To:

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Design Quality Assurance Bureau
EIIS Administrator
Bldg. 5, Rm. 408
MC 0750,

New York State Department of Transportation
ENGINEERING BULLETIN

EB 96-023

Expires one year after issue unless replaced

Title: **CORRECTIONS TO EI 96-029**

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Approved:

Wayne J. Brule
W. J. Brule, Director, Materials Bureau

05/28/96
Date

Engineering Instruction 96-029; and one of the specifications it transmits; 18502.6596 M, Cracking and Seating Existing Portland Cement Concrete Pavement, contain a metric conversion error. Both refer to 2 feet as 750 mm. The correct metric conversion is 600 mm.

Make the following changes to EI 96-029:

- On page 2, item 3, first bullet, ***delete*** "750 mm (2 feet)" and ***replace*** with "600 mm (2 feet)".
- On page 4, item 7, ***delete*** "750 mm (2 feet)" and ***replace*** with "600 mm (2 feet)".

Revisions to specification 18502.6596 M are provided on the attached pages 1 and 2. Please discard the original pages 1 and 2 distributed by EI 96-029 and insert the attached pages.

Questions regarding this EB should be directed to Bill Cuerdon at [518] 457-5956.

ITEM 18502.6596 M - CRACKING AND SEATING EXISTING PCC PAVEMENT

DESCRIPTION: The Contractor shall crack and seat an existing portland cement concrete (PCC) pavement, including PCC shoulders, within the limits shown on the plans (or within revised limits established by the Engineer in writing) before placing a Hot-Mix Asphalt (HMA) overlay.

EQUIPMENT REQUIREMENTS:

Cracking Equipment: A self-propelled, self-contained unit equipped with:

- A 5.4 Mg (Metric Ton) guillotine-type drop weight having a striking surface 1.65 m wide by 100 mm thick. Weight and dimensions are minimums.
- An adjustable drop height.
- A readily visible and accurate measure or rule that allows the inspector to observe the drop height.
- A skirt or shield at the pavement level that surrounds the strike area and protects traffic from flying debris.

Alternate equipment may be submitted to the Director, Materials Bureau, for approval consideration. Such a submission is not cause for a time extension as provided in §108-04.

Seating equipment: A roller conforming to the requirements of §203-3.13B with a minimum mass of 45 Mg (Metric Ton).

CONSTRUCTION DETAILS: All Construction Details shall be performed by the Contractor unless stated otherwise.

Preparation: Before cracking, perform the following as indicated on contract plans or as ordered by the Engineer:

- Remove existing HMA overlays or overlay patches (including those on shoulders) having areas greater than 10 m^2.
- Install functional underdrains a minimum of 2 weeks before cracking begins.
- Identify locations of existing drainage facilities beneath the pavement. Do not crack within 3 m of culverts and storm drains having less than 3 m of cover. If such a culvert traverses the pavement, and the slab above it contains no existing open cracks, make a full-depth; full-width transverse sawcut; 10 mm wide maximum; in the PCC slab above the culvert centerline. If the culvert is skewed relative to the pavement centerline, make multiple transverse cuts such that either a sawcut or open crack occurs at 3 m increments where cracking is not allowed. There are no restrictions regarding cracking adjacent to pavement underdrains.
- Consult utility companies and municipalities to determine cracking limits near their facilities and abide by their recommendation. If the utility company or municipality offers no recommendation, do not crack within 6 m of the utility. If the utility traverses the pavement, and the slab above it contains no existing open cracks, make a full-depth; full-width transverse sawcut; 10 mm wide maximum; in the PCC slab above the utility centerline. If the utility is skewed relative to the pavement centerline, make multiple transverse cuts such that either a sawcut or open crack occurs at 3 m increments where cracking is not allowed.

ITEM 18502.6596 M - CRACKING AND SEATING EXISTING PCC PAVEMENT

- Clean cracks and joints greater than 10 mm wide in accordance the special specification, Cleaning and Filling Joints and Cracks. Leave these cracks and joints unfilled during cracking and seating.

Test Sections: Select an initial drop height and strike spacing. The maximum strike spacing is 600 mm. The drop height shall be as great as possible while producing minimal spalling at the strike. The Engineer will then designate a test section within the cracking and seating payment limits. Crack the test section normal to the centerline using the initial settings. Wet the pavement surface and retrieve pavement cores when and where directed by the Engineer to ensure induced cracks are full-width and full-depth.

If an acceptable crack pattern results as determined by the Engineer, begin production cracking with the initial drop height and spacing. An acceptable crack pattern consists of a network of full-depth, full-width cracking with minimal surface spalling to the Engineer's satisfaction. If induced cracks are not full-width or full-depth, multiple passes or closer strike spacings will be required as determined by the Engineer. The Engineer may at any time require additional test section(s) be established if the original combination of drop height, strike spacing, and number of passes proves inadequate elsewhere in the project.

Production Cracking: Crack the pavement in the direction of travel unless otherwise approved by the Engineer. Do not strike the pavement within 450 mm of transverse joints to avoid undue joint spalling.

Seating: After cracking, seat the entire cracked pavement with a minimum of 2 roller passes. A "pass" is defined as 1 movement of the roller, travelling parallel to the pavement centerline, over any point of the pavement in either direction. Multiple, parallel roller passes are required to cover the entire cracked pavement width. Complete seating before preparation to paving and within 1 week of cracking.

Preparation to Paving: After seating and before placing the first HMA course, perform the following as indicated on the contract plans or as ordered by the Engineer:

- Remove pavement areas having poor or uneven support, make subbase and/or subgrade repairs, and replace excavated PCC with full-depth HMA. The Engineer will determine, with input from the Regional Geotechnical Engineer, the required excavation depth and replacement materials. Replace excavated PCC with Asphalt Concrete, Type 1 or Type 2 Base Course. Compact HMA in accordance with §401-3.12, Compaction, using a minimum of two lifts of approximately equal thickness. Compact subbase and\or subgrade courses in accordance with §203-3.12, Compaction.

- Remove loose pieces of PCC or asphalt from the pavement surface and repair spalled areas. If removing loose pieces results in a depression less than 25 mm deep to sound concrete, that depression may be swept clean and left unpatched prior to paving. This type of spalling may have been present before cracking or a result of cracking. Sweep clean similar spalls deeper than 25 mm, patch with truing and leveling HMA, and compact. Repair full-depth spalling in accordance with the special specification, Repair of Spalled Areas, Joints, and/or Cracks in PCC Pavement.

- Re-clean and fill cracks and joints 10 mm or greater in width. Clean these cracks and joints with a compressed air stream having a minimum gauge pressure of 550 kPa (measured at the source) with the cleaning jet held 25 mm above the pavement surface. Fill with Asphalt Filler meeting the requirements of §702, Bituminous Materials, designation 702-0700; or §403, Hot Mix Asphalt Concrete Pavement, as determined by the Engineer.