

SECTION 114 – UNIT PAVERS

1. GENERAL

The work covered in this section consists of furnishing all equipment, materials and labor required for the installation of the unit pavers in the location shown on Drawings with concrete/brick materials in accordance with the latest version of Section 1301 of the Kansas Department of Transportation (KDOT) Standard Specifications and as amended herein.

2. SUBMITTALS

A. Product data for the following items:

- a. Concrete or Brick Pavers
- b. Edge Restraints
- c. Mortar

B. Samples for verification in full-size units of each type of paver indicated; in sets for each color, texture and pattern specified, showing the full range of variations expected in these characteristics; with joints grouted and cured, indicating full range of colors to be expected in the completed work.

C. Qualification data for firms and persons specified in the “Quality Assurance” section to demonstrate their capabilities and experience to include lists of completed projects showing project name, location and contact information

3. QUALITY ASSURANCE

A. Installer Qualifications. Engage an experienced Installer who has completed unit paver installations similar in material, design, and extent indicated on the Project with a record of successful performance.

B. Single-Source Responsibility. Obtain each color, type and variety of unit pavers, joint materials, and setting materials from a single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying the work.

4. DELIVERY, STORAGE AND HANDLING.

Protect unit pavers and aggregate during storage and construction against soilage or contamination from earth and other materials. Wrap pavers in plastic or use other packaging materials that will prevent rust marks from steel strapping.

5. COLD-WEATHER PROTECTION

Do not use frozen material or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

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6. MATERIALS

- A. Concrete Base. See Section 202 for specifications for concrete base which shall be a minimum depth of 4 inches (4”) unless otherwise shown on the Drawings.
- B. Graded Aggregate for Subbase or Base. Quality-controlled graded aggregate complying with ASTM D 2940 for aggregate material.
- C. Sand for Leveling Course. Fine, sharp, nonplastic aggregate complying with ASTM C 33.
- D. Sand for Joints. Fine, sharp, masonry sand with 100 percent passing the No. 16 (1.18mm) sieve and no more than 10 percent passing the No. 200 (0.075 mm) sieve.

7. PREPARATION

Clean concrete substrates to remove dirt, dust, debris and loose particles. Subgrade shall be checked for unstable areas and areas requiring additional compaction. Do not proceed with installation of unit pavers until deficient subgrade has been corrected and is ready to receive subbase materials.

8. INSTALLATION

- A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work. Mix pavers from several pallets or cubes as they are placed to produce uniform blend of colors and textures.
- B. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- C. Joint Pattern shall be as indicated on the Drawings. Tolerances shall not exceed 1/16-inch unit-to-unit offset from flush (lippage) or 1/8 inch in 24 inches and ¼ inch in 10 feet from level, or indicated slope, for finished surface of paving.
- D. Provide edge restraints as indicated and install prior to placing unit pavers. Install edge restraints to comply with manufacturer’s directions. Place stakes at intervals required to hold edge restraints in place during and after installation of unit pavers.
- E. Compact soil subgrade uniformly to at least 98 percent of standard proctor density. Place aggregate subbase in the thickness indicated. Compacted by tamping with a plate vibrator and screed to the elevation required to allow setting the pavers to finish grade.
- F. Place sand for leveling course and screed to a thickness of 1 inch (+/- ¼ inch), taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted. All detail and section notes that refer to ½” or ¾” sand bedding shall be interpreted as a cement/sand mixture for all areas of the project. The cement/sand mixture shall consist of one (1) part cement to three (3) parts of sand (25% approximately by volume).

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G. Set pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling course. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch with pieces cut to fit from full-size unit pavers.

H. When installation is performed with mechanical equipment, use only unit pavers with space bars on sides of each unit.

I. Vibrate pavers into leveling course with a low amplitude plate vibrator capable of a 3500- to 5000- lbf compaction force to 4800 to 5400 vibrations per minute. Perform at least 3 passes across paving with vibrator. Vibrate under the following conditions:

a. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.

b. Before ending each day's work, fully compact installed concrete pavers within 36 inches of the laying face. Cover the open layers with nonstaining plastic sheets overlapped 48 inches on each side of the laying face to protect it from rain.

J. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling. Do not allow traffic on installed pavers until sand has been vibrated into joints.

K. Repeat joint-filling process 30 days later. Remove all excess sand.

8. REPAIR, CLEANING, AND PROTECTION.

Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment to eliminate evidence of replacement.

9. MEASUREMENT AND PAYMENT

Payment for this work shall be made at the contract square yard price for "Unit Pavers or Brick Street Repair" of the specified type which includes subgrade preparation, concrete base course, levelling sand/cement mixture, joint sanding, tools, materials and equipment necessary to complete the work.