

Seaside Rehabilitation and Healthcare Center
Portland, Maine

SECTION 02900 – LANDSCAPING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

- A. Documents affecting Work of this Section include, but are not necessarily limited to, The CONDITIONS OF THE CONTRACT General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1, which are hereby made a part of this Section.
- B. Reference is made to the Erosion and Sedimentation Control Report and Drawings for this project. Strict adherence to this Report and Drawings is required in order to prevent adverse on-site and off-site impacts from erosion and sedimentation. Reference is also made to Section 02270 - Erosion Control & Slope Protection.

1.02 DESCRIPTION OF WORK:

- A. Provide all labor, material, equipment and service required to complete the following, in accordance with the American Association of Nurserymen Standards:
 - 1. Preparation of final subgrades in Lawn and Planting areas, as required.
 - 2. Installation of Loam over all Lawn and Planting areas, as required.
 - 3. Harrowing, raking and fine grading.
 - 4. Soil treatment.
 - 5. Lawn construction by seeding or sodding, and related items, as required.
 - 6. Excavation, soil preparation and backfilling Planting pits.
 - 7. Furnish and install new Trees and Plant materials as indicated and required, including mulch, fertilizer, soil conditioners, etc.
 - 8. Transplanting of any existing Trees and Plant materials to new locations as may be required.
 - 9. Watering from on-site sources, as necessary.
 - 10. Staking, guying, wrapping and mulching.
 - 11. Trimming and pruning of existing trees and shrubs
 - 12. Interim watering, fertilization and maintenance.
- B. All topsoil on this site shall remain the property of the Owner. No topsoil shall be permanently removed from the site without the express written permission of the Owner. Any excess quantity of topsoil resulting from stripping operations shall be stockpiled on or off the site in a location to be determined by the Architect/Engineer, until final landscaping and/or final disposition as directed by the Owner.

1.03 QUALITY ASSURANCE; SUBMITTALS:

- A. General: Comply with requirements of Division 1 Sections for Submittals and Quality Control.
- B. Materials Testing: All loam shall be tested by an approved soils testing laboratory which normally provides testing of agricultural soils.
 - 1. The soils testing laboratory shall analyze the Contractor's sample(s) and shall identify the materials and the rates of distribution required to meet the Specifications for loam. The laboratory shall also recommend the addition of fertilizer and limestone to meet Specifications for pH and nutrient levels.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

2. The amended loam, unless otherwise specified or approved, shall have an acidity range of approximately 5.5 pH to 7.6 pH.
3. The organic content of loam shall be not less than 4% or more than 20% as determined by the wet combustion method (chromic acid reduction).
4. There shall be not less than 20% loam nor more than 80% loam passing the 200 mesh sieve, as determined by the wash test made in accordance with the standard test ASTM D1140.
5. All laboratory testing of loam shall be at the Owner's expense. All sampling and related costs shall be at the Contractor's expense. Test reports shall be forwarded to the Owner, Architect/Engineer, and Contractor.

C. Submittals required:

1. Loam samples for testing, as specified above.
2. Certificate from vendor that the seed being supplied complies with the Specifications.
3. Certificate from vendor stating mulch for the hydro-seeding conforms to that which is specified.

1.04 PLANTING SEASON:

- A. Plant Lawn and Plant materials during season or seasons normal for such Work. More specifically, construct lawns between April 30 and June 30 and between August 15 and October 15.
- C. Contractor may do Planting during unseasonable conditions if approved by the Architect/Engineer. No additional compensation will be allowed, and Work is subject to approval as to time and methods of operation.

PART 2 - PRODUCTS

2.01 LAWN MATERIALS:

A. Topsoil:

1. The Contractor shall notify the Architect/Engineer in advance of the time he intends placing topsoil. No topsoil may be placed without proper authorization from the Architect/Engineer.
2. Reuse existing on-site topsoil from stripped stockpile, after samples are taken and tested by an approved laboratory as specified above, and the results sent to the Architect/Engineer for review and approval.
3. Amend existing topsoil as required by the Architect/Engineer, based on laboratory testing, prior to spreading. No topsoil shall be amended or spread if it is in a frozen or muddy condition.
4. It is not anticipated that additional off-site topsoil will be required. If, however, off-site topsoil is required for any reason:
 - a. Provide new topsoil which is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1/2" in any dimension, and other extraneous or toxic matter harmful to Plant growth. It shall contain at least 4% of decayed organic matter (humus). Topsoil shall not be

Seaside Rehabilitation and Healthcare Center
Portland, Maine

excessively acid or alkaline nor contain toxic substances which may be harmful to Plant growth.

