

SUPERSEDED BY EB 15-031 EFFECTIVE 9/28/15		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 12-004
Title: NEW STANDARD SPECIFICATION SECTION 601 ARCHITECTURAL PAVEMENTS AND TREATMENTS			
Target Audience: ☒ Manufacturers (18) ☒ Local Govt. (31) ☒ Agencies (32)	☐ Surveyors (33) ☒ Consultants (34) ☒ Contractors (39) ☐ _____ ()	Approved: <u>Anthony Torre</u> <u>05-02-2012</u> Anthony Torre, P.E. Date Acting Deputy Chief Engineer, Research	

ADMINISTRATIVE INFORMATION:

- This EI is effective for projects let on or after September 6, 2012.
- Superseded Issuances: This issuance does not supersede any other issuances.
- The revisions transmitted by this issuance will be incorporated into a future update of the Standard Specifications.

PURPOSE: The purpose of this EI is to issue a new Standard Specification Section 601 *Architectural Pavements and Treatments*.

TECHNICAL INFORMATION:

- Items with the 608 root are not appropriate for use in vehicular pavement applications.
- Section 601 is designated for architectural pavements and treatments to assist designers with aesthetic pavements, which have been evaluated for safety and durability under vehicular traffic.
- This EI is being issued concurrently with EB 12-009 *Architectural Pavements: Standard Sheet 601-01 and M601-01 Precast Concrete Street Paver Layout Details* and EI 12-005 *Section 601 Architectural Pavements Special Specifications*.
- When selecting an architectural pavement system item, select the appropriate system based on the traffic conditions, context, and cost. If conditions are appropriate and a segmental pavement surface is desirable, use pay item 601.01 *Precast Concrete Street Paving (Bituminous Setting Bed)*. Other pavements are available for use as special specifications. Contact the Landscape Architecture Bureau for further information.
- Actions by particular units. Design guidance will be issued in the near future by the Landscape Architecture Bureau. For additional information, refer to the publication *Best Practices for Architectural Pavement Treatments* at the following site:
<https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-06-18%20Final%20Report?nd=nysdot>.
- Cost Impact: There is no anticipated cost impact resulting from this issuance.

IMPLEMENTATION:

- The Design Quality Assurance Bureau will insert the revisions to the Standard Specifications into contract proposals that include items in the 601 series beginning with projects submitted for the letting of Sept. 6, 2012.
- New Specifications. Standard Specification 601.01 *Precast Concrete Street Paving (Bituminous Setting Bed)*.

TRANSMITTED MATERIALS: Revisions to the Standard Specifications in both Metric and U.S. Customary units are attached to this EI.

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BACKGROUND: Contract pay items from Section 608 - *Sidewalks, Driveways, Bicycle Paths* have sometimes been used to specify aesthetic pavements for crosswalks, intersections, and other areas subject to vehicular traffic. These contract items are not appropriate for this purpose, because they may not meet the friction or durability requirements needed for roadway pavements. Section 601 has been created to address the need for durable, aesthetic pavements for vehicular traffic areas.

CONTACT: James Patnaude, Materials Bureau (518) 485-7056, james.patnaude@dot.state.ny.us or Peter Dunleavy Landscape, Architecture Bureau (518) 457-1370, peter.dunleavy@dot.state.ny.us.

Section 601 – Architectural Pavements

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

Page 483, **delete** "SECTION 601" as modified by EI 09-014 *New Standard Specification Section Numbers* in its entirety and **replace** with the following:

SECTION 601 - ARCHITECTURAL PAVEMENTS AND TREATMENTS

601-1 DESCRIPTION. This work shall consist of the construction, placing, or applying of architectural pavements and treatments in accordance with the Contract Documents or as directed by the Engineer.

601-2 MATERIALS. Materials shall conform to the following subsections.

Bituminous Materials	702
Bituminous Tack Coat (SS-1h or CSS-1h)	702-3601
Fine Aggregates	703-01
Mineral Filler	703-08
Precast Concrete Street Pavers	704-23
Water	712-01

601-2.01 Precast Concrete Street Paving.

- A. **Neoprene-Modified Asphalt Adhesive.** Neoprene-Modified Asphalt Adhesive shall consist of 2% neoprene, grade WM1, oxidized asphalt with a R & B softening point of 154° F minimum and a penetration of 80, and 10% asbestos-free fibers.
- B. **Polymeric Sand.** Polymer modified graded sand designed specifically for filling joints between pavers. Polymeric sand shall be supplied in clearly labeled sealed packages.

601-3 CONSTRUCTION.

601-3.01 Precast Concrete Street Paving

- A. The provisions under §401-3, Construction Details for Plant Mix Pavements - General, shall apply.
- B. The Contractor shall construct the subbase according to the current 601 Standard Sheet(s).

Prior to placing the setting bed, the Contractor shall prepare the subbase surface according to §402-3.05a.

The bituminous setting bed shall consist of PG binder 64-22 mixed with fine aggregate meeting the requirements of §703-01. Alternate PG binder grades may be allowed by the RME in lieu of PG 64-22. The PG binder will meet the requirements outlined in Section 702 *Bituminous Materials*, Table 702-1 *Performance-Graded Binders for Paving*. The PG binder shall be 7.0% of the total batch weight. The mix shall be heated to approximately 325° F. The compacted thickness of the bituminous setting bed shall be ¾ inch.

A coating of neoprene-modified asphalt adhesive shall be applied by mopping, squeegeeing or troweling over the top surface of the setting bed to provide bond under the bricks.

