PART 1: GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent of landscape development work is shown on drawings and in schedules.

B. Subgrade Elevations: Excavation, filling and grading required to establish elevations shown on drawings are not specified in this section. Refer to earthwork sections.

1.03 QUALITY ASSURANCE

A. Subcontract landscape work to a single firm specializing in landscape work.

B. Source Quality Control

1. General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.

2. Do not make substitutions: If specified, landscape material is not obtainable, submit proof of non-availability to Architect, together with proposal for use of equivalent material.

3. Analysis and Standards: Package standard products with manufacturer’s certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

4. Topsoil: Before delivery of topsoil, furnish Architect and Cornell Grounds Department with written statement giving location of properties from which topsoil is to be obtained, names and addresses of owners, depth to be stripped, and crops grown during past two years. TOPSOIL ACQUISITION AND AMENDMENTS TO TOPSOIL ARE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR (see also Part 2.01, F).
5. Trees, Shrubs and Plants: Provide trees, shrubs and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 “American Standard for Nursery Stock.” Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.

6. Label each tree and shrub with securely attached waterproof tag bearing legible designation of botanical and common name.

7. Label at least one tree and one shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

8. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread, and label with number to assure symmetry in planting.

9. Furnish the Architect and Grounds Director a complete as built listing of plant nursery sources of all plants installed upon initial plant acceptance by Architect.

C. Inspection: The Architect may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size, and quality. Architect retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from project site.

1.04 SUBMITTALS

A. Certification: Submit certificates of inspection as required by governmental authorities. Submit manufacturers or vendors certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.

1. Submit seed vendor’s certified statement for each grass seed mixture required, stating botanical and common name, percentage by weight, and percentages of purity, germination, and weed seed for each grass seed species.

B. Planting Schedule: Submit proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reason for delays.
C. Maintenance Instructions: Submit typewritten instructions recommending procedures to be established by Owner for future maintenance after acceptance and warranty expiration. Submit prior to expiration of required maintenance period(s).

D. Provide and pay for materials testing. Testing agency shall be acceptable to the Architect. Provide the following data:

1. Test representative material samples proposed for use.

2. Topsoil:
   a. pH factor
   b. Mechanical analysis
   c. Percentage of organic content
   d. Recommendations on type and quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring nutrients to satisfactory level for planting.
   e. Bio-assay topsoil for toxin detection.

E. Percolation tests to be performed on a minimum of 10% of tree pits and 20% of shrub beds, and on any areas of questionable drainage, or as required by Architect. Percolation tests shall consist of a one gallon container at minimum of 1” (one inch) per hour drainage at base of plant root level.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

B. Sod: Time delivery so that sod will be placed within twenty-four hours after stripping. Protect sod against drying and breaking of rolled strips.

C. Trees and Shrubs: Provide freshly dug trees and shrubs. Do not prune prior to delivery unless otherwise approved by Architect. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches, or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery. Do not let plant roots dry, crush, or be exposed to heat or cold during deliveries.

D. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than six hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture.
E. Do not remove container grown stock from containers until planting time.

1.06 JOB CONDITIONS

A. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.

B. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.

C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Architect when encountered. No planting under such conditions will occur until approved by Architect.

D. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.07 SPECIAL PROJECT WARRANTY

A. Warranty lawns through specified lawn maintenance period, and until final acceptance.

B. Warranty trees and shrubs through specified maintenance period, and until final acceptance.

C. Warranty trees and shrubs, for a period of one year after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer’s control. Proper watering during full warranty period is the responsibility of the landscape contractor.

D. Remove and replace trees, shrubs, or other plants immediately if found to be dead or in unhealthy condition during warranty period. Make replacements during the next specified planting season. Replace trees and shrubs which are in doubtful condition during the next planting season. Replace trees and shrubs which are in doubtful condition next planting season, unless, in opinion of Architect, it is advisable to extend warranty period for a full growing season.
1. Another inspection will be conducted at end of extended warranty period, if any, to determine acceptance or rejection. Only one replacement (per tree, shrub or plant) will be required at end of warranty period, except for losses or replacements due to failure to comply with specified requirements.

