

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1           Asphaltic concrete paving.
- .2           Surface sealer.

**1.2                REFERENCES**

- .1           City of Winnipeg Standard Construction Specification – CW 3410-R9.

**1.3                PERFORMANCE REQUIREMENTS**

- .1           Paving: Designed for sidewalk use in accordance with the geotechnical report recommendations.

**1.4                SUBMITTALS FOR INFORMATION**

- .1           Section 01 33 00: Submittal Procedures.

**1.5                CLOSEOUT SUBMITTALS**

- .1           Section 01 78 00: Closeout Submittals.

**1.6                QUALITY ASSURANCE**

- .1           Perform Work in accordance with City of Winnipeg Standard Construction Specification CW3410-R9.
- .2           Mixing Plant: Conform to the City of Winnipeg Standard Construction Specification CW3410-R9.
- .3           Obtain materials from same source throughout.

**1.7                REGULATORY REQUIREMENTS**

- .1           Conform to applicable code for paving work on private property.

**1.8                ENVIRONMENTAL REQUIREMENTS**

- .1           Do not place asphalt when ambient air or base surface temperature is less than 4 °C, or surface is wet or frozen.

**Part 2            Products**

**2.1                MATERIALS**

- .1           Asphalt Cement: In accordance with City of Winnipeg standards.
- .2           Aggregate for Asphalt Mix: In accordance with City of Winnipeg standards.

- .3 Tack Coat: Emulsified asphalt. In accordance with City of Winnipeg standards.

## **2.2 ASPHALT PAVING MIX**

- .1 Use dry material to avoid foaming. Mix uniformly.
- .2 Type 1A Asphalt mix in accordance with City of Winnipeg standards.

## **2.3 SOURCE QUALITY CONTROL AND TESTS**

- .1 Mix design to conform with the City of Winnipeg Standards.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Section 01 71 00: Verify existing conditions before starting work.
- .2 Verify base conditions to Section 01 73 00.
- .3 Verify gradients and elevations of base are correct.

### **3.2 PREPARATION - PRIMER**

- .1 Apply primer in accordance with City of Winnipeg standards.

### **3.3 PREPARATION - TACK COAT**

- .1 Apply tack coat in accordance with City of Winnipeg standards.

### **3.4 PLACING ASPHALT PAVEMENT - SINGLE COURSE**

- .1 Install Work in accordance with City of Winnipeg standards.
- .2 Place asphalt within 24 hours of applying primer or tack coat.
- .3 Place to 50 mm compacted thickness.
- .4 Install catch basin frames and covers in correct position and elevation.
- .5 Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- .6 Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

### **3.5 TOLERANCES**

- .1 Section 01 73 00.
- .2 Flatness: Maximum variation of 10 mm measured with 3 m straight edge in accordance with the City of Winnipeg Standards.

.3 Scheduled Compacted Thickness: In accordance with the City of Winnipeg Standards.

.4 Variation From Design Elevation: In accordance with the City of Winnipeg Standards.

**3.6 FIELD QUALITY CONTROL**

.1 Section 01 45 00: Field inspection and testing.

.2 Take samples and perform tests in accordance with City of Winnipeg standards.

**3.7 PROTECTION OF FINISHED WORK**

.1 Section 01 78 40: Protecting installed work.

.2 Immediately after placement, protect pavement from mechanical injury until surface temperature has cooled to atmospheric temperature.

**END OF SECTION**

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1        Requirements and procedures for installing precast concrete unit pavers by hand or with mechanical equipment.

**1.2                RELATED SECTIONS**

- .1        Section 01 33 00 - Submittal Procedures.
- .2        Section 01 45 00 - Quality Control.

**1.3                REFERENCES**

- .1        City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.

**1.4                SHOP DRAWINGS**

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

**1.5                SUBMITTALS**

- .1        Product Data:
  - .1        Submit product data in accordance with Section 01 33 00 - Submittal Procedures

**1.6                QUALITY ASSURANCE**

- .1        Perform work in accordance with City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.
- .2        Refer to architectural drawings.

