
PART I - GENERAL

- 1.1 Related Work
- .1 Rough Grading : Section 02211
 - .2 Granular Paving : Section 02512
- 1.2 Scope of Work
- .1 The work under this section shall comprise the supply of labour, materials and equipment for mixing, hauling, spreading, jointing and compaction of hot mix, hot laid asphaltic concrete to the lines and levels as indicated on the drawings.
 - .2 Coordinate work in this section with work in all other sections.
- 1.3 Guarantee
- .1 The contractor shall guarantee all material and workmanship for a period of two years from the date of Preliminary Acceptance by the City.

PART II - PRODUCTS

- 2.1 Materials
- .1 Asphalt used on this project shall consist of the following types:
 - .1 HL3 Surface Course - Asphalt Cement 5.0% to 7.0% by weight to be used on asphalt pathway and as top coat layer on parking area.
 - .2 HL8 Base Course - Asphalt Cement 4.5% to 6.5% by weight to be used as base course on parking area.
 - .3 Asphalt Emulsion - SS-1 Emulsion to OPSS 1103.
 - .2 The various materials for these types of asphalt shall be selected to conform to the latest Ontario Provincial Standards Specifications (OPSS) Forms 1001, 1003, 1101 and 1150.
 - .3 The contractor shall forward to the City in writing, his proposed job mix formula for the specific type of asphalt to be used indicating:
 - .1 source and location of all materials;
 - .2 the proportions of all materials;

- .3 the single definite percentage for each sieve fraction.
- .4 The job mix formula, as noted above, must be corroborated by the contractor, by supplying to the Community Services representative at least a three-point Marshall Mix Design proposed by an accredited testing firm acceptable to the Community Services Department. The mix design shall have been carried out during the calendar year of the submission of the job mix formula. Adequate samples of the materials proposed to be used shall be made available for acceptance tests upon request by the Community Services Department. No mix shall be supplied until the proposed job mix formula has been approved by the Community Services Department. The contractor shall accept full responsibility for the supply of a uniform product.
- .5 The submission of the job mix formula shall, upon approval, bind the contractor to supply a mixture not only within the limiting requirements of the specification, but as a further requirement, also meeting the exact formula established, subject to the following tolerances :

Permissible Tolerances

Aggregates, Passing Nos:

<u>Sieve</u>	
26.5 mm to 4.75 mm	± 5%
2.36 mm	± 4%
1.18 mm	± 4%
600 um	± 4%
300 um	± 4%
150 um	± 2%
75 um	± 2%
Asphalt Cement Content	±0.3%

Failure of test samples to meet the job mix formula shall be sufficient cause for the Community Services representative to prohibit shipment of any material from the plant until such time as the contractor has satisfactorily demonstrated the ability to consistently supply an approved product.

- .6 Granular Base : Sound, hard, durable 19 mm and 50 mm crusher run limestone, free from clay or organic matter meeting

OPSS Standards 1001, 1004 and 1010 installed to the compacted depths indicated on the drawings.

- .7 Line Paint : White lines and yellow handicapped, regular dry traffic paint meeting OPSS 1710 Standard.

PART III - EXECUTION

3.1 Placement

- .1 The equipment, methods of heating materials, hauling, spreading, jointing and compaction procedures shall conform to the latest OPSS Form 310 for HL3 and HL8. The granular base on which hot mix is placed shall be firm and stable, and shaped to proper contour and grade, compacted to 98% Standard Proctor Maximum Dry Density. Receive approval of granular base from the Community Services representative prior to placement of asphalt.

- .2 Class "R1" or Class "S1" roller (as defined in OPSS Form 310, Table V) as an intermediate roller for compaction shall be used at the discretion of the Community Services representative. The rolling sequence shall be as follows :

Breakdown roller : 9-11 mg Steel Tandem - 5-7 passes

Intermediate roller : Pneumatic Tire - 13 passes

Finishing roller : 7-9 mg Steel Tandem - 3 passes

The roller shall be operated by competent and experienced operators. To prevent adhesion of asphalt mixture to the roller, it shall be kept moistened, but excess water shall not be permitted. The mixture shall be compacted to a density not less than 98% of the density of the laboratory compacted mixture, and after compaction shall not contain more than 6% voids.

- .3 The surface of the finished pavement shall be free from depressions exceeding 3 mm as measured with a 3 metre straight-edge parallelling the centerline of the roadway or walkway. Any finished pavement not meeting these requirements will be removed and replaced to the satisfaction of the Community Services Department. Patching will not be acceptable.

3.2 Joints

- .1 All joints shall be cleaned of dirt or other foreign material and shall be painted with a thin, uniform and continuous coating of SS-1 asphalt emulsion which complies with OPSS Form Number 1103. The joints shall be carefully made and in such a manner as to ensure a thorough and continuous band, and to provide a smooth riding surface.
- .2 Requirements for Longitudinal Joints :
 - .1 Where the existing pavement comprises a single course, it shall be cut back to a straight vertical face.
 - .2 Where the existing pavement comprises two or more courses, it shall be cut back approximately 100 mm to a straight vertical face, and to its full depth. The existing surface course shall then be cut back a further 150 mm to a straight vertical face and the 150 mm width of surface course removed by burning, if necessary, to form a stepped joint.
- .3 Requirements for Transverse Joints :

Except when a board is used to form transverse joints, the edge of previously laid course shall be cut back to its full depth to a straight vertical face. All joints between the surface course and existing bituminous pavement shall be butt joints. These joints shall be prepared by cutting the existing surface course to a straight vertical face. Where the existing pavement comprises two or more courses, the new surface course shall overlap the existing binder course across the full width of the pavement for a longitudinal distance of not less than 1.0 m and that at no point shall the depth of the new surface course be less than 25 mm.

3.3 Temperature

- .1 No surface asphalt shall be placed unless the air temperature at the surface of the road is a minimum of 7°C.
- .2 Hot mix asphalt can be placed when the minimum temperature is greater than 2°C when :
 - .1 any frost or moisture from previous inclement weather has evaporated to leave a dry surface;

- .2 base asphalt is laid on a granular grade;
 - .3 compacted lifts are greater than 75 mm in thickness;
 - .4 a single course pavement is laid on a granular grade.
- .3 The temperature of the mixture immediately after spreading and prior to rolling shall not be less than 120°C and not more than 160°C.

3.4 Field Quality Control

- .1 At edges of curb and interfaces with concrete surfaces ensure that asphalt is flush and smooth. Remove spilled or soiled areas to leave tidy appearance.
- .2 Edges of asphalt paths must be hand tamped at 45° to ensure a clean angled edge. Ensure that width and depth of path remains consistent as indicated on the drawings.

3.5 Line Painting

- .1 Apply line paint 100 mm wide to dimensions shown on the drawings.
- .2 Paint is to be applied on a smooth, clean, dust free, dry surface with an approved spray applicator.
- .3 Paint shall be applied according to manufacturer's recommendations.
- .4 Use template to the dimensions as detailed on drawings for the handicapped symbols.

3.6 Protection and Testing

- .1 Protect and maintain completed paving from time of installation until acceptance of work.
- .2 Keep areas clean and neat at all times. Mud tracking and cleaning of roads and walkways both on and off the site shall be the responsibility of the contractor.
- .3 Inspection and compaction tests of subbase, granular and asphalt as well as finished thickness and composition tests of asphalt, in accordance with item 2.1.5 of this section, shall be carried out by an independent testing laboratory. Costs of tests shall be paid for by the contractor. Subbase tests shall be submitted to the

Community Services Department for approval prior to the installation of the granular material. Granular compaction tests will be submitted to the Community Services Department for approval prior to the installation of asphalt.

END OF SECTION 02552