

SECTION 02820
TURF ESTABLISHMENT

02820.01 GENERAL**A. Description**

Turf establishment shall include, but not necessarily be limited to, soil preparation, seeding, fertilizing, mulching, liming as required, overseeding, refertilizing, and mowing all areas disturbed by construction where designated for turf establishment in accordance with the Contract Documents.

B. Related Work Included Elsewhere

1. Earthwork; Section 02200.
2. Placing salvaged topsoil; Section 02812.
3. Furnished topsoil; Section 02813.

C. Quality Assurance and Submittals

1. Fertilizer

The Engineer may inspect and take such samples of fertilizer that he deems necessary for testing, or may require the Contractor to furnish an affidavit from the manufacturer or a testing laboratory as to the available nutrients contained therein.

2. Mulch and Wood Cellulose Fiber

The Engineer will visually inspect mulch.

3. Seed

The Engineer will inspect each seed lot. Each seed lot must have been uniformly and thoroughly mixed in the presence of an inspector from the Turf and Seed Section, Maryland Department of Agriculture, at which time the inspector will sample the seed for laboratory testing.

D. Submittals

Certificates of compliance shall be as specified in the "General Provisions" for all wood cellulose fiber and seed materials stating that the material furnished is in accordance with the requirements specified herein.

02820.02 MATERIALS

A. Materials Furnished by the County

1. The County will not furnish any materials for turf establishment.
2. The Contractor may purchase water for hydroseeding or turf irrigation from the County's potable water system. The Contractor shall contact the Bureau of Utilities, Meter Section, for requirements.

B. Contractor's Options

1. Fertilizer may be furnished in either dry or liquid form unless otherwise noted.
2. Mulch may consist of straw, hay, salt hay, or wood cellulose fiber unless otherwise noted.

C. Detailed Material Requirements

1. Ground Limestone

Ground limestone shall contain not less than 80% calcium and magnesium carbonates. Dolomitic or magnesium limestone shall contain at least 10% magnesium as magnesium oxide. The limestone shall be ground to meet the following size gradation:

<u>Sieve Sizes</u> <u>U.S. Standard</u>	<u>Percent Passing</u> <u>by Weight</u>
No. 10	100
No. 20	98
No. 100	50

2. Fertilizer

- a. Fertilizer shall be a standard commercial grade fertilizer meeting the requirements of all State and Federal regulations and standards of the Association of Official Agricultural Chemists. Commercial fertilizer shall provide the minimum percentage of available nutrients specified.
- b. Fertilizer shall be furnished in bulk or new, clean, sealed, and properly labeled bags. Fertilizer failing to meet the specified analysis may be used as determined by the Engineer providing sufficient materials are applied to comply with the specified nutrients per unit of measure without additional cost to the County.
- c. Fertilizer analysis shall be 5-10-10, 0-10-10 (refertilization), and 38-0-0 (ureaform) as specified in Section 02820.03.

3. Seed

a. General

All seed shall meet the following requirements:

- 1) Each container shall be labeled in accordance with the Maryland Seed Law.
- 2) The Contractor shall furnish the County with a certification that the seed mix to be used complies with the specifications.
- 3) No seed shall be used after date of expiration.
- 4) Seedsmen (wholesale or retail) desiring to stock or furnish seed for County projects must comply with the same requirements as outlined for Contractors and must assume all service charges.

b. Seed must comply with the Maryland Seed Law, Agricultural Article of the Annotated Code of Maryland.

c. The percentage by weight of pure seed present shall be such agriculture seeds free from inert matter and from other seeds distinguishable by their appearance.

d. The percentage of germination shown for agriculture seed shall be actual sprouts and not include hard seeds unless specifically permitted.

e. Grass and agricultural seeds shall meet the following requirements:

	Purity Not Less Than %	Weed Seed Not More Than %	Minimum % Germination Including Hard Seed	Hard Seed Not to Exceed %
Kentucky Bluegrass (<i>Poa pratensis</i>) (Certified Domestic Origin) Broad genetic base – North Central Origin (Example "South Dakota" and/or "Kenblue")	90	0.40	80	--
Canada Bluegrass (<i>Poa compressa</i>)	90	0.50	80	--
Redtop (<i>Agrostis alba</i>)	92	0.75	80	--
Annual Ryegrass (<i>Lolium species</i>)	95	0.25	85	--
Perennial Ryegrass (<i>Lolium perenne</i>)	98	0.25	90	--
Boer Lovegrass(<i>Eragrostis chloromelas</i>) or Lehmann's Lovegrass (<i>Eragrostis Lehmanniana</i>)**	98	0.50	80	--
Hungarian Millett(<i>Setaria italica</i>)**	99	0.15	80	--

