PCCP REVISIONS FOR 2005

The Standard Specifications are revised as follows:

SECTION 302, BEGIN LINE 52, INSERT AS FOLLOWS:

Construction traffic shall not be allowed on the aggregate drainage layer, except where placement of the PCCP is restricted. Exceptions shall be submitted for approval. All displacement or rutting of the aggregate drainage layers shall be repaired prior to placing subsequent material.

SECTION 501, BEGIN LINE 70, DELETE AND INSERT AS FOLLOWS:

The Contractor may elect to use fine and coarse aggregates in accordance with 904, or may propose the use of alternate gradations. If alternate gradations are proposed, the QCP shall specify the tolerances of material passing each sieve. In either case, 100% of the coarse aggregate shall pass the 25 mm (1 in.) sieve. The combined amount of fine and coarse aggregates passing the 75 μm (No. 200) sieve shall be from 0% to 2.0% for ~~sand~~ fine aggregate and gravel, and from 0% to 2.5% for ~~sand~~ fine aggregate and crushed stone or crushed slag.

SECTION 501, BEGIN LINE 89, DELETE AND INSERT AS FOLLOWS:

Fly ash or GGBFS used as an additive, or blended portland cements may only be incorporated in the concrete mix between April 1 and October 15 of the same calendar year. If type IP, type IP-A, type IS or type IS-A cements are to be used, the minimum portland cement content shall be increased to 300 kg/m³ (500 lbs/yd³). The use of fly ash or GGBFS as an additive will not be permitted when blended portland cements are used.

SECTION 501, BEGIN LINE 143, INSERT AS FOLLOWS:

501.11 Preparation of Subbase. *Subbase, if required, shall be placed and shaped to the required grade and section in accordance with 302. Construction traffic shall not be allowed on the aggregate drainage layer of the subbase, except where PCCP placement is restricted. Exceptions shall be submitted for approval.*

SECTION 501, BEGIN LINE 223, INSERT AS FOLLOWS:

501.17 CMD Adjustments. *The target water/cementitious ratio and target unit weight may be adjusted during the first lot of each year's production or as a result of fluctuations in fine or coarse aggregate specific gravities.*

SECTION 501, BEGIN LINE 278, DELETE AND INSERT AS FOLLOWS:

~~*The profilograph shall be used on all full-width pavement lanes of 75 m (250 ft) or longer and having a design speed greater than 70 km/h (45 mph), unless otherwise specified.*~~

The profilograph shall be used where all of the following conditions are met:

(a) the design speed is greater than 70 km/h (45 mph), and

(b) the pavement lanes are full width and 0.16 km (0.1 mi) or longer.

If a pay item, profilograph, PCCP, is included in the contract, and the above conditions are met, the Contractor shall furnish, calibrate, and operate an approved profilograph in accordance with ITM 901. The profilogram produced shall become the property of the Department. The profilograph shall remain the property of the Contractor. When a

profilograph, PCCP is not included as a pay item, and the above conditions are met, the Department will furnish, calibrate, and operate the profilograph or the Department will develop an extra work agreement in accordance with 109.05 to include profilograph, PCCP as a pay item.

The 4.9 m (16 ft) long straightedge shall be used on all full-width pavement lanes shorter than ~~75 m (250 ft)~~ 0.16 km (0.1 mi.), on tapers, within 15 m (50 ft) of ~~bridge ends~~ a reinforced concrete bridge approach, and within 15 m (50 ft) of an existing pavement which is being joined~~, on ramps, and on full-width pavement lanes having a design speed of 70 km/h (45 mph) or less, unless otherwise specified~~.

The 3 m (10 ft) long straightedge shall be used for transverse slopes, approaches, and crossovers.

As soon as the PCCP has cured sufficiently, the smoothness may be checked. Profile testing shall be completed prior to opening the pavement to traffic. The Department may direct that the pavement profile be ~~tested~~ evaluated within 24 h following placement. When profile testing is consistently outside pavement surface tolerances the paving operation shall be discontinued until an amended QCP is submitted. An initial profile index will be determined from the profilogram of this profile. The initial profile index for areas requiring replacement will be adjusted to include the results of a profilogram of all replaced areas.

