To: SUPERSEDED BY EC 10-022 EFFECTIVE 1/6/11		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 08-032

Title: **THICKNESS DIMENSION REQUIREMENTS FOR §704-23 – PRECAST CONCRETE STREET PAVERS**

Distribution:
- ☒ Manufacturers (18)
- ☐ Local Govt. (31)
- ☒ Agencies (32)
- ☐ Surveyors (33)
- ☒ Consultants (34)
- ☒ Contractors (39)
- ☐ _____( )

Approved:

Robert L. Sack, P.E.
Deputy Chief Engineer, Research

8 SEP 08
Date

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective with projects submitted for the letting of 01/08/2009.
- No issuances are superseded by this EI.
- The shelf notes transmitted by this EI will be incorporated into a future revision of the Standard Specifications

PURPOSE: This EI issues a revision to §704-23 of the Department's Standard Specifications.

TECHNICAL INFORMATION:

Precast Concrete Street Pavers submitted for §704-23 shall be 80 mm ($3^1/_8$ inches) thick, with dimensional tolerances as per ASTM C 936. The cost of these items is expected to increase due to the additional 20 mm (¾ inches) of material required.

Item 601.40----91- PRECAST CONCRETE PAVING (BITUMINOUS SETTING BED), drafted for experimental use and available on the Department's server at P:\Toolbox\Documents & Resources\Special Specifications\Metric Specs\Approved SpecFiles\91-EXPERIMENTAL, outlines additional design guidance including sub base, edge restraint, layout pattern and joint material.

IMPLEMENTATION:

- Main Office Design Quality Assurance Bureau will insert the standard specification shelf note beginning with projects submitted for the letting of 01/08/2009.

TRANSMITTED MATERIALS: The following shelf notes are attached to this EI:

- Revised §704-23 – Precast Concrete Street Pavers

Both Metric versions and US Customary versions of the shelf notes are included. The Metric version updates the Standard Specifications of May 4, 2006 and the US Customary version updates the Standard Specifications of May 1, 2008.

BACKGROUND: The current Standard Specification for precast concrete street pavers does not specify a minimum thickness for these items. Guidance from the Interlocking Concrete Pavement Institute (ICPI) recommends that all precast pavers used for pavement application be a minimum of 80 mm ($3^1/_8$ inches) thick. Rotational interlock is necessary to prevent differential settlement of individual pavers due to the effect of turning and braking forces from vehicles. Increasing the thickness of the pavers, in conjunction with enhanced sub base requirements, horizontal restraint, joint material, and consistent spacing of the precast paver pavement, achieves this interlock.

CONTACT: Direct questions regarding this issuance to Jim Patnaude of the Materials Bureau via e-mail at jpatnaude@dot.state.ny.us or (518) 485-7056.

Make the following changes to Standard Specifications of May 4, 2006:

Page 758, ***delete*** Sub Section 704-23 – **PRECAST CONCRETE STREET PAVERS** in its entirety, and replace with:

"704-23 PRECAST CONCRETE STREET PAVERS

SCOPE. This specification covers the material and quality requirements for precast pavers used for street paving.

MATERIAL REQUIREMENTS. Precast concrete pavers shall meet the requirements of ASTM C936 except as noted herein. The shape, size, and color of the precast pavers shall be as shown in the contract documents. Minimum thickness for precast concrete pavers shall be 80 mm. Materials used in the manufacture of precast concrete pavers shall meet the requirements of the following subsections:

Portland Cement	701-01
Coarse Aggregate*	703-02
Mortar Sand*	703-03
Grout Sand*	703-04
Concrete Sand *	703-07
Fly Ash	711-10
Ground, Granulated Blast-Furnace Slag	711-12
Water	712-01

*Aggregates used in precast concrete street pavers shall meet the friction requirements of §501-2.02 B. 2.

Fly ash or ground, granulated blast-furnace slag may be substituted up to a maximum of 20% by weight of the total amount of cement plus pozzolan in the mix. Pigments used for integral coloring shall meet the requirements of ASTM C979. Other materials may be used in the manufacture as approved by the Director, Materials Bureau.

Physical Properties. Precast concrete pavers shall meet the compressive strength and absorption requirements in ASTM C936. In addition, the maximum acceptable average freeze/thaw loss of five paver samples, subjected to 25 freeze/thaw cycles in a 10% NaCl solution, is 1.0%, with no individual sample exceeding 1.5%.

SAMPLING AND TESTING. Samples, when requested by the Department, shall be randomly selected from production–run material. A total of 15 precast concrete pavers of the same size and style will be required. Five samples will be tested for compressive strength and five for absorption, in accordance with ASTM C140. Five samples will be tested for freeze/thaw durability in accordance with NYSDOT test methods.

BASIS OF ACCEPTANCE. Precast Concrete Street pavers will be accepted on the basis of the manufacturer's name and location appearing on the Department's Approved List and a material certification that specifies the product conforms to this specification."

Make the following changes to Standard Specifications of May 1, 2008:

Page 758, ***delete*** Sub Section 704-23 – **PRECAST CONCRETE STREET PAVERS** in its entirety, and replace with:

"704-23 PRECAST CONCRETE STREET PAVERS

SCOPE. This specification covers the material and quality requirements for precast pavers used for street paving.

MATERIAL REQUIREMENTS. Precast concrete pavers shall meet the requirements of ASTM C936 except as noted herein. The shape, size, and color of the precast pavers shall be as shown in the contract documents. Minimum thickness for precast concrete pavers shall be 3 1/8 inches. Materials used in the manufacture of precast concrete pavers shall meet the requirements of the following subsections:

Portland Cement	701-01
Coarse Aggregate*	703-02
Mortar Sand*	703-03
Grout Sand*	703-04
Concrete Sand *	703-07
Fly Ash	711-10
Ground, Granulated Blast-Furnace Slag	711-12
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