	<u>Purity Not Less Than %</u>	<u>Weed Seed Not More Than %</u>	<u>Minimum % Germination Including Hard Seed</u>	<u>Hard Seed Not to Exceed %</u>
Creeping Red Fescue Pennlawn (Festuca rubra) (Certified Seed Only)	98.5	0.50	85	--
Kentucky 31 Tall Fescue (Festuca arundinacea) (Certified Seed Only)	98	0.50	90	--
Chewings Fescue (Festuca rubra commutata)	98	0.50	85	--
Oats (Avena sativa)	99	0.50	90	--
Crownvetch (Coronilla varia)**	98.5	0.50	80	30
White Clover (Trifolium repens)	97	0.75	85	20
Lespedeza, Korean(Lespedeza stipulacea)*	98	0.50	85	20
Lespedeza, Sericea (Lespedeza cuneata)	98	0.50	85	2
Lespedeza, Interstate (Lespedeza cuneata interstate)*	98	0.50	85	20
Weeping Lovegrass Strain A-67 (Eragrostis curvula)	98	0.50	80	--
Barley (Hordeum vulgare)	98	0.30	90	--
Rye Grain, Balbo or Abruzzi (Secale cereale)***	98.50	0.05	85	--
Sudangrass (Sorgham sundanense)	98	0.30	80	--

Notes: All seed is to be free of Maryland noxious weed seeds.

The above mentioned percentages are by weight.

* Leguminous seed to be used in Anne Arundel County Seed Mix No. 1.

** To be used for summer seeding in Anne Arundel County Seed Mix No. 1.

*** To be used for fall seeding in Anne Arundel County Seed Mix No. 1.

f. Anne Arundel County Seed Mixes shall meet the following requirements:

1) Seed Mix No. 1

75% Kentucky 31 Tall Fescue (Certified Seed Only)

5% Redtop

10% Canada Bluegrass

10% Kentucky Bluegrass (Certified Domestic Origin)

2) The following seed mix shall be used on all temporary seeding areas:

84% Barley

16% Sudangrass

4. Mulch
- a. Mulches shall be free of clay, stones, foreign substances, plant parts of Canada Thistle and Johnsongrass, and reasonably free of other weed seeds. Mulches containing Canada Thistle and Johnsongrass shall not be used for any purposes on any Project.
 - b. Straw, hay, and salt mulches shall not contain sticks larger than 1/4 inch diameter or other materials which would prevent matting down during application. No straw, hay, or salt hay mulches shall be used within 48 hours after cutting. Straw, hay, and salt hay shall be free from mold and other objectionable material and shall be in an air-dry condition suitable for placing with mulch blower equipment.
 - c. The following mulches may be acceptable by visual inspection provided they meet the above and following requirements:
 - 1) Straw: Straw shall consist of thoroughly threshed wheat, rye, or oat straw.
 - 2) Hay: Hay shall consist of native grasses or other plant material approved by the Engineer. Hay shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 - 3) Salt Hay: Salt hay shall consist of well cured beach grasses or other approved material.
 - 4) Wood Cellulose Fiber: Wood cellulose fiber shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state. Wood cellulose fiber shall contain a green dye that will provide easy visual inspection for uniformity of the slurry spread. The wood cellulose fiber, including dye, shall contain no germination or growth inhibiting properties. The material shall be manufactured and processed in a manner that the wood cellulose fiber will remain in uniform suspension in water under agitation and blend with seed, fertilizer, and other additives to form a homogeneous slurry. The wood cellulose fiber shall perform satisfactorily in hydraulic seeding equipment without clogging or damaging the equipment.

The manufacturer shall certify that wood cellulose fiber meets the following requirements:

<u>Requirements</u>	<u>Specification Limits</u>
Particle Length	Approximately 3/8 inch
Particle Thickness	Approximately 3/64 inch
Net Dry Weight Content	Minimum stated on bag
pH, ASTM D778	4.0 to 8.5
Ash Content, ASTM D586	1.6% maximum
Water Holding Capacity	90% minimum

The material shall be delivered in packages of uniform weight not exceeding 75 pound net weight and bear the name of the manufacturer, the net weight, and a supplemental statement of net weight content.