PART 2: PRODUCTS

2.01 TOPSOIL

A. Stockpiled topsoil from stripping of site may be used if meeting requirements specified. Furnish additional topsoil required for planting and lawns from sources off the site if stockpiled topsoil is insufficient, unsatisfactory, or stockpiling is not performed.

B. Topsoil material shall consist of weathered surface soils (A horizon), or amended unweathered subsoil (B horizon) or a blend of both, and shall be free of hard fragments and stones larger than one inch across the greatest dimension, objectionable salts, noxious weeds and plants, partially disintegrated debris, or any other material inferior to the surface soils. All soils to be obtained from naturally drained sources and shall contain at least two percent natural organic matter (as determined by loss on ignition of moisture) – free samples dried and tested in accordance with current methods of the Association of Official Agricultural Chemists.

C. Topsoil shall be amended as needed to meet the following requirements:

1. A minimum of 6%, and not to exceed 10% of combined organic matter.

2. Soil acidity range: pH 5.5 to pH 7.0 inclusive.

3. Soil fertility shall rate “high” in natural nutrients based on the coordinated ratings in pounds per acre as established by the National Soil and Fertilizer Research Committee.

4. Should tests and analysis indicate that soil proposed for use is deficient in any of the above requirements, a system of ameliorating may be proposed for approval.

5. For lawn areas where topsoil pH is below 5.0, limestone shall be added at a rate of 2-1/2 (two and one half) pounds per cu. yd. of topsoil to raise the pH value one full point.

   a. Limestone: Shall be raw, ground agricultural limestone containing not less than 85% calcium carbonate and shall be ground to such a fineness that 50% shall pass through a 100 mesh sieve, and 90% through a 20 mesh sieve.
6. Where topsoil pH is above 7.0, aluminum sulfate shall be added at a rate of 2-1/2 pounds per cu. yd. of topsoil to lower the pH value one full point.

   a. Aluminum sulfate: In dry powder form.

D. All topsoil obtained from on-site or loam borrow obtained from off-site used for work of this section shall be tested prior to being spread or mixed. All testing shall be done by approved independent test laboratory or by agriculture unit of State University System. Contractor shall provide required representative samples of material proposed for use to testing facility for analysis and recommended treatment. The Contractor shall bear any and all costs incurred in testing and analysis. Test reports also contain specific recommendations as to the exact types, times and rates of application of soil additives and fertilizers based upon the soil test results and type of material to be planted. Approved materials and topsoil shall be covered with waterproofing membrane if stored on site. Approved material shall be stockpiled as not to be contaminated or to interfere with other work or with other sub grade or fill materials. Recommendations shall be followed during planting operations.

E. Analysis shall include:
   1. Classification of soil
   2. Percent organic content
   3. Soil acidity
   4. Recommendation shall include type of soil additive and fertilizer, their composition and rate, and means of application.

F. Note that any and all materials and procedures with respect to soil additive and fertilizers, contained herein, are the responsibility of the landscape contractor and are approximate, and that all soil additives will be adjusted to comply with test reports.

2.02 SOIL AMENDMENTS

A. Lime: 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 10 mesh sieve, and not less than 50% passes a 100 mesh sieve.

B. Aluminum Sulfate: Commercial grade.

C. Peat Humus: FS Q-P-166 decomposed peat with no identifiable fibers and with pH range suitable for intended use.
D. Super phosphate: Soluble mixture of treated minerals; 20% available phosphoric acid.

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


G. Vermiculite: Horticultural grade, free of toxic substances.

H. Sawdust: Rotted sawdust, free of chips, stones, sticks, soil or toxic substances and with 7.5 lbs nitrogen uniformly mixed into each cubic yard of sawdust.

