

SODDING**PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Preparation of Sod Bed
- B. Fertilizing - First Application
- C. Sod Installation
- D. Watering
- E. Fertilizing - Second Application
- F. Maintenance
- G. Clean-Up
- H. Acceptance

1.02 DESCRIPTION OF WORK

This section includes preparation of the sod bed, furnishing and installing sod, watering, and maintenance for completed sodded areas as specified in contract documents.

1.03 SUBMITTALS

Follow the General Provisions (Requirements) and Covenants, as well as the following:

- A. Submit sod growers certification of grass species and location of sources.
- B. Submit certification of the fertilizer analysis.
- C. Submit written maintenance instructions to Engineer recommending procedures for maintenance of sodded lawns, prior to final acceptance of sodded lawns.

1.04 SUBSTITUTIONS

Follow the General Provisions (Requirements) and Covenants.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Sod shall be harvested, delivered, and transplanted within a period of 24 hours unless a suitable preservation method is approved by the Engineer prior to delivery.
- B. Do not harvest or transport sod when moisture content may adversely affect sod survival.
- C. Protect sod from sun, wind, dehydration, and rain prior to installation that cannot be placed immediately on delivery.
- D. Sod showing visible signs of heating or dehydration will be rejected.
- E. Do not tear, stretch, or drop sod during handling and installation.
- F. Deliver fertilizer to site in original, unopened, and non-damaged containers, each bearing manufacturer's guaranteed analysis.

1.05 DELIVERY, STORAGE, AND HANDLING (Continued)

- G. Store packaged materials off ground and protect from moisture and deterioration.

1.06 SCHEDULING AND CONFLICTS

- A. Notify Engineer at least 3 calendar days prior to start of sodding operations.
- B. Perform sod installation after planting and other work affecting ground surface has been completed, or as approved by Engineer.

1.07 SPECIAL REQUIREMENTS

- A. A warranty is required to guarantee completed sodding operations providing a uniformly dense, live, and healthy stand of grass, free of weeds and undesirable grasses, debris, and free of eroded areas, bare spots, diseases, and insects at the end of one year following the minimum maintenance period.
- B. Contractor to replace as originally specified areas that have failed to survive, as often as required, to establish the sodded lawn area until accepted; at no additional compensation.
- C. Repair and replace to original condition all damages to property resultant from the sodding operation and all damages as a result from the remedying of these defects, without additional compensation.

1.08 MEASUREMENT FOR PAYMENT

Sodding shall be measured in squares; each square containing 100 square feet of accepted sod within the contract limits.

PART 2 - PRODUCTS**2.01 SOD**

- A. Sod: An "approved" well established no less than 18 months old, well rooted, healthy nursery grown sod blend of improved Kentucky Bluegrass with a uniform color, leaf texture, density, and varieties consisting of a minimum of 3 cultivars selected from the following list and grown in Iowa:

Permitted Kentucky Bluegrass Cultivars

Ram I
Liberty
Midnight
Meret
Nubblue
Nustar
Apex
Eclipse
Glade
America
Rugby II
NuGlade
Quantrum
Dragon
Dellwood
Blue Chip
Absolute
Award
Blue Moon

- B. Sod grown in peat bedded soil is not acceptable.
- C. Sod shall be free of objectionable grasses and broadleaf weeds; sod shall be considered free of such weeds if less than 2 such plants are found per 100 square feet of area. Sod shall be free from roots of trees or shrubs, stones, thatch, and other objectionable materials. Sod shall be free of nematodes and soil born insects and free of disease.
- D. Mow at height of 2 inches prior to cutting. Sod to be machine cut at uniform soil thickness of approximately 1 inch. Thickness measurement shall exclude top growth.
- E. Sod shall be cut with a sod machine in strips of uniform width and lengths with ends square standard to the industry.
- F. Sod shall be moist when placed.

2.02 FERTILIZER

Fertilizer shall comply with the rules of the iowa department of agriculture and as follows:

- A. The grade of fertilizer will be identified according to the percent nitrogen (N), percent of available phosphoric acid (P_2O_5), and percent water soluble potassium (K_2O), in that order, and approval will be based on that identification.
- B. All fertilizer shall be furnished from an established fertilizer dealer and guaranteed percentage analysis shall be provided by the fertilizer supplier on each container with the proper scale weight records.

2.02 FERTILIZER (Continued)

- C. Fertilizer shall be of a type that can be uniformly distributed by the application equipment. Fertilizer may be furnished in a dry (granular) or liquid form.
- D. When applied dry, the fertilizer shall be a granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer. Granular or pellet form shall be uniform in composition, dry, and free flowing without caking or other damage not suitable for use.
- E. When applied in a liquid form, fertilizer may be or may be furnished as separate ingredients.
- F. Upon request of the Contracting Authority, the Contractor shall provide a test of the fertilizer for conformance with the required analysis at no additional compensation; a tolerance of 1.0 percentage point plus or minus will be considered substantial compliance.