5) Mulch Binder

Mulch binder shall be emulsified asphalts meeting the requirements of Section 02644.02, or wood cellulose fiber meeting the requirements of Section 02820.02, Article C, Paragraph 4, Item c., 4).

6) Water

Water used in the planting or care of vegetation shall be free from oil, acids, alkalis, salts, or any substance injurious to plant life. Water from streams, lakes, ponds, or similar sources shall not be used unless the source is approved by the Engineer.

02820.03 EXECUTION

A. Seed Mix

Anne Arundel County Seed Mix No. 1 shall be used in all areas unless specified otherwise.

B. Seeding Season

No seeding shall be done on frozen ground or when the temperature is 32°F or lower. If the time required for completing any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, extends beyond the contract period, then such time will be charged against the contract time; and liquidated damages will be enforced with respect to this portion of the work. Seeding seasons shall be as follows:

1. Regular Seeding Season

March 1 to May 1 and August 1 to October 31, inclusive. Include 20 pounds per acre of Interstate Lespedeza which shall be added to Anne Arundel County Seed Mix No. 1.

2. Summer Seeding Season

May 2 to July 31 inclusive. Summer seeding shall include 2 pounds per acre of Lovegrass (Boer's and/or Lehmann's) or 10 pounds per acre of Hungarian Millet which shall be added to Anne Arundel County Seed Mix No. 1.

3. Late Fall Seeding Season

November 1 to November 30 inclusive. Late fall seeding shall include 22 pounds per acre of Rye Grain (Abruzzi and/or Balboa) which shall be added to Anne Arundel County Seed Mix No. 1.

C. Schedule of Procedure

The Contractor shall begin his work at a point or points approved by the Engineer. When topsoil is required for areas to be seeded, all topsoiling shall be completed before seeding operations are started.

D. Soil Preparation

Soil shall be properly prepared as indicated hereafter. All areas to be seeded shall meet the finished grades shown on the plans and be free of any weed or plant growth. When ground limestone is required, it may be incorporated as part of the loosening for soil preparation. All areas shall be loosened by discing, harrowing, or other approved methods immediately prior to seeding, unless otherwise directed by the Engineer. All clods, loose stones, and other foreign materials which are larger than 3 inches in any dimension shall be removed. All gullies, washes, or disturbed areas that develop subsequent to final dressing shall be repaired before seeding. The seedbeds shall be as follows:

1. Areas flatter than 3:1:

The topsoil shall be loose to a depth of 3 inches.

2. Slope areas 3:1 and steeper, and non-topsoiled areas:

The subsoil or topsoil shall be loose to a depth of 1 inch.

3. Serrated cut slopes:

The subsoil shall not be loosened other than from the normal operation of the serrated cut slope construction. The top portions of the serrated cut slope areas shall be shaped, seeded, and mulched in no greater than 50-foot vertical increments before proceeding with rough grading of the lower portion of the slope.

- a. Serrated cut slope areas constructed in rippable rock and completed prior to or during the seeding season must be shaped, seeded, and mulched at the beginning of the next seeding season.

- b. Serrated cut slope areas constructed in other than rippable rock must be shaped, seeded and mulched during a seeding season.

E. Seeding

Seeding shall consist of soil preparation (Section 02820.03, Article D), and application of seed, fertilizer, and mulch. Seed application shall be by either of the following application methods as the Contractor may elect:

1. Dry Application Method

- a. Ground Limestone: Ground limestone, shall be applied, at rates as determined by soil test or no less than 50 pounds per 1000 square feet, separately before the application of any fertilizer or seed on seedbeds which have previously been prepared in accordance with Section 02820.03, Article D. Where ground limestone is required to be worked in, the seedbed shall again be properly graded and dressed for seeding. Refer to Section 02820.03, Article I., for application rates to be used on non-topsoiled areas. Limestone shall be worked into seedbeds as follows:

<u>Seedbed Area</u>	-	<u>Depth of Limestone Incorporation</u>
4 inches of topsoil	-	3 inches
2 inches of topsoil	-	2 inches
Subsoil, serrated cut slopes and other non topsoiled areas 3:1 and steeper	-	Incorporation not required

