

## **53.14 ASPHALT PAVEMENT - DEEP PATCHING**

### **53.14.1 GENERAL**

Work consists of the vertical cutting, excavation (generally not exceeding 750 mm in depth) and disposal of existing pavement, excavation and disposal of unsuitable base and sub-base material, and repair based on a typical structure of 100 mm of compacted asphalt pavement, 300 mm of compacted granular base course and 350 mm of compacted suitable subgrade fill. Painting of interim traffic markings (spotting) and the referencing of the ends of no passing zones (barrier lines) are included in the Work.

### **53.14.2 MATERIALS**

The Contractor shall either “pickup” asphalt pavement and granular base course patching material from a source/plant to which the Department has access, or shall supply the patching material, as directed by the Engineer.

Asphalt concrete patching material supplied by the Contractor shall be produced in accordance with specification 53.11 Production of Asphalt Concrete Pavement. Granular base course material supplied by the Contractor shall be provided in accordance with 53.3, Granular Base Course. The use of other materials will be subject to the approval of the Engineer.

Generally, the Contractor shall have the option of supplying any of the specified mix types or an approved alternative. However, the Engineer reserves the right to require the use of a particular specified mix type when, in his opinion, the materials being proposed by the Contractor, are not suitable for the Work.

“Subgrade Fill” material shall be supplied by the Contractor from sources of his own choice. The source(s) used shall be situated in the local vicinity of the Work unless otherwise approved by the Engineer. In cases where the existing "excavated" material is suitable, it may be used as subgrade fill.

The Contractor shall supply prime and tack coat materials in accordance with Specification 55.5, Supply of Asphalt. The types and grades of liquid asphalts for prime and tack coats will be the choice of the Contractor unless otherwise specified by the Engineer.

Paint and glass beads shall be supplied by the Contractor and shall comply with the requirements of the Alberta Transportation Recognized Products List.

### **53.14.3 PROCEDURES**

The area to be repaired shall be marked out by the Engineer.

The Contractor shall vertically cut the designated area by using a method which does not disturb or damage the adjoining pavement. The unsuitable asphalt concrete pavement, base course and subgrade material shall be excavated to the required depth and disposed of in a suitable manner. The depth of excavation required to provide an effective "deep patch" will vary based on site conditions and will be determined during the performance of the Work. Generally, the depth required will not exceed 750 mm. Disposal of such material within the right-of-way will be subject to the approval of the Engineer. In certain situations it may be necessary to exceed the design repair structure depth of 750 mm in order to achieve an effective patch. In these situations, the required depth will be agreed to by the Contractor and the Engineer.

“Daylighting” the patch to the sideslope of the highway to maintain subsurface drainage, will be subject to the approval of the Engineer. This additional work shall be marked out by the Engineer and constructed with the standard deep patch repair structure.

Subgrade fill followed by granular base course shall be placed and compacted in the excavated area. Any loose debris or other objectionable material shall be removed from the finished surface of the granular base course. The exposed surface shall then be treated with a tack or prime coat. The tack coat shall extend a minimum distance of 150 mm beyond the edge of the repair area to allow for feathering of the patching material.

The asphalt concrete patching material shall be placed in uncompacted lifts not exceeding 80 mm in depth and compacted to produce a hard, stable surface which does not rut or otherwise distort under traffic loading. Patching material placed on the edges of a patch shall be feathered using rakes or lutes. Coarse material shall be removed from the edges of the patch.

Asphalt pavement material placed in a patch that is in a rutted depression in the direction of travel, shall be compacted such that the completed patch is level with the adjacent undisturbed pavement. In addition, the material on the edges of the patch shall be feathered to provide a smooth transition between the patch and the existing pavement surface.

#### **53.14.3.1 Interim Traffic Markings (Spotting)**

Where newly constructed patches obliterate existing painted roadway lines, the Contractor shall provide interim painted traffic markings (spotting) on the patched area immediately upon completion of the patching work. The end points of the barrier lines shall be marked or otherwise referenced where applicable.

All spotting shall be applied using the same colour paint as the permanent marking. Spots shall be 10 centimetres wide and 30 centimetres long, applied lengthwise to the road surface and shall delineate the travel lanes and/or edge lines as applicable. The maximum distance between spots shall be 15 metres on tangent sections and 7.5 metres on curves.

