To:		*New York State Department of Transportation* **ENGINEERING INSTRUCTION**	**EI 05-042**
Title: **PRECAST CONCRETE PAVEMENT SLAB SYSTEMS – SPECIAL SPECIFICATION**			
Distribution: ☒Manufacturers (18) ☒Local Govt. (31) ☒Agencies (32) ❑ Surveyors (33) ☒Consultants (34) ☒Contractors (39) ❑ _____( )		Approved: /s/ Robert L. Sack Robert L. Sack, Deputy Chief Engineer, Technical Services	21DEC05 Date

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective beginning with projects submitted for the letting of 09/07/2006.
- No EIs or Engineering Bulletins are hereby superseded.
- The Special Specification transmitted by this EI, 502.15PF--18, Precast Concrete Pavement Slabs, will reside on the Department Server under Toolbox\Documents & Resources\Special Specifications.

PURPOSE: To issue a new specification for precast concrete pavement slab installation.

TECHNICAL INFORMATION: The following are issued concurrently:

- EI 05-043, Precast Concrete Pavement Slab Systems - Design Guidance.
- EI 05-041, Precast Concrete Pavement Slab Systems - Standard Specification.
- Interim construction guidance is available from the Materials Bureau on a project-by-project basis until it is included in the Construction Inspection Manual.

The Materials Bureau will generate an approved list of precast concrete pavement slab systems and their designers.

IMPLEMENTATION:

- Item 502.0101--91, Installation of Precast Concrete Highway Pavement Slabs, is disapproved by this EI.
- Item 502.0102--91, Precast Concrete Highway Pavement Slabs, is disapproved by this EI.
- Item 502.02--91, Precast Concrete Highway Pavement Slabs Bedding Grout, is disapproved by this EI.
- Item 502.03--91, Precast Concrete Highway Pavement Slabs Dowel and Tiebar, is disapproved by this EI.
- A new Special Specification, 502.15PF--18, Precast Concrete Pavement Slabs, is approved by this EI.
- Designers will insert the transmitted Special Specifications into contract proposals beginning with projects submitted for the letting of 09/07/2006.

TRANSMITTED MATERIALS: Special Specification 502.15PF--18, Precast Concrete Pavement Slabs.

BACKGROUND: Precast concrete slabs have been used in New York since 2000 without any governing specifications. The transmitted specification details installation requirements.

CONTACT: Address questions concerning this issuance to the Field Engineering II Section of the Materials Bureau. Current contacts are Michael Brinkman (mbrinkman@dot.state.ny.us) at (518) 457-4584 or William Cuerdon (wcuerdon@dot.state.ny.us) at (518) 485-5278.

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DESCRIPTION. Install precast concrete pavement slabs in accordance with the contract documents. The precast slab system selected must appear on the Department's Approved List entitled "Precast Concrete Pavement Slab Systems (704-15)."

MATERIALS.

Precast Concrete Pavement Slab Systems 704-15

CONSTRUCTION DETAILS. Convene a preplacement meeting 7 to 14 calendar days before the planned start of slab installation with the Engineer, manufacturer, supplier, system designer, and any relevant subcontractors to review and coordinate all aspects of placement and inspection including personnel requirements. Install slabs to the line and grade depicted in the contract documents ± 6 mm.

Technical Assistance. Several processes in this specification are performed in accordance with the system designer's instructions. The system designer must supply on-site technical assistance at the beginning of the installation until the Engineer determines the assistance is no longer required. Provide approved system designer instructions to the Engineer at least 30 calendar days before starting work associated with slab installation.

Weather Limitations. Apply §502-3.01, Weather Limitations.

Subbase Course. Apply Section 304, Subbase Course, for new construction and add-on lanes. For pavement repair, prepare the subbase course in accordance with the contract documents. Fine grade the subbase to achieve maximum uniform support. Follow the system designer's instruction for any final subbase preparation prior to slab installation. Do not disturb the prepared surface before installation.

Slab Installation. Install the slabs in accordance with the system designer's instructions. Set grade-supported slabs to achieve maximum contact with the prepared subbase.

Joints. Submit a proposed joint layout with the Fabricator Working Drawings, submitted in accordance with §704-15, Precast Concrete Pavement Slab Systems. Align joints both transversely and longitudinally between abutting precast slabs, i.e., do not stagger joints, except where approved on the joint layout. When tying precast slabs to existing concrete pavement, such as an add-on lane, joint alignment is not required. However, do not drill and anchor longitudinal joint ties within 400 mm of a transverse joint in the existing pavement.

Joint Widths. For pavements remaining concrete surfaced, install slabs such that joint widths are 0 mm – 10 mm, regardless of joint orientation. For pavements receiving hot mix asphalt (HMA) overlays, install slabs such that joint widths are 0 mm – 20 mm. These dimensions apply to joints between adjacent precast slabs or joints between precast slabs and existing pavement.

Bed and Level Slabs. Bed and level slabs in accordance with the system designer's instructions such that the vertical differential across any joint is 6 mm or less.

Backfill Pavement Hardware. Backfill around pavement hardware in accordance with the system designer's instructions.

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Smoothness (Pavements Remaining Concrete Surfaced). Apply §502-3.15, Hardened Surface Test, for nonprofilographed pavement or §502-3.16, Profilograph, for profilographed pavement. No Smoothness Quality Adjustment is paid for precast slab pavement construction.

Opening to Traffic (Grade-Supported Slabs). It is highly desirable to open precast slabs to traffic after the:

- Backfill material around the pavement hardware obtains 17 MPa compressive strength.
- Bedding and\or slab leveling materials obtain 2 MPa compressive strength.
- Joints are addressed in accordance with §502-3.12, Sealing Joints.

Slabs may be opened before backfill material and/or bedding grout is placed. In this case, backfill material and bedding grouts must be placed within 24 hours of the first slab's placement. Remove and reset any slabs having a vertical differential greater than 6 mm across any joint.

The longer slabs are opened to loads before backfilling and grouting, the greater the potential for slab movement. Schedule work to minimize the amount and duration of ungrouted slabs open to traffic.

Opening to Traffic (Grout-Supported Slabs). Open precast slabs to traffic after the:

- Backfill material around the pavement hardware obtains 17 MPa compressive strength.
- Bedding and\or slab leveling materials obtains sufficient strength to support loads without deflection.
- Joints are addressed in accordance with §502-3.12, Sealing Joints.

Slabs may be opened before backfill material around the pavement hardware has been placed. In this case, backfill material must be placed within 24 hours of the first slab's placement. Remove and reset any slabs having a vertical differential greater than 6 mm across any joint.

The longer slabs are opened to loads before backfilling, the greater the potential for slab movement. Schedule work to minimize the amount and duration of ungrouted slabs open to traffic.

Damaged or Defective Concrete. Apply §502-3.14, Damaged or Defective Concrete.

METHOD OF MEASUREMENT. The work will be measured for payment as the number of cubic meters of precast concrete pavement slabs satisfactorily installed measured to the nearest 0.1 m^3.

BASIS OF PAYMENT. Include the cost of all labor, material, and equipment necessary to satisfactorily perform the work, including technical assistance from the system designer, in the unit price bid for Precast Concrete Pavement Slabs.

Payment will be made under:

Item Number	**Item**	**Pay Unit**
502.15PF--18	Precast Concrete Pavement Slabs	Cubic Meter

P – Profilograph	*F – Friction Type*
0 – Nonprofilographed	*1 – Type 1*
1 – Level 1	*2 – Type 2*
2 – Level 2	*3 – Type 3*
	9 – Type 9