- b. Fertilizer: Fertilizer of the analysis 5-10-10 shall be applied to topsoiled areas at a rate of 50 pounds per 1000 square feet. If a fertilizer having an analysis other than specified is used, its rate of application shall be adjusted to provide not less than the same amount of total nitrogen, available phosphoric acid, and total potash per unit as specified above.
- c. When fertilizing non-topsoiled areas, including serrated cut slopes, a fertilizer of the analysis 38-0-0 (ureaform) shall also be applied at a rate of 15 pounds per 1000 square feet as an additive to the 5-10-10 fertilizer.
- d. Seed Application: Apply specified Anne Arundel County Seed Mix No. 1 at the rate of 2 pounds per 1000 square feet on flat areas and 1.5 pounds per square feet on slope areas immediately after fertilizing. Rake fertilizer and seed into the prepared seedbed to a depth of not more than 1/4 inch.
- e. Seedbed Compaction: After seed has been properly covered on flat areas, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot of width for clay soil (or any soil

having a tendency of pack), and weighing 150 to 200 pounds per foot of width for sandy or light soils, unless an intervening precipitation causes such rolling to be detrimental to the seeded area.

2. Wet Application Method

- a. General: Apply seed and fertilizer (ground limestone, if required) by spraying the material on previously prepared seedbeds in the form of an aqueous mixture using the methods and equipment described herein. The rates of application shall be the same as those specified for the Dry Application Method.
- b. Spraying Equipment: The spraying equipment shall have a water tank equipped with a bar or liquid level gage calibrated to read in increments not larger than 50 gallons over the entire range of the tank capacity. The gage shall be mounted to be visible to the nozzle operator. The tank shall also be equipped with an agitation system capable of keeping all the solids in the mixture in complete suspension at all times until used.
- c. Ground Limestone
 - 1) Ground limestone, if required, shall be sprayed separately from mixtures of seed and fertilizer on areas flatter than 3:1. The water-limestone mixture shall contain a maximum of 600 pounds per 100 gallons. The water-limestone mixture shall be applied at a minimum rate of 1000 gallons per acre. The water-limestone mixture shall be worked into the topsoil as required under Section 02820.03, Article E, Paragraph 1, Item a. After working the ground limestone into the topsoil, the seedbed shall again be properly graded and dressed.
 - 2) Ground limestone shall not be required to be applied separately on slope areas 3:1 and steeper. The rate of application for limestone on non-topsoiled areas shall be as specified in Section 02820.03, Article I. The water-seed-fertilizer and limestone mixture shall be applied at a minimum rate of 1000 gallons per acre in the relative proportions specified so that these combined solids do not exceed 600 pounds per 100 gallons.
- d. Application
 - 1) Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which ground limestone, if required, has been incorporated. Seed and/or fertilizer shall be mixed together with water in the relative proportions specified so that these combined solids do not exceed 300 pounds/100 gallons. The water-seed-fertilizer mixture shall be applied at a minimum rate of 1000 gallons/acre.

- 2) All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All seed mixtures in aqueous agitation shall be used within eight hours after mixing, except for leguminous seed which shall be used within one hour after mixing. Seeds mixtures not utilized within the time limits shall be wasted and disposed of at locations acceptable to the Engineer.
 - 3) The mixtures shall be applied by high pressure spray equipment which shall always be directed upward into the air so the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in a manner to produce erosion or runoff.
 - 4) Particular care shall be exercised to insure that application is made uniformly at the prescribed rate and to guard against misses and overlaps. Proper predetermined quantities of the mixture, as specified, shall be used to cover specified sections of known area. Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or collecting containers over the area at intervals and observing the quantity of material deposited thereon.
 - 5) The spray method shall not be used during periods of high winds which prohibit satisfactory spray patterns.
 - 6) Seed and fertilizer applied by the spray method need not be raked into the soil.
 - 7) Any spray or residual which disfigures or otherwise damages existing structures or vegetation shall be thoroughly cleaned from the damaged surface.
3. Leguminous Seeds

All leguminous seeds shall be inoculated or treated with unexpired approved cultures in the proper proportions as indicated on the package label. The inoculant shall be stored at room temperatures, out of direct sunlight, and away from heating units. When seeding dry with mechanical seeders, the following method of mixing the inoculant with the seed shall be followed. "The culture in powder form shall be thoroughly mixed with the seed by using a very small quantity of water; just enough to dampen the seeds before the culture is powdered on." The leguminous seed shall then be mixed with the other seeds of the formula. Seeds inoculated with the powder shall be sown within 48 hours after treatment. Inoculant and seed treated with inoculant shall not be exposed to sunlight for more than one hour prior to seeding. When seed is applied by hydraulic seeders, 10 times the quantity of inoculant recommended for dry leguminous seed application shall be used. Inoculated seed shall not be held in a slurry with fertilizer for more than one hour, otherwise

reinoculation will be required before applying the seed. Inoculated seed not used within the time period shall be reinoculated.

