

## **PART 1 - GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 31 22 13 - Rough Grading
- .3 Section 32 91 21 - Soil Placement and Grading

### **1.2 REFERENCES**

- .1 Canadian Nursery Landscape Association - Canadian Standards for Nursery Stock, latest edition.
- .2 Department of Justice Canada
  - .1 Seeds Act, latest edition.
  - .2 Seeds Regulations, latest edition.
  - .3 Fertilizers Act, latest edition.
  - .4 Fertilizers Regulations, latest edition.

### **1.3 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 Contractor is responsible for soil testing to determine appropriate ratios and application rates for fertilizer, lime, and any soil amendments that may be required.
  - .1 Soil test report to prescribe ratios and rates for initial application as well as subsequent applications during establishment and warranty periods.
  - .2 Submit soil test report to Departmental Representative in accordance with Section 01 33 00 - Submittal Procedures.

### **1.4 SCHEDULING**

- .1 Schedule hydraulic seeding to coincide with preparation of soil surface.
  - .2 Schedule hydraulic seeding using grass mixtures between dates recommended by Provincial Guidelines and local area requirements.
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## **1.5 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 Mulch.
    - .3 Tackifier.
    - .4 Fertilizer.
  - .3 Submit in writing to Departmental Representative two (2) weeks prior to commencing work:
    - .1 Volume capacity of hydraulic seeder in liters.
    - .2 Amount of material to be used per tank based on volume.
    - .3 Number of tank loads required per hectare to apply specified slurry mixture per hectare.

## **1.6 MEASUREMENT FOR PAYMENT**

- .1 Hydroseed: The supply of labour, materials, plant and equipment for the application of hydroseed, as indicated on the drawings, will be measured by the Square Metre (m<sup>2</sup>) calculated from actual field measurements.
- .2 Include incidental to the unit price the cost of the surface preparation, the fertilizing program and maintenance program as required.

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS**

- .1 Seed: Canada No. 1 Grade to Government of Canada Seeds Act and Seeds regulations where applicable having a minimum germination of 80% and minimum purity of 85%. Seed mixture: turf type varieties: 40% Canadian Bluegrass; 40% Fescue; 20% Rye Grass or as specified in the Project Documents.
  - .2 Mulch: wood or wood-cellulose fibres free of germination or growth-inhibiting ingredients and forming blotter like ground cover allowing absorption and precolation of water.
  - .3 Tackifier: water diluted liquid dispersion containing polyvinyl acetate polymer emulsion.
  - .4 Water: free of impurities that would inhibit germination and growth.
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- .5 Fertilizer:
  - .1 To Canada "Fertilizers Act" and "Fertilizers Regulations".
  - .2 Complete synthetic, slow release with 35% of nitrogen content in water soluble form.
  - .3 Ratio spring seeding 1:2:2; ratio fall seeding 1:4:4 or a soils lab approved by Departmental Representative.

### **PART 3 - EXECUTION**

#### **3.1 WORKMANSHIP**

- .1 Do not spray onto structures, signs, guide rails, fences, plant material, utilities and other than surfaces intended. Wrap with suitable material if over spray is unavoidable, remove after spraying is complete.
- .2 Clean-up immediately, any material sprayed where not intended, to satisfaction of Departmental Representative.
- .3 Do not perform work under adverse field conditions such as wind speeds over 10 km/h, frozen ground or ground covered with snow, ice or standing water.
- .4 Protect seeded areas from trespass until plants are established.

#### **3.2 PREPARATION OF SURFACES**

- .1 Prepare surface in accordance with Section 32 91 21 - Soil Placement and Grading.
- .2 Restore all disturbed areas affected by construction operations.
- .3 Fine grade areas to be seeded free of humps and hollows. Ensure areas are free of deleterious and refuse materials.
- .4 Ensure areas to be seeded are moist to depth of 150 mm before seeding.
- .5 Obtain Departmental Representative's approval of grade and topsoil depth before starting to seed.

#### **3.3 FERTILIZING PROGRAM**

- .1 Fertilize prior to fine grading incorporating fertilizer equally distributed in accordance with the rate and ratio determined from soil tests.
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- .2 Fertilize during establishment and warrantee periods with the rate and ratio determined from soil tests.

### **3.4 PREPARATION OF SLURRY**

- .1 Measure quantities of materials by weight or weight-calibrated volume measurement satisfactory to Departmental Representative. Supply equipment required for this work.
- .2 Charge required water into seeder. Add material into hydraulic seeder under agitation. Pulverize mulch and charge slowly into seeder.
- .3 After all materials are in the seeder and well mixed, charge tackifier into seeder and mix thoroughly to complete slurry.

### **3.5 SLURRY APPLICATION**

- .1 Hydraulic seeding equipment:
    - .1 Slurry tank.
    - .2 Agitation system for slurry to be capable of operating during charging of tank and during seeding, consisting of recirculation of slurry and/or mechanical agitation method.
    - .3 Capable of seeding by 50 m hand operated hoses and appropriate nozzles.
  - .2 Slurry mixture applied per hectare:
    - .1 Seed Mixture: 200 kg or as recommended by seed supplier.
    - .2 Type 1 Mulch: 1350kg
    - .3 Tackifier: as per manufacturer's specification.
    - .4 Water: Minimum 30,000 L.
    - .5 Fertilizer: as determined by soil analysis.
    - .6 Lime: as determined by soil analysis.
  - .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 300 mm into adjacent grass areas or sodded 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.
  - .7 Protect seeded areas from trespass to satisfaction of Departmental Representative.
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- .8 Remove protection devices as directed by Departmental Representative.

### **3.6 MAINTENANCE DURING ESTABLISHMENT PERIOD**

- .1 Perform following operations from time of seed application until acceptance by Departmental Representative.
- .1 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance and to satisfaction of Departmental Representative.
  - .2 Fertilize seeded areas after first cutting or ten (10) weeks after germination provided plants have mature true leaves in accordance with fertilizing program. Spread half the required amount of fertilizer in one direction and the remainder at right angles; water in well.
  - .3 Eliminate weeds by mechanical or chemical means. Spread half of required amount of fertilizer in one direction and remainder at right angles.
  - .4 Control weeds by mechanical means utilizing acceptable integrated pest management practices.
  - .5 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.

### **3.7 ACCEPTANCE**

- .1 Seeded areas will be accepted by Departmental Representative provided that:
- .1 Plants are uniformly established and seeded areas are free of rutted, eroded, bare or dead spots.
  - .2 Areas have been fertilized.
- .2 Areas seeded in fall will achieve final acceptance 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 Repair and reseed dead or bare spots to satisfaction of Departmental Representative.
  - .2 Fertilize seeded areas in accordance with fertilizing program. Spread half the required amount of fertilizer in one direction and the remainder at right angles; water in well.
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### 3.9 CLEANING

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