- b. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at project site. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4 in. Do not obtain from bogs or marshes.
 - c. Before any topsoil is delivered, the Contractor shall deliver to the site a sample of proposed supply for inspection, testing, and approval by the Architect/Engineer. Delivery of topsoil may begin upon approval of the sample.
 - d. If the topsoil is not approved, additional sources shall be found and sampling and testing shall be accomplished as specified herein until an approved topsoil material is found, all at the Contractor's expense. Delivery and spreading of topsoil may begin only upon approval of the sample.
 - e. No topsoil shall be delivered in a frozen or muddy condition.
- B. Fertilizer:
1. Provide commercial brand fertilizer of neutral character, the elements of which are delivered from organic sources. Fertilizer shall be a standard product complying with state and federal fertilizer laws.
 2. Actual percentages of nitrogen, phosphorous, and potash shall be based on laboratory test recommendations, as approved by the Architect/Engineer.

For purposes of bidding:

- a) Provide fertilizer with percentage of nitrogen required to provide not less than 1 lb. of actual nitrogen per 100 sq. ft. of lawn area and not less than 4% phosphoric acid and 2% potassium. Provide nitrogen in a form that will be available to lawns during initial period of growth; at least 50% of nitrogen shall contain no less than 3% water-insoluble nitrogen.
3. Fertilizer shall be delivered to the site, mixed as specified, in the original, unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guarantee statement of analysis, or a manufacturer's certificate of compliance covering analysis, which shall be furnished to the Architect/Engineer. Fertilizer shall be stored in a weatherproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

C. Lime:

1. Provide natural dolomitic limestone containing not less than 85% of total carbonates with a minimum of 30% magnesium carbonates, ground so that not less than 90% passes a 20-mesh sieve and not less than 50% passes a 100-mesh sieve. Coarser material will be accepted, provided the specified rates of application are increased proportionately on the basis of quantities passing the 100 mesh sieve.

D. Water:

Seaside Rehabilitation and Healthcare Center
Portland, Maine

1. Potable water, unless otherwise approved by the Architect/Engineer.

E. Crabgrass Preventative:

1. "Tupersan".

F. Broad Leaf Weed Control:

1. 2-4-D material.

G. Grass Seed Mixtures:

1. Slopes and landscaped areas shall be seeded at the rate of 10 lbs/1,000 sq. ft. with fresh, clean, new crop seed composed of the following varieties:

EMERALD BLEND:

<u>%Mix</u>	<u>Seed Name</u>	<u>Germination</u>
34.05%	Merit Ky Blue	90%
14.76%	Park Ky Blue	80%
24.35%	Champion Rye	90%
14.61%	Shadows Chewing	93%
14.61%	Aurora-Hard Chewing	88%
9.85%	Other	1.51%
0.67%	Inert	0.20% Weed

Available from Nutrite Corp., Leeds, Maine 04263

2. Seed shall be delivered pre-mixed to the site in standard size sealed containers, bearing the vendor's guaranteed statement attesting to the composition of the mixture and to the percentages of purity and germination of each variety. Seed shall be stored in such a manner that its effectiveness is not impaired. Samples of seed shall be taken as directed by the Architect/Engineer and shall be submitted to the State Agricultural Station for analysis.

H. Sod:

1. All sod shall be well established, good quality, permanent lawn grass, grown on open ground in an approved area. It shall be strongly rooted, containing seventy-five (75) percent Merion Bluegrass (*Poa pratensis merion*) and twenty-five (25) percent Pennlawn Fescue, free of pernicious weeds and coarse, burned or bare spots.
2. The sod shall be in rectangular Sections varying in length between 3 feet and 6 feet and shall be of uniform width not to exceed 18 inches. Sod shall have a uniform soil thickness of three-fourths (3/4") inches.
3. Grass shall have been mowed to a height of two (2) inches before lifting. Sections shall be of such size as to be lifted without breaking, tearing, or loss of soil.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

The Contractor shall furnish the Architect/Engineer with an adequate sample for inspection and approval before any sod is delivered to the site.