F. Mulch Application

1. Mulch materials shall be furnished, hauled, and evenly applied on the area shown on the Plans and/or as directed by the Engineer. All mulch shall be applied within 48 hours after seeding. Mulch applied by hand shall provide a loose depth of not less than 1.5 inches nor more than 3 inches. Mulch applied by the blowing method shall provide a loose depth of not less than 1 inch nor more than 2 inches, and 95% of the mulch shall be 6 inches or more in length. Mulch applied by the above methods shall achieve a uniform distribution and depth so no more than 10% of the soil surface is exposed. Mulch applied either by hand or the blowing method shall be spread evenly over all seeded areas at the rate of 2.0 tons per acre.
2. If the mulch is to be secured with a mulch anchoring tool, the rate shall be 2.5 tons per acre. If the tracking method is used, the rate of mulch shall be 1.5 tons per acre.

G. Securing Mulch

Mulch may be secured by any of the following methods except the mulch anchoring tool method will be required for summer seeding under conditions which will permit proper anchoring of the mulch by the mulch anchoring tool method on areas 3:1 and flatter.

Where mulch has been secured with either an asphalt binder or wood cellulose fiber binder, it will not be permissible to walk on the slopes after the binder has been applied. The Contractor is warned that in the application of asphalt binder material he must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the seeded area and that he will be held responsible for any such damage resulting from his operations. He will be required to place temporary protective covers over existing signs just before seeding and mulching. The covering shall be immediately removed after seeding and mulching operations are completed.

1. Peg and String Method

If the peg and string method is used, the mulch shall be secured by stakes or wire pins driven into the ground on 5 foot centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be driven nearly flush to the ground to draw the twine down tight onto the mulch.

2. Spray Method

If the spray method is used, all mulched surfaces shall be sprayed with the selected binder material so the surface has a uniform appearance. Mulch binder may be sprayed on the mulched slope areas from either the top or the bottom of the slope. A spray nozzle of approved design must be used. The nozzle shall be operated at a

distance of not less than 4 feet from the surface of the mulch. Uniform distribution of the binder material will be required. A pump or an air compressor of adequate capacity shall be used to insure the uniform distribution of binder material.

a. Asphalt Binder

Asphalt mulch binder shall be uniformly applied to the mulch at the rate of approximately 8.0 gallons per 1000 square feet, or as directed by the Engineer. The minimum-maximum rates of application shall be 6 and 10 gallons per 1000 square feet depending on the type of mulch and the effectiveness of the binder securing it.

b. Chemical Binder

Wood cellulose fiber used as a binder shall be applied at a net dry weight of 750 pounds per acre.

The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons.

3. Mix Method

If the mix method is used, the mulch shall be blown onto the area by a mulch blower; and the binder material shall be sprayed into the mulch as it leaves the mulch blower. For rates of application, see Spray Method above.

4. Anchoring Tool Method

If the mulch anchoring tool method is used, the mulch shall be incorporated into the soil to a minimum depth of 2 inches by equipment and a method acceptable to the Engineer.

5. Tracking Method

If the tracking method is used, the mulch shall be incorporated into the soil with a bulldozer having steel cleats with a minimum depth of 1.5 inches. The equipment used and the method of tracking shall be acceptable to the Engineer. Upon completion of tracking, the mulch shall be further secured as described for the spray method under Section 02820.03, Article G, Paragraph 2.

H. Wood Cellulose Fiber

Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 pounds per acre. The wood cellulose fiber shall be mixed with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons. This wood cellulose fiber will be permitted to be used in the following areas when approved, and as directed, by the Engineer:

1. Narrow disturbed areas up to 8 feet wide adjacent to pavement where traffic created gusts of wind could cause problems with straw;
2. Deep or high slope areas inaccessible to straw application by a mulching machine.

I. Ground Limestone

Ground limestone shall consist of furnishing and placing limestone on non-topsoiled areas, including serrated cut slopes, in accordance with Section 02820.03, Article E, Paragraph 1, Item a., at a rate of 2 tons of ground dolomitic limestone per acre.

J. Fertilizer

Ureaform fertilizer shall be furnished and placed as an additive per Section 02820.03, Article E, Paragraph 1, Item b, and Article L, to non-topsoiled and serrated cut slope areas and other areas directed by the Engineer. The rate of application shall be 15 pounds per 1000 square feet unless otherwise directed.

