

RON DESANTIS GOVERNOR 605 Suwannee Street Tallahassee, FL 32399-0450 JARED W. PERDUE, P.E. SECRETARY

October 1, 2024

Cathy Kendall
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office

Section: 526

Proposed Specification: 5260000 Architectural Pavers

Dear Ms. Kendall:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by David Cerlanek to add language to differentiate dimensions between brick and concrete pavers, add final base layer requirements, and allow reuse of pavers in good condition for repair projects. Also added language commonly used by Modified Special Provision requests.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email <a href="mailto:daniel.strickland@dot.state.fl.us">daniel.strickland@dot.state.fl.us</a>.

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E. State Specifications Engineer

DS/dh

Attachment

cc: Florida Transportation Builders' Assoc.

State Construction Engineer

## ARCHITECTURAL PAVERS (REV 9-26-24)

SECTION 526 is deleted and the following substituted:

## 526-1 Description.

Furnish and install architectural pavers, <u>base materials</u>, <u>concrete curbs</u>, <u>and bedding and</u> joint materials in accordance with this Section and as indicated in the Contract Documents.

### 526-2 Materials.

**526-2.1 General:** Architectural pavers shall meet the following requirements:

Table 526-1 Architectural Paver Requirements				
Proposed Use	ASTM C902 (Brick Paver)	ASTM C1272 (Brick Paver)	ASTM C936 (Concrete Paver)	
Local Side Streets (≤ 35 mph Design Speed)	Do Not Use	X	X	
Commercial Driveways	Do Not Use	X	X	
Sidewalks and Medians	X	Do Not Use X	X	
Residential Driveways	X	<del>Do Not Use</del> X	X	

Ensure that the pavers are consistent in color, size, and appearance. Architectural paver type, pattern, shape and/or color will be in accordance with plan details, when specified. Existing pavers to be reinstalled must be uncut and unbroken except along edges and to fill gaps, use due care when removing and storing existing pavers identified for reinstallation. Pavers with hairline cracks or spalls greater than 1/4 inch shall be discarded and replaced with a type matching the existing paver.

- **526-2.2 Architectural Pavers Roadway:** For installations on roadways and commercial driveways, provide <u>concrete</u> architectural pavers having a minimum thickness of 3-1/8 inches or brick architectural pavers having a minimum thickness of 2-5/8 inches. Reinstalling existing pavers as roadway pavers requires Engineer written approval.
- **526-2.3 Architectural Pavers Sidewalk:** For installations on sidewalks, medians and residential driveways, provide <u>concrete</u> architectural pavers having a minimum thickness of 2–3/8 inches or brick architectural pavers having a minimum thickness of 2-1/4 inches. Reinstalling existing pavers as roadway pavers requires Engineer written approval.
- **526-2.4** <u>Base Materials:</u> For Architectural Pavers Roadway, the minimum base as established per the Contract Documents shall include, in part, 1-1/2 inches of Superpave Asphalt Base meeting the requirements in Section 234 or 4 inches of Cement Concrete Pavement meeting the requirements of Section 350, placed as the final lift of base material.
- <u>526-2.5</u> Bedding and Joint Sands: Provide clean, non-plastic bedding and joint sand, free from deleterious or foreign matter, natural or manufactured from crushed rock.

Ensure the bedding sand meets the grading requirements of ASTM C33 Standard Specification for Concrete Aggregate with no more than 1% passing the No. 200 sieve.

Ensure the joint sand meets the grading requirements of ASTM C144 Standard Specification for Aggregate for Masonry Mortar with no more than 5% passing the No. 200 sieve.

Bedding sand may be used for joint sand. Do not use joint sand for bedding sand.

**526-2. 56 Bedding and Joint Grouts:** A suitable grout, in thickness specified by the manufacturer and approved for use by the architectural paver manufacturer, may be substituted for either bedding sand, joint sand or both when specified in the <u>PlansContract Documents</u> and approved by the Engineer. <u>Bedding and joint grouts shall only be used for non-vehicular applications</u>.

**526-2.7 Concrete Curbs:** Concrete curbs to restrain the pavers, bedding and base layers shall conform to Section 520.

### 526-3 Construction Methods.

### **526-3.1** General:

**526-3.1.1 Submittals:** For Architectural Pavers – Roadway, furnish full size samples to the Engineer for approval prior to beginning placement. For Architectural Pavers — Sidewalk, submit to the Engineer a certification that the architectural pavers meet the requirements of this Section. In addition, for all architectural pavers <u>except existing pavers</u> <u>approved for reinstallation</u>, submit a certified sieve analysis for gradation comparing results of the bedding sand and joint sand with the requirements of ASTM C33 or ASTM C144 as applicable.

