

## 1.0 GENERAL

### 1.1 References

- 1.1.1 Saskatchewan Noxious Weeds Act 1984, Current List

### 1.2 Related Work

- 1.2.1 Section 02210 - Site Grading – Rough
- 1.2.2 Section 02212 - Planting Soil and Finish Grading

### 1.3 Delivery and Storage

- 1.3.1 Seed shall be mixed and tested by a recognized seed house and clearly marked with the name of the supplier and the specified seed composition.

- 1.3.2 The contractor shall supply the consultant with the seed certificates of analysis for all of the lots of seed used, a minimum of 14 days prior to seeding providing sufficient time for rejection.

- 1.3.3 Deliver and store 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
- .7 Name and address of distributor

- 1.3.4 Fertilizer: deliver in original sealed water-proof packages showing product data and analysis for fertilizer. Protect from elements.

### 1.4 Measurement for Payment

- 1.4.1 Supply of seed will be measured in kilograms.

- 1.4.2 Seeding will be measured in square metres of surface area on the drawings. If there is a discrepancy, the actual surface area in the field will be used.

- 1.4.3 Seed protection on slopes will be measured in square metres of surface area on the drawings. If there is a discrepancy, the actual surface area in the field will be used.

- 1.4.4 Payment for Seeding will occur after Substantial Performance.

## 2.0 PRODUCTS

### 2.1 Grass Seed

- 2.1.1 Seed to be Certified No. 1 Grade in accordance with Government of Canada “Seeds Act” and “Seeds Regulations” and having minimum germination of 85% for irrigated grass seed and minimum purity of 97%.
- 2.1.2 All seed is to be Zone 2B hardy.
- 2.1.3 Seed is to be free of weeds as listed under the Saskatchewan Noxious Weeds Act.
- 2.1.4 Substitutions are to be approved by the consultant. Acceptable varieties are noted. A minimum of one in each percentage category is required. All other variety substitutions require approval. For Kentucky bluegrass, any substituted variety brought forward for approval should be in the correct “Type” classification and must provide documentation on its ratings in that “Type”.
- 2.1.5 Supply in writing actual varieties used in the seed mix.
- 2.1.6 Use a grass seed mixture and respective rate equivalent to one of the following as indicated on the Drawings or as directed by the landscape architect.

SEED MIX NAME	SEED MIX AND RATE
<b>Mix #1</b> Class 1&2 Sports Field and Class A Park	Seed at a rate of 0.5 kg / 100 sq.m -20% Kentucky bluegrass (Compact Midnight Type): Award, Quantum Leap, Blue Velvet, Midnight 2, Midnight Star -20% Kentucky bluegrass (Compact Type): Moonlight, Alpine, Moonshadow, Indigo and Explorer -20% Kentucky bluegrass, (Aggressive or Compact America Type): Northstar, Limousine, Touchdown, Langara, America, Bedazzled -20% Kentucky bluegrass, (BMVG, Shamrock or Other): Cannon, Crest, Merit, Champlaine, Parkland, Brooklawn, Bluechip, Abbey, Washington -20% Creeping Red fescue. Varieties: Aberdeen, Jasper II, Treasure
<b>Mix #2</b> Class 3 Sports Field and Class B Park	Seed at a rate of 0.5 kg / 100 sq.m -15% Kentucky bluegrass (Compact or Compact Midnight Type): Award, Quantum Leap, Blue Velvet, Midnight 2, Midnight Star, Moonlight, Moonlight SLT, Alpine, Moonshadow, Indigo and Explorer (Nugget) -15% Kentucky bluegrass, (Aggressive or Compact America Type): Northstar, Limousine, Touchdown, Langara, America, Bedazzled - 20% Kentucky bluegrass, (BMVG, Shamrock or Other): Cannon, Crest, Merit, Champlaine, Parkland, Brooklawn, Bluechip, Abbey, Washington -30% Creeping Red fescue. Varieties: Aberdeen, Jasper II, Treasure -20% Chewings fescue. Varieties: Windward, Victory II, Ambrose, Ambassador
<b>Mix #3</b> Unirrigated coarse grasses - non-native species (may be irrigated)	Seed at a rate of 1.8 to 2.3 kg per 100 sq.m (4 to 5 lbs per 1,000 square feet) -30% Canada Blue Varieties: Reubens or Canon -30% Creeping Red fescue ( <i>Festuca rubra</i> ) Varieties: Aberdeen, Jasper 2, -20% Hard fescue ( <i>Festuca duriscul</i> ) Varieties: Spartan, Aurora -20% Nakiska Sheeps fescue ( <i>Festuca ovina</i> )

