

13. Landscaping Standards – Seed and Sod

PART I – DESIGN

Refer to Section 8.0.

PART II – GENERAL

13.1 Examination

- 13.1.1 Report to the Town, in writing, any conditions or defects encountered on the site before or during any construction upon which the work of this section depends and which may adversely affect its performance.
- 13.1.2 Do not commence work until those conditions or defects have been investigate and corrected.
- 13.1.3 Commencement of work shall imply acceptance of existing surfaces and conditions and no claims for damages or extras resulting from such conditions or defects will be accepted later, except in cases where such conditions could not have been known prior to commencing work.

13.2 Samples

- 13.2.1 Samples of grass seed may be requested for approval by the Town.
- 13.2.2 Retain approved samples on site until work has been inspected.
- 13.2.3 All work shall confirm to approved samples.

13.3 Product Delivery, Storage, and Handling

- 13.3.1 Deliver seed in the original containers, tagged with identification as to the analysis of the seed mixture, percentages of seed, year of production, net weight, and date.
- 13.3.2 Deliver seed to the site only when ready for seeding.
- 13.3.3 During transportation, protect sod with tarpaulins to prevent sun scalding and drying out, and to ensure arrival in the site in a healthy condition.
- 13.3.4 All manufactured items subject to deterioration shall be stored in a weatherproof place on site in such a way that their effectiveness is not impaired.
- 13.3.5 Sod must be installed on the day of arrival at the site. If delays in installation occur due to weather, protect sod on the site from sun, keep moist, and store in a cool location until installation.
- 13.3.6 Handle sod carefully to prevent tearing or breaking.
- 13.3.7 Fertilizer shall be delivered mixed, in standard size unopened containers, showing weight, analysis, and name of manufacturer. These containers shall be stored in a weatherproof place to keep the fertilizer dry.
- 13.3.8 Follow manufacturer's delivery, storage, and handling instructions.

13.4 Substitution

- 13.4.1 All requests for substitutions of seed mixes shall be vetted through the Consultant. Such requests shall be forwarded to the Town for review and approval prior to installation.

13.5 Inspection

- 13.5.1 The Town will inspect all seed and sod installations.
- 13.5.2 Prior to the commencement of installation, all materials may be inspected and approved whether at the source of local supply or on site at the discretion of the Town. Previous approval will not impair the right of the Town during the course of construction to reject sod which has been damaged or which, in any way, does not conform to the specifications.
- 13.5.3 Give timely notice, in writing, to the Town when materials are available for inspection.
- 13.5.4 At the time of inspection, all turf shall be alive and in a healthy, satisfactory growing condition.
- 13.5.5 Remove all rejected materials from site immediately.

PART III - PRODUCTS

13.6 Grass Seed

- 13.6.1 All grass seed mixes shall have a minimum purity of 98% and minimum germination of 95%.
- 13.6.2 All seed must be from a recognized seed firm having membership in the Canadian Seed Trade Association. Seed must meet the requirements for the Seeds Act for Canada No. 1 grade seed and seed shall be certified No. 1 grade. The Town may request germination tests, purity tests, and/or weed seed analyses to confirm conformance.
- 13.6.3 Seed Mixes:

13.6.4 Acceptable cultivars:

Seed	Acceptable Cultivar
Kentucky Bluegrass	A34, Able 1 Alpine, America, Banff, Baron, Challenger, Cheri, Cynthia, Midnight, Nugget, Ram 1, Touchdown, Washington
Creeping Red Fescue	Jasper, Fortress, Boreal, Shademaster, Flyer
Wheat Grass	AEC Hillcrest Awned, Elbee Northern, Walsh Western Streambank, Sodar Streambank
Perennial Ryegrass	Fiesta II, Palmer, Manhattan

13.7 Sod

13.7.1 Sod shall conform to the specifications of the Canadian Nursery Sod Growers of Landscape Alberta Nursery Trades Association, be vigorous and healthy with a strong fibrous root system, free from disease, insect pests, stones, burns, dry or bare spots, and tears.

