

 Winnipeg PUBLIC WORKS DEPARTMENT • SERVICE DES TRAVAUX PUBLICS Engineering Division • Division de l'ingénierie	Effective Date: February 1st, 2022
	DIVISION 4
CW 3510 – R10	SODDING

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1. DESCRIPTION

1.1 General

1.1.1 This Specification shall cover the supply and placing of cultivated turfgrass sod in park areas and in boulevard and median areas adjacent to the pavement.

1.2 Referenced Standard Construction Specifications

1.2.1 CW 3110 – Sub-Grade, Sub-Base and Base Course Construction

1.2.2 CW 3540 – Topsoil and Finish Grading for Establishment of Turf Areas

2. MATERIALS

2.1 General

2.1.1 The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification. All sod supplied under this Specification shall be subject to inspection and testing by the Contract Administrator and/or the City's Parks Area Superintendent. There shall be no charge to the City for any materials taken by the Contract Administrator or the City's Parks Area Superintendent for inspection purposes.

2.1.2 Sod will be subject to tests for nitrate, phosphate, potassium, sulphate, pH, E.C. (salinity), mineral soil layer thickness and its organic matter content by a testing laboratory designated by the Contract Administrator.

2.1.3 Tests conducted to determine the thickness of the mineral soil layer of the sod and its percent of organic matter shall be done in accordance with standard operating procedures approved by the Contract Administrator for both receiving, and analysing sod samples.

2.1.4 Any sod placed on the Work Site that in the opinion of the Contract Administrator does not conform to the Specification detailed herein, shall be rejected by the Contract Administrator and replaced by and at the expense of the Contractor.

2.2 Topsoil

2.2.1 Topsoil shall be supplied in accordance with Clause 5.2 of CW 3540.

2.3 Turf Grass Sod

2.3.1 The Contractor shall supply turf grass sod with a mineral soil layer containing a minimum of seventy (70%) percent inorganic soil. Upon delivery or thirty (30) days following delivery, the salinity rating shall be less than 4.0 mm hos/cm on a saturated paste basis. The pH range shall be between 6.0 – 8.0. Sod supplied shall have been sown in nursery fields with Canada Certified No. 1 or Canada Certified No. 2 grass seed and mixed by percentage (%) of weight to meet the following certified seed blends or mixtures:

2.3.1.1 Athletic grounds and golf course fairways, sod shall contain a blend composed of:

2.3.1.1.1 One hundred (100%) percent Kentucky Bluegrass (100% Class 1 cultivars as specified in Clause 2.3.1.3, 3 cultivars in equal proportion).

2.3.1.2 For general park areas, boulevards, medians and interchange areas, sod shall contain:

2.3.1.2.1 A blend composed of one hundred (100%) percent Kentucky Bluegrass (100% Class 1 or Class 2 cultivars as specified in Clause 2.3.1.3, 3 cultivars in equal proportion); or

2.3.1.2.2 A mixture of ninety-five (95%) percent Kentucky Bluegrass (100% Class 2 cultivars as specified in Clause 2.3.1.3, 3 cultivars in equal proportion) and five (5%) percent Creeping Red fescue.

2.3.1.3 Wherever Kentucky Bluegrass is specified, the proportion of the cultivars to be included in the blend shall adhere to the following:

Class 1 Cultivars – specified blend of Class 1 cultivars shall consist of equal proportions of any three of the following:

Able 1	Absolute	Allure	Award	Baron
Bartitia	Blacksburg	Blackstone	Caliber	Challenger
Chateau	Estate	Explorer	Kelly	Liberator
Limousine	Midnight	Misty	Northstar	NuGlade
Pick 151	Pick 8	Platini	Quantum Leap	Rambo
Rugby II	Serene	Shamrock	SR 2000	Total Eclipse
Touchdown	Unique	VB 16015	Wildwood	

Class 2 Cultivars – specified blend of Class 2 cultivars shall consist of equal proportions of any three of the following:

A34	Abbey	Alpine	America	Apollo
Arcadia	Ascot	ASP 200	Banff	Baronie
Baruzo	Bluechip	Cardiff	Champagne	Chicago
Classic	Compact	Conni	Coventry	Crest
Cynthia	Dragon	Eclipse	Fortuna	Glade
Goldrush	Haga	Huntsville	Impact	Indigo
Jefferson	Kenblue	Langara	Lipoa	Livingston
Marquis	Mercury	Moonlight	Nimbus	NuBlue
NuStar	Odyssey	Park	Pepaya	Pick 3
Pick 4	Pick 855	Princeton 105	Raven	Rugby
Seabring	Sodnet	SR 2100	SR 2109	Washington

2.3.1.4 Any variations to the above referenced seed blends or mixtures shall be approved by the Contract Administrator prior to placement of sod.