**1.7                MEASUREMENT PROCEDURES**

- .1        Measure precast concrete paving for payment in square metres.

**Part 2            Products**

**2.1                CONCRETE PAVERS**

- .1        Concrete pavers: to CSA-A231.2 and as follows:
  - .1        Manufacturer: Barkman
  - .2        Shape: BOARDWALK Series.
  - .3        Size: 4 11/16 and 3 1/2” widths x 14 1/4”, 12 11/16”, 11 1/8”, an 9 9/16” lengths. Thickness: 3 1/8”.

- .4 Colour: [Natural – Special Order], variations to homogenous pattern as acceptable to Contract Administrator.
- .2 Manufactured in moulds, with spacers, suitable for installation and delivered on site in cubes of laying panels.
- .3 Pigment in concrete pavers: to ASTM C979.

## **2.2 BEDDING AND JOINT MATERIAL**

- .1 Perform work in accordance with City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.

## **2.3 EDGE RESTRAINTS**

- .1 Edge restraints shall be plastic.
  - .1 Standard of Acceptance: Snap Edge by Barkman
  - .2 PVC or medium density polyethylene, industrial and flexible type edging, manufactured for use in paver installation, complete with connectors and pre-manufactured anchoring locations for spikes.
  - .3 Anchoring: install according to manufacturer's instructions.
- .2 Refer to Section 01 23 10 for alternative to Concrete Curb

## **2.4 CLEANING COMPOUND**

- .1 Clear, organic solvent, designed and recommended by manufacturer for cleaning concrete pavers of contamination encountered.
- .2 Acid based chemical detergent, designed and recommended by manufacturer for removal of contamination encountered on pavers.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

### **3.2 STRUCTURAL SURFACE**

- .1 Perform work in accordance with City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.

### **3.3 INSTALLATION OF EDGE RESTRAINTS**

- .1 Install restraints true to grade, in accordance with manufacturer's recommendations.

### **3.4 PLACING OF BEDDING MATERIAL**

- .1 Perform work in accordance with City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.

### **3.5 INSTALLATION OF CONCRETE PAVERS**

- .1 Perform work in accordance with City of Winnipeg Standard Construction Specification – CW 3335-R1- INSTALLATION OF INTERLOCKING PAVING STONES ON A LEAN CONCRETE BASE.
- .2 Lay pavers to pattern indicated on drawings.
- .3 Use appropriate end, edge and corner stones. Saw cut pavers to fit around obstructions and at abutting structures.
- .4 Use a low amplitude, high frequency plate compactor capable of at least 22 kN centrifugal compaction force to vibrate pavers into bedding sand.
- .5 Inspect, remove, and replace chipped, broken and damaged pavers.
- .6 Sweep dry joint sand material into joints.
- .7 Settle sand by vibrating pavers with plate compactor.
- .8 Continue application of joint material and vibrating of pavers until joints are full. Do not vibrate within 1 m of unrestrained edges of pavers.
- .9 Sweep off excess joint material when installation is complete.
- .10 Final surface elevations not to exceed plus or minus 10 mm under 3 m long straightedge.
- .11 Ensure conformance of final elevations.

### **3.6 CLEANING**

- .1 Carry out cleaning at times and conditions recommended by manufacturer of cleaning compound and as directed by Contract Administrator.
- .2 Remove and dispose of loose, extraneous materials from surfaces to be cleaned.
- .3 Apply cleaning compounds appropriate for removal of various contaminants encountered in accordance with manufacturer's recommendations.
- .4 Final surface to be free of contamination.

**3.7 PROTECTION OF FINISHED WORK**

- .1 Section 01 78 40: Protecting installed work.

**END OF SECTION**

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1      Fertilizing.
- .2      Sod installation.
- .3      Maintenance.

**1.2                RELATED SECTIONS**

- .1      Section 31 05 13 - Soil Materials.

**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 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:
  - .1 Kentucky Blue Grass Type: 100 percent (100% Class 1or 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 specifics, 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 70 00: 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**