I. Mulch:

1. Clean hay free of weed seed.

2.02 PLANT MATERIALS:

- A. Quality: Provide new trees, shrubs, and other Plants of size, genus, species and variety as indicated on Drawings. Comply with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock". Plant names shall conform to "Standardized Plant Names" by the American Joint Committee on Horticultural Nomenclature. All new Plants shall be nursery grown. All new Plants shall be hardy under climate conditions similar to those in the locality of the project.
- B. Trees: Provide new trees where indicated of height and caliper shown, and with branching configuration recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are shown or listed.
 1. Provide balled and burlapped (B&B) deciduous trees.
 2. Provide balled and burlapped (B&B) evergreen trees.
- C. Shrubs: Provide new shrubs only where indicated of the height shown, and with not less than minimum number of canes required by ANSI Z60.1 for type and height of shrub required.
 1. Provide balled and burlapped (B&B) or container-grown deciduous shrubs.
 2. Provide balled and burlapped (B&B) evergreens.
- D. All new Plants shall be freshly dug. No heeled-in Plants or Plants from cold storage shall be used. All Plants shall be typical of their species or variety and shall have a normal habit of growth. Plants shall be sound, healthy, and vigorous, well branched, and densely foliated when in leaf; shall be free of disease, insect pests, eggs or larvae; and shall have healthy, well-developed root systems.
- E. Container-grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil together firm and whole. No Plants shall be loose in the container.
- F. Do necessary pruning at time of planting, for both new and transplanted trees and shrubs.
- G. No substitutions for new Plants will be acceptable, except upon submission of proof that any Plant called for is unavailable. In such cases substitutions shall be equal in size to current originally planted species, or size to which species would have grown to over elapsed time since original planting time. All substitutions shall be approved by the Architect/Engineer.
- H. Plants larger than those specified in the Plant list may be used if approved by the Architect/Engineer, but use of such Plants shall not increase the Contract Price. If the use of larger Plants is approved, the spread of roots or ball of earth shall be increased in proportion to

Seaside Rehabilitation and Healthcare Center
Portland, Maine

the size of the Plant. If there is a time delay from original time of planting, size of substituted Plants shall be equal in size to current size of originally planted species, or size to which species would have grown to over elapsed time since original planting time.

I. Root protection:

1. Plants designated "B&B" to be dug with firm, natural ball of earth large enough to encompass fibrous and feed root system necessary for full Plant recovery. Wrap with natural burlap and bind with twine or cord. When necessary to prevent ball from cracking, ball shall be secured on a platform.
2. Protect "B&B" material which cannot be planted immediately on delivery from drying wind and sun, by covering ball with moist soil or mulch. Water as necessary until planted.

J. Loam: Same as that used for lawn materials (See SS 2.01A).

K. Fertilizer:

1. Commercially bagged dehydrated cow manure such as Bovung, Dri-Conure.
2. Chemical Planting Tablets such as Agriform Planting Tablets by Leslie Agriform Corp., Newark, California. Follow manufacturer's recommendations for application.

L. Water: Clean and potable. Available from on-site sources only after utility construction.

M. Peat Moss: Commercially packaged natural, shredded, low in wood content, with ph of 4 to 5 and maximum moisture of 30%.

N. Super-phosphate: Soluble mixture of treated minerals; 20% available phosphoric acid.

O. Sand: Clean, washed sand, free of toxic materials.

P. Manure: Well rotted, unbleached stable or cattle manure containing not more than 25% by volume of straw, sawdust or other bedding materials, and containing no chemicals or ingredients harmful to Plants. Manure shall not be more than two years or less than 9 months old.

Q. Mulch: Organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants, and consisting of one of the following: ground or shredded well rotted bark.

R. Anti-Desiccant: Emulsion type film-forming agent, designed to permit transpiration but retard excessive loss of moisture from Plants. Deliver in manufacturer's fully identified containers, and mix in accordance with manufacturer's instructions.