2.3.1.5 Turf grass sod shall be free of disease, turf damaging insects and any grass

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specifies, strains or cultivars other than specified herein.

2.3.1.6 At the time of delivery, the turf grass sod shall:

- 2.3.1.6.1 Not contain more than ten (10) broadleaf weeds per fifty (50) square metres;
- 2.3.1.6.2 Have been mowed to a height of 50 mm prior to delivery and be of sufficient density that no surface soil will be visible;
- 2.3.1.6.3 Have a uniform inorganic soil layer thickness of not less than 12 mm and not greater than 19 mm and shall be consistent throughout all loads delivered to the work site;
- 2.3.1.6.4 Have the organic thatch layer within the sod not exceed an uncompressed thickness of 12 mm and in all cases, the final rolled and compacted topsoil/sod growing medium shall be maintained at not less than 100 mm in depth.

2.4 Herbicides

2.4.1 Herbicides shall be standard commercial products registered for sale and use in Canada under the Pest Control Products Act.

2.5 Insecticides

2.5.1 Insecticides shall be standard commercial products registered for sale and use in Canada under the Pest Control Product Act.

3. CONSTRUCTION METHODS

3.1 Site Safety and Traffic Control

- 3.1.1 Where work is to be done in boulevard and median areas adjacent to roadways, the Contractor shall maintain traffic and ensure that protection is afforded to the road user and that the Contractor's operations in no way interfere with the safe operation of traffic.
- 3.1.2 The Contractor shall supply, erect and maintain all applicable traffic control devices in accordance with the provisions of the latest edition of the Manual of Temporary Traffic Control in Work Areas on City Streets issued by the Public Works Department of the City of Winnipeg.

3.2 Site Grading

3.2.1 Site grading will be done and paid for in accordance with Specification CW 3110.

3.3 General

3.3.1 The Contractor shall not commence sodding operations until the finished topsoil surface has been inspected and approved by the Contract Administrator.

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3.3.2 The Contractor shall provide the Contract Administrator with a minimum of two working days notice for inspection of the finished topsoil surface.

3.4 Topsoil and Finish Grading

3.4.1 Preparation of the finished topsoil surface shall be completed in accordance with Specification CW 3540.

3.4.2 To prevent the formation of depressions or water pockets, the Contractor shall smooth out any undulations or irregularities in the topsoil surface prior to placing the sod.

3.5 Placement of Sod

3.5.1 The sod shall be placed evenly and closely packed together, leaving no open joints and no overlap on adjacent pieces of sod. Joints in adjacent rows shall be staggered, as shown in Standard Detail SD-243. A full row of sod, not less than 450 mm in width shall be placed along the perimeter of the sodded area, parallel to planting or walkway areas.

3.5.2 Where big roll sod is to be placed, the Contractor shall ensure that any reinforcement netting that may be used to assist with the harvesting and/or placement of the sod roll is removed before final placement of the sod.

3.5.3 On embankments, sod shall be placed lengthwise across the face of the slope. On slopes of 1 vertical to 3 horizontal (18 degrees) or steeper, in every second row on the slope and at the foot of the slope, each piece of sod shall be pegged with two minimum 250 mm long wooden pegs driven into the soil layer of the sod.

3.5.4 For slopes of 1 vertical to 2 horizontal (26 degrees) or steeper, each piece of sod in every row shall be pegged as indicated above.

3.5.5 When abutting an existing turfed area, cut the existing turf so as to form a straight joint with the new sodded area.

3.5.6 Small, broken or irregular pieces of sod will be rejected.

3.5.7 All visible joints, low, bare or dead spots shall be repaired to the satisfaction of the Contract Administrator prior to the commencement of the Thirty (30) Day Maintenance Period described in Clause 3.7.

3.5.8 Sodding operations shall be completed within two working days after placing the sod. This shall be deemed to include watering, rolling, and repairing any visible joints and low, bare or dead spots within the sodded area.

3.5.9 Sod shall not be placed in a frozen state, or when any other conditions unfavourable to the successful transplanting of sod exist.

3.5.10 The Contractor shall not place sod after September 15 unless the Contract Administrator gives written approval to proceed.