- a. Sods shall be machine stripped at a uniform thickness of 15 mm (± 5 mm), delivered and installed within a period of 24 hours, unless a suitable preservation method is authorized prior to delivery. Sod shall be thickness determined at the time of stripping and shall exclude top growth and thatch.
- b. Sod shall conform to the following mix:

Seed	Percent of Mixture
Kentucky Bluegrass ¹	70-90%
Creeping Red Fescue	10-30%

¹ – Must contain a minimum three certified Kentucky Blue grass cultivars.

- c. Other grasses and clover shall not be apparent in the sod and there shall be no more than one broadleaf weed or ten other weeds for every 45 m².
- d. Wooden pegs required to hold sod in place shall have dimensions of approximately 15 mm x 35 mm x 300 mm. Metal pegs will not be accepted.

13.8 Binder

13.8.1 Use Turfmaster Hydro Seal or equivalent, compatible binder additive at the manufacturer’s recommended rate, sufficient to mix a consistent slurry.

13.8.2 Binder shall be mixed and supplied by a recognized supplier and shall have tested rates of purity.

13.9 Mulch

13.9.1 Mulch shall be wood cellulose fibre containing no contaminants.

- a. Fibre shall be supplied by a recognized supplier and shall a certified weight and composition.
- b. Minimum application rate is 16.0 kg of air dry fibre per 100 m².
- c. Fibre shall be measured as it is fed into the seeder.

13.10 Fertilizer

13.10.1 Use standard commercial fertilizers with guaranteed chemical analyses.

13.10.2 Fertilizers shall be clearly labeled and supplied in unopened, moisture-proof containers.

13.10.3 Fertilizer requirements are as follows:

Type 1 – Rate 3.5 kg/100 m²	
Total Nitrogen	19%
Available Phosphoric Acid	19%
Potash	19%
Type 2 – Rate 3.5 kg/100 m²	
Total Nitrogen	10%
Available Phosphoric Acid	30%
Potash	10%
Type 3 – Rate 3.5 kg/100 m²	
Ammonia	12%
Phosphate	51%
Sulphate	0%

13.10.4 Fertilizers shall be granular, water-soluble type.

13.10.5 The Town may require changes to the fertilizer feed rates if an analysis of the topsoil shows this to be necessary.

13.11 Water

13.11.1 Water shall be clean and free of any substance that may inhibit vigorous growth of the plants.

13.11.2 The Contractor prior to submission of his/her bid or quotation shall investigate the type and distance of water supply available.

13.11.3 A permit shall be required if water is to be obtained from a Town hydrant.

PART IV – EXECUTION

13.12 Preparation

13.12.1 Remove weeds and debris from topsoil.

13.12.2 Verify grades and check that topsoil has been placed as required.

13.12.3 Notify the Town prior to commencing seeding or sodding operations.

13.12.4 Apply fertilizer according to the manufacturer's instructions or as directed by the Town.

13.12.5 Apply fertilizer with a spreader at the designated rate.

13.12.6 Mix fertilizer thoroughly into the upper portion of the topsoil.

13.12.7 Float and level out the finished topsoil surface.

13.13 Seeding

13.13.1 Seeding or sodding must be done between May 1 and September 30, unless otherwise approved by the Town in writing depending on weather conditions.

13.13.2 Do not seed when prepared topsoil is covered with frost, snow, or standing water.

13.13.3 Conduct seeding operations in low wind conditions only. Do not carry out seeding operations when wind velocities pose the risk to cause seed mix to be blown. Suspend and delay seeding operations if the Town determines wind conditions are unsuitable.

13.13.4 Proceed with seeding operations in accordance with sound horticultural practices.

13.13.5 Hand broadcast seeding is unacceptable except for site-specific repair work and pre-authorized work in naturalization areas.

13.13.6 Mechanical Seeding

- a. For slopes flatter than 3H:1V, apply Parks and Boulevards Mix, unless otherwise specified, by mechanical dry spread (Brillion or Cyclone type) at a rate of 24 kg/1,000 m².
- b. Apply in two passes, each pass at a rate of 12 kg/1,000 m² and perpendicular to each other.
- c. Lightly roll seeded area after seed application is complete.
- d. Spread Type 3 fertilizer evenly over the area and at the rate specified.
- e. Thoroughly harrow the site after fertilizing.

