

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Provide all labor, equipment and materials required to furnish, install, construct and perform all field maintenance work complete as specified herein. Contractor shall maintain all field areas including minimum 20-ft beyond field or to adjacent pathways whichever is greater as outlined below. All work will be coordinated with Martha's Vineyard Regional High School maintenance activities.
- B. Maintenance support activities, shall include, but shall not be limited to, the following:
 - 1. Litter pickup and disposal within field area and surrounds.
 - 2. Lawn maintenance.
 - 3. Monthly turf maintenance/site condition report. (bi-weekly)
 - 4. Paper posting in accordance with state laws, for chemical applications.
 - 5. Irrigation system maintenance and repair.
 - 6. Other work required to keep the field area turf in good condition.

1.02 SUBMITTALS

- A. Samples of product literature shall be submitted to the Martha's Vineyard Regional High School prior to the ordering of material. Indicate product source, purpose, concentration, timing, means of application and frequency of application.

1.03 SOIL ANALYSIS

- A. In August, one (1) composite soil sample taking at least four (4) blended auger samples from the field shall be taken by the Contractor from the Active Field Areas to determine lime and fertilizer requirements. Test results should also be provided soil particle size analysis. Approved testing companies include Turf & Soil Diagnostics, Trumansburg NY. www.turfdiag.com
- B. Soil analysis results shall be made available to the Martha's Vineyard Regional High School for review. The results/ recommendations of the soil testing agency shall be incorporated into the maintenance program as approved by the Martha's Vineyard Regional High School.

1.04 NOTICE

- A. Maintenance Contractor shall notify the Martha's Vineyard Regional High School at least forty-eight (48) hours in advance of all site maintenance activities, for approval.

1.05 MAINTENANCE PERIOD

- A. Maintenance activities shall begin immediately upon field acceptance for use and continue in accordance with these Specifications as directed by the Martha's Vineyard Regional High School.
- B. The time period for the site support program shall be one year from the date of provisional acceptance and shall be renewed annually with field use permit.

1.06 QUALIFICATIONS

- A. The Contractor doing field maintenance activities shall have experience in athletic field turf maintenance as a proprietor, partnership or corporation. In addition, the principals must give the name of the school or organization from which their training and experience was obtained, the address and period of time by dates from start to finish of training. The Contractor shall give the names of companies, addresses and written references for whom he has done maintenance work, as required by this Section. The Maintenance Contractor must be bondable and show evidence of financial stability, satisfactory to the Martha's Vineyard Regional High School that he/she is in a financial position to carry out the work. The Contractor must also be able to take on the maintenance and welfare of the contract areas throughout the specified period. Such care and maintenance of the contract area shall be supervised by the Contractor or by a qualified subordinate acting under the direction of the Contractor. Maintenance Contractor shall be approved by the Martha's Vineyard Regional High School prior to maintenance activities.
- B. Any paving, site amenities, plant materials, fencing, or any other items damaged by equipment owned, leased or others used by the Contractor or his/her agent shall be reported immediately to the Martha's Vineyard Regional High School and repaired or replaced within a reasonable period of time at the contractor's expense according to the original materials, specifications design and execution.

PART 2 PRODUCTS

2.01 TOPSOIL/LOAM MIX

- A. New Topsoil: Shall be natural, fertile loam typical of cultivated topsoils of the locality, containing not less than 4% or more than 6% by weight, of decayed organic matter (humus) as determined by ASTM F-1647. If organic amendments are needed to obtain the specified matter content of the topsoil, the organic matter source may be a compost material. Compost may be used, provided that the material has been composted in an in-vessel system, has an organic content of not less than 70%, and a PH range of 6.5 to 7.2.
- B. Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots or other objectionable, extraneous matter or debris.
- C. Topsoil shall be free of Quack-grass rhizomes, *Agropyron Repens*, and the nut-like tubers of Nutgrass, *Cyperus Esculentus*, and all other primary noxious weeds.
- D. Topsoil shall have a pH not less than 6.0 or greater than 7.0.
- E. Topsoil shall not be delivered or used while in a frozen or muddy condition.
- F. Topsoil shall mirror the Soil Particle Size of the existing soil as determined by an annual Particle Size Analysis as outlined in section 1.03. The new topsoil shall generally conform to the following particle size distribution, as determined by pipette method in compliance with ASTM F-1632:

Sand	75-80%
Silt	10-20%
Clay	5-10%

If determined by a soil test that the existing stripped topsoil does not meet these specifications, the topsoil shall be amended to provide an acceptable topsoil for use. Loam sample and test results shall be provided to Martha's Vineyard Regional High School for review of approval prior to use of loam on site.

