SCHEDULE "1"

PAVEMENT MARKING SPECIFICATIONS

A. MATERIALS

The Contractor will use, unless otherwise approved in writing by the Province;

(a) traffic paint, thermoplastic material and glass beads in accordance with the Recognized Products List (or equivalent) from at least one of the following agencies:

- **(i)** British Columbia Ministry of Transportation and Infrastructure,
- **(ii)** Alberta Ministry of Transportation,
- **(iii)** Washington State Department of Transportation,
- **(iv)** Idaho Transportation Department,
- **(v)** Alaska Department of Transportation and Public Facilities;

(b) white paint that conforms to US Federal specification 595b White 17886;

(c) yellow paint that conforms to US Federal specification 595b Yellow 33538.

The Contractor will dispose of all waste material in an environmentally appropriate manner and in accordance with any applicable legislation.

B. DPMMI

1. Each paint application vehicle must have mounted on it a DPMMI that will be used to track data at an interval no greater than every 15 seconds at all times during paint application.

(a) The data to be tracked will include:

- (i) date;
- (ii) time;
- (iii) location;
- (iv) speed of vehicle;
- (v) paint application thickness (wet mils);
- (vi) distance painted;

(vii) glass bead application rate;

(viii) road temperature;

(ix) air temperature;

(x) paint temperature.

2. The Contractor is responsible to accurately track the road and exact location on the road that all recorded data applies to.

3. If, for any reason, the DPMMI becomes inoperable, the Contractor will immediately advise the Ministry Representative. The Contractor will inform the Ministry Representative of the area that has been painted without the DPMMI and a date when the instrument will be back in operation. If the instrument will be out of service for 5 or more Operational Days, the Contractor may be required to provide documentation from the manufacturer regarding the problem and the proposed date for the solution.

C. INTERPRETATION

Whenever more than one Pavement Marking Specification or more than one part of a Pavement Marking Specification applies to a particular Highway location, condition, circumstance or activity, the Contractor will comply with each and every applicable Pavement Marking Specification or part of a Pavement Marking Specification.

D. PAVEMENT MARKING SERVICES COMPLETION

Wherever the time within which work must be performed by the Contractor under these Pavement Marking Specifications exceeds the time remaining in the Term, the Contractor will, notwithstanding any other provision of these Pavement Marking Specifications, perform the work prior to the end of the Term.

E. REFERENCED MANUALS

The following sets out a list of manuals that are referenced throughout these Pavement Marking Specifications and are required by the Contractor to perform the Pavement Marking Services. It is the Contractor's obligation to obtain these manuals and maintain them throughout the term of this Agreement.

- Manual of Standard Traffic Signs and Pavement Markings, Ministry of Transportation and Infrastructure, September 2000 Edition, which can be accessed through the following Internet address:

  http://www.th.gov.bc.ca/publications/eng_publications/electrical/MoST_PM.pdf

- The latest edition of the Recognized Products List, Ministry of Transportation and Infrastructure, which can be accessed through the following Internet address:

  http://www.th.gov.bc.ca/publications/eng_publications/geotech/rpl.htm

- The latest edition of the Traffic Control Manual for Work on Roadways, Ministry of Transportation and Infrastructure, which can be accessed through the following Internet address:

  http://www.th.gov.bc.ca/publications/eng_publications/TCM/Traffic_Control_Manual.htm

- Technical Bulletins, Engineering, Ministry of Transportation and Infrastructure, which can be accessed through the following Internet address:

  http://www.th.gov.bc.ca/publications/eng_publications/TE_Bulletins/TE_bulletins.htm

- The latest edition of the Landmark Kilometre Inventory (LKI) for non-CIS users, Ministry of Transportation and Infrastructure, which can be accessed through the following internet address:

  http://www.th.gov.bc.ca/publications/eng_publications/geomet/lki/lki.htm

- The latest edition of the Equipment Rental Rate Guide, available through the BC Roadbuilders and Heavy Construction Association.

B.C. MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE

PAVEMENT MARKING SPECIFICATION #1

Longitudinal Markings

1. OBJECTIVE

To facilitate the safe and efficient movement of traffic on Highways through the use of Longitudinal Markings to delineate, guide and inform Highway users.

2. DETAILED PERFORMANCE SPECIFICATIONS

The Contractor must:

(a) perform all work in accordance with the Manual for Traffic Control and Work on Roadways;

(b) layout Longitudinal Markings on new asphalt in accordance with the Manual of Standard Traffic Signs and Pavement Markings; with payment in accordance with Appendix A of Schedule 5 (Additional Pavement Marking Services)

(c) layout, with no additional payment, Longitudinal Markings in areas where the previous markings are not visible in accordance with the Manual of Standard Traffic Signs and Pavement Markings or as instructed by the Ministry Representative;

(d) ensure all surfaces are clean prior to painting Longitudinal Markings;

(e) paint all Longitudinal Markings in accordance with the Manual of Standard Traffic Signs and Pavement Markings;

(f) paint existing Longitudinal Markings to match those in the field, provided the existing markings conform to the Manual of Standard Traffic Signs and Pavement Markings;

(g) contact the Ministry Representative about any existing Longitudinal Markings that do not conform to the Manual of Standard Traffic Signs and Pavement Markings prior to proceeding with the painting;

