 446 kilograms per meter) of rolling width for each axle. It shall be operated approximately parallel to the contour of slopes.
- (b) **Watering Equipment.** Equipment shall apply water as specified on plans without operating on the slopes. Provide a calibrated meter to measure water.
- (c) **Fertilizer Equipment.** Equipment shall conform to Subsection 234.03(b).
- (d) **Sprigging Equipment.** The equipment for row planting of sprigs shall automatically open the furrows, place the sprigs in the furrow, then cover the sprigs and furrow with soil—all in one continuous operation.

230.04. CONSTRUCTION METHODS.

- (a) **Solid Slab Sodding Operations.**
 - (1) To prepare areas to be sodded, fill, reshape eroded areas, clean ditches, and refinish slopes and medians to the established typical grading section.
 - (2) Clear the area of all litter and debris.
 - (3) The location, placement, and seasonal requirements for areas to be solid slab sodded will be as shown on the Plans.
 - (4) Place the slabs of sod soil side down in rows, which on slopes shall run parallel to the roadway. Fit each slab tightly against the edge of adjoining slabs, and place them so that the

vertical joints are not continuous across adjoining horizontal rows. Fill voids with additional sod. Thoroughly press all slabs into firm contact with the soil underneath.

- (5) After the slabs have been placed, thoroughly water the sodded area. When the area is sufficiently dry, fill additional voids with good soil and water again. Water the area daily for a period of at least seven days after placement. Watering operations shall conform to Subsection 230.04(g).
 - (6) Apply fertilizer in accordance with Subsection 230.04(h).
- (b) **Mulch Sodding Operations.**
- (1) To prepare areas to be mulch sodded, fill, reshape eroded areas, clean ditches, and refinish slopes and medians to the established typical grading section.
 - (2) Prior to placing the mulch sod, scarify the cut and fill slopes.
 - (3) Place the sod on the prepared areas and spread it uniformly to such a depth that when thoroughly compacted, with a roller conforming to Subsection 230.03, it is 3 inches (75 mm) thick. Roll slopes along approximate contour lines unless otherwise directed.
 - (4) Water the mulch areas within 24 hours after placement. The remaining watering operation shall conform to Subsection 230.04(g).
 - (5) Apply fertilizer in accordance with Subsection 230.04(h).
- (c) **Row Sprigging Operations.**
- (1) To prepare areas to be row sprigged, till the specified areas to a depth of at least 4 inches (100 mm) with an offset disk plow or a tandem disk plow.
 - (2) Apply fertilizer in accordance with Subsection 230.04(h).
 - (3) Plant the sprigs with an automatic sprig planter conforming to Subsection 230.03 (you may hand plant in areas where the sprig planter cannot operate). Plant the sprigs in furrows parallel to the approximate contour lines of the slopes. The distance between furrows shall not exceed 20 inches (500 mm) on centers. Place the sprigs approximately 3 inches (75 mm) deep at the rate of approximately 30 bushels per acre (6.9 cubic meters per hectare) with the ends of sprigs meeting or overlapping.
 - (4) Do not operate the sprig planter in excess of 4 miles (6.4 kilometers) per hour.
 - (5) Roll all sprigged areas the same day they are planted; roll slopes along approximate contour lines.
 - (6) Water the row sprigged areas within 24 hours after placement. The remaining watering operation shall conform to Subsection 230.04(g).
- (d) **Broadcast Sprigging Operations.**
- (1) • **Broadcast Sprigging Method A.** Prepare areas for broadcast sprigging method A by tillage with either a tandem disk plow or an offset disk plow until the areas are suitable for sprig planting. The depth of tillage shall be approximately 4 inches (100 mm). If rains or other conditions should pack the soil before planting can be completed, repeat the tillage. Plant at least 80 bushels per acre (8.70 cubic meters per hectare) of sprigs unless otherwise shown on the Plans. Broadcast the sprigs evenly and uniformly on the soil surface. Within two hours after the sprigs have been planted, disk the areas to a depth of approximately 3 inches (75 mm) with either a tandem or offset disk plow.

- (2) • **Broadcast Sprigging Method B.** Thoroughly incorporate at least 12 bushels (0.42 cubic meters) of sprigs into 100 cubic yard (76 cubic meters) of stockpiled method B salvaged topsoil. Use a method approved by the Engineer to meter and distribute the sprigs into the stockpiled topsoil. During the mixing operation, keep both the soil and sprigs moist. Prepare areas for broadcast sprigging method B shall consist by scarifying on the contour, with approved equipment, the designated areas shown on the Plans prior to placing the soil-sprig mixture. Spread the soil-sprig mixture on the designated areas 5 inches (125 mm) thick, within 4 hours of manipulation.
- (3) • **Fertilizing, Rolling, and Watering.** Use the following procedures for both method A and method B of broadcast sprigging:
- 3.1 • Apply fertilizer in accordance with Subsection 230.04(h).
 - 3.2 • Roll and compact the planted areas with equipment conforming to Subsection 230.03(a). Rolling of slopes shall be along approximate contour lines and in a manner approved by the Engineer.
 - 3.3 • Water the sprigged areas 24 hours after placement. Watering operations shall conform to Subsection 230.04(g).
- (e) **Planting Season and Weather Restrictions.**
- (1) Perform erosion control operations during the seasonal periods shown on the Plans. With written approval of the engineer, you may perform permanent erosion control operations out of season if you guarantee at least 70% cover at the beginning of the next planting season. As cut and fill sections are brought to grade and constructed to the lines and dimensions shown on the typical sections, promptly place and finish the salvaged topsoil, and construct the specific erosion control item or items, if in accordance with seasonal limitations, as shown on the Plans. Regardless of the dates specified, suspend the work during excessively wet or dry weather conditions that would cause unsatisfactory results.
 - (2) Planting shall begin promptly and shall proceed without undue delay until completed or until interrupted by the “out-of-season period.” When construction of an operation is interrupted by the “out-of-season period,” resume construction immediately with the beginning of the “in season period” for that operation.
- NOTE: If the contractor elects to place permanent erosion control out of season, the responsibility for repair and maintenance as specified in Subsection 230.04(i) shall be at the contractor’s expense.*
- (3) Apply temporary erosion control operations on all cuts, fills, and other disturbed erodible areas where the permanent operation was interrupted by seasonal limitations. Begin this work immediately after placement of topsoil or as otherwise directed by the Engineer and continue without undue delay.
- (f) **Soil Moisture Requirements.**
- (1) Soil moisture shall exist throughout the zone from 1 inch (25 mm) below the surface to at least 5 inches (125 mm) below the surface at the time of planting. The required moisture content of the soil may be estimated and judged closely by the hand-squeeze test. The soil should readily form a tight cast when squeezed in the hand. The cast should break into two pieces without crumbling and without leaving excess water on the hand after casting.

- (2) Sodded or sprigged areas shall be watered for 30 days after planting unless otherwise directed. The depth of watering with moving equipment shall be carried out on short sections until the soil is moist throughout the top 1 inch (25 mm).
 - (3) The application rate and fineness of the spray shall be adjusted according to wind velocity to provide uniform infiltration without appreciable erosion or excessive runoff.
- (g) **Fertilizer Operations.**
- (1) Apply fertilizer at the rates shown on the Plans.
- NOTE: Do not place fertilizer on hard or glazed surfaces.*
- (2) When satisfactory results can be obtained, you may disk for soil preparation, remove weeds, and incorporate fertilizer in one operation.
 - (3) If a fertilizer containing phosphorous is specified, apply it *before* placement of solid slab sod, mulch sod, row sprigging, or broadcast sprigging, and then incorporate it into the soil by disking.
 - (4) If a fertilizer contains nitrogen only, apply it *after* the sodding and sprigging operations have been completed.
- (h) **Repair and Maintenance.** The Contractor shall be responsible for repairs and maintenance of areas designated for sodding or sprigging until all work on the Contract or designated portion thereof has been completed and approved for final acceptance.
- (1) **Repair.** This includes the following: recovery, replacement, and compaction of soil that has been removed by erosion; filling and reshaping eroded areas; cleaning ditches; and refinishing slopes and medians to the approximate typical grading section shown on the Plans or as determined by the Engineer. Repair shall include resodding or sprigging, refertilizing, and watering damaged areas, which shall be performed during the specified planting season.
 - (2) **Maintenance.** This consists of weed control by mowing, hand cutting, herbicides, or other approved methods. Remove weed growth on sodded areas as often as determined by the Engineer. If herbicides are used, use them in accordance with label instructions and after getting approval from the Engineer. Mowing shall be in accordance with Section 241.

230.05. METHOD OF MEASUREMENT.

Solid slab sodding, mulch sodding, row sprigging, and broadcast sprigging Method A and Method B will be measured by the square yard (square meter) of sodded area.

Watering will be measured by the 1000 gallon (kiloliter) of water. The water will be measured by the use of a calibrated meter.

Fertilizer will be measured and paid for in accordance with Section 234.

Mowing when directed by the Engineer, shall be measured and paid for in accordance with Section 241.

230.06. BASIS OF PAYMENT.

Accepted sodding, measured as provided above, shall be paid for at the contract unit price as follows:

- (A) SOLID SLAB SODDING SQUARE YARD (SQUARE METER)
- (B) MULCH SODDING SQUARE YARD (SQUARE METER)
- (C) ROW SPRIGGING SQUARE YARD (SQUARE METER)
- (D) BROADCAST SPRIGGING (METHOD A) SQUARE YARD (SQUARE METER)
- (E) BROADCAST SPRIGGING (METHOD B) SQUARE YARD (SQUARE METER)
- (F) WATERING M-GAL (KILOLITER)

Such payment shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

**SECTION 231
PLANTING**

231.01. DESCRIPTION.

This work shall consist of furnishing, handling, planting, and establishing plant materials in accordance with these Specifications and in reasonably close conformity with the areas and locations shown on the Plans or established by the Engineer.

231.02 . MATERIALS.

Materials shall meet the requirements specified in the following Subsections of Section 700 Materials.

Plant Materials	735.03
Plant Soil Mix	735.03
Vegetable Compost	735.03

Water shall be free from harmful quantities of toxic salts or other substances that might interfere with the establishment and growth of plants.

231.03. EQUIPMENT.

You must furnish equipment meeting the requirements of Subsection 108.06 and as prescribed herein. When machine planting trees, the equipment must have all the accessories necessary to dig, lift, carry, and deposit a plant intact into an excavation (previously dug by the same or identical type machine) without damage to the ball of soil or the plant.

231.04. CONSTRUCTION METHODS.

(a) **General.**

- (1) Perform all work under the supervision of a competent and experienced nurseryman.
- (2) Protect all new plants and existing trees, shrubs, and turf from damage or injury before, during and after construction and plant establishment operations.
- (3) Bare-rooted plants will be designated BR, and balled and burlapped plants will be designated B&B.