2.02 ADMIXTURES

- A. Admixtures such as lime, superphosphate, commercial fertilizer, and all other required materials for maintenance of lawns shall be submitted to Martha's Vineyard Regional High School for review and approval.

2.03 SEED MIXTURES

- A. Athletic Field Mix (Irrigated Fields): The seed shall consist of 20% perennial ryegrass and 80% Kentucky bluegrass on a weight basis. The Kentucky bluegrass portion of the mix shall be a blend of three (3) Kentucky bluegrass varieties and shall have a minimum germination percentage of 80%. The perennial ryegrass shall have a minimum germination percentage of 85%. The percentage of weed seed shall not exceed 1%, and other crop seed 1% by weight of the mixture. Final turf grass variety selections, substitutions or deviations from these specifications must be approved by the Martha's Vineyard Regional High School.
- B. Approved products include the following:
 1. Big League Perennial Ryegrass – Mountain View Seeds
 2. Grand Slam Perennial Ryegrass – Mountain View Seeds
 3. 365ss Kentucky Bluegrass Blend – Mountain View Seeds
 (365ss to include a blend of Bolt, Legend & Blue Note Kentucky Bluegrass varieties)

2.04 COARSE SAND

- A. Sand for top dressing mowed areas shall be based upon the annual Soil Particle Size Analysis test results outlined in section 1.03. Approved products include root zone sand as manufactured by Read Sand and Gravel, Rockland, MA or equal and shall conform to the following ideal sample range by the International Sports Turf Research Center, Olathe, KS:

TEXTURAL ANALYSIS		% Retained on Sieve	
USDA (mm)	U.S. Sieve (mesh)	Minimum	Maximum
2.00	10	--	3
<.002		--	3
.05-2.00	270-18	89	100

PARTICLE SIZE DISTRIBUTION		% Retained on Sieve	
USDA (mm)	U.S. Sieve (mesh)	Minimum	Maximum
1.00	18	--	7
0.50	35	65	85
0.25	60	65	85
0.18	80	--	85
0.15	100	--	10
0.10	140	--	10
0.05	270	--	10

PART 3 EXECUTION

3.01 MAINTENANCE

- A. Watering (All field areas and use areas adjacent to field covered by field inground irrigation system)
1. Watering of the field areas shall be applied as necessary to ensure a healthy, vigorous turf cover for the athletic field. Water shall be applied at the rate of 1-in per week subtracting the amount of natural precipitation occurring during one week from the amount to be applied by the Contractor. Water shall be allowed to penetrate the soil to a depth of six (6) inches. Contractor shall coordinate site watering with weather conditions and scheduled uses.
 2. Irrigation system as installed shall be utilized by the Contractor. The Contractor shall not be responsible for costs associated with electric service for irrigation.
 3. Contractor to utilize soil content measuring device to track soil water holding capacity. Using that data, fine tune watering program to account for daily evapotranspiration.
- B. Mowing of athletic field areas shall be the responsibility of Martha's Vineyard Regional High School and shall include the following:
1. Before the first mowing in the spring, all debris, leaves, paper, and trash that has accumulated shall be picked up and legally disposed of off the property.
 2. Mowing intervals shall be spaced not more than one-third (1/3) of the leaf blade is removed at any one time. At the time of cutting, keep mower blades adjusted for a finished cut height of between one and one half (1.5") and two (2") inches. Grass clippings shall be returned to the turf. Mowing shall be performed weekly, or when the grass is of sufficient length to produce clippings that are a maximum one (1) inch long. Rotary mowers, including the 3500 Toro, 7400JD, or equal are acceptable and shall be well adjusted with sharp blades.
 3. Trim all grass edges at each mowing; at plant bed, pavement edges and fence lines.
 4. Remove and legally dispose of all visible clumps of grass after each mowing.
 - a. All clippings are to be raked from planting areas and pavements and be removed from the site. If grass clippings are excessive on athletic fields as determined by the Martha's Vineyard Regional High School, they shall also be removed at no additional cost.
 - b. All clippings are to be removed from concrete and bituminous; walks, curbs and from all manholes and catch basins after each mowing by either sweeping or hosing.
 5. Care shall be taken not to damage tree trunks, walls, curbs, etc., when mowing and trimming.
- C. Fertilization Program - All athletic field areas and adjacent use areas.
1. Contractor shall be responsible for furnishing and supplying commercial fertilizer at the rates recommended by the soil analysis, but not less than the following rates and frequencies to all active athletic field lawn areas, sodded areas, and recreational slopes. All fertilization programs shall be in compliance with the applicable rules and regulations governing Fertilization for Turf on Martha's Vineyard, and the Town of Oak Bluffs. Rates may be altered