(h) paint all Longitudinal Markings at a wet thickness of not less than 16 mils, unless requested by the Ministry Representative, in accordance with Schedule 4 (Routine and Quantified Pavement Marking Services) to paint at a wet thickness of not less than 18 mils;

(i) if requested by the Ministry Representative, paint at a wet thickness of not less than 18 mils, paint, with credit for such work in accordance with Schedule 4 (Routine and Quantified Pavement Marking Services);

(j) on new asphalt, apply 2 coats of paint, each coat to be applied at a wet thickness of not less than 16 mils and the Contractor will be entitled to payment for each applied coat at the Additional Pavement Marking Services Unit Rate for Longitudinal Markings in Appendix A of Schedule 5 (Additional Pavement Marking Services);

(k) ensure all Longitudinal Markings have well defined edges and are free of tire tracking, with no splatter, excessive overspray or other defects;

(l) ensure lateral deviation from any existing Longitudinal Markings do not exceed 10mm;

(m) ensure Longitudinal Markings are straight, or of uniform curvature, and conform with the alignment;

(n) ensure the following dimensional criteria are met:

(i) Longitudinal Markings cannot exceed a dimensional width of 110mm for specified 100mm wide line. No tolerance below 100mm is allowed for the specified 100mm line;

(ii) Longitudinal Markings cannot exceed a dimensional width of 210mm for specified 200mm wide line. No tolerance below 200mm is allowed for the specified 200mm line;

(iii) the distances between the lines for double solid and simultaneous solid and broken cannot exceed a dimensional separation of 110mm. No tolerance below 100mm is allowed;

(iv) Longitudinal Marking lane lines cannot exceed a maximum dimensional length deviation of +/- 100mm for the specified length; and

(v) no spaces between broken lines can exceed a maximum dimensional length deviation of +/- 100mm from the specified length of space;

(o) apply glass beads immediately following the paint application at a uniform application rate;

(p) ensure the following retro-reflectivity properties are achieved when painting at a wet thickness of not less than 16 mils:

FOR LOWER MAINLAND AND VANCOUVER ISLAND ONLY:

Colour	***Initial (for at least 30 days from time of application)***	***End of Season***
White	225 millicandela $m^{-2} \cdot lux^{-1}$	150 millicandela $m^{-2} \cdot lux^{-1}$
Yellow	175 millicandela $m^{-2} \cdot lux^{-1}$	100 millicandela $m^{-2} \cdot lux^{-1}$

FOR NORTHERN, THOMPSON-CARIBOO AND OKANAGAN-KOOTENAY ONLY:

Colour	***End of Season***
White	150 millicandela $m^{-2} \cdot lux^{-1}$
Yellow	75 millicandela $m^{-2} \cdot lux^{-1}$

(q) ensure the following retro-reflectivity properties are achieved when painting at a wet thickness of not less than 18 mils:

Colour	***Initial (for at least 30 days from time of application)***	***End of Season***
White	n/a	150 millicandela $m^{-2} \cdot lux^{-1}$
Yellow	n/a	75 millicandela $m^{-2} \cdot lux^{-1}$

B.C. MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE

PAVEMENT MARKING SPECIFICATION #2

Transverse Markings

1 OBJECTIVE

To facilitate the safe and efficient movement of traffic on Highways through the use of Transverse Markings to delineate, guide and inform Highway users.

2. DETAILED PERFORMANCE SPECIFICATIONS

The Contractor must:

(a) perform all work in accordance with Schedule 5 (Additional Pavement Marking Services);

(b) perform all work in accordance with the Manual for Traffic Control and Work on Roadways;

(c) layout Transverse Markings in accordance with the Manual of Standard Traffic Signs and Pavement Markings;

(d) ensure all surfaces are clean prior to painting Transverse Markings;

(e) paint or apply thermoplastic Transverse Markings in accordance with the Manual of Standard Traffic Signs and Pavement Markings;

(f) when applicable, ensure grinding is:

(i) uniform in depth, has well defined edges and is free of other defects;
(ii) to a minimum of 3mm and a maximum of 5mm depth below final surface grade;
(iii) performed using equipment appropriate for the surfaces, materials and volumes to be removed and/or grooved;

(g) paint all Transverse Markings at a wet thickness of not less than 16 mils;

(h) apply thermoplastic markings at a minimum finished thickness of 3mm;

(i) ensure all painted Transverse Markings are free of tire tracking, with no splatter, excessive overspray or other defects;

(j) ensure all thermoplastic markings are uniform in thickness and free of tire tracking, or other defects;

(k) ensure the ends of all chevrons, crosshatching, and stop bars are within 50mm of the centre of the intersecting longitudinal line;

(l) ensure all Transverse Markings have well defined edges;

(m) apply glass beads immediately following the paint or thermoplastic application over the entire surface of the marking, and at a uniform application rate;

(n) ensure the following retro-reflectivity properties are achieved for painted and thermoplastic Transverse Markings:

Colour	*End of Season*
White	150 millicandela $m^{-2} \cdot lux^{-1}$
Yellow	75 millicandela $m^{-2} \cdot lux^{-1}$

(o) ensure 100% of the markings are still visible at the end of the Season in which they were installed, and 70% are still visible at the start of the following Season.