3.5.11 Should the Contract Administrator provide written approval to, or direct the Contractor to

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place sod after September 15, and termination of the sod maintenance period is not achieved in accordance with Clause 3.10 in that same year, the Contractor will not be held responsible for sod damage over the winter due to winter-kill, ice damage, sand/salt applications on adjacent streets or from snow removal or spring clean up equipment. When the Contract Administrator provides written approval, or direction to the Contractor to place the sod after September 15, the City will assume all costs related to the spring replacement of sod damaged over the winter provided that the layover was due only to the late season start and not defective sod or maintenance not conforming to this Specification.

3.5.12 Where the Contractor places sod prior to September 15, and termination of the sod maintenance period is not achieved in accordance with Clause 3.10 in that same year, the Contractor shall be responsible for replacement of any sod damaged over the winter due to winter-kill, ice damage, sand/salt applications on adjacent streets, or from snow removal or spring clean up equipment.

3.6 Watering and Rolling

3.6.1 Immediately after placement of sod, the Contractor shall water the area in sufficient quantities and frequencies required to obtain root development and sod growth. All costs to provide water for sodded areas shall be borne by the Contractor. These costs may include hydrant permit and meter rental fees.

3.6.2 After the sod and topsoil has dried sufficiently to prevent damage, the areas shall be rolled (the edges pounded if necessary) with a mechanical roller minimum weight of 220kg and minimum width of 760mm to form a uniform even surface and level with adjoining existing grades, sidewalks and curbs. Heavy rolling to correct irregularities in grade will not be permitted. Sodded areas near existing fixtures that are unable to be rolled shall be thoroughly tamped to ensure a good bond between topsoil and sod.

3.7 Commencement of Thirty (30) Day Maintenance Period

3.7.1 Immediately after the sod has been placed to the satisfaction of the Contract Administrator, the Contractor shall provide and pay for continuous maintenance of the sodded area until the criteria specified for termination of the maintenance period in Clause 3.10 has been met.

3.7.2 The Contract Administrator will not allow the Thirty (30) Day Maintenance Period to commence until the following requirements are met:

3.7.2.1 Written approval has been granted by the Contract Administrator to place sod if after September 15.

3.7.2.2 The nursery sod supplied meets the seed mixture requirement specified in Clause 2.3.

3.7.2.3 The sod is free of bare and dead spots.

3.7.2.4 The nursery sod does not contain more than 10 broadleaf weeds per 50 square metres.

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- 3.7.2.5 Sodded area has been rolled to form a firm, uniform even surface.
- 3.7.2.6 The sod has sufficient shoot density that no surface soil is visible within sod.
- 3.7.2.7 The height of the top growth of the sod is between 50 – 60 mm.
- 3.7.2.8 The sodded area is free of any visual obstructions such as leaves
- 3.7.2.9 Sodded area is free of any turf damaging insects.
- 3.7.3 Any deficient, damaged or vandalized areas shall be resodded by the Contractor within three working days after receiving notification from the Contract Administrator and the area so resodded, shall be further maintained until it meets the criteria specified in Clause 3.10.
- 3.7.4 In situations where the start of the Thirty (30) Day Maintenance Period is not granted by the Contract Administrator before the end of a growing season, the Thirty (30) Day Maintenance Period will commence on May 15 of the following year or such date as is mutually agreed upon by all parties, at which time all sodded areas must meet the requirements listed above.

3.8 Maintenance of Sodded Area

- 3.8.1 The Contractor shall mow the turf area at regular intervals to a height of between 50 - 60 mm. Do not cut more than thirty (30%) percent of the grass height at any one mowing. Remove clippings that will smother grassed areas.
- 3.8.2 The Contractor shall water sodded areas in sufficient quantities and frequencies required to maintain sod growth. All costs to provide water for sodded areas shall be borne by the Contractor. These costs may include hydrant permit and meter rental fees.
- 3.8.3 The Contractor shall provide adequate protection of sodded areas from erosion, pedestrian and mechanical damage, and shall only remove such protection after the sodded area has been accepted by the City's Parks Area Superintendent or designate.
- 3.8.4 The Contractor shall clean and remove all dead vegetation, leaves, debris and snowmold from turf areas to encourage healthy and uniform grass growth.
- 3.8.5 Given the need for weed control, the Contractor shall have in his possession a Pesticide Applicator's License and a Pesticide Use Permit for pesticide applications related to this Specification.
- 3.8.6 The Contractor shall apply herbicide when broadleaf weeds start developing in competition with grass. Apply herbicide in accordance with the City of Winnipeg Weed Control Standards and Procedures, manufacturer's instructions and the Manitoba Agriculture Guide to Crop Protection and Herbicide Recommendations for Landscape Applicators, latest editions and the following criteria:
 - 3.8.6.1 Use 2,4-D Amine or MCPA Amine herbicide for susceptible broadleaf weeds.

