

## SECTION 6200 - UNIT PAVERS

### PART 1- GENERAL

**1.01 SCOPE:** This Section covers unit pavers. Topics include worker's experience, material certification, weather limits, bedding, installation, and tolerances.

**1.02 RELATED WORK:** Refer to the following sections for the named related subjects:

Curbs and Headers	Section 4100-Concrete Pavement and Flatwork
Base Course	Section 2200-Subgrade Preparation and Pavement Milling
Concrete Base	Section 4100-Concrete Pavement and Flatwork
Asphalt Base	Section 3100-Asphalt Paving
Mortar	Section 6400-Stone Wall

**1.03 INSTALLER'S QUALIFICATIONS:** Installation shall be by an installer with at least three successful installations of concrete pavers of similar scope.

**1.04 SUBMITTALS:** The following material shall be submitted for review:

- A. A sufficient number of pavers to show the full range of size, color, and surface texture.
- B. Manufacturer's and supplier's test results from an independent testing laboratory demonstrating compliance of pavers to the requirements given in Part 2 of this Section.
- C. Sieve analysis of bedding and joint sand.
- D. References demonstrating installers' experience.

**1.05 SAMPLE PANEL:** A minimum 40-square foot sample of each paving style shall be prepared using the personnel, materials, edges, and methods to be employed in the final work. This area will be used to determine surcharge of the sand layer, joint sizes, laying patterns, colors, and texture of the job. Rejected samples shall be removed and additional samples prepared until Engineer approves sample. Sample shall be the standard from which the work shall be judged. Sample may form part of the final work.

**1.06 ENVIRONMENTAL LIMITS:** Pavers shall not be installed on frozen surfaces or during snow or rain.

### PART 2 - PRODUCTS

**2.01 CONCRETE UNIT PAVERS:** Concrete pavers shall be manufactured and supplied by a member of the Concrete Paver Institute, a division of the National Concrete Masonry Association. Minimum paver thickness shall be 2-3/8 inches for medians, alleys, and pedestrian areas, and 3-1/8 inches for streets. Face size and shape shall be as specified in the Special Conditions. Color shall be selected by Engineer from manufacturer's available colors. Pavers shall have spacer bars on the sides of each

unit; spacer bars shall be a minimum of 1/16-inch thick. Pavers shall meet the requirements of ASTM C936 and as follows:

- A. Minimum average compressive strength of 8,000 psi at 28 days.
- B. Maximum absorption no greater than 5 percent measured in accordance with ASTM C140.
- C. No breakage and less than 0.5 percent weight loss after 50 freeze-thaw cycles tested by ASTM C67, or suitable field history.

**2.02 JOINT SAND:** Bedding and joint sand shall be concrete sand conforming to ASTM C33 grading requirements as shown below. Sand shall be sharp, washed, and free of foreign material. Masonry sand shall not be used.

<u>Sieve Size</u>	<u>Percent Retained</u>
3/8-inch	0
No. 4	0 to 5
No. 8	0 to 20
No. 16	15 to 50
No. 30	40 to 75
No. 50	70 to 90
No. 100	90 to 98

**2.03 BEDDING MATERIALS:**

- A. For crosswalks, medians and roadway pavements bedding shall be same as mortar for stone walls. See related work part 1.
- B. For sidewalks unamended joint sand shall be used for Bedding.

**2.04 INSTALLATION EQUIPMENT:** Cutting and compaction equipment shall meet the following requirements:

- A. Cutting equipment shall be either a double-bladed splitter or masonry saw. In areas of high pedestrian traffic, wet sawing may be required by Engineer.
- B. Compactor shall be low amplitude, high frequency plate vibrator capable of 3,000 to 5,000 lbs. centrifugal force.

**2.05 EDGE RESTRAINTS:** Concrete curbs and headers used as edge restraints are specified as referenced in Part 1. Other edge restraints, if any, are specified in the Special Provisions.

**PART 3 - EXECUTION**

**3.01 EXAMINATION:** Prior to installation, Contractor shall verify that subbase is installed, dry, and at the correct grade and elevation, and that curbs or headers or other edge restraints are installed and approved by Engineer.

**3.02 BASE COURSE:** Base course shall be installed as detailed on the drawings or in the Special Provisions. If not specified elsewhere, the base for medians and pedestrian areas shall be 4 inches of compacted granular base course.

**3.03 SAND BEDDING:** Bedding sand shall be spread and screeded to form a uniform 1- to 1-1/2-inch layer. Sand bed shall be protected from compaction, including compaction from foot traffic, or settlement from exposure to rain, snow, or condensation. Sand that has become compacted prior to setting pavers shall be raked and screeded.

**3.04 PAVER INSTALLATION** Pavers shall be installed as follows:

- A. Paving pattern shall be as specified in the Special Conditions or the drawings, or as directed by Engineer.
- B. Pavers shall be free of foreign materials before installation.
- C. Pavers shall be set hand tight with 1/16-to 1/8-inch wide joints. Gaps at edges shall be filled with cut pavers or edge units. Cuts shall be made with approved equipment. Gaps at edges of 3/8-inch and smaller shall be filled with sand.
- D. Pavers shall be vibrated into the sand bed using approved equipment. All pavers shall be vibrated the same day they are set, except pavers within 3 feet of the laying face shall not be vibrated. Pavers shall be protected from direct contact with the compactor by a layer of sand. A minimum of two passes shall be completed. Vibration shall continue until sand completely fills the joints.
- E. After vibration, the top surface elevation of pavers on aggregate base shall be 1/8-to 1/4-inch above adjacent curbs, inlets, concrete collars, and channels. Pavers on concrete base shall be flush with curbs, inlets, concrete collars, and channels.
- F. When possible, work shall be arranged to avoid leaving an unrestrained edge overnight. When left overnight, the laying face and sand bed shall be covered with waterproof sheeting.
- G. Excess sand shall be removed. Completed paving shall be swept.

**3.05 TOLERANCES:** Finished surface shall be true to plane and line within the following limits:

<u>Item</u>	<u>Tolerance</u>
Surface Planeness	3/8-inch in 10'
Horizontal Line	1/2-inch in 20' and 1-inch overall
Vertical Offset at Joint between two Pavers	1/16-inch

END OF SECTION 6200