Precast concrete street pavers shall be laid in a 90° herringbone pattern according to the current 601 Standard Sheet(s) to provide a uniformly even surface, with no more than ¼ inch variation. Joints shall be 1/8 inch wide ($\pm 1/16$ inch). No precast concrete street pavers shall be laid when the air temperature is below 40° F. Joint lines shall not deviate more than $\pm 1/2$ " over 50 feet from string lines. The Contractor shall fill gaps at the edges of the paved area with cut pavers or edge units. The Contractor shall adjust pattern at pavement edges such that cutting of edge pavers is minimized. All cut pavers subject to tire traffic shall be no less than one-third (1/3) of a whole unit. After pavers are placed on the adhesive, set them in it with at least one pass of a minimum 300 pound hand roller. Replace any cracked units with whole units and set them with the hand roller.

Section 601 – Architectural Pavements

Polymeric sand shall be swept over the precast concrete street pavers until the joints are completely filled. The paver surface shall be swept clean and the joints lightly wetted with water. This joint filling operation shall not be performed if the air temperature is expected to fall below 40°F, or there is an expectation of rain within 4 hours of the completion.

601-4 METHOD OF MEASUREMENT. Architectural pavements and treatments will be measured by the number of square yards placed.

601-5 BASIS OF PAYMENT. The unit price bid per square yard shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work, including setting bed material, except that any sawcutting of existing pavement, excavation, concrete base, curb, curb and gutter, and subbase course will be paid for separately.

Payment will be made under:

Item No.	Item	Pay Unit
601.01	Precast Concrete Street Paving (Bituminous Setting Bed)	Square Yard

Section 601 – Architectural Pavements

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

Page 479, **delete** "SECTION 601" as modified by EI 09-014 *New Standard Specification Section Numbers* in its entirety and **replace** with the following:

SECTION 601 - ARCHITECTURAL PAVEMENTS AND TREATMENTS

601-1 DESCRIPTION. This work shall consist of the construction, placing, or applying of architectural pavements and treatments in accordance with the Contract Documents or as directed by the Engineer.

601-2 MATERIALS. Materials shall conform to the following subsections.

Bituminous Materials	702
Bituminous Tack Coat (SS-1h or CSS-1h)	702-3601
Fine Aggregates	703-01
Mineral Filler	703-08
Precast Concrete Street Pavers	704-23
Water	712-01

601-2.01 Precast Concrete Street Paving.

- A. **Neoprene-Modified Asphalt Adhesive.** Neoprene-Modified Asphalt Adhesive shall consist of 2% neoprene, grade WM1, oxidized asphalt with a R & B softening point of 68°C minimum and a penetration of 80, and 10% asbestos-free fibers.
- B. **Polymeric Sand.** Polymer modified graded sand designed specifically for filling joints between pavers. Polymeric sand shall be supplied in clearly labeled sealed packages.

601-3 CONSTRUCTION.

601-3.01 Precast Concrete Street Paving

- A. The provisions under §401-3, Construction Details for Plant Mix Pavements - General, shall apply.
 - B. The Contractor shall construct the subbase according to the current 601 Standard Sheet(s).
- Prior to placing the setting bed, the Contractor shall prepare the subbase surface according to §402-3.05a.

The bituminous setting bed shall consist of PG binder 64-22 mixed with fine aggregate meeting the requirements of §703-01. Alternate PG binder grades may be allowed by the RME in lieu of PG 64-22. The PG binder will meet the requirements outlined in Section 702 *Bituminous Materials*, Table 702-1 *Performance-Graded Binders for Paving*. The PG binder shall be 7.0% of the total batch weight. The mix shall be heated to approximately 163°C. The compacted thickness of the bituminous setting bed shall be 20 mm.

A coating of neoprene-modified asphalt adhesive shall be applied by mopping, squeegeeing or troweling over the top surface of the setting bed to provide bond under the bricks.

Precast concrete street pavers shall be laid in a 90° herringbone pattern according to the current 601 Standard Sheet(s) to provide a uniformly even surface, with no more than 6 mm variation. Joints shall be 3 mm wide (± 1 mm). No precast concrete street pavers shall be laid when the air temperature is below 5°C. Joint lines shall not deviate more than ± 15 mm over 15 m from string lines. The Contractor shall fill gaps at the edges of the paved area with cut pavers or edge units. The Contractor shall adjust pattern at pavement edges such that cutting of edge pavers is minimized. All cut pavers subject to tire traffic shall be no less than one-third (1/3) of a whole unit. After pavers are placed on the adhesive, set them in it with at least one pass of a minimum 135 kg hand roller. Replace any cracked units with whole units and set them with the hand roller.

Polymeric sand shall be swept over the precast concrete street pavers until the joints are completely filled. The paver surface shall be swept clean and the joints lightly wetted with water. This joint filling operation shall not be performed if the air temperature is expected to fall below 5°C, or there is an expectation of rain within 4 hours of the completion.

601-4 METHOD OF MEASUREMENT. Architectural Pavements will be measured by the number of square meters placed.

601-5 BASIS OF PAYMENT. The unit price bid per square meter shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work, including setting bed material, except that any sawcutting of existing pavement, excavation, concrete base, curb, curb and gutter, and subbase course will be paid for separately.

Payment will be made under:

Item No.	Item	Pay Unit
601.01	Precast Concrete Street Paving (Bituminous Setting Bed)	Square Meter