13.13.7 Hydro Seeding

- a. For slopes 3H:1V or steeper, apply Naturalization and Low Maintenance Mix, unless otherwise specified, by hydro seeder.
- b. Mix seed with water, mulch, and fertilizer in the following application rates:

Ingredient	Quantity
Grass Seed	2.0 kg/100 m ²
Mulch	16 kg/100 m ²
Water	160 L/100 m ²
Fertilizer	3.5 kg/100 m ²

- c. Thoroughly mix seed, water, mulch, fertilizer, and binder (where specified) in a slurry.
- d. Uniformly apply the slurry mixture and cover with an acceptable mulch.

13.13.8 Seed Germination, Dry Seed, and Hydro Seed Applications

- a. If 95% of seed fails to germinate within two (2) growing months, re-cultivate and re-seed until germination takes place.
- b. Approximately six (6) weeks after germination, apply supplementary fertilizer 27-14-0 at a rate determined by topsoil analysis, or such other fertilizer as may be required by the Town.

13.14 Sodding

13.14.1 Firm the sod-bed by rolling before application.

13.14.2 Thoroughly irrigate the soil prior to placing sod. Sod shall not be laid on soil that is dry and powdery.

13.14.3 Cut sod by suitable methods and in accordance with the recommendations of the Landscape Alberta Nursery Trades Association.

13.14.4 Handle sod carefully when loading and installing to prevent tearing or breaking.

13.14.5 Installation

- a. Lay sod evenly in staggered rows with edges and ends butted tightly. If sodding is required on any slope 3H:1V or steeper, sod may be pegged with short wooden pegs set flush with the ground, 25 pegs per 10m², to prevent sod from slipping.
- b. On slopes, lay sod with the longer dimension oriented downhill.
- c. Blend edges of sod with existing grass or cultivated areas.
- d. Where sod butt joins surface paving or other surface features (i.e. manholes, catch basins, sidewalks, curbs, driveways, roads), position the sod turf crown flush with the finished hard surface.
- e. Top dress seams as required with topsoil.

- f. Water the sod and upper 200 mm of topsoil with water spray. Do not cause erosion.
- g. Let sod and soil dry out sufficiently to prevent damage, and then roll sod with a roller to ensure good bonding between the sod and the topsoil, and to smooth out humps and depressions.
- h. Immediately after rolling, saturate sod and upper 200 mm of topsoil with fine spray. To prevent grass and soil from drying out, continue adequate watering for 8 to 10 days after laying, or until roots are well established.
- i. Four (4) weeks after laying, and following initial cutting, apply organic supplementary fertilizer 27-14-0 at a rate determined by topsoil analysis, or such other fertilizer as may be required by the Town.

13.15 Clean-up

13.15.1 Immediately after planting, remove all debris and excess material from the site, leaving the area neat and tidy. Clean all areas, which are contaminated as a result of planting operations.

13.15.2 Maintain all areas in a neat and tidy manner at all times until acceptance.

13.16 Construction Completion Inspection

13.16.1 At time of the construction completion inspection, all grassed areas shall have a healthy, full even stand of grass, free of diseases, weeds, thin, burned-out patches or non-flush joints and shall be not more than 65 mm in height.

13.17 Maintenance

13.17.1 During the Warranty Period, areas showing deterioration, bare spots, or thin areas shall be re-seeded or re-sodded. Seed shall be properly germinated and/or sod properly knitted prior to final inspection. Refer to Section 8.18.

13.18 Final Inspection

13.18.1 Final inspection of seeded or sodded areas will be made prior to the end of the Warranty Period.

13.18.2 At the time of inspection, all the areas shall be alive and in a healthy, satisfactory growing condition, and free from weeds. Any deficiency in this respect shall be remedied at the developer's expense.

13.18.3 Seeding/Sod

- a. Grass shall be cut to 65 mm at the time of the inspection throughout the area for which the FAC is sought.
- b. No bare soil visible when the grass is observed from a standing position, nor burned spots.
- c. Grass shall be free of disease and growing vigorously with no footprints, deep ruts, soil lumps or grass clippings visible.
- d. No restricted weeds, noxious weeds, or prohibited noxious weeds, as defined by the Weed Control Act of Alberta, shall be present. No more than one broadleaf weed or ten other weeds per 45 m².
- e. Sod has knitted and no cracks are visible between joints.

Third party damage that occurs within the maintenance period is the responsibility of the Developer.