I. Manure: Well rotted, unleached 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.

J. Mulch: Single hammer milled, coarse, from hardwood bark mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants.

K. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing following percentages of available plant nutrients:
   1. For trees and shrubs, provide fertilizer with not less than 5% total nitrogen, 10% available phosphoric acid and 5% soluble potash.
   2. For lawns, provide fertilizer with percentage of nitrogen required to provide not less than 1 lb of actual nitrogen per 1,000 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 lawn during initial period of growth; at least 50% of nitrogen to be in organic form.

2.03 PLANT MATERIALS

A. Quality: Provide trees, shrubs, and other plants of size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 “American Standard for Nursery Stock.”

B. Deciduous Trees: Provide trees of height and caliper scheduled or shown, and with branching configuration recommended by ANSI A300.1 for type and species required. Provide single stem trees except where special forms are shown or listed.

1. Provide balled and burlapped (B&B) or container grown deciduous trees as specified on plant list.
C. Deciduous Shrubs: Provide shrubs of the height shown or listed 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 as specified on plant list.

2.04 GRASS MATERIALS

A. Schedule of Grass Seed Requirements:

1. All grass seed will be fresh, clean, new crop seed delivered in original unopened packages, bearing guaranteed analysis.

2. Seed germination test results for each seed type and cultivar must be performed within 10 months prior to landscape installation of seed, and must have no less than ninety percent (90%) germination rate.

3. All grass seed cultivar purity must be no less than ninety percent (90%) by weight.

4. All Grass Seed and Grass Seed Mixes used will consist of one of the following four (4) types:

**TYPE 1 - Kentucky Bluegrass (Poa pratensis) Seed Mix:** This grass seed will be used without exception for all non-athletic turf campus lawn seedings unless specified otherwise in writing by the Architect. This seed mix will consist of the following:

Twenty-five percent (25%) of each of any three of the nine choices of named Kentucky Bluegrass cultivars listed below to total 75% of the Kentucky Bluegrass Seed Mix (e.g. Type 1) by weight. Kentucky Bluegrass cultivar choices include: Midnight, Midnight 2, Caberner, Huntington, Bordeaux, Shiraz, Langara, and Diva.

Fifteen percent (15%) by weight of one of the following: Chewing Fescue (Festuca rubra) seed cultivars: Enjoy, Abram, or Checker; OR Hard Fescue (Festuca longifolia) seed cultivars: Reliant, Aurora, Spartan, Waldina, or SR#3000.

Ten percent (10%) by weight of one of the Perennial Ryegrass (Lolium perenne) seed cultivars: Paragon GLR, Exacata 2, Revenge GLX, or Fiesta 4.

**TYPE 2: Perennial Ryegrass Seed (Lolium perenne):** This grass seed will not be used, except as 10% of the Type 1 Kentucky Grass Seed Mix, or for athletic field or other temporary lawns only when specified in writing by the Architect.
Architect. Use one of the following Perennial Ryegrass (Lolium perrene) seed cultivars: Paragon GLR, Exacata 2, Revente GLX, or Fiesta 4.

**TYPE 3: Fine Fescue Seed (Festuca rubra):** This shade tolerant turf grass (will be used only for lawn establishment in heavily shaded areas receiving less than 4 hours of direct sunlight daily and upon written approval of the Architect. Equal parts by weight of at least two of the following grass seeds will be used: Nordic, Stonhenge, Jasper 3, Predator, Sea Breeze, and Quatro.

**TYPE 4: Fine Leaf Tall Fescue (Festuca arundinacea):** This seed will only be used on low maintenance athletic fields with poorer quality soil and draughty site conditions, and only upon written approval of the Architect. Equal parts by weight of at least two of the following grass seed cultivars will be used: Falcon 4, Falcon 5, Avenger, Hunter, or Biltmore.