Pavement smoothness variations outside specified tolerances shall be corrected by grinding with a groove type cutter or by replacement. Grinding will not be permitted until the PCCP is 10 days old or ~~until~~ the ~~test indicates a modulus of rupture of~~ flexural strength tests is 3800 kPa (550 psi) or greater. The grinding of the pavement to correct the profile shall be accomplished in either the longitudinal or the transverse direction. The PCCP texture after grinding shall be uniform. If the grinding operation reduces the tining grooves to a depth of less than 1.5 mm (1/16 in.) and the longitudinal length of the removal area exceeds 4.5 m (15 ft), or two or more areas are within 9.0 m (30 ft) of each other, the PCCP shall be retextured in accordance with 504.03.

SECTION 502, BEGIN LINE 66, DELETE AND INSERT AS FOLLOWS:

Fly ash or GGBFS used as an additive, or blended portland cements may only be incorporated in the concrete mix between April 1 and October 15 of the same calendar year. If type IP, type IP-A, type IS or type IS-A cements are to be used, the portland cement content shall be increased to 355 kg/m^3 (598 lbs/yd^3). The use of fly ash or GGBFS as an additive will not be permitted when blended portland cements are used.

SECTION 502, BEGIN LINE 140, INSERT AS FOLLOWS:

502.08 Preparation of Subbase. *Subbase, if required, shall be placed and shaped to the required grade and section in accordance with 302. Construction traffic shall not be allowed on the aggregate drainage layer of the subbase, except where PCCP placement is restricted. Exceptions shall be submitted for approval.*

SECTION 503, BEGIN LINE 34, INSERT AS FOLLOWS:

All joints shall be cut to the required dimensions and sealed. All sawed joints shall be made by ~~concrete saws~~ sawing equipment in accordance with 508.07 and shall be in accordance with the following.

SECTION 507, BEGIN LINE 19, DELETE AND INSERT AS FOLLOWS:

~~507.03 Routing Cracks and Joints.~~ *~~Cracks and joints in PCCP shall be routed when specified. Cracks and joints shall then be cleaned by blowing with compressed air or by other suitable means. Air compressors shall be capable of producing a minimum air pressure of 690 kPa (100 psi). Water blasting shall not be applied under pressure that may damage the concrete.~~*

507.03 Cracks. *Sealing and filling operations shall not be conducted on a wet surface, when the ambient temperature is below 4°C (40°F), or when other unsuitable conditions exist, unless approved by the Engineer.*

(a) Routing, Cleaning and Sealing. *Cracks in PCCP shall be routed and cleaned when specified. Cracks shall be routed with a vertical-spindle router with carbide-tipped or diamond router bits to form a reservoir not exceeding 13 mm (0.5 in.) wide with a minimum depth of 19 mm (0.75 in.). The operation shall be coordinated such that routed materials do not encroach on pavement lanes carrying traffic and all routed materials are disposed of in accordance with 104.07. The cracks shall be cleaned with compressed air or by other suitable means. Air compressors shall be capable of producing a minimum air pressure of 690 kPa (100 psi). Water blasting shall not be utilized.*

Cracks shall be sealed with asphalt rubber in accordance with the manufacturer recommendations within 7 mm (0.25 in.) of the surface. A distributor in accordance with 409.03 shall be used with an indirect-heat double boiler kettle and mechanical agitator. The asphalt rubber shall be placed utilizing a "V" shaped wand tip, to allow the penetration of the materials into the cracks.

Application of asphalt rubber shall be completed without covering existing pavement markings. When traffic is to be maintained within the limits of the section, temporary traffic control measures in accordance with 801 shall be used. Treated areas shall not be opened to traffic until the asphalt rubber has set.

(b) Cleaning and Filling. *The cracks shall be cleaned by blowing with compressed air or by other suitable means when specified. Air compressors shall be capable of producing a minimum air pressure of 690 kPa (100 psi). Water blasting shall not utilized.*

Cracks shall be filled with asphalt emulsion. The cracks shall be completely filled or overbanded not to exceed 125 mm (5 in.), or as required. Asphalt emulsion shall be placed utilizing a "V" shaped wand tip, to allow the penetration of the materials into the cracks. The filled cracks shall be covered with sufficient fine aggregate to prevent tracking of the asphalt emulsion. All excess cover material shall be removed from the pavement.