<p><b>Mix #7</b> Residential boulevards and road right-of-way - saline component</p>	<p>Seed at a rate of 0.9 to 1.3 kg per 100 sq.m (2 to 3 lbs per 1,000 square feet) -25% Hard fescue (<i>Festuca duriscul</i>) Varieties: Spartan, Aurora -25% SeaLink Creeping Red fescue (<i>Festuca rubra litoralis</i>) -25% Creeping Red fescue (<i>Festuca rubra</i>) Varieties: Aberdeen, Jasper 2 -25% Kentucky bluegrass Varieties: Baroness, Royale, Mallard, Moonlight, Unique, Lily, Langara, Bedazzled</p>
<p><b>Mix #8</b> Overseeding Mix - Sportsfield with wear damage (quick fix)</p>	<p>Overseed with: -10% <i>poa supina</i> (not hardy, overly aggressive, see background information in Thiessen report prior to using) -90% (or 100%) Kentucky bluegrass Varieties: Limousine, Princeton 105, Award, Moonshadow or Midnight II</p>
<p><b>Mix # 11</b> Overseeding Mix - in areas where trees have matured creating shade</p>	<p>Seed at a rate of 0.9 to 1.3 kg per 100 sq.m (2 to 3 lbs per 1,000 square feet) - 25% Hard fescue (<i>Festuca duriscul</i>) Varieties. Spartan, Aurora</p>

- 2.2 Water: potable, free of impurities that would inhibit germination. The contractor is responsible for the supply and payment of water, water hoses, water truck and all other water related costs. If water connections are turned off, the contractor must bring in water at no additional cost to the client.
- 2.3 Fertilize according to recommendation of soil reports. Ratio to be determined by soil testing.
- 2.4 Fertilizer:
  - 2.4.1 For areas under 1000 sq.m. a soil report is not required.
  - 2.4.2 First application: complete synthetic, slow release fertilizer with maximum 35% water soluble nitrogen. Ratio:16-32-6 at rate of 0.5 kg per 100 m<sup>2</sup>.
  - 2.4.3 Second and third application need only have Nitrogen. Ratio to be: 26-0-0 applied at a rate of 0.5 kg per 100 m<sup>2</sup>.
- 2.5 Turf establishment blanket is at the discretion of the contractor. Must be adequate to meet acceptance.
- 2.6 Turf establishment blanket to be: A Type 2D erosion control blanket for use on slopes with gradients not exceeding 2:1. Blanket to be biodegradable, 100% agricultural straw stitched with cotton thread between two woven biodegradable jute nets. Blanket to have nets on both top and bottom. Longevity of the blanket is to be 3-12 months. The blanket is to be free of any weed seeds.
- 2.7 Pins for securing blanket to be 10cm or longer Biodegradable T-shaped stakes with 3.8cm head.

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- 2.8 If Hydro-mulching is preferred to a turf blanket it is the contractor's responsibility to provide sufficient information for review by the consultant and City staff. Information to include: equipment, mulch composition, method of application, environmental analysis, safety precautions and experience.

### 3.0 EXECUTION

- 3.1 Workmanship
- 3.1.1 Keep site well drained.
- 3.1.2 Clean up immediately soil or debris spilled onto pavement, dispose of deleterious materials.
- 3.2 Preparation of Surface
- 3.2.1 Obtain Consultant's approval of topsoil grade and depth before starting seeding.
- 3.2.2 Verify control of weeds prior to laying topsoil. It is the contractor's responsibility to use weed free soil and seed and is responsible for correcting errors in judgement.
- 3.2.3 Harrow or rake areas to be seeded to 25 mm depth immediately prior to seeding. Fine grade free of humps and hollows and free of deleterious and refuse material.
- 3.3 Seed Placement
- 3.3.1 Use equipment suitable for area involved to the approval of the Consultant.
- 3.3.2 All broadcast sowing is to occur during calm weather (winds less than 10 km/h).
- 3.3.3 Hand broadcasting is only acceptable for repair work and areas under 1000 sq.m.
- 3.3.4 Sow seed uniformly. Use half of required amount of seed in one direction and remainder at right angles. Incorporate seed into soil to a minimum depth of 5 mm simultaneously or within one hour after seeding operation. Mix carefully with light chain harrow or wire rakes.
- 3.3.5 Water with fine spray, avoiding washing out of seed. Apply enough water to ensure penetration of minimum 50 mm (2").
- 3.3.6 Roller pack the site immediately after seeding.
- 3.3.7 Protect seeded areas against damage. Remove this protection after lawn areas have been accepted by the Consultant.
- 3.3.8 Reseed at two week intervals where germination has failed.
- 3.3.9 Irrigated grass areas to be seeded anytime before September 15<sup>th</sup>. Seeding after September 15<sup>th</sup> requires approval of Consultant.