5. Seed may be mixed by an approved method on site, or may be mixed by a seed dealer. If the seed is mixed on site, each cultivar shall be delivered in the original containers which shall bear the dealer’s guaranteed analysis legibly printed on the seed label as required by law. If the seed is mixed by a dealer, the contractor shall furnish the owner with the dealer’s guaranteed statement of the composition of the mixture. All seed labels for seed used on campus will be furnished to the Architect for review, and then incorporated into the owner’s project files.

2.05 MISCELLANEOUS LANDSCAPE MATERIALS

A. Anti-Erosion Mulch: Provide clean, seed-free salt hay or threshed straw of wheat, rye, oats or barley.

B. 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.


D. Wrapping: Tree-wrap tape not less than 4".

E. Stakes and Guys: Provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide wire ties and guys of 2-strand, twisted, pliable galvanized iron wire not lighter than 12 gauge. Provide not less than 1/2" (one-half inch) diameter rubber or plastic hose, or approved straps, cut to required lengths and of uniform color, material and size to protect tree trunks from damage by wires.
F. Temporary Lawn Protection: Shall include 1” x 1” hardwood stakes, 4’ (four feet) high, a maximum of 10’ (ten feet) apart with a single line of double stranded white polypropylene twine, flagged with 1” wide red weather resistant flag tape. The maximum length of the flagging tapes will be 4” (four inches).

PART 3: EXECUTION

3.01 PREPARATION

A. Layout individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Architect’s acceptance before start of planting work. Make minor adjustments as may be requested.

B. Preparation of Planting Soil

1. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.

2. Fertilizer shall be complete, partially organic, containing by weight: 10% nitrogen, 10% phosphorous, 10% potash.

3. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.

4. For planting beds and lawns, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.
   a. Mix lime with dry soil prior to mixing of fertilizer.
   b. Prevent lime from contacting roots of acid-loving plants.
   c. Apply phosphoric acid fertilizer (other than that constituting a portion of complete fertilizers) directly to subgrade before applying planting soil and tilling.

C. Preparation for Planting Lawns

1. Loosen subgrade of lawn areas to a minimum depth of 10” (ten inches). Remove stones over 1 1/2” (one and one-half inch) in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
   a. Spread top soil to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement.
b. Place approximately 1/2 of total amount of top soil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 10" (ten inches) of topsoil.

D. Preparation of Unchanged Grades: Where lawns are to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: till to a depth of not less than 6" (six inches); apply soil amendments and initial fertilizers as specified; remove high areas and fill in depressions; till soil to a homogeneous mixture of fine texture, free of lumps, clods, stones, roots, and other extraneous matter.

1. Prior to preparation of unchanged areas, completely remove existing grass, vegetation, and turf with non-selective herbicide unless otherwise approved. Dispose of such material outside of Owner’s property; do not turn over into soil being prepared for lawns.

2. Allow for sod thickness in areas to be sodded.

3. Apply specified commercial fertilizer at rates specified and thoroughly mix into upper 3" (three inches) of topsoil. Delay application of fertilizer if lawn planting will not follow within seven days.

E. Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Rake and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading. Allow for soil settlement.

F. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

G. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

H. Preparation of Planting Beds

1. Remove 12" (twelve inches) of existing soil and perform percolation test as specified in Section 1.04.

2. Thoroughly loosen subgrade of planting bed areas to a minimum depth of 12" (twelve inches) below planting mix. Remove stones over 1 1/2" (one and one-half inch) in any dimension, and sticks, stones, rubbish and other extraneous matter. Test for percolation as specified in Section 1.04.
3. Spread planting soil mixture to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement. Place approximately ½ of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil.

4. Mix with specified soil amendments and fertilizers to a depth of not less than 12” (twelve inches).

I. Excavation for Trees and Shrubs

1. Excavate pits, beds and trenches, with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.

   a. For balled and burlapped (B&B trees and shrubs), make excavations at least half as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill:

      1. Allow for 3” (three inch) setting layer of planting soil mixture.

   b. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

J. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.

