

## SUDAS Revision Submittal Form

Status Date: As of 3/15/2018 Topic: Brick sidewalk requirements  
Manual: Specifications Manual Location: Section 7030, 1.08, B; 2.03-2.07;  
3.06-3.07 and Figure 7030.203

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### Requested Revision:

#### 1.08 MEASUREMENT AND PAYMENT

##### ~~F. Brick Sidewalk:~~

##### ~~1. Brick Sidewalk with Sand Base:~~

- ~~a. Measurement:~~ Measurement will be in square yards for the area of brick sidewalk placed on a sand base.
- ~~b. Payment:~~ Payment will be at the unit price per square yard for the area of sidewalk.
- ~~c. Includes:~~ Unit price includes, but is not limited to, subgrade preparation, brick edge restraints, furnishing and placing compacted sand base, and sand/cement joint filler.

##### ~~2F. Brick/Paver Sidewalk with Concrete Base:~~

- a1. Measurement:** Measurement will be in square yards for the area of brick/paver sidewalk placed on a concrete base. The area of concrete base will not be measured separately.
- b2. Payment:** Payment will be at the unit price per square yard for the area of brick/paver sidewalk.
- e3. Includes:** Unit price includes, but is not limited to, subgrade preparation, concrete base, HMA setting bed, neoprene asphalt adhesive for asphalt setting bed, setting the bricks/pavers, installing weep holes and associated materials, and sand/cement joint filler.

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#### 2.03 BRICK PAVERS BRICKS/PAVERS

- A. Clay Bricks:** Use 8 inch by 4 inch by 2 1/4 inch thick clay paving bricks with straight edges or a maximum chamfer of 1/8 inch manufactured to comply with ASTM C 902, Class SX, Type I. Color selection and surface texture as approved by the Engineer.
- B. Concrete Pavers:** Supply as specified in the contract documents. Use pavers with straight edges or a maximum chamfer of 1/8 inch.

#### 2.04 HMA SETTING BED FOR BRICKS/PAVERS

- A. Mixture:** Proportion mix using 7% asphalt binder and 93% fine aggregate. Apportion each ton in the approximate ratio of 145 pounds asphalt binder to 1,855 pounds sand. Maintain mix temperature at approximately 250°F during placement.
- B. Asphalt Binder:** Use asphalt binder complying with Section 7020 with a performance grade of PG 58-28 or 64-22.
- C. Fine Aggregate:** Use clean, hard sand with durable particles free from adherent coating, lumps of clay, alkali salts, and organic matter. Use sand that is uniformly graded from coarse to fine with all passing the No. 4 sieve and meeting AASHTO T 27.
- D. Pre-Mixed High Performance Cold Mix:** If allowed, substitute a pre-mixed high performance cold mix product for the HMA setting bed generally meeting the HMA mixture requirements noted above.

## 2.05 NEOPRENE MODIFIED ASPHALT ADHESIVE FOR BRICK/PAVERS

### A. Mastic (Asphalt Adhesive):

<b>Solids (Base):</b>	74% to 76%
<b>Pounds per Gallon:</b>	8 to 8 1/2 pounds
<b>Solvent:</b>	Mineral spirits with a flash point above 100° F

### B. Base (2% Neoprene, 10% Asbestos-free Fiber, 88% Asphalt):

<b>Melting Point:</b>	200° F minimum according to ASTM D 36
<b>Penetration:</b>	23 to 27 according to ASTM D 5
<b>Ductility:</b>	1250 mm minimum according to ASTM D 113 @ 25° C, and a rate of 50 mm/minute

## 2.06 BRICK/PAVER JOINT FILLER

Dry sand-cement mixture consisting of one part masonry cement complying with ASTM C 91 and three parts sand complying with ASTM C 144 and passing the No. 16 sieve. Provide colored cement to match bricks as specified in the contract documents.

## 2.07 DETECTABLE WARNINGS

Use manufactured detectable warning panels or brick pavers with a non-slip surface and raised truncated domes. Comply with the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (also known as PROWAG) for contrast and dimension requirements. Also comply with Iowa DOT Materials I.M. 411.

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## 3.06 BRICK/PAVER SIDEWALKS WITH A CONCRETE BASE

### ~~A. Brick Sidewalk with a Sand Base:~~

- ~~1. Comply with Figure 7030.203.~~
- ~~2. Use a cross section and patterns as specified in the contract documents or approved by the Engineer.~~
- ~~3. Do not use broken bricks or materials with stained faces in the paving areas.~~
- ~~4. Set edge restraints true to line and grade along both edges of brick sidewalk.~~
- ~~5. Place bricks on smooth, compacted bedding sand and tightly set in place without gaps.~~
- ~~6. Compact bricks using a 3 to 5 ton roller or machine with a vibratory plate weighing a minimum of 100 pounds.~~
- ~~7. Tightly compact joints with brick sand/cement.~~

### ~~B. Brick/Paver Sidewalks with a Concrete Base:~~

#### ~~1A. General:~~

- ~~a1. Comply with Figure 7030.203.~~
- ~~b2. Use a cross-section and patterns as specified in the contract documents or approved by the Engineer.~~
- ~~e3. Do not use broken bricks or materials with stained faces in the paving areas.~~
- ~~e4. Construct the concrete base to comply with PCC sidewalk construction specifications.~~

#### ~~2B. HMA Setting Bed:~~

- ~~a1. Place 3/4 inch depth control bars on the base to serve as guides for the striking board. Shim depth control bars as necessary to adjust bedding thickness and to ensure the top surface of pavers will be at the required finished grade.~~

- b2. Place HMA bedding material between the parallel depth control bars. Pull striking board over bars several times. After each pass, spread fresh bedding material over low or porous spots to produce a smooth and even setting bed. After placing and smoothing each section, advance depth control bars to next section. After removal of depth control bars and shims, carefully fill any depressions that remain.
- e3. While still hot, roll the HMA bedding with a power roller to a nominal depth of 3/4 inch.
- e4. Ensure the joints in the concrete base do not project through the HMA setting bed.
- e5. Apply neoprene modified asphalt adhesive over the top surface of the cooled asphalt setting bed with notched trowel with serration not exceeding 1/16 inch. Allow adhesive to dry to the touch before placing pavers.

**C. Weep Holes:**

- 1. Install 2 inch diameter PVC sleeve 12 inch long in the PCC base with the top even with the asphalt setting bed at the locations identified on the plans.
- 2. Fill sleeve with 3/4 inch clean rock and place engineering fabric to cover the sleeve.
- 3. Install minimum of 12 inch deep and 12 inch wide reservoir of clean 3/4 inch rock around the sleeve below the PCC sidewalk base or extend the rock reservoir to the pavement subdrain.

**3D. Brick Pavers Bricks/Pavers:**

- a1. Place the bricks/pavers by hand in straight courses with hand tight joints and uniform top surface.
- b2. Sweep dry joint filler into joints until the joints are completely filled.
- e3. Fog surface lightly with water to cure cement.
- e4. Clean any cement stains from bricks/pavers surface. Remove stains from other concrete surfaces.

**4E. Protection:** Protect newly laid bricks/pavers at all times using panels of plywood. Panels can be advanced as work progresses; however, keep the plywood protection in areas that will be subjected to movement of materials, workers, and equipment. Take precautions in order to avoid depressions and protect brick/paver alignment until cured and ready for pedestrian or vehicle traffic.

**3.07 DETECTABLE WARNING INSTALLATION**

**A. Manufactured Panels:**

- 1. Comply with Figure 7030.210.
- 2. Install according to manufacturer's recommendations.
- 3. Set panels in fresh concrete.

**B. Brick Pavers:**

- 1. Comply with Figure 7030.203.
- 2. Install according to Section 7030, 3.06.

Set detectable warning panels in fresh concrete according to the manufacturer's recommendations and Figure 7030.210.

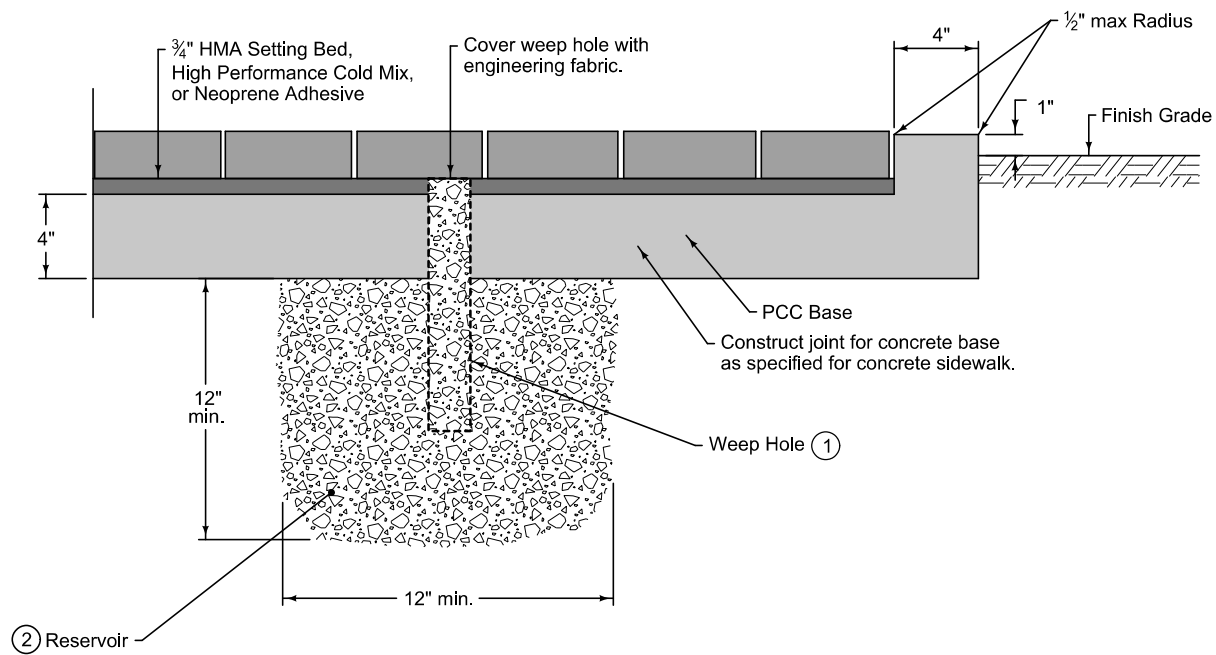
**Reason for Revision:** Delete sand bedding and modify brick/paver requirements to meet ADA.

**Comments:** None.

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<b>Comments:</b>	Two cities commented that they have had issues with HMA setting bed; would desire to keep the sand setting bed. The newer asphalt plants make it difficult to make the sand setting bed. Could potentially use a porous asphalt. Another city has used a high performance cold patch and had great results.						

**Final District Action Summary:**


**Board of Directors Action:**



BRICK SIDEWALK WITH CONCRETE BASE

Install brick sidewalk with pattern specified in the contract documents.

- ① Install 2 inch diameter, 12 inch long, PVC sleeve even with the top of the asphalt setting bed at locations specified. Fill pipe with 3/4 inch clean rock.
- ② Fill reservoir with 3/4 inch clean rock.

	REVISION
	2   10-16-18
	<b>SUDAS</b> <b>7030.203</b> SHEET 1 of 1
SUDAS Standard Specifications	
BRICK SIDEWALK	