SECTION 32 1100
MAINTANENCE AND PROTECTION OF TRAFFIC

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This work shall consist of maintaining pedestrian and vehicular traffic and protecting the public from damage to person and property within the limits of and for the duration of the contract.

B. Traffic shall be maintained over a reasonably smooth travel way which shall be marked by the use of flagman, traffic signs, barricades, lights and other devices and methods to maintain the safety of those persons coming in contact with the construction site, both day and night.

C. Coordination of trucks, equipment and parking for construction workers.

D. Removal of equipment and devices upon completion of the related work.

PART 2 PRODUCTS

2.01 SIGNS, LIGHTS AND DEVICES

A. Barricades, lights, signs, and fencing as required for the work of this section.

B. Traffic Cones and Drums, Flares and Lights: as required for the work of this section.

C. Flagman and flagman equipment as required for work of this section.

PART 3 EXECUTION

3.01 GENERAL

A. Maintain the surface condition of traveled ways. Existing pavements shall be kept in repair using materials compatible with the pavement.

B. Maintain the drainage facilities and other site elements, old or new, including that on detours.

C. Provide adequate protection for pedestrian traffic during construction.

D. Provide the necessary traffic control equipment and flagmen for adequate traffic control on the traveled way and in accordance with the plans.

E. Make all necessary repairs to existing pavements and wearing surfaces as required to provide a reasonably smooth traveled way where vehicle operation is maintained.

F. Protect the public from damage to person and property which may result directly or indirectly from the construction operations.

G. Schedule the work to keep to a minimum the amount of pavement and/or facilities that are destroyed or torn up at any one time.

H. Control dust and keep the traveled way free from materials spilled from hauling equipment. This shall also apply to dust control and spilled material resulting from the Contractor's operations in the areas outside the contract limits.

3.02 PROJECT SITE PATROL

A. The Contractor shall provide personnel to patrol the contract area as necessary to ensure that conditions on the site are adequate for public safety and convenience at all times.

3.03 CONSTRUCTION PARKING CONTROL

A. Control construction related vehicular parking to prevent interference with public traffic and access by emergency vehicles. Construction parking will generally occur off the side street.

3.04 FLAGPERSONS

A. Provide trained and equipped flag persons to regulate and control traffic as required.

3.05 HAUL ROUTES

A. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.

3.06 TEMPORARY TRAFFIC SIGNS

A. The Contractor shall furnish, install, move, remove and maintain construction signs, construction barricades, lights, fencing, drums and cones as required to maintain effective traffic control. Relocate as work progresses.

3.07 REMOVAL

A. Remove equipment and devices when no longer required.

END OF SECTION

SECTION 32 1123
AGGREGATE BASE COURSE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base courses for all pavements and retaining walls.

1.02 RELATED SECTIONS

A. Section 31 2200 – Earthwork and Site Grading.

B. Section 31 1100 – Aggregate materials and geotextiles.

1.03 REFERENCES

A. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures.

B. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.

C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

E. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

F. NYSDOT Standard Specifications (latest edition) section 203-3.12 compaction.

1.04 SUBMITTALS

A. Contractor shall submit gradation and mechanical analysis for each aggregate sub-base material to be used.

1.05 QUALITY ASSURANCE

A. Testing and Inspection Service: Contractor shall employ and pay for a qualified independent geotechnical testing and inspection service/laboratory to perform soil testing and inspection service during earthwork operations.

B. Testing Laboratory Qualifications: To qualify for acceptance, the geotechnical testing and inspection service/ laboratory must demonstrate to Director's Representative satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct required field and laboratory geotechnical testing without delaying the progress of the work.

PART 2 PRODUCTS

2.01 MATERIALS

A. See Section 31 1100 – Aggregate materials, for Aggregate Subbase Course materials and geotextiles.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify substrate has been inspected, gradients and elevations are correct, including crowns and cross sections, and is dry.

3.02 PREPARATION

A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

B. Do not place fill on soft, muddy, or frozen surfaces.

C. Proof-roll subgrade with a smooth drum roller (with vibratory capability with a minimum static drum weight of 10 tons. A minimum of 3 passes shall be made in one direction, followed by 3 overlapping passes in a direction perpendicular to the first.

