

## **53.27 MAINTENANCE AND PREPARATION OF GRAVEL SURFACE ROADS AND SNOW REMOVAL AND ICE CONTROL ON GRAVEL AND PAVED SURFACES**

### **53.27.1 GENERAL**

The Work consists of using a grader to maintain gravel surface roads during the summer months, to prepare gravel roads prior to gravel surfacing and/or dust abatement, and to perform snow removal and ice control on gravel surfaced roads and paved surfaces during the winter months.

The road preparation work consists of preparation of the roadway and retrieving existing gravel, not rebuilding the roadway. Any major realigning or width changes will be undertaken as a separate activity.

### **53.27.2 MATERIALS**

In normal circumstances, no materials are required for this Work. The Contractor may be required to provide gravel for summer work. If gravel is required, it shall be supplied in accordance with Specification 53.29, "Spot Graveling", or Specification 53.30, "Gravel Surfacing".

### **53.27.3 EQUIPMENT**

The Contractor shall supply a motor grader in good working condition and meeting the following requirements:

- ! possesses a 150 horsepower engine or greater,
- ! is less than 12 years old. For smaller sections of gravelled roads, an older grader may be used if approved by the Engineer,
- ! is equipped with functioning headlights, tail lights, 4-way flashers, back up alarm, revolving light, slow moving symbol and warning flags on the outward edges of the cab and moldboard,
- ! is equipped with a functioning hour metre,
- ! is equipped with an adequate set of blades, scarifier teeth, shanks and Sandvik blades and bits (System 2000) or equivalent,
- ! is equipped with a wing mounted on the right hand side for winter operations,
- ! properly fitting tire chains available at the worksite,
- ! a left side wing when specified in the Special Provisions

The Engineer reserves the right to inspect the equipment prior to commencement of the Work and at any time during the term of the Contract to ensure the equipment meets all requirements. Equipment downgrades will not be accepted unless specifically authorized by the Engineer.

### **53.27.4 PROCEDURES**

#### **53.27.4.1 General**

For all work covered by this specification, graders shall travel in the same direction as the traffic at all times.

Material used or resulting from the performance of this work shall not be carried onto structures such as bridge decks, cattle guards and railway crossing flangeways. Should this occur, the Contractor shall remove the material from the structures at his expense. Backblading may be required to remove excess material from the edges of such structures. The Contractor shall ensure there is a smooth transition on and off of the structures.

After crossing railway tracks, bridge structures and cattle guards, the Contractor shall immediately inspect the flangeways of the railway track and the other structures for any damage and, in the event any damage is evident, the Contractor shall immediately inform the railway company roadmaster for railway damage and the Engineer for damage to all structures.

#### 53.27.4.2 Summer Maintenance of Gravel Roadways

The roadway shall be bladed to eliminate pot holes, washboards and ruts. The superelevation on curves shall be retained or restored over the entire roadway width.

At intersections, the crown on the main roadway shall be maintained through the intersection. The crown on the intersecting roadway shall be feathered back.

Whenever possible, windrowed material shall not be left on the roadway overnight. If windrowed material must be left on the roadway overnight, it must be signed and barricaded to maintain safety, as per TCS-B-1.5(a) in the Department's Traffic Accommodation in Work Zones manual.

The Contractor shall make every effort to minimize the loss of gravel from the roadway surface when performing the Work.

When required by the Engineer, the Contractor shall supply and erect the following signs when performing Summer Maintenance as per TCS-B-2.6(a) in the Traffic Accommodation in Work Zones manual.

<b>TEMPORARY SIGNS FOR SUMMER MAINTENANCE</b>					
<b>Sign No.</b>	<b>Message or Description</b>	<b>Size (Centimetre)</b>	<b>Shape</b>	<b>Colour</b>	
				<b>Message</b>	<b>Background</b>
WD-191	Grading 3km	75 x 75	Diamond	Black	Orange
WD-193	Grader Next 3km	75 x 75	Diamond	Black	Orange
WD-150	Loose Gravel	60 x 75	Rectangle	Black	White

Sign sizes, shapes, symbols and colours are to be in accordance with the latest Edition of the Traffic Accommodation in Work Zones manual.

### **53.27.4.3      Preparation of Gravel Roadways**

Gravel roadways shall be prepared such that the finished surface has defined shoulders, proper crown, and proper superelevation on curves. Loose gravel shall be retrieved from the roadway sideslopes and spread over the roadway in a manner that provides a finished surface which is smooth and free of any large rock and other objectionable material such as grass clumps and sods.