3.02 PLANTING

A. Planting Trees and Shrubs

1. Set balled and burlapped (B&B) stock on a 2” (two inch) layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball approximately 2” (two inches) above adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. Remove minimum of upper one third of wire. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3-full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

2. Set container grown stock 1” (one inch) above grade as specified for balled and burlapped stock, except cut cans on two sides with an approved can cutter and remove. Remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.
3. Dish top of backfill to allow for mulching.

4. Mulch pits, trenches and planted areas. Provide not less than following thickness of mulch and work into top of backfill and finish level with adjacent finish grades.
   a. Provide a 3" (three inch) thickness of mulch. Mulches are not to be applied against collar of trees and shrubs.

5. If deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.

6. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by Architect, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character.

7. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

8. Wrap tree trunks of 2" (two inch) caliper and larger. Start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.

9. Guy and stake trees immediately after planting, as indicated. Remove guys and stakes after one season.

3.03 SEEDING NEW LAWNS

   A. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage and not more than a nine month old 85% germination result rate.

   B. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds 5 miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two directions at right angles to each other.

   C. Sow grass seed at rate specified for seed mixture type. Increase by 20% for new seeding on slopes in excess of a 3:1 ration.

   D. Rake seed lightly into top 1/8" (one-eighth inch) of soil, roll lightly.
E. Protect seeded slopes against erosion with an organic erosion netting such as jute or other methods acceptable to the Architect.

F. Protect seeded areas against erosion by spreading chopped straw mulch, or acceptable organic hydroteering cellulose mulch within 24 hours after seeding. During the months of June, July and August, only straw mulch will be used. Place straw mulch uniformly in a continuous blanket at the rate of 2-2/2 tons per acre, or 2-50 lb bales per 1,000 sq ft of area. A mechanical blower may be used for straw mulch application when acceptable to the Landscape Architect.

G. Time of Seeding (for conventional method):

1. Seed immediately after preparation of seed bed. Seeding shall be done between April 1 and June 1, or between August 15 and September 30. When delays in operations carry the work beyond the seasons specified, or when conditions of high winds (winds that exceed 5 mph velocity), drought, excessive moisture or ice are such that satisfactory results are not likely to be obtained at any stage of the work, the work will stop and it shall be resumed only when the desired results are likely to be obtained, or when approved corrective measures and procedures are adopted.

H. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations after proper soil preparation as specified in section 3.01.

I. Work notification: Notify Architect at least seven (7) working days prior to start of seeding operations.

J. Protect existing utilities, paving, and other facilities from damage caused by seeding operations.

K. Perform seeding work only after planting and other work affecting ground surface has been completed, or as otherwise approved by Architect.

L. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required, as referenced in section 3.07.

M. Provide hose and lawn watering equipment as required.
N. Method of Seeding:

1. Mechanical drills or seeders shall place the seed to a depth not exceeding 1/4" (one quarter inch). Two passes of seeder shall be made over each area, the second pass being made at right angles to the direction of the first, one-half of the required amount of seed being sown in each pass. Broadcast seed shall be covered to a depth not exceeding 1/4" (one-quarter inch) by raking, brush or chain harrowing, or other approved method. Broadcast seeding shall not be done during windy weather. After sowing, the seeded areas shall be lightly rolled and the seed bed before and after seeding shall weigh not more than 65 pounds per foot of width. Cultipacker, or similar equipment, may be used in one operation to cover the seed and firm the seed bed after seeding.

3.04 Reconditioning Existing Lawns

A. Recondition existing lawn areas damaged by Contractor’s operations, including storage of materials and equipment, and movement of vehicles. Also, recondition existing lawn areas where minor regrading is required.

B. Provide fertilizer, seed or sod, and soil amendments as specified for new lawns, and as required, to provide a satisfactorily reconditioned lawn.

C. Cultivate bare and compacted areas thoroughly to a depth of 6” (six inches) to provide a satisfactory planting bed.

D. Remove dead and unsatisfactory lawn areas; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor’s operations, including oil drippings or other harmful chemicals, stone, gravel, and other loose building materials.