based on a soil test recommendation as approved by the Martha's Vineyard Regional High School, but otherwise shall be as follows:

Dates of Application	Nutrients*/1000 square feet
April 15 – June 1	0.75 lbs nitrogen (20% or more as WIN, CRN, or a coated nitrogen source**) N-P-K (30-0-4)
May 15 – June 15	0.50 lbs nitrogen (20% or more as WIN, CRN, or a coated nitrogen source**) N-P-K (28-0-3)
August 25 – Sept 20	0.75 lbs nitrogen (20% or more WIN, CRN, or coated nitrogen Source); 0.5 lbs phosphate; 0.5 lbs potash. N-P-K (20-0-8)
Oct. 15 – Nov. 15	0.50 lbs nitrogen (20% or more WIN, CRN, or coated nitrogen Source); 0.5 lbs phosphate; 0.5 lbs potash N-P-K (28-0-6)

2. A Nutrient Management Plan shall be established by a certified Agronomist and/or Certified Nutrient Planner. Soil nutrient testing results should guide the Nutrient Management Plan.
 3. Approved fertilizers to contain a minimum of 50% of its nitrogen in the slow-release form. Compost tea and liquid fertilizer are exempt from this standard, provided that no single application exceeds 0.1 lbs of nitrogen per 1000 square feet over a four (4) week period.
 4. Fertilizer shall not be applied within four (4) weeks of prior application.
 5. Do not apply Fertilizer when soils are frozen.
 6. Cumulative applications of fertilizer must not exceed 3.0 pounds of nitrogen per 1000 square feet of turf per year.
 7. The Contractor shall not apply fertilizer that contains phosphorus, unless a Soil Test taken within three (3) years indicates a phosphorus deficiency of less than 14 ppm, in which case the phosphorus application shall be limited to the quantity specified in the test results. A Soil Test shall not be required for the application of organic compost; specially labeled 'starter fertilizer' products intended for use in establishing turf or in repairing damaged turf when applied in conjunction with turf seed; compost tea, and pelletized organic fertilizer whose phosphate content by weight is no greater than 25% of its nitrogen content by weight.
 8. Apply the fertilizer only when the grass is dry. After the Application, wash the material into the soil to prevent discoloration or burning of the grass.
 9. When fertilizer is applied, Contractor shall provide proper posting as required by State law.
- D. Liming - All sport field areas and adjacent use areas to surrounding pathways.
1. A Nutrient Management Plan shall be established by a certified Agronomist and/or Certified Nutrient Planner. Soil nutrient testing results should guide the Nutrient Management Plan.
 2. Lime shall be ground limestone containing not less than eighty-five (85) percent of total carbonated and shall be ground to such a fineness that fifty (50) percent will pass through a twenty (20) mesh sieve. Coarser material shall be acceptable provided specified rates of application are increased proportionately on the basis of quantities passing the one hundred (100) mesh sieve.