**526-3.1.2 Mock-ups:** Prior to beginning placement, install a 6 foot by 6 foot paver area following these specifications. This area will be used to determine surcharge of the bedding material layer, joint sizes, lines, laying patterns and colors of the job. This area will be adjacent to an edge treatment, incorporated into the work, and will be the standard from which the work will be judged.

**526-3.1.3 Environmental Conditions:** Cover stockpiled materials with waterproof covering to prevent exposure to rainfall. Do not install bedding materials or architectural pavers during heavy rains or over wet substrata.

## **526-3.2 Installation:** Install the architectural pavers in the following manner:

- 1. When reinstallation of existing pavers is shown in the Contract Documents, remove existing sidewalk pavers with caution to avoid damage to the pavers. Replace any paver damaged during removal or storage with a new paver at no cost to the Department. Follow existing layout pattern when reinstalling existing pavers. Remove and dispose of existing bedding material below freshly removed pavers to base depth, not to exceed 6 inches in depth. Place new base material to the level specified in the Contract Documents.
- 2. Spread the bedding <u>sandmaterial</u> evenly over the base course and screed to plan thickness, not to exceed a thickness of 1-1/2 inches. Do not disturb the screeded bedding material. Ensure placement of sufficient bedding material to stay ahead of the laid architectural pavers. Do not use the bedding material to fill depressions in the base course.
- 23. Lay architectural pavers in the pattern(s) shown in the Contract Documents Plans and maintain straight pattern lines.
- 34. Joints between the architectural pavers, on average, will be between 1/16 to 3/16 inch wide.
- 4<u>5</u>. Fill gaps at the edges of the paved area with cut or edge architectural pavers. For vehicular applications, no cut paver subject to tires shall be less than one-third of a whole paver.

- 56. When utilizing bedding and joint sand:
- a. Use a low amplitude vibrator <u>capable of with a minimum of 5,000</u> footpounds <u>with centrifugal force operating at 70- to 100 Hz frequencies</u> to vibrate and compact architectural pavers into bedding sand. <u>Make a minimum of two passes over the entire area with the second pass perpendicular to the first pass.</u>
- b. Vibrate the architectural pavers, sweeping dry joint sand into the joints and vibrating, until the joints are full. Do not vibrate within 3 feet of the unrestrained edges of the architectural pavers. Make a minimum of two passes over the entire area with the second pass perpendicular to the first pass.
- c. At the end of each day, all work within 3 feet of laying face must be left fully compacted, with sand-filled joints. <u>If rain is forecasted overnight</u>, secure a waterproof cover over exposed, screeded bedding sand that has not received pavers such that it does not become saturated.
  - d. Sweep off the excess sand.
- 67. Leave a final surface elevation of architectural pavers of 1/8 to 1/4 inch above adjacent drainage inlets, concrete collars or channels.
- 78. Do not permit the final surface elevations of the pavers to deviate more than 3/8 inch under a 10-foot-long straightedge, or more than 1/8 inch between adjacent pavers.

#### **526-4 Method of Measurement.**

526-4.1 General: The quantity to be paid for will be the plan quantity, in square yards, for architectural pavers and edge restraint completed and accepted. No deduction will be made for the areas occupied by ornamental trees left within and any other areas occupied by manholes, inlets, drainage structures or by public utility appurtenances within the normal areas of the architectural pavers. Base materials will be paid in accordance with Section 234 or Section 350, as required.

526-4.2 Removal and Reinstallation of Existing Pavers: Payment for removal and reinstallation of existing architectural pavers will be the plan quantity area, in square yards, for existing pavers removed and reinstalled, completed and accepted.

Payment for replacing existing damaged pavers as identified in the Contract Documents will be made as new pavers.

No payment will be made for material used to replace pavers damaged during removal or storage.

## 526-5 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including all materials, equipment, edge restraint curbing, and labor; including any preparation of the base or subgrade not included in the work to be paid for under another Contract item; and all incidentals necessary to complete the work. labor, and incidentals necessary to complete the work.

Payment shall be made under:

Item No. 526- 1 Pavers, Architectural Pavers per square yard.
Roadway – per square yard.
Sidewalk – per square yard.
Remove Existing and Reinstall - per square yard

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### 526-1 Description.

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Table 526-1					
Architectural Paver Requirements					
Proposed Use	ASTM C902	ASTM C1272	ASTM C936		
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Design Speed)					
Commercial Driveways	Do Not Use	X	X		
Sidewalks and Medians	X	X	X		
Residential Driveways	X	X	X		

Ensure that the pavers are consistent in color, size, and appearance. Architectural paver type, pattern, shape and color will be in accordance with plan details, when specified. Existing pavers to be reinstalled must be uncut and unbroken except along edges and to fill gaps, use due care when removing and storing existing pavers identified for reinstallation. Pavers with hairline cracks or spalls greater than 1/4 inch shall be discarded and replaced with a type matching the existing paver.