Application of asphalt emulsion shall be completed without covering existing pavement markings. When traffic is to be maintained within the limits of the section, temporary traffic

control measures in accordance with 801 shall be used. Treated areas shall not be opened to traffic until the asphalt emulsion has set.

SECTION 507, BEGIN LINE 25, DELETE AND INSERT AS FOLLOWS:

~~***507.04 Sealing Cracks and Joints.*** *Longitudinal and transverse joints that have been routed shall be cleaned and sealed as required in accordance with 503.05. Longitudinal and transverse joints that have not been routed shall be cleaned and sealed with asphalt material. Cracks and joints shall be cleaned by blowing with compressed air or by other suitable means. The asphalt material shall be placed to allow the penetration of the materials into the cracks and joints. The cracks and joints shall be completely filled. All excess asphalt material shall be removed from the pavement. The sealed cracks and joints shall be covered with sufficient fine aggregate to prevent tracking of the asphalt materials. All excess cover material shall be removed from the pavement.~~

507.04 Joints. *Sealing and filling operations shall not be conducted on a wet surface, when the ambient temperature is below 4°C (40°F), or when other unsuitable conditions exist, unless approved by the Engineer.*

(a) Sawing, Cleaning and Sealing. *Joints in PCCP shall be sawed, cleaned and sealed when specified. Air compressors shall be capable of producing a minimum air pressure of 690 kPa (100 psi). Water blasting shall not be utilized. The existing joints shall be sawed to the width and depth as shown on the plans. Slurry or saw residue remaining in the slot shall be immediately flushed. Traffic may be allowed on the PCCP for up to 7 calendar days after the saw cutting prior to sealing.*

Joints shall be sealed with joint sealing materials in accordance with the sealant manufacturer's recommendations. Transverse joints shall be sealed with silicone sealant or preformed electrometric joint sealant. Longitudinal joints shall be sealed with an asphalt rubber or silicone sealants.

Application of asphalt materials shall be completed without covering existing pavement markings. When traffic is to be maintained within the limits of the section, temporary traffic control measures in accordance with 801 shall be used. Treated areas shall not be opened to traffic until the asphalt material has set.

(b) Cleaning and Filling*. Joints in PCCP shall be cleaned by blowing with compressed air or by other suitable means when specified. Air compressors shall be capable of producing a minimum air pressure of 690 kPa (100 psi). Water blasting shall not be utilized.*

Joints shall be filled with asphalt rubber in accordance with the manufacturer's recommendations within 7 mm (0.25 in.) of the surface. A distributor in accordance with 409.03 shall be used with an indirect-heat double boiler kettle and mechanical agitator. The asphalt rubber shall be placed utilizing a "V" shaped wand tip, to allow the penetration of the materials into the joints.

SECTION 507, BEGIN LINE 57, DELETE AND INSERT AS FOLLOWS:

507.06 Profiling*. Profiling consists of the diamond grinding of the pavement. The grinding shall be completed by mechanical grinding equipment in accordance with 508.08(c)*

~~*using diamond tipped saw blades mounted on a power driven, self-propelled machine containing transverse and longitudinal grade controls. The cutting head shall be no less than 900 mm (36 in.) wide to produce a uniform texture per the full width of the cutting head shaft*~~. *Grinding shall be completed in a longitudinal direction and shall begin and end at lines normal to the pavement centerline in any ground section. The operation shall be coordinated such that the slurry or residue materials are continuously removed from the pavement. The slurry shall not encroach into adjacent pavement lanes carrying traffic, or flow into gutters or other drainage facilities and shall be immediately and directly deposited into a tanker truck and removed from the jobsite. Final disposal of the material shall be in an approved manner and in accordance with 107.01.* ~~*Retexturing of the pavement tining in accordance with 504.03 is required.*~~ *Pavement smoothness will be measured and adjusted in accordance with 501.25 and 501.28(d) after the cracks are routed, cleaned, and sealed in accordance with 507.03 and joints are sawed, cleaned, and resealed in accordance with 507.04.*

SECTION 507, BEGIN LINE 103, DELETE AND INSERT AS FOLLOWS:

507.09 Method of Measurement. *Routing and sealing of cracks* ~~*and joints,*~~ *filling of cracks,* ~~*and sealing cracks and*~~ *sawing and sealing of joints, and filling of joints will be measured by the meter (linear foot), complete in place. Retrofit load transfer will be measured by each dowel bar assembly installed, complete in place. PCCP patching will be measured in accordance with 506.12. Profiling, regardless of depth, will be measured by the square meter (square yard). Asphalt material and drilled holes for undersealing will be measured in accordance with 612.06.*

HMA partial depth patching will be measured by the megagram (ton), in accordance with 109.01(b).

Construction activities for the cutting, cleaning of the PCCP, dowel bars, dowel bar supports, dowel bar end caps, foam core board, patching material and all other incidentals will not be measured.

Routing of cracks or sawing of joints will not be measured. Routing and sealing of transverse random cracks at retrofitted load transfer assemblies will not be measured.

Temporary traffic control measures for routing, sealing or filling of cracks or sawing, sealing, or filling of joints, and profiling will be measured in accordance with 801.17.

507.10 Basis of Payment. *Routing and sealing of cracks* ~~*and joints,*~~ *filling of cracks,* ~~*and sealing cracks and*~~ *sawing and sealing of joints, and filling of joints will be paid for by the meter (linear foot), complete in place. The accepted quantities of retrofit load transfer will be paid for at the contract unit price per each assembly installed, complete in place. PCCP patching will paid for in accordance with 506.13. Profiling will be paid for by the square meter (square yard). Undersealing and drilled holes will be paid for in accordance with 612.07. The accepted quantities for HMA partial depth patching will be paid for at the contract unit price per megagram (ton), complete in place.*

The cost of temporary traffic control measures for routing, sealing or filling of cracks or joints, and profiling will be paid for in accordance with 801.18.

Payment will be made under:

Pay Item	*Metric Pay Unit Symbol (English Pay Unit Symbol)*
Cracks ~~and Joints~~ in PCCP, Rout and Seal	*m (LFT)*
Cracks ~~and Joints~~ in PCCP, ~~Seal~~ Filled	*m (LFT)*
Joints in PCCP, Saw and Seal	*m (LFT)*
Joints in PCCP, Filled	*m (LFT)*
HMA Partial Depth Patch	*Mg (TON)*
Profiling PCCP	*m2 (SYD)*
Retrofit Load Transfer	*EACH*

The cost of milling, cleaning, tacking, and all incidentals shall be included in the cost of the pay item, partial depth patching.

The cost of cutting of slots, cleaning, dowel bars, dowel bar supports, dowel bar end caps, foam board, mortar, and curing materials shall be included in the cost of the pay item retrofit load transfer.

The cost of cleaning, sealing materials, and all incidentals shall be included in the cost of the pay item ~~sealing~~ cracks in PCCP, filled ~~and~~ or joints in PCCP, filled.

The cost of routing, cleaning, sealant materials, and all incidentals shall be included in the cost of the pay item ~~routing and sealing cracks and joints~~ cracks in PCCP, rout and seal. The cost of sawing, cleaning, sealant materials, and all incidentals shall be included in the cost of the pay item joints in PCCP, saw and seal.

The cost of all grinding, diamond cutting heads, and cleaning of the pavement, ~~and re-tining of the surface~~ shall be included in the cost of the pay item for profiling.

SECTION 508, BEGIN LINE 233, DELETE AND INSERT AS FOLLOWS:

(c) Grinding. *~~The machine used to remove the bumps shall be capable of producing a uniform texture on the pavement surface.~~ Grinding shall be completed by mechanical grinding equipment using diamond tipped saw blades mounted on a power driven, self-propelled machine containing transverse and longitudinal grade controls. The cutting head shall be no less than 900 mm (36 in.) wide to produce a uniform texture per the full width of the cutting head shaft. The pavement surface after cutting shall have a uniform texture but shall not be smooth or polished. Tearing or dislodging of aggregates will not be permitted.*

SECTION 901, AFTER LINE 35, INSERT AS FOLLOWS:

Slag Modified Portland Cement, Type ISM ..... AASHTO M 240