3. At the start of the maintenance program, soil tests shall be performed as required under Paragraph 1.04A. This should reveal the condition of the lawns as to whether liming will be required at that time.
 4. Ground limestone will be applied to lawn areas to bring to a desired 5.5 to 6.5 pH level.
 5. Rate of application of ground limestone shall be at least thirty (30) pounds, but shall not exceed fifty (50) pounds per thousand (1,000) square feet at any one time, with at least thirty (30) day. between applications to bring the pH to the desired level.
 6. Lime applications shall be in late fall (mid/late November).
 7. Limestone and fertilizer shall be separate applications.
- E. Weed Control
1. If and when weeds occur, they should be identified and the appropriate selective herbicide as recommended by a certified Agronomist. Application of post emergent control will be carried out by the Contractor as part of the program in early spring and late fall, prior to aerification, and as recommended by a certified Agronomist.
- F. Disease and Pest Control
1. The contractor shall notify the Martha's Vineyard Regional High School of any diseased or distressed grass areas. The Contractor shall apply insecticides and/or fungicides to lawn only where necessary and as recommended by a certified Agronomist.
- G. Aeration & VertiDrain
1. Aeration shall be done with a device which removes plugs of earth approximately five-eighths (5/8) inch in diameter and a minimum of ten (10) inches deep. Multiple passes in different directions are recommended, with a goal of 36 plugs per square foot. Make minimum two (2) passes. Shorter tines may be used upon review with and prior approval from the Owner.
 2. Approved aeration products include Toro ProCore, John Deere ProCore, or equivalent with a maximum hole spacing at 2"x2" using a minimum tine size of 5/8".
 3. VertiDrain - Provide a full depth aeration with VertiDrain equipment. Larger VertiDrain equipment that penetrates the full 12" depth of topsoil is preferred. VertiDrain equipment drives tines into the soil and fractures the compacted topsoil.
- H. Top Dressing
1. All lawn and sod areas shall be aerated and top dressed with one-quarter (1/8) inch layer of topdressing sand, not to exceed 25 tons/acre, and thoroughly worked into the soil. Adjust top dressing program to the specific conditions as recommended by a certified Agronomist.
- I. Slice Seed
1. After aeration and top dressing, slice seed with athletic field seed mix specified in section 2.03. Slice seeder and method shall be approved by the Martha's Vineyard Regional High School. Approved products include Redexim OverSeeder, Vredo Compact Seeder, or approved equivalent with a maximum of 3" spacing. Seeding shall be done in two directions at right angles to each other using an approved seeder which slices existing turf and plants seed approximately 1/4-in deep into soil.

J. Topsoil/Loam Fill

1. Topsoil/loam all bare areas, depressions and washouts to bring finished grade level to adjacent turf areas and seed. Topsoil to meet the requirements of section 2.01.

K. Athletic Field Maintenance Task Schedule

Task	As Nec.	Weekly	Monthly	Yearly	J	F	M	A	M	J	J	A	S	O	N	D
Soil Tests				X	-	-	-	-	-	-	-	X	-	-	-	-
Watering (of irrigated turf areas)	X				-	-	-	-	X	X	X	X	X	O	-	-
Mowing and Edging by Owner	X			-	-	-	X	X	X	X	X	X	X	X	-	-
Fertilizing				4X	-	-	-	X	-	X	-	-	X	X	-	-
Liming				X	-	-	-	-	-	-	-	-	-	-	X	-
Weed Control	O				-	-	-	-	-	X	O	O	O	X	-	-
Disease and Pest Control	O				-	-	-	-	O	O	O	O	O	O	-	-
Slice and Seed				4X	-	-	X	-	X	-	-	X	-	X	-	-
Aeration																
1. Active Areas			5X		-	-	O	X	-	O	-	-	X	O	-	-
VertiDrain																
1. Active Areas			1X		-	-	-	-	-	-	-	-	X	-	-	-
Top Dressing																
1. Active Areas			2X		-	-	-	X	-	-	-	X	-	-	-	-
Rolling				1X	-	-	-	-	X	-	-	-	-	-	-	-

X = Task is mandatory

O = Task shall be done as necessary and an approval is required by the Martha's Vineyard Regional High School

3.02 IRRIGATION SYSTEM MAINTENANCE

A. System Familiarization

1. The Contractor shall inspect the irrigation system and become familiar with the layout of the system, all materials and equipment used and all services relating to it. This includes the irrigation system as installed, all piping, valves, sprinkler heads, access boxes, controls, drains, wells, pumps and all appurtenances.