S. Wrapping: Tree-wrap tape, not less than 6" nor more than 10" wide, designed to prevent bore damage and winter freezing, shall be first-quality burlap or paper material, manufactured for this purpose.

T. Stakes: As shown on Drawings.

U. Hose Friction Guards: As shown on Drawings.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

V. Wire or guys: As shown on Drawings.

PART 3 - EXECUTION

3.01 LAWN CONSTRUCTION:

- A. Subgrade Preparation: Subsoil shall be graded and uniformly compacted to a true smooth slope six (6) inches below and parallel to the proposed finish grade, for areas to be seeded or sodded. Subgrade shall be loosened to a depth of two (2) inches. Subsoil shall be kept in a loosened condition until the loam is spread. Subgrade shall be inspected and approved by the Architect/Engineer before placing of loam.
- B. Topsoil Placement: Topsoil shall be placed and spread, compacted and otherwise manipulated, over approved areas to a sufficient depth so that after natural settlement and light rolling, the completed Work shall conform to the lines, grades, and elevations shown on the Drawings or as directed by the Architect/Engineer.

After topsoil has been spread, it shall be carefully prepared by scarifying or harrowing and hand raking. The whole surface shall then be rolled with a hand roller weighing not more than one hundred (100) pounds per foot of width. All depressions caused by settlement as a result of rolling shall be filled with additional loam, and the surface regraded and re-rolled until it presents a smooth, even finish to the required grades.

- C. Lime Application: Prior to completion of topsoil preparation, and if recommended as a result of soil analysis, lime shall be evenly distributed and thoroughly worked into the top three (3) inches of topsoil, at the rate recommended by the soil analysis laboratory. Limestone shall be applied at least seven (7) days before applying fertilizer. The pH content of the loam shall be 6.0 to 7.0 before sod or seed is placed. Fine grade the topsoil to a smooth, friable, fine texture surface, free of hollows, bumps or depressions. Remove all stones over 1" in diameter, stocks, roots or other extraneous matter. Avoid over compaction of topsoil.
- D. Fertilizer Application: Commercial fertilizers shall be uniformly applied in all new grass areas. The application shall be within one week prior to placement of sod or seed, at the rate recommended by the soil analysis laboratory, and worked lightly into the top two (2) inches of loam. Grass areas shall be watered thoroughly after the application of fertilizers.
- E. Hydroseeding: Upon completion of fine grading, hydro-seed all lawn areas with a seed, lime and mulch slurry. Rates of mix as follows:

Seed: 250 lbs. per acre
Lime: 450 - 500 lbs. per acre
Mulch: 1,200 lbs. per acre

- 1. Hydroseeding equipment shall maintain the slurry in an agitated condition and distribution shall be uniform in all areas. Furnish a certified statement prior to this Work, as to the number of pounds of lime, seed and mulch per 100 gallons of water. This statement should specify the number of square yards of seeding that can be covered with the solution.
- 2. Hydroseeding shall be done with suitable standard equipment capable of spreading at the above rates. Exercise care in hydroseeding. Do not carry on operations on a windy day; keep

Seaside Rehabilitation and Healthcare Center
Portland, Maine

mixture off all equipment, structures, vehicles, pedestrians, pavement, and adjoining property. Protect newly seeded areas from erosion, traffic, etc.

