



**SPECIAL PROVISIONS**

**FOR**

**CONCRETE PAVERS**

**Lee County**

**STBG-SWAP-2697(633)--SG-56**

**Effective Date**

**February 16, 2021**

**THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.**

**155078.01 DESCRIPTION.**

- A. This part of the Specifications includes all labor, materials, equipment, and supervision required to furnish and install concrete pavers.
- B. This section includes the specifications for concrete pavers, sand setting bed/bituminous setting bed, modified asphalt adhesive, paver joint filler, concrete subbase preparation, concrete subbase priming, installation of sand setting bed/bituminous setting bed, paver and joint filler installation.

**1.01 QUALIFICATIONS**

1. Every manufacturer and installer shall demonstrate that they have supplied and/or installed pavers for projects of a similar nature, with regard to installation and production capacity of at least 300,000 square feet.
  - a. Paver Manufacturer's Qualifications:
    - 1) The manufacturer shall demonstrate a minimum of 5 years successful experience in the manufacture of interlocking concrete block pavers.
    - 2) The manufacturer shall have sufficient production capacity and established quality control procedures to produce, transport, and deliver the required number of pavers with the quality specified, without causing a delay to the work.
    - 3) The manufacturer shall have suitably experienced personnel and a management capability sufficient to produce the number of quality pavers as depicted on the contract plans and as specified herein.
  - b. Paver Installer's Qualifications
    - 1) Installer shall provide installation history, including references in writing with contact information, demonstrating to the satisfaction of the owner their ability to perform the paver installation and related work indicated in the plans and specifications.
    - 2) The installer shall have suitably experienced personnel and a management capability sufficient to execute the work shown on the contract plans and specified herein.
    - 3) The installer's foreman shall demonstrate, including references, a minimum of 5 years experience in the installation of unit paver systems similar in size and nature to this project.

**1.02 DEFINITIONS**

- A. Mechanical Installation: The use of specialized machines to lift clusters of pavers from the bundles and place them on the prepared bedding course. These specialized machines are designed specifically for this application.
- B. Method Statement: The paver installer's and manufacturer's plan for construction and quality control of the pavers.
- C. Spacer Bars: Small protrusions on each side of pavers which are used to keep them uniformly spaced while minimizing chipping and spalling. Mechanically installed pavers must have spacer bars.

**1.03 SUBMITTALS**

- A. Paver manufacturer's material test data certifying pavers comply with specification.
- B. Paver samples representing actual size, shape, quality, and color range.

- C. Supplier's formulation for 2% Neoprene-modified asphalt adhesive.
- D. Submit Method Statement and Quality Control Plan.

#### **1.04 SITE DISTURBANCES**

- A. Take precautions to ensure equipment and vehicles do not disturb or damage existing site grading, walks, drives, utilities, plants, etc.
- B. Repair and/or return to original condition any damage caused by Contractor's negligence at no cost to Contracting Authority.
- C. Provide temporary barricades and warning lights as required for protection of project work and public safety.

#### **155078.02 MATERIALS.**

##### **2.01 CONCRETE PAVERS**

- A. Compressive Strength: 7000 psi tested in accordance to ASTM C140.
- B. Water Absorption: Maximum of 5%; ASTM C140 and freeze-thaw testing per Section 8 of ASTM C-67.
- C. Style, Size and Color:
  - 1. Type 1A/1B Paver: Hollandstone Paver (2 3/8 inch)  
Color: Red  
Bedding: Sand
  - 2. Type 2 Paver: Hollandstone Paver (2 3/8 inch)  
Color: Charcoal  
Bedding: Sand
  - 3. Type 4 Paver: Hollandstone Paver (3-1/8 inch)  
Color: Red  
Bedding: HMA
- D. Specified Manufacturer Information:
  - 1. One single manufacturer shall be used for the entire project and must have the capability of producing all of the paver colors as specified in Section 2.01.
  - 2. Concrete Pavers as manufactured by one of the following:
    - a. BELGARD HARDSCAPES  
480 South 16<sup>th</sup> Street  
West Des Moines, IA 50265  
Chris Boyd  
515.202.2404
    - b. BORGERT  
8646 Ridgewood Road  
St. Joseph, MN 56374  
Mike Buckley  
608.495.3855
    - c. UNILOCK  
301 E. Sullivan Road  
Aurora, IL 60505  
Brad Punke  
630.892.9191 Ext. 253

**2.02 GEOTEXTILE FABRIC**

- A. Section 4196 of the Standard Specifications.

**2.02 BITUMINOUS SETTING BED (FOR TYPE 4)**

- A. Section 2303 of the Standard Specifications. 3/8 inch Type A Binder and Surface Course Mixture

**2.03 2% NEOPRENE-MODIFIED ASPHALT ADHESIVE (FOR TYPE 4)**

- A. Base (2% Neoprene, 10% Fibers, 88% Asphalt):
- B. Melting point – ASTM D 36: 200°F minimum.
- C. Penetration/25°C, 100 load, 5 second (0.1mm): 23-27
- D. Ductility – ASTM D 113 at 25°C; 50 mm/min.: 1.25 m/min.

