SP-156069
(New)

SPECIAL PROVISIONS
FOR
CONCRETE AND DETECTABLE WARNING PAVERS

Johnson County
STP-U-1557(639)--70-52

Effective Date
January 17, 2018

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

156069.01 DESCRIPTION.

A. This special provision includes all labor, materials, equipment, and supervision required to furnish and install concrete pavers and detectable warning pavers.

B. This special provision includes the specifications for concrete pavers, detectable warning 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

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. Qualifications shall be submitted at the time of bid, without exception.

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, truncated dome paver design quality, and color range.

C. Supplier's formulation for Neoprene-modified asphalt adhesive.

D. Submit Method Statement and Quality Control Plan.

1.04 Site Disturbances

A. Take precautions to insure 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.

156069.02 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: Holland Paver (2 3/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Charcoal
   Bedding: Sand

2. Type 2 Paver: Holland Paver (2 3/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Harvest Gold
   Bedding: Sand

3. Type 4 Paver: Holland II Paver with Center Chamfer (2 3/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Charcoal
   Bedding: Sand

4. Type 5 Paver: Holland II Paver with Center Chamfer (2 3/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Millstream
   Bedding: Sand

5. Type 6B Paver: Holland II Paver with Center Chamfer (2 3/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Red
   Bedding: Sand

6. Type 8 Paver: Holland Paver (3 1/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Charcoal
   Bedding: HMA

7. Type 9 Paver: Holland II Paver with Center Chamfer (3 1/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Millstream
   Bedding: HMA

8. Type 10 Paver: Holland II Paver with Center Chamfer (3 1/8 inch)
   Manufacturer: Borgert Products, Inc.
   Color: Harvest Gold
   Bedding: HMA

9. DETECTABLE WARNING PAVERS:
   Manufacturer: Hanover Architectural Products
   Contact: 5000 Hanover Road
   Hanover, PA 17331
   Phone: 717-637-0500
   Fax: 717-637-7145
   Color: Red 15
   OR Approved Equal

D. Specified Manufacturer for Type 1-10 Pavers and Custom Manhole Collar Paver:
Manufacturer: Borgert Products, Inc.
Contact: 8646 Ridgewood Road

St. Joseph, MN 56374
Phone: 320.363.4671
Toll Free: 800.622.4952
Fax: 320.363.8516

2.02 Asphalt Primer (For Type 8, 9 & 10)
Section 2303 of the Standard Specifications.

2.03 Bituminous Setting Bed (For Type 8, 9 & 10)
Section 2303 of the Standard Specifications. 3/8 inch Type A Binder and Surface Course Mixture

2.04 Neoprene-Modified Asphalt Adhesive (For Type 8, 9 & 10)
Karnak Corp. #230-2% Neo-Asphalt or approved equivalent (manufacturer's phone number: 1-800-526-4236).

2.05 Sand Setting Bed (For Type 1a, 1b, 2, 4, 5, 6b & Detectable Warning Pavers)

A. Sand shall be a layer of sharp, washed aggregate beneath the pavers conforming to ASTM C 33.

B. Sieve according to ASTM C 136.

C. Submit sand gradation analysis for approval.

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

ASTM C 33	
Sieve Size	***Percent Passing***
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

2.06 Joint Filler

A. Sand shall be concrete sand or finer.

B. General fineness requirement: 95% to 100 % passing the No. 8 sieve.

C. Submit sand gradation analysis for approval

Grading Requirements for Joint Filler Sand:

	ASTM C 144 Natural Sand	**ASTM C 144 Manufactured Sand**
Sieve Size	***Percent Passing***	***Percent Passing***
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

156069.03 CONSTRUCTION.

3.01 Preparation of Concrete Subbase

A. Prior to construction of concrete base (included in a separate specification), 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 PCC subslab to insure surface is clean and built in conformance with details.

C. Verify elevation difference between PCC subslab and adjacent finished PCC pavement/sidewalk surface to confirm PCC Pavers can be installed flush with bordering pavement/sidewalk.

3.02 Prime Concrete Slab (For Type 8, 9 & 10)

A. Clean PCC subslab.

B. Prime PCC subslab surface with asphalt primer.

3.03 Placing Bituminous Setting Bed (For Type 8, 9 & 10)

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 PCC subslab 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 inch 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.

3.04 Placing Sand Setting Bed (For Type 1A, 1B, 2, 4, 5, 6B & Detectable Warning Pavers)
Place geotextile fabric over the concrete subbase and spread bedding sand evenly over the fabric and 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.

A. Do not disturb screeded sand.

B. Screeded area shall not substantially exceed that which is covered by pavers in one day.

C. Do not use bedding sand to fill depressions in base surface.

3.05 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 2,500 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.

3.06 Joint Treatment

A. Joints shall be from 0 inches to maximum of ¼ inch for concrete pavers.

B. Sweep the dry joint filler sand into concrete paver joints.

3.07 Clean-Up

A. Sweep excess sand from paved surfaces and remove from site.

B. Remove all excess materials and debris from site.

156069.04 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

A. Method of Measurement: The Engineer will measure the square yard surface area of the installed Concrete Pavers. The Engineer will measure the square feet surface area of the installed Detectable Warning Pavers.

B. Basis of Payment: Payment for Concrete Pavers and Detectable Warning Pavers includes all labor, materials, equipment, and supervision required to furnish and install concrete and detectable warning pavers, complete.

C. Unit Price for Concrete Pavers (Type 1A, 1B, 2, 4, 5, 6B) and Detectable Warning Pavers will include subgrade preparation, concrete base, material cutting and installation of pavers, sand setting bed, geotextile fabric, edge restraints and joint filler.

D. Unit Price for Concrete Pavers (Type 8, 9 & 10) will include subgrade preparation, primer, material cutting and installation of pavers, HMA setting bed, modified asphalt adhesive and joint filler.