- F. Mechanical Seeding: Mechanical seeding shall be done on dry or moderately dry soil, and at a time when wind does not exceed a velocity of five (5) miles per hour. Seeding shall be done in two directions, at right angles, in such a manner that a uniform stand shall result. Seed shall be sown evenly by hand, or with an approved mechanical spreader, to a depth not exceeding one-fourth (1/4) inch, at the rate of five (5) pounds per one thousand (1000) square feet of area.
1. After seeding, the surface shall be evenly and lightly raked with a fine wood-toothed rake or other approved method, and rolled in both directions with a hand roller weighing not more than one hundred (100) pounds per foot of width, and then watered thoroughly with a fine spray.
 2. Maintain a moist seedbed until a thick stand of grass is produced. Furnish sufficient watering equipment to apply water to a minimum 2 in. depth in a 24-hour period, to assure continued growth of germinated grass. Watering shall be done to provide uniform coverage, prevent erosion, and prevent damage from watering equipment to the finished surface.
- G. Mulching of Seeded Areas: Mulch to be 1 in. deep over all grassed areas.
- H. Sodding: After the areas to be topsoiled have been brought to finished subgrade, and immediately prior to placing and spreading topsoil, the subgrade shall be loosened by discing or rototilling to a depth of a least four (4) inches, to permit bonding of the topsoil to the subgrade material. At slopes exceeding 25 percent in gradient, this shall be accomplished manually, in an approved manner. In existing topsoil areas which are near finished subgrade, and to which topsoil is to be added to furnish the overall required depth, the existing topsoil shall be loosened as noted above, to permit bonding to the added topsoil. However, the depth of loosening may be decreased, as directed by the Architect/Engineer, to match the existing depth of topsoil so that topsoil is not tilled into the subgrade.

After all areas to which topsoil is to be added have been tilled as specified above, the Contractor shall distribute the topsoil to the sod subgrade 1/2 to 3/4 inches below finished grade.

1. After all surfaces to be sodded have been topsoiled to the sod subgrade, the Contractor shall furnish and apply limestone as herein specified.

Limestone shall be applied at a rate up to maximum of one (1) pound per square yard as determined by the results of laboratory tests conducted at an approved testing laboratory at the Contractor's expense. A minimum of four (4) sub-samples, taken to the proposed depth of topsoil, shall be taken per acre of area to be limed. These samples shall be placed in a suitable container obtained from the testing laboratory and marked so as to clearly identify the acre area from which they were taken. The samples shall be delivered by the Contractor to the testing laboratory for chemical and mechanical analysis. The testing laboratory shall be directed by the Contractor to furnish test results and recommendations to the Architect/Engineer for approval.

Lime shall be mechanically spread at the rate determined by testing on all areas which are to be sodded, up to a slope gradient of 25 percent. On slopes exceeding 25 percent, the lime shall be applied manually and the soil shall be loosened manually, both in an approved manner.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

2. After the liming and tilling have been satisfactorily accomplished, the Contractor shall apply fertilizer to all areas to be sodded as specified herein.

All fertilizer shall be uniformly spread by a mechanical spreader at the rate of ten (10) pounds per one thousand (1000) square feet. At slopes exceeding 25 percent in gradient, the fertilizer shall be applied manually, in an approved manner.

After the areas to be sodded have been properly fertilized, the Contractor shall hand rake the fertilizer into the topsoil by means of garden rakes, to a minimum depth of one (1) inch, to the satisfaction of the Architect/Engineer. During this raking process the areas to be sodded shall be cleared of all stones over one (1) inch in size and all other unsuitable material. All such undesirable material shall be removed from the site. These areas shall be compacted by rolling, dragging, or by an approved method which obtains an equivalent compaction to that produced by a hand roller weighing from 75 to 100 pounds per foot of width. All depressions caused by settlement or rolling shall be filled with additional topsoil, and regraded and prepared as specified above until it presents a reasonably smooth and even finish at the required sod subgrade, and is satisfactory to the Architect/Engineer.

3. At least seven (7) days shall lapse after the application of lime and fertilizer, before sodding shall begin.

Properly fine grade the sod bed to the satisfaction of the Architect/Engineer.

The soil shall be irrigated within 12-24 hours of sod placement, and permitted to dry sufficiently to allow the use of mechanical equipment on the sod bed.

After the preparation of the areas to be sodded has been approved by the Architect/Engineer, the Contractor shall sod the areas as specified herein.

Sod shall be furnished and installed in either of the following dimensions, to be selected by the Contractor:

- a. In rectangular sod strips measuring 12 inches or 16 inches in width, and from 4 feet or 6 feet in length, stored in rolls with the grass top side inverted so that the topsoil side is to the exterior.
- b. In rectangular sod strips termed "Big Rolls", consisting of three 16-inch wide sod strips, maximum 50 feet long, rolled and stored on specially fabricated heavy duty tubes furnished by the sod supplier. The overall dimensions of the "Big Roll" are 48 inches wide by a maximum of 50 feet long.
- c. Sod to be furnished as in (a) above shall be installed as specified below. Sod to be furnished as in (b) above shall be installed as specified below, additionally in accordance with the provisions noted for the "Big Roll" system.

