

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            31 05 13 – Soil Materials

**1.2                REFERENCES**

- .1            ASTM International
  - .1            ASTM C136-[06], Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .2            ASTM C117-[04], Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
  - .3            ASTM D4318-[05], Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
  - .4            ASTM D698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
- .2            Canadian General Standards Board (CGSB)
  - .1            CAN/CGSB-8.1-[88], Sieves, Testing, Woven Wire, Inch Series.
  - .2            CAN/CGSB-8.2-[M88], Sieves, Testing, Woven Wire, Metric.

**1.3                ADMINISTRATIVE REQUIREMENTS**

- .1            Access: allow access to building at all times.
- .2            Scheduling: co-ordinate paving schedule to minimize interference with normal use of premises.

**1.4                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.

**1.5                DELIVERY, STORAGE AND HANDLING**

- .1            Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2            Store crushed stone as and where directed by Contract Administrator.

**Part 2            Products**

**2.1                MATERIALS**

- .1            Granular stone paving: in accordance with the following requirements:
  - .1            Crushed black granite aggregate stone, 6mm (1/4”) particle size, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

- .2 Granular base: in accordance with the following requirements and City of Winnipeg Specification CW 3110 & 3150:
  - .1 Crushed stone or gravel: hard, durable, angular particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
  - .2 Minimum requirement to be 19mm (3/4") down limestone to a depth of 150mm (6").
- .3 Edging: to be "Snap Edge" type as per City of Winnipeg Specification CW 3330.
- .4 Geotextile filter: to City of Winnipeg Specification CW 3130.

**Part 3 Execution**

**3.1 SUBGRADE**

- .1 Ensure subgrade preparation conforms to levels and compaction required, to allow for installation of granular base.

**3.2 GRANULAR BASE LAYER**

- .1 Granular base material thickness: 150 mm minimum.
- .2 Spread and compact granular base material in uniform layers not exceeding 100mm compacted thickness.
- .3 Compact to a density of not less than 100% Standard Density in accordance with ASTM D698.

**3.3 GEOTEXTILE FILTER**

- .1 Install geotextile filter in accordance with manufacturer's specifications. Install over compacted granular base layer.

**3.4 GRANITE AGGREGATE STONE TOP FINISH LAYER**

- .1 Apply 50mm (2") thick over geotextile filter. Spread to a level, even consistency.

**3.5 EDGING**

- .1 Install edging true to grade, in location, layout as indicated.

**3.6 FIELD QUALITY CONTROL**

- .1 Inspection and testing of crushed stone paving: carried out by designated testing laboratory.
- .2 Costs of tests: paid under Cash Allowance.

**3.7 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

- .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**3.8 PROTECTION**

- .1 Prevent damage to buildings, landscaping, curbs, sidewalks, trees, fences, roads and adjacent property.
  - .1 Repair damages incurred.

**END OF SECTION**

**Part 1 General**

**1.1 SECTION INCLUDES:**

- .1 Replacement of sodding which has become damaged as a result of construction within the scope of work boundary shown on Drawings.
- .2 Fertilizing.
- .3 Sod installation.
- .4 Maintenance.

**1.2 RELATED SECTIONS**

- .1 Section 31 05 13 - Soil Materials.
- .2 Section 32 15 40 – Crushed Stone Surfacing

**1.3 REFERENCES**

- .1 ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.
- .2 City of Winnipeg Standard Construction Specification – CW 3510 Sodding.
- .3 City of Winnipeg Standard Construction Specification – CW 3540 Topsoil and Finish Grading for Establishment of Turf Areas.

**1.4 DEFINITIONS**

- .1 Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

**1.5 ADMINISTRATIVE REQUIREMENTS**

- .1 Coordination:
  - .1 Coordinate with other work having a direct bearing on work of this section.
  - .2 Coordinate with installation of underground sprinkler system piping and watering heads.
- .2 Sequencing: Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

**1.6 SUBMITTALS FOR INFORMATION**

- .1 Section 01 33 00: Submission procedures.

**1.7 CLOSEOUT SUBMITTALS**

- .1 Section 01 78 00: Closeout Submittals.
- .1 Maintenance Contracts:
  - .1 Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition for two (2) cuttings.
- .2 Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

**1.8 QUALITY ASSURANCE**

- .1 To the City of Winnipeg Standard Construction Specification – CW 3510 Sodding.
- .2 Sod: Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
- .3 Submit sod certification for grass species and location of sod source.
- .4 Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the Province of Manitoba.
- .5 Installer: Company approved by the sod producer.
- .6 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.

**1.9 REGULATORY REQUIREMENTS**

- .1 Comply with regulatory agencies for fertilizer and herbicide composition.
- .2 Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

**1.10 DELIVERY, STORAGE, AND PROTECTION**

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Protect exposed roots from dehydration.
- .3 Do not deliver more sod than can be laid within 24 hours.
- .4 At the time of delivery, the turf grass sod shall:
  - .1 Not contain more than ten (10) broadleaf weeds per fifty (50) square metres;
  - .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;
  - .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;

- .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.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 To City of Winnipeg Standard Construction Specification – CW 3510 Sodding.
- .2 Sod: cultivated grass sod; type indicated below; with strong fibrous root system, free of stones, burned or bare spots; 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 mmhos/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:
  - .1 Kentucky Blue Grass Type: 100 percent (100% Class 1 or Class 2 cultivars as specified in Clause 5.3.3, 3 cultivars in equal proportion); or
  - .2 Kentucky Blue Grass Type: 95 percent (100% Class 2 cultivars as specified in Clause 5.3.3, 3 cultivars in equal proportion) and five (5%) percent Creeping Red fescue.
- .3 Turf grass sod shall be free of disease, turf damaging insects and any grass species, strains or cultivars other than specified.
- .4 Topsoil: As specified in Section 31 05 13.
  - .1 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.
  - .2 The Contractor shall not commence sodding operations until the finished topsoil surface has been inspected and approved by the Contract Administrator.
  - .3 The Contractor shall provide the Contract Administrator with a minimum of two working days notice for inspection of the finished topsoil surface.
- .5 Fertilizer: Type recommended for soil and grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil; to City of Winnipeg Standard Construction Specification – CW 3540 Topsoil and Finish Grading for Establishment of Turf Areas.
- .6 Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

### **2.2 ACCESSORIES**

- .1 Accessories: To City of Winnipeg Standard Construction Specification – CW 3510 Sodding.
- .2 Herbicide: Herbicides shall be standard commercial products registered for sale and use in Canada under the Pest Control Products Act.

- .3 Insecticides: Insecticides shall be standard commercial products registered for sale and use in Canada under the Pest Control Products Act..

### **2.3 SOURCE QUALITY CONTROL**

- .1 Section 01 45 00: Quality Control.
- .2 To City of Winnipeg Standard Construction Specification – CW 3510 Sodding.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Section 01 71 00: Examination and Preparation - Verify existing conditions before starting work.
- .2 Verify that prepared soil base is ready to receive the work of this section.

### **3.2 FERTILIZING**

- .1 Apply fertilizer in accordance with manufacturer's written instructions.
- .2 Apply after smooth raking of topsoil and prior to installation of sod.
- .3 Apply fertilizer no more than 48 hours before laying sod.
- .4 Mix thoroughly into upper 50 mm (2 inches) of topsoil.
- .5 Lightly water to aid the dissipation of fertilizer.
- .6 City of Winnipeg Standard Construction Specification – CW 3540 Topsoil and Finish Grading for Establishment of Turf Areas.

### **3.3 LAYING SOD**

- .1 To City of Winnipeg Standard Construction Specification – CW 3510 Sodding.

### **3.4 MAINTENANCE**

- .1 To City of Winnipeg Standard Construction Specification – CW 3510 Sodding.
- .2 Mow grass at regular intervals to maintain at a maximum height of 50 - 60 mm. Do not cut more than 1/3 of grass blade at any one mowing.

### **3.5 SCHEDULES**

- .1 Refer to Drawings.

**END OF SECTION**