D. Install filtration and stabilization geotextiles in accordance with the plans and manufacturer's recommendation.

3.03 AGGREGATE PLACEMENT

A. Place aggregate sub-base on the prepared sub-grade in layers of uniform thickness, conforming to the cross-section and thickness indicated on the plans. Maintain the optimum moisture content for compacting the aggregate sub-base during placement operations.

B. When a compacted aggregate sub-base course is shown to be 6" thick or more, place the material in equal layers, except no single layer more than 8" or less than 3" in thickness when compacted.

C. Level and contour surfaces to elevations and gradients indicated. Place in such a manner to minimize segregation. No aggregate sub-base shall be placed under adverse weather conditions.

D. Compact and roll each layer of aggregate sub-base course to 95% maximum density.

E. All compaction requirements shall be in accordance with NYSDOT Standard Specification section 203-3.12. The depth of each sub-base course shall not exceed the compactor's capability. Each compactor lacking the original manufacturer identification plates, or with altered or illegible plates, will not be recognized as acceptable compaction equipment and shall be removed from the site.

F. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

G. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

H. When the pavement sub-base becomes mixed with the sub-grade or any other material, it shall be removed and replaced with the appropriate material. The movement of any traffic over the fine graded aggregate sub-base is not recommended. When damage or contamination occurs, it must be repaired before paving begins.

3.04 TOLERANCES

A. Fine grading of the pavement sub-base finish course shall not vary more than 1/2 inch above or below true grade at any point.

B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Flatness: Maximum variation of 1/2 inch measured with a 10 foot straight edge.

3.05 FIELD QUALITY CONTROL

A. Quality Control Testing during construction: Allow testing service to inspect, test and approve each aggregate sub-base layer before further backfill or construction work is performed. Testing service shall review and test material and determine optimum moisture at which maximum density can be obtained in accordance with ASTM D 1557, modified proctor.

B. Field Compaction testing will be performed in accordance with ASTM D1556 (sand cone method), ASTM D2167 (rubber balloon method), or ASTM D2922 (nuclear method). If tests indicate work does not meet specified requirements, remove work, replace and re-test.

C. Frequency of Tests: Make at least one field density test for each layer of aggregate sub-base every 2,000 sq. ft.

3.06 MAINTENANCE AND CLEAN-UP

A. Protection of graded areas: Protect newly graded and compacted aggregate sub-base courses from traffic and erosion. Repair and re-establish grades in settled, eroded and rutted areas.

B. Remove all excess materials and debris from the Owner's property.

END OF SECTION

SECTION 32 1219

CONCRETE PAVEMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Furnish and install concrete pavement pads.

1.02 REFERENCES

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 2002).

B. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 2000.

C. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 1988 (Reapproved 2002).

D. ASTM A 185/A 185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2006.

E. ASTM A 497/A 497M - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete; 2006.

F. ASTM C 33 - Standard Specification for Concrete Aggregates; 2003.

G. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2005.

H. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; 2007.

I. ASTM C 150 - Standard Specification for Portland Cement; 2005.

J. ASTM C 173/C 173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2001.

K. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 2006.

L. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2006.

M. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; 2005a.

N. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2005.

O. ASTM C 685/C 685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2001.

P. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (non-extruding and Resilient Bituminous Types); 2004.

1.03 SUBMITTALS

A. Product Data: Provide data on concrete mix, joint filler, joint sealant, steel reinforcing, admixtures, and curing compound.

B. Design Data: Indicate pavement thickness, designed concrete strength, reinforcement, and typical details.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301.

B. Obtain cementitious materials from same source throughout.

C. Follow recommendations of ACI 306R when concreting during cold weather.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Form Materials: Conform to ACI 301.

B. Wood form material, profiled to suit conditions.

2.02 JOINT FILLER

A. Preformed; non-extruding bituminous type (ASTM D 1751). Thickness: 3/8 inch, unless specified otherwise on the plans.

B. Joint sealant: Two component polyurethane sealant: Polyurethane-based, two-part elastomeric sealant, complying with FS TT-S-00227, Class A, type 1 (self-leveling) unless type 2 (non-sag) is recommended by the manufacturer for application shown.