The spots and centerline barrier line reference marks shall be completely covered with glass beads at the time of painting.

#### **53.14.4 SAMPLING AND TESTING**

The Contractor shall retain copies of his supplier's QC testing results, and undertake the quality control and quality assurance testing as required by the QC/QA Program as shown in the Special Provisions. The Contractor shall supply material samples to the Engineer for QA (Audit) testing purposes when requested.

#### **53.14.5 ACCEPTANCE CRITERIA**

Evaluation of the Work will be based on a visual inspection by the Engineer. To be acceptable, the patch shall be of the required structure thicknesses, provide a dense, smooth and level transition between the treated area and the adjacent undisturbed pavement surface, and all debris and loose materials have been removed and properly disposed of.

#### **53.14.6 TIME TO COMPLETE**

In urgent situations, the Contractor shall complete the Work within 7 calendar days of the issuance of the Work Order. When the Work is required expeditiously but is not urgent, the Engineer will request the Work be completed within 30 calendar days. In all other cases, the Contractor shall complete the Work within 60 calendar days of the issuance of the Work Order.

#### **53.14.7 MEASUREMENT AND PAYMENT**

##### **53.14.7.1 General**

Measurement for asphalt pavement deep patching (up to 750 mm in depth), including any “daylighting” approved by the Engineer, will be in square metres of the surface area of the excavated hole/trench.

Measurement and payment for deep patches that require excavation greater than 750 mm in depth will be negotiated between the Engineer and the Contractor prior to commencing the Work.

Payment for hauling of new crushed aggregate and new asphalt concrete pavement from the closest source of acceptable material will be made in accordance with Specification 55.2, Hauling.

If a particular mix type is specified by the Engineer in the Work Order, and it is not readily available, the additional costs to the Contractor to supply that mix type will be paid as Extra Work.

Supplying and applying interim marking paint and glass beads will not be paid for separately but will be considered incidental to the Work.

Any damage caused to the roadway structure outside the patch area shall be repaired at the Contractor's expense.

### **53.14.7.2 Premium Payments**

In urgent situations where the Contractor is required to complete the Work within 7 calendar days of the issuance of the Work Order, an additional payment will be made at the unit price bid per occurrence for "Deep Patching - Premium". This payment will be full compensation for complying with the accelerated scheduling required to complete the Work, including accelerated scheduling for all related Work such as excavation and backfill, pit-run and granular base course.

In situations where the Contractor is required to complete the Work within 30 calendar days of the issuance of the Work Order, an additional payment will be made at the unit price bid per occurrence for "Deep Patching - Interim Premium". This payment will be full compensation for complying with the accelerated scheduling required to complete the Work, including accelerated scheduling for all related Work such as excavation and backfill, pit-run and granular base course.

### **53.14.7.3 Department Supply of Patching Materials**

Payment will be made at the unit price bid per square metre for "Asphalt Pavement - Deep Patching - Pick up and Place." This payment will be full compensation for cutting; excavating and disposing of materials; supplying, hauling, placing and compacting suitable subgrade fill; picking up, placing and compacting new granular base course material; supplying and applying prime or tack coat, picking up, placing and compacting new asphalt concrete pavement material, interim traffic markings; and all labour, equipment, tools and incidentals necessary to complete the Work.

### **53.14.7.4 Contractor Supply of Patching Materials**

Payment will be made at the unit price bid per square metre for "Asphalt Pavement - Deep Patching - Supply and Place." This payment will be full compensation for cutting; excavating and disposing of materials; supplying, hauling, placing and compacting suitable subgrade fill; supplying, placing and compacting new granular base course material; supplying and applying prime or tack coat, supplying, placing and compacting new asphalt concrete pavement material, interim traffic markings; and all labour, equipment, tools and incidentals necessary to complete the Work.

Payment for the supply of aggregate for asphalt concrete pavement and granular base course materials will be made in accordance with Specification 55.4, Supply of Aggregate.

## **53.14.8 WARRANTY**

The warranty period for this Work shall be 1 year.