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- 3.8.6.2 Use a mixture containing 2,4-D Amine or MCPA Amine, Mecoprop and Dicamba for 2,4-D resistant plants.
- 3.8.6.3 Do not apply to newly seeded turf until after the second or third mowing.
- 3.8.6.4 Do not water within 24 hours after application.
- 3.8.6.5 Apply when winds are less than 20 km/h and air temperature is above 10° (degrees) Celsius.
- 3.8.6.6 Avoid use of pure Dicamba solutions near trees and shrubs.
- 3.8.7 Given the need for insect control, the Contractor shall have in his possession a Pesticide Applicator's License and a Pesticide Use Permit for pesticide applications related to this Specification. Use standard commercial products in accordance with the manufacturer's instructions and the Manitoba Agriculture Guide to Crop Protection (latest edition) for the particular insect/insects involved.
- 3.8.8 Copies of the Pesticide Applicator's License and the Pesticide Use Permit must be submitted to the Contract Administrator prior to commencement of pesticide application.
- 3.8.9 All persons handling pesticides shall be fully aware of toxicological rules and regulations governing their use.
- 3.8.10 The Contractor shall inform the Contract Administrator immediately of any dangerous occurrence.

3.9 Spring Clean Up

- 3.9.1 Where termination of the sod maintenance period has not been achieved in accordance with Clause 3.10 prior to the end of a growing season, the Contractor shall complete all operations related to the clean up of the work area in the following spring. This shall include the cleaning and removal of all dead vegetation, leaves, debris, snowmold and any sand or gravel resulting from winter sanding/deicing operations from turf areas to encourage healthy and uniform grass growth.
- 3.9.2 All costs for spring clean up operations shall be borne by the Contractor if in the previous year, the termination of the sod maintenance period, in accordance with Clause 3.10 was not achieved in that same year or where the damage was due to defective sod or maintenance not conforming to this Specification.

3.10 Termination of Maintenance Period

- 3.10.1 The Contract Administrator will terminate the sod maintenance period after the following criteria has been met:
 - 3.10.1.1 The work site is clean and the sodded area is free of any visual obstructions such as leaves

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- 3.10.1.2 The sod is free of bare and dead spots and without more than 10 broadleaf weeds per 50 square metres Do not apply to newly seeded turf until after the second or third mowing.
- 3.10.1.3 Grass roots are well anchored into the underlying topsoil and the sodded area has established into a healthy, vigorously growing condition.
- 3.10.1.4 Sodded areas are free of visible joints.
- 3.10.1.5 The sod has sufficient shoot density that no surface soil is visible when the grass has been cut to a height of 50 – 60 mm.
- 3.10.1.6 Sodded area has been cut to a height of 50 – 60 mm within two working days before the final inspection.
- 3.10.1.7 Sodded area is free of any turf damaging insects.

3.10.2 If the sodded area does not meet the above criteria, the deficient area shall be resodded within three working days after receiving notifications from the Contract Administrator and maintained by and at the expense of the Contractor in accordance with Clauses 3.7 and 3.8 herein.

3.10.3 In situations where the termination of the maintenance period is not granted by the Contract Administrator before the end of a growing season, the maintenance period will commence as described in Clause 3.7

3.11 Site Clean Up

3.11.1 During both the placement and maintenance of sod, all sidewalks, streets, approaches, driveways and properties near the sodding operation shall be kept clean at all times by the Contractor.

3.11.2 Upon completion of the project, the Contractor shall immediately remove all excess material, debris and equipment from the work site.

4. METHOD OF MEASUREMENT

4.1 Sodding

4.1.1 Supply, placement and maintenance of sod will be measured on an area basis. The area to be paid for shall be the total number of square metres placed and maintained in accordance with this Specification and accepted by the **City's Parks Area Superintendent or designate**, as computed from measurements made by the Contract Administrator. No payment will be made for sod placed outside of the limits of placement as directed by the Contract Administrator.

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5. BASIS OF PAYMENT

5.1 Sodding

5.1.1 Supply, placement and maintenance of sod will be paid for at the Contract Unit Price per square metre for the “Items of Work” listed here below, measured as specified herein, which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification. Payment for sodding shall be in accordance with the following:

5.1.1.1 Seventy-Five (75%) of quantity following supply and placement.

5.1.1.2 Remaining twenty-five (25%) percent of quantity following termination of the maintenance period.

Items of Work:

Sodding

- i.) Width < 600 mm
- ii.) Width ≥ 600 mm