2.03 REINFORCEMENT

A. Steel Welded Wire Reinforcement: Plain type, ASTM A 185/A 185M; in flat sheets; unfinished.

B. Dowels: ASTM A 615/A 615M Grade 40 (280); deformed billet steel bars; unfinished finish.

2.04 CONCRETE MATERIALS

A. Cement: ASTM C 150 Normal - Type I Portland type, grey color.

B. Fine and Coarse Mix Aggregates: ASTM C 33.

C. Fly Ash: ASTM C 618, Class C or F.

D. Water: Clean, and not detrimental to concrete.

E. Air Entrainment Admixture: ASTM C 260.

F. Chemical Admixtures: ASTM C 494/C 494M, Type A - Water Reducing, Type C - Accelerating, and Type G - Water Reducing, High Range and Retarding.

2.05 ACCESSORIES

A. Curing Compound: ASTM C 309, Type 1, Class A.

2.06 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.

C. Concrete Properties:

1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 4000 psi.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Cement Content: Minimum 606 lbs. per cubic yard of concrete.
4. Water-Cement Ratio: Maximum 40 percent by weight.
5. Total Air Content: 4 percent, determined in accordance with ASTM C 173/C

173M.

6. Maximum Slump: 3 inches.

7. Maximum Aggregate Size: 1 inch.

2.07 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C 685. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.

B. Transit Mixers: Comply with ASTM C 94/C 94M.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify compacted sub-grade is acceptable and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

3.02 AGGREGATE SUB-BASE COURSE

A. See Section 32 1123 for construction of aggregate sub-base course for work of this Section.

3.03 PREPARATION

A. Moisten sub-base to minimize absorption of water from fresh concrete.

B. Notify Director's Representative minimum 24 hours prior to commencement of concreting operations.

3.04 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.05 REINFORCEMENT

A. Place reinforcement as indicated.

B. Interrupt reinforcement at expansion joints.

C. Place dowels to achieve pavement and curb alignment as detailed.

3.06 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

D. Place concrete to joint pattern.

3.07 JOINTS

A. Place 3/8 inch wide expansion joints where shown on the plans and to separate paving from fixed vertical surfaces and other components and in pattern indicated.

1. Form joints with joint filler extending from bottom of pavement to within 1/2 inch off finished surface.

2. Secure to resist movement by wet concrete.

3. Install joint sealant in accordance with manufacturer's recommendation.

B. Provide scored joints:

1. As shown on the plans and details.

3.08 FINISHING

A. Light broom, texture perpendicular to direction of travel with troweled and radiused edge 1/4 inch radius, and as shown on the plans.

B. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.09 TOLERANCES

A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.

B. Maximum Variation From True Position: 1/4 inch.

3.10 FIELD QUALITY CONTROL

A. The Contractor shall employ an independent testing agency to perform field quality control tests and to submit test reports.

1. Provide free access to concrete operations at project site and cooperate with appointed firm.

2. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

3. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.

B. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cu yd or less of each class of concrete placed.

1. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

2. Perform one slump test for each set of test cylinders taken.

C. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.11 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

B. Do not permit pedestrian traffic over pavement for 7 days minimum after finishing.

END OF SECTION

SECTION 32 9218

LANDSCAPE GRADING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes spreading topsoil and providing finish grade for final seeding. Existing topsoil shall be stripped and stockpiled for reuse, import topsoil as required to meet project requirements.

PART 2 – PRODUCTS

2.01 TOPSOIL

A. In accordance with Section 31 1000 – Soil Materials.

2.02 SOURCE QUALITY CONTROL

A. Topsoil material shall consist of material complying with the specifications contained herein. Existing and re-used topsoil shall be tested and amended as necessary to comply with specifications.

B. If testing and analysis indicate topsoil materials do not meet specified requirements, amend material and retest.

C. Provide materials of each type from same source throughout the Work.

PART 3 – EXECUTION

A. Verify earthwork and site grading has been completed and inspected.

B. Verify sub-grade has been contoured and compacted.

3.01 SUBGRADE PREPARATION

A. Eliminate uneven areas and low spots.

B. Remove debris, roots, branches, stones, in excess of ½ inch in size. Remove subsoil contaminated with petroleum products.