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- 3.3.10 Non-native grass areas to be seeded between May 1st to June 15th or after the 15th of August to within two weeks of freeze-up.
- 3.4 Fertilizing Program
- 3.4.1 Fertilize according to soil test recommendations or as noted in Products item 2.3 and 2.4. First application may be avoided if recommended by test results.
- 3.4.2 Irrigated grass: First application to be done during final grading and directly before seeding. Second application during establishment 4-6 weeks after seeding. If maintaining grass for one year apply approximately May 1, June 15, August 1.
- 3.4.3 Unirrigated grass: First application to be done during final grading and directly before seeding. No other fertilizer is required for unirrigated grass. **(Remove this note and combine with irrigated grass if unirrigated mix goal is a visually green grass with some irrigation during drought periods.)**
- 3.4.4 Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.
- 3.4.5 Postpone fertilizing until next spring if application falls within four week period prior to expected end of growing season.
- 3.5 Seed Protection on Slopes
- 3.5.1 Cover seeded slopes where slope is 3:1 or steeper with turf establishment blanket. Roll blanket down over slopes without stretching or pulling.
- 3.5.2 Lay blanket smoothly on soil surface, burying top end of each section in narrow 150 mm trench. Leave 300 mm overlap from top roll over bottom roll. Leave 100 mm overlap over adjacent section.
- 3.5.3 Secure blankets with pins as specified by the blanket manufacturer.
- 3.5.4 If Hydro-mulching ensure the mulch and process of application have been approved by the consultant and City prior to application.
- 3.6 Maintenance during Grass Establishment
- 3.6.1 Ensure maintenance equipment suitable to Consultant.
- 3.6.2 Perform operations from time of seed application until acceptance by Consultant.
- 3.6.3 Keep soil moist during germination period and adequately water grassed areas until accepted by Consultant.
- 3.6.4 Apply water to ensure moisture penetration of 75 to 100 mm. Control watering to prevent washouts.
- 3.6.5 Repair and reseed dead or bare spots to satisfaction of Consultant.
- 3.6.6 Remove garbage from areas to be cut.

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- 3.6.7 Cut grass when it reaches height of 100 mm and cut to height of 75 mm.
  - 3.6.8 Maintain grassed areas free of pests and disease utilizing acceptable integrated pest management practises.
  - 3.6.9 Maintain grassed areas free of **perennial** weeds and unwanted grasses by mechanical means or spot-spraying 4-6 weeks after germination. Blanket spraying is to be considered when perennials weeds become denser than 50% of the area.
  - 3.6.10 Apply Kilex® (or other dicamba and picloram solutions) near trees and shrubs only with prior approval of Consultant.
  - 3.6.11 If under a one year maintenance contract, **annual** weeds do not need to be removed until maintenance acceptance, but mowing of flower heads prior to setting seed must be done. If substantial performance marks the end of the contract, annual weeds do need to be removed prior to acceptance.
  - 3.6.12 If chemical means are used, comply with Section 02282 - Chemical Vegetation Control.
  - 3.6.13 Fertilize seeded areas as noted in Fertilizer program.
- 3.7 Substantial Performance
- 3.7.1 Areas will be considered substantially performed provided that seeded areas are properly established and:
    - .1 Turf is free of eroded, bare or dead spots and 98% free of weeds.
    - .2 No surface soil is visible when grass has been cut to height of 50 mm.
    - .3 Grass areas have been cut at least twice, the last cut being 50mm rather than 75mm and carried out within 24 hours of acceptance.
    - .4 Areas have been fertilized twice.
  - 3.7.2 Notwithstanding the time of issuance of certificate(s) of completion, areas seeded in fall will be considered substantially performed the following spring one month after start of growing season provided acceptance conditions are fulfilled.
- 3.8 Maintenance during Warranty Period
- 3.8.1 Perform operations from time of Substantial Performance until end of warranty period, which is one year unless otherwise stated in the tender documents.
  - 3.8.2 Perform all operations noted in “Maintenance during Establishment” Section 3.6.
  - 3.8.3 Water irrigated grass at weekly intervals, if required, to obtain optimum soil moisture conditions to depth of 100 mm.
  - 3.8.4 Do not water unirrigated areas unless there is drought stress or less than 25mm (1”) of rain for four weeks.
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- 3.8.5 Water unirrigated areas that are to remain green every 2 weeks to obtain optimum moisture conditions to depth of 100mm.
- 3.8.6 Fertilize seeded areas as noted in fertilizer program and include in maintenance operations all areas indicated in drawings, including sod placed by others.
- 3.9 Maintenance Acceptance
  - 3.9.1 Maintenance Acceptance will occur at the end of the warranty period, which is one year from Substantial Performance unless otherwise stated in the tender documents.
  - 3.9.2 Turf is free of eroded, bare or dead spots and 98% free of all weeds.
  - 3.9.3 No surface soil is visible when grass has been cut to height of 75 mm.
  - 3.9.4 Last cut has been carried out within 24 hours of maintenance acceptance.
  - 3.9.5 Areas have been fertilized three times according to fertilization program, unless otherwise stated in the tender documents (See 3.4).