2.03 STAKES

- A. Softwood Stakes:** 3/4 inch diameter and 8 inch long, or
- B. Steel, Tee Shaped Pins:** 4 inch head and 8 inch leg.

2.04 WATER

- A. Water shall be free of substance harmful to sod growth.
- B. Contractor to provide water, equipment, methods of transportation, water tanker, hoses, sprinklers, and the application of water.

PART 3 - EXECUTION**3.01 PREPARATION OF SOD BED**

- A. Limit preparation to areas which will be immediately sodded.
- B. Where weed growth has developed, remove all weeds and weed debris. Weed growth removal process to be approved by Engineer, without additional compensation.
- C. Contractor shall shape and fine grade to remove washes or gullies, water pockets, and irregularities to a smooth, firm, and even surface true to grade and cross-section.
- D. Rototill and cultivate sod bed to a minimum 3 inch depth to a fine and mellow condition. Clear the top 3 inches of soil lumps, stones over 3/4 inch, and foreign material using hand labor as required.

3.02 FERTILIZING - FIRST APPLICATION

- A. Provide a guaranteed analysis of 20-26-6 commercial fertilizer or the equivalent units of nitrogen (N), phosphate (P), and potash (K) by weight at the rate of 200 pounds per acre.
- B. Incorporate fertilizer into soil to a depth of 1 1/2 inch prior to sodding.

3.03 SOD INSTALLATION

- A. Sod shall not be installed between the dates of June 15 to August 15, unless authorized by Engineer.
- B. Lay no sod on frozen soil nor with eminent freezing conditions within 24 hours.
- C. Do not lay dormant nor frozen sod.
- D. Dampen dry soil prior to sodding.
- E. Sod shall be carefully placed in rows or strips evenly and with longest joint parallel to the finished contours and at right angles to the center line of ditches and channels. On slopes, sodding shall begin at the bottom and progress upward.
- F. Minimize traffic on newly laid sod during installation. Provide plank or wood sheets as may be required to protect sod already laid, without extra compensation during sodding operations.
- G. Lay each strip with tightly-fitted joints against each other without voids. Do not overlap edges. Joints at the ends of sod strips shall be staggered with adjacent strips of sod.
- H. Finish sod edges at walks, curbs, planting, mulch edges, and other vertical surface by cutting neatly and fitting tightly to edge and line.
- I. Sod mat to be approximately 1 inch below finished height of walks, pavement, curbs, etc. Any sod not conforming to this requirement will be removed, the subgrade adjusted, and the sod re-laid.
- J. Where new sod joins existing lawns, cut straight and neatly into existing lawn and level subgrade to allow height to match.
- K. Stake sod on grades exceeding 4:1 and in drainage channels. Stake each roll at minimum two foot intervals to prevent movement under rainfall conditions.
- L. Soil shall be firmed or healed in along the edges of the sodded areas.
- M. Roll sod that has been lightly watered with small mechanical or hand roller to sufficiently set or heal sod into soil and remove lumps. Roll as required to firm and level the sodded areas.

3.04 WATERING

- A. Not more than 1 hour shall elapse between the laying and initial watering of the sod.
- B. Initial watering shall provide a thoroughly wet sod and sod bed.
- C. Water all sodded areas during maintenance period as necessary to maintain sod and soil moisture, supplement rainfall, to promote growth, proper rooting to insure sod survival, and to prevent dormancy.
- D. Apply water uniformly and consistently on all sodded areas to prevent damage to sod and existing or recently planted trees and shrubs.

3.05 FERTILIZING - SECOND APPLICATION

Apply second application of fertilizer with a guaranteed analysis of 10-10-10 commercial fertilizer or the equivalent units of nitrogen (N), phosphate (P), and potash (K) at the rate of 300 pounds per acre two weeks after laying sod and prior to final acceptance.

3.06 MAINTENANCE

- A. Begin maintenance immediately following installation of sod and continue for a period until sodded areas are established with sod rooted in place. Maintenance period shall be a minimum of 14 days.
- B. Maintenance of sodded areas shall include watering, weeding, mowing to a 2 - 2 1/2 inch height after height has exceeded 3 inches and prior to 4 inches, and replacement and installation of sod as originally specified for sodded areas failing to survive. Clippings from mowing which mat on the grass, are to be removed.

3.07 CLEAN-UP

- A. Perform cleaning during installation of work and upon completion.
- B. Remove from site all excess materials, debris, and equipment.
- C. Hose down and/or broom clean all paved surfaces.
- D. Repair any damage resulting from sodding operations.

3.08 ACCEPTANCE

- A. Sod acceptance shall be based upon the following criteria:
 - 1. All requirements for the completed installation and maintenance have been provided.
 - 2. Sodded areas are healthy, even colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects.
 - 3. Sod is "knit down" to the soil so that it cannot be pulled up.
 - 4. Sodded areas are without scattered bare spots, dead or dormant sod.
 - 5. Clean-up operations are completed.
- B. Replacement sod work shall be reinspected in accordance with A above before acceptance.

END OF SECTION