B. Shop Drawings

1. It shall be the responsibility of the Contractor to obtain a set of the complete Shop Drawings and As-Built Drawings from the Martha's Vineyard Regional High School.

C. Operation and Maintenance Manual

1. At the start of the irrigation system maintenance program, the Contractor shall obtain one (1) copy of the Operation and Maintenance Manual from the Martha's Vineyard Regional High School.

D. System Maintenance Procedures

1. The Contractor shall maintain the irrigation system in optimum operating condition during the entire maintenance period. The Contractor shall be responsible for ensuring that the manufacturer's printed instructions and recommendations are closely followed.
2. If at any time any item or part of the system is not properly functioning, or is not as intended, it is the responsibility of the Contractor to bring this to the attention of the Martha's Vineyard Regional High School and record the problem in the semi-monthly summary report with a detailed estimate of repair or replacement being sent to the Martha's Vineyard Regional High School immediately after damage inspection and the Martha's Vineyard Regional High School's approval. The Contractor shall be prepared to supplement water by hose truck at stated irrigation rates, if any part of the system is malfunctioning for longer than one week between May 1st and September 1st and shall continue until the system is fully operational at the cost of the Contractor. All replacement parts, materials and labor, except for defects in the original parts, materials and workmanship, shall be the responsibility of the Contractor. It shall also be the responsibility of the Contractor to provide and ensure that any necessary condition. The Contractor shall carry out the replacement with the approval of the Martha's Vineyard Regional High School and with the cost being borne by the Martha's Vineyard Regional High School unless there has been negligence on the part of the Contractor.
3. All replacement parts and irrigation pipe shall be by the same manufacturer or approved equal according to original specifications.
4. In all cases for repairs or changes, a reasonable time period shall be determined during which the work can be accomplished.
5. The Contractor shall be responsible for the following items on a weekly basis:
 - a. Check spray heads to assure their proper operation which includes design coverage, volume and timing and to check for vandalism. Head spray pattern shall be adjusted, if required, to provide complete and adequate coverage of the areas to be watered.
 - b. Clean spray head of any sand, silt or debris and trim grass around heads.
 - c. Repair all damage that may occur immediately, after notifying the Martha's Vineyard Regional High School's Representative and also noting the problem in the semi-monthly report.
6. The Contractor shall twice per year, remove the last spray head from each line and flush pipe lines of grit and gravel by drainage and blowing out each line with compressed air. See start-up and winterizing maintenance procedures in this Division. This shall be done more frequently if it is necessary.
7. The Contractor shall be responsible for start-up of the irrigation system in the spring.
 - a. The entire system shall be blown out. The system shall not be drained.
 - b. The Contractor shall test the entire irrigation system, including the pump station. The test shall clearly demonstrate that each and every part of the system functions as intended.
 - 1) Manual feature of the irrigation system shall be tested for satisfactory operation. Water shall be turned into each portion of the irrigation line and maintained at full

pressure for not less than one-half hour after all air has been expelled from the line. If unsatisfactory performance or any leaks developed, this shall be described in the summary report, the condition corrected and these testing procedures repeated until satisfactory operation is obtained.

3.03 MISCELLANEOUS MAINTENANCE

A Trash and Litter Pickup

1. Litter shall be picked up after each event on a daily basis and legally disposed of off the site by the Contractor.

3.04 DAMAGE INSPECTION

- A Contractor shall inspect for and report all vandalized and otherwise damaged conditions on a monthly basis and include the damage report in the monthly summary report to the Martha's Vineyard Regional High School.
- B The Martha's Vineyard Regional High School will provide the Contractor with the necessary checklist to facilitate the reporting.
- C Forms shall be submitted in triplicate to the Martha's Vineyard Regional High School on the first Monday of each Month.

END OF DOCUMENT