K. Overseeding

Overseeding (flat and slope areas) shall consist of applying seed and fertilizer to previously seeded and mulched areas where turf establishment has not been successful and where remulching is not required due to mulch remaining from the previous application of mulch. Work shall be performed in the areas as directed by the Engineer in accordance with Section 02820.03, Article E, except for requirements of soil preparation and mulch.

L. Refertilizing

Refertilizing shall consist of applying 0-20-20 fertilizer and 38-0-0 (ureaform) fertilizer each at 10 pounds per 1000 square feet to non-top-soiled and serrated cut slope areas and other areas as directed by the Engineer in accordance with these Specifications and as follows:

1. Fertilizations: 2
2. Months after Seeding: April and September

M. Mowing

1. Rural Areas

Mowing shall consist of maintaining vegetation seeded by the Contractor by means of a 5 to 7 foot rotary or sickle bar tractor mower as directed by the Engineer. Vegetation shall not exceed 10 inches in height nor be mowed to less than 5 inches in height.

2. Urban Areas

Mowing shall consist of maintaining vegetation seeded by the Contractor by means of riding or push mowers. First mowing should not be attempted until grass is at least three (3) inches high. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2 and 4 inches unless otherwise specified.

3. Seeded areas shall be mowed and maintained by the Contractor through at least two mowings. If following two mowings the Project has not been conditionally accepted, mowing and maintenance shall continue until conditional acceptance.

N. Repair of Defective Areas

1. The responsibility for maintaining treated areas shall be as follows: Until the Project is finally accepted, the Contractor will be required to repair or replace any seeding or mulching that is defective or damaged. When, in the judgment of the Engineer, such defects or damages are the result of poor workmanship or failure to meet the requirements of the Specifications, the cost of necessary repairs or replacement shall be borne by the Contractor. However, once the Contractor has completed the seeding and mulching of any area in accordance with the provisions of the Specifications and to the satisfaction of the Engineer, no additional work at his expense will be required. Subsequent repairs and replacements deemed necessary shall be made by the Contractor and will be paid for as additional work or extra work.
2. When either the Dry or Wet Application Method is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density. If, when the Contract has been completed, it is not possible to make an adequate determination of color, density and uniformity of such stand of grass, payment for the unaccepted portions of the areas will be withheld until these requirements have been met.

02820.04 METHOD OF MEASUREMENT

A. Seeding and Mulching

Measurement for seeding and mulching will be made of the area, measured in place, acceptably seeded and mulched.

B. Limestone

Measurement for ground limestone or ground dolomitic limestone will be made by weight of limestone furnished and applied. Weight will be determined by certified delivery tickets or other acceptable means.

C. Fertilizer

Measurement for ureaform fertilizer will be made by weight of fertilizer furnished and applied. Weight will be determined by certified delivery tickets or other acceptable means.

D. Overseeding

Measurement for overseeding will be made by weight of Anne Arundel County Seed Mix No. 1 furnished and installed. Other seed such as leguminous and out-of-season Lovegrass or Rye Grain seed are incidental to this item and will not be measured. Weight will be determined by certified delivery tickets or other acceptable means.

E. Refertilizing

Measurement for refertilizing will be made by weight of fertilizer furnished and applied. Weight will be determined by certified delivery tickets or other acceptable means.

F. Mowing

Measurement for mowing will be made based on the actual time spent in mowing.

02820.05 BASIS OF PAYMENT**A. General**

1. Payment will be made at the unit prices bid. The prices bid shall include all labor, tools, equipment and materials necessary to complete the work as shown and specified in strict accordance with the Contract Documents, and accepted by the Engineer.
2. Payment will be made for contingent items when ordered by the Engineer. Payment will be as specified in Sections 02951, 02952, 02953, 02954, 02955, 02956, and 02957.

B. Seeding and Mulching

Payment for seeding and mulching will be made per square yard of area acceptably seeded and mulched. Payment will include furnishing and placing Anne Arundel County Seed Mix No. 1, other seed such as leguminous and out-of-season Lovegrass or Rye Grain, lime, fertilizer, mulch, and watering as necessary to obtain an established stand of grass.

C. Limestone

Payment for furnishing and spreading limestone will be made per ton.

D. Fertilizer

Payment for furnishing and spreading fertilizer will be made per pound.

E. Overseeding

Payment for overseeding will be made per pound.

F. Refertilizing

Payment for refertilizing will be made per pound of combined fertilizer.

G. Mowing

Payment for mowing will be made per hour.