### **53.27.4.4      Winter Maintenance**

#### **53.27.4.4.1      Gravel Surface Roadways**

Snow shall be removed from the roadway surface and winging of sideslopes as directed by the Engineer. When necessary, ice shall be scarified or removed from the roadway surface.

When maintaining roadways in winter, high snowbanks, which limit visibility of traffic, shall be removed from areas near railway tracks, intersections, signs or other points designated by the Engineer.

#### **53.27.4.4.2      Paved Surface Roadways**

Snow shall be removed from the roadway surface and sideslopes as directed by the Engineer. When necessary, ice shall be scarified or removed from the roadway surface.

When maintaining roadways in winter, high snowbanks, which limit visibility of traffic, shall be removed from areas near railway tracks, intersections, signs or other points designated by the Engineer.

When it is determined by the Engineer and the Contractor that an arrowboard is required in order to safely perform this activity, the Contractor shall supply a mobile truck mounted arrowboard in accordance with Specification 53.38, Supply of Arrowboards for Traffic Control.

### **53.27.5      ACCEPTANCE CRITERIA**

Winter and summer maintenance shall be performed to the satisfaction of the Engineer. Preparation of gravel roadways will be evaluated through visual inspection by the Engineer and shall comply with the following:

- !      The roadway surface is smooth and free of ridges, rocks and other material that may be hazardous to traffic.
- !      All pot holes, washboards, ruts and grass clumps have been eliminated.
- !      Roadway shoulders are well defined.
- !      At intersections, the crown on the main roadway has been maintained through the intersection while the crown on the intersecting roadway has been feathered back.
- !      The finished surface has a uniform crown of between 3% and 5%.
- !      Superelevation on curves is retained or restored.
- !      Existing gravel material has been retrieved from the sideslopes as required.

### **53.27.6      RESPONSE TIME AND TIME TO COMPLETE**

#### **53.27.6.1      Summer and Winter Maintenance**

The hours, location and time to complete the Work will be determined by the Engineer in consultation with the Contractor.

The Contractor shall schedule his operations based on priority routes as identified by the Engineer.

**53.27.6.2 Preparation of Gravel Surface Roadways**

The Contractor shall complete the Work within 60 calendar days of the issuance of the Work Order. This Work is usually performed in conjunction with gravel surfacing or dust abatement activities.

**53.27.7 MEASUREMENT AND PAYMENT**

**53.27.7.1 General**

Measurement will be in hours (to the nearest ¼ hour) for the time the grader is engaged in the Work in accordance with the following:

- ! two 15 minute coffee breaks per day will be allowed (no deduction)

Payment will not be made for travel time or for time required to change blades, refuel or install chains.

**53.27.7.2 Summer Maintenance and Preparation of Gravel Roadways**

Payment will be made at the unit price per hour for "Maintain/Prepare Gravel Surface Roads (Grader)". This payment will be full compensation for supplying the grader complete with blades and all specified attachments, maintaining or preparing the roadway, signing, and all labour, equipment, tools and incidentals necessary to complete the Work.

If the Engineer and the Contractor agree that extra equipment, such as a water truck or gravel retriever, is required to complete the Work, payment for such equipment will be made as Extra Work in accordance with Specification 51.2, General (For Maintenance Work).

**53.27.7.3 Winter Maintenance**

**53.27.7.3.1 Gravel Surface Roadways**

Payment will be made at the unit price bid per hour for "Snow Removal and Ice Control on Gravel Surfaces (Grader)". This payment will be full compensation for supplying the grader complete with blades and all specified attachments, removing snow and/or ice from the roadway and all labour, equipment, tools and incidentals necessary to complete the Work.

**53.27.7.3.2 Paved Surface Roadways**

Payment will be made at the unit price bid per hour for "Snow Removal and Ice Control on Paved Surfaces (Grader)". This payment will be full compensation for supplying the grader complete with blades and all specified attachments, removing snow and/or ice from the roadway and/or slopes and all labour, equipment, tools and incidentals necessary to complete the Work.

If an arrowboard is required, payment will be made in accordance with Specification 53.38, Supply of Arrowboards for Traffic Control.

**53.27.8            WARRANTY**

There is no warranty period for this Work.