**2.04 SAND SETTING BED (FOR TYPE 1A, 1B, 2)**

- A. Bedding sand shall conform to the requirements of ASTM C 33 with the modifications shown in the table below

<b>ASTM C 33</b>	
<b>Sieve Size</b>	<b>Percent Passing</b>
3/8 in.	100
No. 4	95 to 100
No. 8	85 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10
No. 200	0 to 1

**2.05 JOINT FILLER**

Gradation Requirements for Joint Filler Sand:

	<b>ASTM C 144 Natural Sand</b>	<b>ASTM C 144 Manufactured Sand</b>
<b>Sieve Size</b>	<b>Percent Passing</b>	<b>Percent Passing</b>
No. 4	100	100
No. 8	95 to 100	95 to 100
No. 16	70 to 100	70 to 100
No. 30	40 to 75	40 to 100
No. 50	10 to 35	20 to 40
No. 100	2 to 15	10 to 25
No. 200	0	0 to 10

### 155078.03 CONSTRUCTION.

#### 3.01 PREPARATION OF CONCRETE SUBBASE

- A. Confirm all dimensions of the actual pavers with the design pattern to confirm configuration, patterns, and dimensions of all material. Contractor shall notify the Engineer if there are any conflicts between the material and the design.
- B. Inspect concrete subbase to ensure surface is clean.
- C. Verify elevation difference between concrete subbase and adjacent finished PCC pavement/sidewalk surface to confirm PCC Pavers can be installed flush with bordering pavement/sidewalk.

#### 3.02 PLACING BITUMINOUS SETTING BED (FOR TYPE 4)

- A. Prior to bituminous setting bed installation, install protective covering over adjacent PCC sidewalk pavement to avoid pavement staining and other surface damage.
- B. Install the setting bed over the concrete subbase surface, place 1 inch deep control bars directly over the base.
  1. If grade must be adjusted, set wood chocks under depth control bars to proper grade.
  2. Set two bars parallel to each other, approximately 11 feet apart to serve as guides for striking board (12 foot long by 2 inch by 6 inch board).
  3. The depth control bars must be set carefully to bring pavers, when laid, to proper grade.
- C. Place some bituminous bed between parallel depth control bars. Pull this bed with the striking board over bars several times.
  1. After each passage, low porous spots must be showered with fresh bituminous material to produce a smooth, firm, and even setting bed.
  2. As soon as this initial panel is completed, advance the first bard to the next position, in readiness for striking the next panel.
  3. Carefully fill up any depressions that remain after removing the depth control bars and wood chocks.
- D. The setting bed shall be rolled/tamped to a nominal depth of 1 inch while still hot; the thickness shall be adjusted so that when the concrete pavers are placed, the top surface of the pavers will be at the required finished grade.
- E. After the setting bed has cooled, a coating of 2% neoprene-modified asphalt adhesive shall be applied by mopping or squeegeeing or troweling over the top surface of the bituminous setting

bed so as to provide a bond under the pavers; if the adhesive is troweled, the trowel shall be serrated with serrations not to exceed 1/16 inch.

- F. Limitations: Comply with Article 2303.03, C, 4, c, of the Standard Specifications for placement of the setting bed and application of the modified asphalt adhesive.

### **3.03 PLACING SAND SETTING BED (FOR TYPE 1A, 1B, 2)**

- A. Place Geotextile fabric over concrete subbase and spread bedding sand evenly over the concrete subbase screed to a nominal 5/8 inch. thickness. Spread bedding sand evenly over the subbase /fabric and screed rails, using the rails and/or edge restraints to produce a nominal 5/8 inch. thickness, allowing for specified variation in the base surface.
  1. Do not disturb screeded sand.
  2. Screeded area shall not substantially exceed that which is covered by pavers in one day.
  3. Do not use bedding sand to fill depressions in base surface.

### **3.04 INSTALLATION OF PCC PAVERS**

- A. After the modified asphalt adhesive is applied or sand setting bed is in place, carefully place the pavers in straight courses with "hand" tight joints and uniform top surface.
- B. Pavers shall be installed in approximately the order in which they were manufactured. No cluster shall be installed next to a cluster that was manufactured more than 2500 cycles before or after.
- C. Good alignment must be kept and the pattern shall be that shown on the plans.
- D. No partial paver shall be installed that has an area less than one-half the original full-size paver.
- E. Bituminous set pavers shall be rolled or compacted to achieve full bond with the setting bed, reduce lippage and improve the overall regularity of the surface. Protect pavers by using a rubber roller of a 4000 to 5000 pound plate tamper with a protective mat attached.

### **3.05 JOINT TREATMENT**

- A. Joints shall be a maximum of 1/4 inch for concrete pavers.
- B. Sweep the dry joint filler sand into concrete paver joints.

### **3.06 CLEAN-UP**

- A. Sweep excess sand from paved surfaces and remove from site.
- B. Remove all excess materials and debris from site.

## **155078.04 METHOD OF MEASUREMENT.**

- A. Method of Measurement: The Engineer will measure the square yard surface area of the installed concrete pavers.

## **155078.05 BASIS OF PAYMENT.**

- A. Basis of Payment: Payment for concrete pavers includes all labor, materials, equipment, and supervision required to furnish and install concrete pavers, complete.

- B.** Unit Price for concrete pavers (TYPE 1A, 1B, & 2) will include subgrade preparation, concrete base, material cutting and installation of pavers, sand setting bed, geotextile fabric, and joint filler.
  
- C.** Unit Price for concrete pavers (TYPE 4) will include subgrade preparation, material cutting and installation of pavers, setting bed, modified asphalt adhesive and joint filler.