E. Where greater than 60% of lawn remains, mow. In areas where there is less than 60% of disturbed grass rake, aerate if compacted, fill low spots, remove humps, and cultivate soil, fertilize, and seed. Remove weeds before seeding, if extensive, apply selective chemical weed killers as required. Apply a seedbed mulch, if required, to maintain moist condition.

F. Water newly planted lawn areas and keep moist until new grass is established AND ACCEPTED IN WRITING BY THE ARCHITECT.

G. Begin maintenance immediately after planting.
3.05 SODDING NEW LAWNS

A. Lay sod within 24 hours from time of stripping. Do not plant dormant sod, or if ground is frozen.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.

1. Anchor sod on slopes steeper than 2:1 with wood pegs to prevent slippage.

C. Water sod thoroughly to a depth of 2 - 3” below sod with a fine spray immediately after planting.

3.06 MAINTENANCE

A. Begin maintenance immediately after planting.

B. Maintain trees, shrubs and other plants until final acceptance, but in no case less than specified period.

C. Maintain trees, shrubs and other plants by pruning, cultivating and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

D. Maintain seeded area until final acceptance.

1. Maintenance period shall begin immediately after seeding is completed for each designated area on Plan, and shall continue until all lawn areas have been fully accepted, not less than 60 days after substantial completion.

2. If seeded in Fall continue maintenance the following Spring until lawn is established and accepted, IN WRITING, by Architect.

3. Maintenance of seeded lawn areas shall include watering, spot weeding, fertilizing, disease and insect pest control, mowing, reseeding, application of herbicides, fungicides, and insecticides until a full uniform stand of grass, free of weeds, undesirable grass species, disease and insects is achieved and accepted by the Architect.
4. Contractor is to provide water daily, or as conditions dictate, to maintain adequate surface soil moisture for proper seed germination. Watering shall be done in the late afternoon or early evening hours and shall continue for a period not less than 30 days. Thereafter, apply 1/2" (one-half inch) of water twice weekly until acceptance. Water shall be from Owner’s source. Contractor shall provide and maintain at his expense, adequate connections, hoses, sprinklers, etc., with minimum leakage. Where use of hoses is not practical, Contractor shall water with a tank truck filled at Owner’s source. When Owner’s water source is not available, Contractor shall include cost of water from off-site source in base bid.

5. Grass shall not be allowed to grow more than 4" (four inches) in height during the maintenance period. Mowing height to be set at 3 to 3 1/2" (three inches to three and one half inches) unless otherwise directed.

6. Pick-up of grass clippings shall be required during or immediately after each mowing, if clippings are an average of 1" (one inch) or longer in length.

7. Contractor to repair, rework, and reseed all areas that have washed out, are eroded, or do not establish. Restore bare areas by top dressing with topsoil as specified. Apply seed at specified rate. Roll with a light roller and cover with a 1/2" (one-half inch) mulch of pre-moistened peat moss.

8. Contractor will provide such barricades, temporary fencing signs or policing as may be necessary to eliminate or minimize damage to lawn. Contractor is responsible for all damage that occurs unless damage is beyond Contractor’s control. Should damage occur beyond Contractor’s control, Contractor will submit request for a Change Order and provide reasonable proof of damage.

3.07 CLEANUP AND PROTECTION

A. During landscape work, keep pavements clean and work area in an orderly condition.

B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors, and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

3.08 INSPECTION AND ACCEPTANCE

A. When landscape work is completed, including maintenance, Architect will, upon request, make an inspection to determine acceptability.
1. Landscape work may be inspected for acceptance in parts agreeable to Architect, provided work offered for inspection is complete, including maintenance.

B. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

C. Upon final acceptance, and within one week of such acceptance, Architect will notify the Director of the Grounds Department, in writing, before final turn over.

END OF SECTION