All sod furnished shall be living sod, containing at least seventy (70) percent of thickly matted grasses as specified, and free from noxious weeds.

Any sod with a growth of more than two inches (2") in height shall be mowed to a height of from one and one half (1-1/2") to two (2") inches, not more than five days prior to

Seaside Rehabilitation and Healthcare Center
Portland, Maine

harvesting. The sod shall be machine cut at a uniform soil thickness of from one-half (1/2") to three-quarter (3/4") inches, excluding top growth and thatch at time of cutting. The maximum allowable deviation from the widths and lengths specified shall be five percent. No broken pads, or torn and uneven ends shall be accepted. Standard size sections of sod (12" x 4' to 16" x 6') shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section. Sod shall not be harvested when its moisture content (excessively wet or dry) may adversely affect survival.

Sod shall be harvested, delivered, and installed within a period of thirty-six (36) hours. Sod not installed within this time period shall be inspected by the Architect/Engineer, and shall not be installed prior to his approval. Any sod not approved by the Architect/Engineer shall be removed from the site by the Contractor, and a fresh sod supply shall be furnished at no extra cost to the Owner.

All sod shall be placed with close joints and no overlapping, by whatever method is chosen. The overlapping of existing lawn with new sod along limit of Work lines shall not be permitted. All new Work shall abut existing lawn to match existing grades along a cut and prepared edge. Sod shall be laid in strips, edge to edge, with the lateral joints staggered. All minor or unavoidable openings in the sod shall be closed with sod plugs or with topsoil, as directed by the Architect/Engineer. However, sod laid with joints determined by the Architect/Engineer to be too large shall be lifted and re-laid to the Architect/Engineer's satisfaction, at no extra cost to the Owner. On slope areas exceeding a 25 percent gradient, the Contractor shall secure sod by pegging each strip 5 feet on center.

4. Immediately after the sod is laid, the sod shall be watered thoroughly by hand or mechanical sprinkling, until the sod and at least one (1) inch of the topsoil bed have been thoroughly moistened.

The sod must be watered on the same working day on which it is installed. If necessary, the Contractor shall provide special crews after normal working hours to accomplish such watering, at no extra cost to the Owner. After this initial watering, the Contractor shall be required to furnish, install, and maintain a system of temporary pipe, sprinklers, and service connections, which are adequate to water the sod weekly with the equivalent of a one (1) inch rainfall. During the first week of the sod installation, watering shall be accomplished daily, with a sufficient quantity of water to penetrate through the sod and into the subbase. If the sod is watered by normal rainfall, the Architect/Engineer may at his discretion eliminate the Contractor's watering during a given week. However, such action by the Architect/Engineer shall in no way waive the Contractor's responsibility for the growth and health of the grass until final acceptance of the sodding.

The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner shall furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor shall be held responsible to furnish adequate supplies at his own cost. All Work injured or damaged due to the lack of or the use of too much water shall be the Contractor's responsibility to correct.

5. If, in the opinion of the Architect/Engineer, rolling of the sod is required to properly joint the sod to the bed after the sod has been laid, then 24 to 48 hours after the initial watering the

Seaside Rehabilitation and Healthcare Center
Portland, Maine

Contractor shall roll the required area with a roller, weighing from 75 to 100 pounds per foot of roller width, at no extra cost to the Owner.

6. The Contractor shall maintain the entire sodded areas until final acceptance at the completion of the Contract. Maintenance shall include watering as specified, weeding, removal of stones which may appear, and the first two (2) cuttings of the grass no closer than ten (10) days apart. The first cutting shall be accomplished when the grass is from 2-1/2 to 3 inches high. All bare or dead spots which become apparent shall be properly prepared, limed and fertilized, and resodded by the Contractor, at his expense and as many times as necessary to secure a good growth. The entire area shall be maintained and cut until accepted by the Architect/Engineer as satisfactorily sodded.
7. Approximately six (6) weeks after the sod has been installed, the Contractor shall uniformly spread fertilizer by a mechanical spreader at the rate of ten (10) pounds per one thousand (1000) square feet. At slopes exceeding 25 percent in gradient, the fertilizer shall be applied manually, in an approved manner.