C. Scarify surface to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.02 PLACING TOPSOIL

A. Place topsoil in areas where seeding and landscaping is required to a thickness of 4 inches or as indicated on the plans. Place topsoil during dry weather.

B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of sub-grade.

C. Remove roots, weeds, rocks, and foreign material while spreading.

D. Manually spread topsoil close to existing vegetation to prevent plant damage.

E. Leave stockpile area and site clean and raked, ready to receive seeding.

3.05 TOLERANCES

A. Top of Topsoil: Plus or minus ½ inch.

3.06 PROTECTION

A. Protect landscaping and other features remaining as final work.

3.07 CLEAN-UP

A. Remove all excess materials and debris from Owner's property.

END OF SECTION

SECTION 32 9219

SEEDING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:

1. Soil preparation.
2. Seed mixtures for permanent seeding, mulching, fertilizing and maintenance until final acceptance.
3. Temporary seeding is specified in Section 31 2501 – Erosion and Sediment Control.

1.02 DEFINITIONS

A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.03 SUBMITTALS

A. Seed vendor's certified statement for each seed mixture required, stating botanical and common name, percentage by weight, percentages of purity, germination, weed seed for each grass seed species, and bagging date.

B. Fertilizer and herbicide manufacturer’s product and application data.

1.04 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

B. Time of seeding: Sow lawn seed between April 1 and May 31 or September 1 and October 31, or as otherwise approved in writing by the Director’s Representative.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver seed mixture in sealed containers showing seed vendor's name and seed analysis by weight. Seed in damaged packaging is not acceptable.

B. Deliver fertilizer and herbicide in waterproof bags showing weight, chemical analysis, and name of manufacturer.

C. Store all products in a cool, dry and secure location.

PART 2 – PRODUCTS

2.01 SEED MIXTURE

A. Provide fresh, clean, new-crop seed mixed in the proportions specified for species and variety, and conforming to state and federal standards.

B. Acceptable material in a seed mixture other than pure live seed consists of nonviable seed, chaff, hulls, live seed of crop plants and inert matter. The percentage of weed seed shall not exceed 0.1% by weight.

C. Lawn Seed Mix: Apply at a rate of 6 lbs. per 1000sf:

1. Kentucky Bluegrass: 35 percent.
2. Perennial Ryegrass: 25 percent.
3. Chewings Fescue: 40 percent.

D. Partial Shade Seed Mix: Apply at a rate of 5 lbs. per 1000sf:

1.	Festuca rubra	Creeping Red Fescue	30%
2.	Festuca rubra ssp. Commutata	Chewings Fescue	30%
3.	Lolium multiflorum	Annual Ryegrass	20%
4.	Poa pratensis ‘Maverick’	Kentucky Bluegrass	10%
5.	Poa trivalis	Rough Bluegrass	10%

E. Wildflower Seed Mix: Apply at a rate of 1.5 lb per 1000 sf:

1.	Sorghastrum nutansPA Ecotype	Indiangrass, PA Ecotype	31.1%
2.	Lolium multiflorum	Annual Ryegrass	20%
3.	Andropogon gerardii, 'Niagara'	Big Bluestem, 'Niagara'	14%
4.	Elymus canadensis	Canada Wildrye	10%
5.	Elymus virginicus, Madison-NY Ecotype	Virginia Wildrye,	7%
6.	Agrostis perennans, Albany Pine Bush-NY	Autumn Bentgrass,	4%
7.	Panicum virgatum, 'Shawnee'	Switchgrass, 'Shawnee'	4%
8.	Panicum clandestinum, Tioga	Deertongue, Tioga	3%
9.	Echinacea purpurea	Purple Coneflower	1.5%
10.	Chamaecrista fasciculata, PA Ecotype	Partridge Pea, PA Ecotype	1.3%
11.	Heliopsis helianthoides, PA Ecotype Oxeye	Sunflower, PA Ecotype	1.2%
12.	Coreopsis lanceolata	Lanceleaf Coreopsis	1%
13.	Rudbeckia hirta	Blackeyed Susan	1%
14.	Monarda fistulosa, Fort Indiantown Gap	Wild Bergamot	0.3%
15.	Asclepias syriaca	Common Milkweed	0.2%
16.	Solidago rugosa, PA Ecotype	Wrinkleleaf Goldenrod,	0.2%
17.	Aster lateriflorus	Calico Aster	0.1%
18.	Aster pilosus, PA Ecotype	Heath Aster, PA Ecotype	0.1%

F. Cover Crop: Overseed all disturbed areas with 100% Annual Rye Grass at a rate of 6 lbs. per 1000 sf, to prevent soil erosion.