- **526-2.2 Architectural Pavers Roadway:** For installations on roadways and commercial driveways, provide concrete architectural pavers having a minimum thickness of 3-1/8 inches or brick architectural pavers having a minimum thickness of 2-5/8 inches. Reinstalling existing pavers as roadway pavers requires Engineer written approval.
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- **526-2.4 Base Materials:** For Architectural Pavers Roadway, the minimum base as established per the Contract Documents shall include, in part, 1-1/2 inches of Superpave Asphalt Base meeting the requirements in Section 234 or 4 inches of Cement Concrete Pavement meeting the requirements of Section 350, placed as the final lift of base material.
- **526-2.5 Bedding and Joint Sands:** Provide clean, non-plastic bedding and joint sand, free from deleterious or foreign matter, natural or manufactured from crushed rock.

Ensure the bedding sand meets the grading requirements of ASTM C33 Standard Specification for Concrete Aggregate with no more than 1% passing the No. 200 sieve.

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- **526-2.7 Concrete Curbs:** Concrete curbs to restrain the pavers, bedding and base layers shall conform to Section 520.

### 526-3 Construction Methods.

### **526-3.1 General:**

- **526-3.1.1 Submittals:** For Architectural Pavers Roadway, furnish full size samples to the Engineer for approval prior to beginning placement. For Architectural Pavers Sidewalk, submit to the Engineer a certification that the architectural pavers meet the requirements of this Section. In addition, for all architectural pavers except existing pavers approved for reinstallation, submit a certified sieve analysis for gradation comparing results of the bedding sand and joint sand with the requirements of ASTM C33 or ASTM C144 as applicable.
- **526-3.1.2 Mock-ups:** Prior to beginning placement, install a 6 foot by 6 foot paver area following these specifications. This area will be used to determine surcharge of the bedding material layer, joint sizes, lines, laying patterns and colors of the job. This area will be adjacent to an edge treatment, incorporated into the work, and will be the standard from which the work will be judged.
- **526-3.1.3 Environmental Conditions:** Cover stockpiled materials with waterproof covering to prevent exposure to rainfall. Do not install bedding materials or architectural pavers during heavy rains or over wet substrata.
  - **526-3.2 Installation:** Install the architectural pavers in the following manner:
- 1. When reinstallation of existing pavers is shown in the Contract Documents, remove existing sidewalk pavers with caution to avoid damage to the pavers. Replace any paver damaged during removal or storage with a new paver at no cost to the Department. Follow existing layout pattern when reinstalling existing pavers. Remove and dispose of existing bedding material below freshly removed pavers to base depth, not to exceed 6 inches in depth. Place new base material to the level specified in the Contract Documents.
- 2. Spread the bedding sand evenly over the base course and screed to plan thickness, not to exceed a thickness of 1-1/2 inches. Do not disturb the screeded bedding material. Ensure placement of sufficient bedding material to stay ahead of the laid architectural pavers. Do not use the bedding material to fill depressions in the base course.
- 3. Lay architectural pavers in the pattern(s) shown in the Contract Documents and maintain straight pattern lines.
- 4. Joints between the architectural pavers, on average, will be between 1/16 to 3/16 inch wide.
- 5. Fill gaps at the edges of the paved area with cut or edge architectural pavers. For vehicular applications, no cut paver subject to tires shall be less than one-third of a whole paver.

- 6. When utilizing bedding and joint sand:
- a. Use a low amplitude vibrator with a minimum of 5,000 foot-pound centrifugal force operating at 70 to 100 Hz to vibrate and compact architectural pavers into bedding sand. Make a minimum of two passes over the entire area with the second pass perpendicular to the first pass.
- b. Vibrate the architectural pavers, sweeping dry joint sand into the joints and vibrating, until the joints are full. Do not vibrate within 3 feet of the unrestrained edges of the architectural pavers. Make a minimum of two passes over the entire area with the second pass perpendicular to the first pass.
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- **526-4.2 Removal and Reinstallation of Existing Pavers:** Payment for removal and reinstallation of existing architectural pavers will be the plan quantity area, in square yards, for existing pavers removed and reinstalled, completed and accepted.

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## 526-5 Basis of Payment.

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Payment shall be made under:

Item No. 526- 1- -- Architectural Pavers

Roadway – per square yard.

Sidewalk – per square yard.

Remove Existing and Reinstall - per square yard.