

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 61 00 - Waste Management.
- .3 Section 32 91 19.13 – Topsoil and Grading

1.2 Scope

- .1 Seeding can be done either through mechanical means or as Hydroseeding. If hydroseeding is used, protect all adjacent amenities and surfacing.

1.3 Delivery and Storage

- .1 Deliver grass seed in original containers showing:
 - .1 Analysis of seed mixture.
 - .2 Percentage of pure seed.
 - .3 Year of production.
 - .4 Net mass.
 - .5 Date when tagged and location.
 - .6 Percentage germination.

1.4 Submittals

- .1 Product Data:
 - .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Provide product data for:
 - .1 Seed.
 - .2 Fertilizer.
 - .3 Mulch

1.5 Quality Assurance

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements.

1.6 Scheduling

- .1 Schedule seeding using grass mixtures after frost has left ground and before June 15th or between August 15th and September 30th.
- .2 Schedule seeding to coincide with preparation of soil surface.
- .3 Schedule completion of work immediately prior to hydraulic mulching where mulching is proposed.

1.7 Waste Management and Disposal

- .1 Separate and recycle waste materials.
- .2 Divert unused fertilizer from landfill to official hazardous material collections site approved by Departmental Representative or Consultant.
- .3 Do not dispose of unused fertilizer into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 Seed Mix 1

- .1 Canada "Certified" seed, "Canada No. 1 Grass Mixture" in accordance with Government of Canada "Seeds Act" and "Seeds Regulations".
 - .1 Grass seed mixture: White clover, perennial ryegrasses, fescues, Kentucky bluegrass.
 - .1 Mixture composition:
 - .1 10% White and/or Red Clover
 - .2 20% Perennial Ryegrass
 - .3 25% Tall Fescue
 - .4 20% Creeping Red Fescue
 - .5 15% Timothy
 - .6 10% Kentucky Bluegrass
 - .2 Such as Greenfields Mix by Pickseed Canada (1-800-661-4769) or approved equivalent.
 - .2 Proportion: (proportioned by mass).
- .2 In packages individually labelled in accordance with "Seeds Regulations" and indicating name of supplier.

2.2 Water

- .1 Free of impurities that would inhibit germination and growth.

2.3 Fertilizer

- .1 To Canada "Fertilizers Act" and "Fertilizers Regulations".
- .2 Complete synthetic fertilizer with guaranteed minimum analysis as specified.

2.4 Mulch

- .1 Specially manufactured for use in hydraulic seeding equipment, non-toxic, water activated, green colouring, free of germination and growth inhibiting factors, with following properties:
 - .1 Type II mulch: made from newsprint, raw cotton fibre and straw, processed to produce fibre lengths of 15 mm minimum and 25 mm maximum. Greater proportions of ingredients to be straw.
or
 - .2 Hydro-mulch specially manufactured for use in hydraulic seeding equipment – 'Cell-u-mulch' or approved equivalent.
 - .3 Approved equivalent.
- .2 Tackifier: water dilutable liquid dispersion containing polyvinyl acetate terpolymer emulsion.

PART 3 - EXECUTION

3.1 Quality of Work

- .1 Do not perform work under adverse field conditions as determined by Consultant
- .2 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; to a licenced contaminated soils disposal site as directed by Consultant

3.2 Seed Bed Preparation

- .1 Verify that grades are correct. If discrepancies occur, notify Consultant and do not commence work until instructed by Consultant
- .2 Fine grade surface free of humps and hollows to smooth, even grade, to contours and elevations indicated to tolerance of plus or minus 15mm, surface draining naturally.
- .3 Cultivate fine grade approved by Consultant to 25mm depth immediately prior to seeding.
- .4 Ensure areas to be seeded are moist to depth of 50 mm before seeding.

- .5 Obtain Consultant's approval of grade and topsoil depth before starting to seed.