3.02 LAWN MAINTENANCE:

- A. Upon completion of planting and prior to acceptance, remove from the site excess soil and debris, and repair all damage resulting from planting operations.
- B. Maintenance shall begin immediately after each area of lawn is planted. Lawns shall be watered, mowed, weeded, replanted, fertilized, cultivated, and otherwise maintained and protected as necessary to establish a uniform stand of the specified grasses, until acceptance.
- C. At the time of first cutting, keep mower blades not less than 2-1/2 inches high. After the grass has started, all areas and parts of areas which fail to show a uniform stand of grass, for any reason whatsoever, shall be reseeded or re-sodded, and such areas and parts of areas shall be reseeded or re-sodded repeatedly until all areas are covered with a satisfactory growth of grass.
- D. Protect lawn areas against trespassing, if required, by fencing 4 feet above grade, using steel drive posts and 2 inch by 4 inch welded wire mesh, or by other approved means. Damage resulting from erosion, gulleys, washouts, vehicle or pedestrian traffic, or other causes shall be repaired by filling with approved topsoil, tamping, refertilizing and reseeded by the Contractor at his expense, if such damage occurs prior to acceptance of the lawn area. Contractor shall coordinate with the Owner to ensure that lawn installation and maintenance does not conflict with the Owner's operations at the Site.
- E. Watering: Lawns shall be watered in a satisfactory manner during and immediately after planting, and not less than twice per week, until acceptance.

Suitable water for planting and maintenance of lawns shall be provided by the Contractor. Contractor shall furnish his own hose and hose connections from the outlets where water is furnished, and shall provide all necessary watering equipment.

- F. Guarantee: All sodded and seeded areas shall be guaranteed for three (3) mowings by the Landscape Contractor, with notification to the Architect/Engineer between each mowing.

3.03 LAWN INSPECTION AND ACCEPTANCE:

Seaside Rehabilitation and Healthcare Center
Portland, Maine

- A. The Architect/Engineer will inspect all Work upon the written request of the Contractor, received at least 10 days before the anticipated date of lawn inspection.
- B. To be acceptable, a stand of grass shall consist of a uniform stand of at least 60 percent established permanent grass species, with uniform count of at least 100 plants per square foot.
- C. Architect/Engineer's inspection shall determine whether maintenance shall continue in any part.
- D. Furnish full and complete written instructions for maintenance of the lawns to the Owner, at the time of acceptance.
- E. After all necessary corrective Work and clean-up has been completed, and maintenance instructions have been received by the Owner, the Architect/Engineer will certify in writing the acceptance of the lawns. The Contractor's responsibility for maintenance of lawns or parts of lawns shall cease on receipt of acceptance.

3.04 PLANTING:

A. Removal of Existing Trees and Shrubs for Transplanting (if required):

- 1. Inspection: Prior to removal of any existing Trees or Shrubs, the Architect/Engineer or his representative will inspect, with the Contractor, any Plant materials scheduled to be transplanted; the Contractor shall suitably and uniquely flag any such plant materials deemed suitable for transplanting. Such unique flagging shall subsequently be maintained on each Plant during transplanting and throughout the project, to identify and differentiate transplanted Plant materials from new materials. The Architect/Engineer will inventory the number, type and species of each plant scheduled for transplanting; such inventory shall serve as a basis for consideration of any subsequent adjustment in the Contract Price that may ultimately be requested by the Contractor or the Owner, due to damage or loss of existing Plants during or after construction.
- 2. Removal and Storage: Following completion of the above inspection and inventory, the Contractor may remove any Plant materials scheduled for transplanting; however, plants shall be left undisturbed in their original locations until ready to be transplanted wherever possible, or else removed and satisfactorily protected and stored for as short a time period as possible prior to replanting. The Contractor shall retain a fully qualified Nursery Service to properly remove, protect, and if necessary, temporarily store Plant materials scheduled to be transplanted.
- 3. Replanting: Any Plant materials thus removed shall be replanted in their new locations immediately, or else at the earliest possible time, in accordance with the Details on the Plans and the procedures specified below for new Plant materials. Any transplanted materials which subsequently fail to thrive despite completion of all specified and necessary measures for fertilization, watering and maintenance, shall be replaced with new, equal Plant materials in accordance with Part D below, when directed by the Architect/Engineer.

B. Installation and Workmanship:

- 1. Layout: Take necessary field measurements to locate trees where shown. Should obstructions above or below ground dictate, alternate locations will be designated by the Architect/Engineer.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

2. Planting Pits: Dig pits and prepare soil prior to moving Plants to respective locations. Excavate circular pits with vertical sides unless plants are designated to be planted in beds. Diameter of pit to be 2 ft. greater than size of ball or spread of roots. Depth of pit to allow 6" of prepared topsoil in tree pits.
3. Soil Preparation: Mix topsoil to be used as follows: Five parts topsoil, one part peat humus, one part manure fertilizer; except that for ericaceous Plants, very acid soils (pH less than 6) are to be mixed with sufficient lime to produce a pH of 6 to 6.5.
4. Setting Plants: Plant vertically, faced to give best appearance or relationship to adjacent areas. Leave burlap in place, untie from crown and bury edges of burlap. Cut off all frayed or broken roots cleanly. Place prepared soil and carefully compact, avoiding injury to roots and filling all voids. Add water when hole is 3/4 full and allow to drain away. Fill hole to finished grade and form a shallow saucer around each Plant. Later, add additional soil as needed.
5. Guying, Staking and Wrapping: Support trees immediately after Planting. Guy trees 3 in. and over in trunk diameter. Stake trees up to 3" diameter.
 - a. Guying - use 4 guy wires, spaced equally at an angle of 60 degrees with the ground surface, attached at 2/5 of tree height. Drive notched stakes at angle away from tree so tops are below finished grade. Use turnbuckles to adjust wire tension. Attach wood or metal flag to each guy 6" to 12" above ground.
 - b. Staking - drive 3 stakes per tree vertically into ground at least 3 feet deep, at 18 inches from tree trunk. Attach stakes to tree as detailed at approximately 5 ft. height using 2 strands of wire and hose.
 - c. Wrapping - wrap trees immediately after guying, spirally from ground to height of second branching. Wrapping to be neat and snug and held in place by suitable natural cord.
6. Mulching: Mulch all Plants within 2 days after Planting. A 3 in. layer shall entirely cover Plant pit, bed or saucer and to edge of paving or grass, as appropriate.
7. Anti-Desiccant: Apply anti-desiccant using power spray to provide an adequate film over trunks, branches, stems, twigs and foliage. If deciduous trees or shrubs are moved or transplanted in full leaf, spray with anti-desiccant before moving, and again 2 weeks after planting.
8. Pruning: Thin out and shape new or transplanted trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by Architect/Engineer, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

C. Maintenance:

1. Repair any damage to lawn areas resulting from Planting operations. Maintain all Plantings throughout the guarantee period by cultivating, spraying, weeding, watering and other necessary operations.

Seaside Rehabilitation and Healthcare Center
Portland, Maine

D. Guarantee and Replacement of Unsatisfactory Plants:

1. All new Plant materials are to be true to name and size, and in vigorous growing condition. Guarantee all new, healthy materials for one (1) year from time of Planting or acceptance if not accepted at planting. Final acceptance will be given after all Plant materials have been in place one (1) year and are in vigorous, healthy growing condition. Replace any dead, unhealthy or unsightly Plants, whether new or transplanted, with equivalent new Plants as soon as weather permits. Replacement of new Plants shall be at the Contractors expense; replacement of any transplanted materials shall be at the Owner's expense, subject to the approval of the Architect/Engineer. Contractor's responsibility ends with final acceptance, except any replaced material is to be guaranteed one year from *replacement* date.

E. Cleanup:

1. Properly dispose of excess materials, branches, paper and rubbish off-site. Leave site in orderly condition, satisfactory to the Architect/Engineer, upon completion of Work.

END OF SECTION