G. Seed Mixes by Ernst Conservation Seeds, Inc., 8884 Mercer Pike, Meadville, PA, 16335, (800) 873-3321, or approved equal.

2.02 SOIL MATERIALS

A. Topsoil: As specified in Section 31 1000 and in accordance with planting plans.

2.03 ACCESSORIES

A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

B. Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing the following percentages of available plant nutrients: 1:2:1 ratio, 5% total nitrogen, 10% phosphoric acid, and 5% soluble potash.

C. Herbicide: Apply a pre-emergent herbicide to the installed topsoil. Apply a post-emergent herbicide when weed infestation exceeds 5% of any planted lawn area. Reapply post-emergent herbicide application until weeds are eradicated.

D. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of lawn or wildflowers.

E. Tackifier: Natural Organic Bio-Degradable Tackifier. Tackifier shall consist of one primary hydrocolloid organic active ingredient which makes up at least 65% of the total formulation or a

proven/approved inorganic equal. Tackifier shall be nontoxic and contain no germination or growth inhibiting factors. "Ecotak" as manufactured by Eastern Products, Inc. 1162 Sycamore Lane, Mahwah, NJ 07430, (201) 934-5050, or approved organic equal.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that prepared topsoil is true to grade, has been rolled and is ready to receive the work of this section. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 PRE-TREATMENT

A. After the areas required to be seeded have been brought to the required subgrade, apply pre-emergent herbicide per manufacturer's instructions. Remove debris and stones larger than 1/2 inch.

3.03 FERTILIZING

A. Apply fertilizer to lawn seed areas in accordance with manufacturer's instructions and according to soil test recommendations. More frequent applications at a lower rate are more desirable. Water all fertilizers after application.

B. Apply after smooth raking of topsoil and prior to roller compaction.

C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.

D. Mix thoroughly into upper 2 inches of topsoil.

E. Lightly water to aid the dissipation of fertilizer.

3.04 SEEDING

A. Apply seed evenly in two intersecting directions in areas as indicated on the plans. Rake seed lightly into top 1/8 inch of soil.

B. Do not seed areas in excess of that which can be mulched on same day.

C. Do not sow immediately following rain, when ground is too dry, or during windy periods.

D. Roll seeded area with roller not exceeding 112 lbs.

E. Immediately following seeding and compacting, apply mulch to a thickness of not less than 1" loose measurement. Maintain clear of shrubs and trees.

F. Apply water with a fine spray immediately after each area has been mulched. Saturate the top 4 inches of soil. Apply tackifier in accordance with manufacturer's recommendations.

3.05 SEED PROTECTION

A. Identify seeded areas and take necessary precautions to minimize traffic in seeded areas.

B. Protect seeded areas against erosion by spreading specified mulch after completion of seeding operations. Spread uniformly to form a continuous blanket not less than 1" loose measurement over seeded areas. Apply tackifier to securely hold in place the mulch. Apply a minimum ratio of 75 lbs. tackifier/2,000lbs. of mulch.

3.06 MAINTENANCE

A. Water to prevent seed and soil from drying out.

B. Topdress surface to remove minor topsoil depressions or irregularities.

C. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

D. Immediately re-seed areas which show bare spots.

E. Protect seeded areas with warning signs during maintenance period.

3.07 CLEAN-UP

A. Remove all excess materials and debris from the owner's property.

3.08 INSPECTION AND ACCEPTANCE

A. The Contractor is responsible for the establishment and proper care of a stand of grass over the entire seeded areas. Final acceptance of seeded areas will be granted when a uniform stand of grass is obtained. An acceptable stand of grass is one in which 98% coverage is obtained.

B. A minimum maintenance period is required. The maintenance period shall extend until 98% coverage is obtained.

END OF SECTION