3.3 Seed Application - Mechanical Seeding

- .1 For mechanical seeding (refer to seed mixes):
 - .1 Use "Brillion" type mechanical landscape seeder which accurately places seed at specified depth and rate and rolls in single operation.
 - .2 Use equipment and method acceptable to Consultant
- .2 On cultivated surfaces, sow seed uniformly at rate of:
 - .1 For Seed Mix 4.
 - .1 1.8kg / 100m².
- .3 Blend applications 300 mm into previous applications to form uniform surfaces.
- .4 Sow half of required amount of seed in one direction and remainder at right angles as applicable.
- .5 Incorporate seed by light raking in cross directions.
- .6 Consolidate mechanically seeded areas by rolling area if soil conditions warrant or if directed by Consultant with equipment approved by Consultant immediately after seeding.
- .7 Water with fine spray to avoid seed wash-out. Water to ensure optimum penetration for germination.
- .8 Protect seeded areas from trespass satisfactory to Consultant.
- .9 Remove protection devices after seeded areas have been accepted by Consultant.

3.4 Seed Application - Hydraulic

- .1 Hydraulic seeding equipment:
 - .1 Slurry tank: minimum 10,000 L.
 - .2 Agitation system for slurry to be capable of operating during charging of tank and during seeding, consisting of recirculation of slurry and mechanical method.
 - .3 Pumps capable of maintaining continuous non-fluctuating flow of solution.
 - .4 Supplied with not less than 6 spray pattern nozzles.
 - .5 Capable of seeding by 50 m hand operated hoses and appropriate nozzles.
 - .6 . Tank volume to be certified by certifying authority and identified by authorities volume certification plate.

- .2 Slurry mixture applied per hectare:
 - .1 All Seed Mixes
 - .1 2kg per 100m².
 - .2 Water: Minimum 30,000 L.
- .3 Apply slurry uniformly, at optimum angle of application for adherence to surfaces and germination of seed.
 - .1 Using correct nozzle for application.
 - .2 Using hoses for surfaces difficult to reach and to control application.
- .4 Blend application 300mm into adjacent grass areas to form uniform surfaces.
- .5 Re-apply where application is not uniform.
- .6 Remove slurry from items and areas not designated to be sprayed.

3.5 Fertilizing Program

- .1 Fertilize seeded areas six weeks after seeding. Spread evenly at rate of 0.5kg of nitrogen/100m² and water in well. Second application of fertilizer to be applied in the late summer (spring seeding) or in the spring (late summer seeding). Postpone fertilizing until next spring and late summer for seeding carried out after August 30.

3.6 Maintenance During Establishment Period

- .1 Perform following operations from time of seed application until acceptance by Consultant:
 - .1 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.
 - .2 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.
 - .3 For Seed Mix 4 only: Cut grass to 50mm whenever it reaches height of 80 mm. Remove clippings which will smother grass [as directed by Consultant
 - .4 Fertilize seeded areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.
 - .5 Control weeds by mechanical means utilizing acceptable integrated pest management practices.
 - .6 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.
 - .7 Over seed areas where required the following spring. Areas to be overseeded will be established with the Consultant.

3.7 Final Acceptance

- .1 Seeded areas will be accepted by Consultant provided that:
 - .1 Areas are uniformly established and turf is free of rutted, eroded, bare or dead spots and free of weeds.
 - .2 Areas have been cut to approval of Consultant.
 - .3 Areas have been fertilized.
- .2 Areas seeded in fall will be accepted in following spring, one month after start of growing season provided acceptance conditions are fulfilled.

3.8 Maintenance During Warranty Period

- .1 Perform following operations from time of acceptance until end of warranty period.
 - .1 Water seeded area to maintain optimum soil moisture level for continued growth of grass. Control watering to prevent washouts.
 - .2 Repair and reseed dead or bare spots to satisfaction of Consultant.
 - .3 Fertilize seeded areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.

3.9 Cleaning

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION