

SECTION 114 – UNIT PAVERS (CONCRETE)

1. GENERAL

The work covered in this section consists of furnishing all equipment, materials and labor required for the installation of the concrete/brick unit pavers in the location shown on detailed drawings.

2. SUMMARY

A. This section includes the following:

1. Concrete/brick pavers set on aggregate base.
2. Edge restraints for unit pavers if needed.

3. SUBMITTALS

A. Product data for the following:

1. Concrete Pavers or Brick Pavers.
2. Edge restraints if needed.

B. Samples for verification in full-size units of each type of unit paver indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.

1. Provide samples 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” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

4. QUALITY ASSURANCE

A. Installer Qualifications. Engage an experienced Installer who has completed unit paver installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service 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.

5. DELIVERY, STORAGE AND HANDLING.

A. Protect unit pavers and aggregate during storage and construction against soilage or contamination from earth and other materials.

1. Wrap pavers in plastic or use other packaging materials that will prevent rust marks from steel strapping.

6. PROJECT CONDITIONS

A. 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.

7. PRODUCTS

A. Manufactures.

1. Manufacturers. Subject to compliance with requirements, provide products by one of the following or another pre-approved manufacturer.

a. Concrete/Brick Pavers.

1) Pavestone Co.

b. Plastic Edge Restraints.

1) Pave Tech, Inc.

2) Ryerson: J. T. Ryerson & Son, Inc.

B. Colors and Textures.

1. Provide materials and products that result in colors and textures of exposed unit paver surfaces and joints complying with the following requirements:

a. Provide City Engineer selections from manufacturer's full range of colors and textures for materials and products of type indicated. Prior to delivery of material or installation, contractor shall receive in writing approval of color selection from City Engineer verifying color acceptance.

C. Unit Pavers.

1. Concrete/Brick Pavers. Solid, interlocking paving units, ASTM C 936, made from normal-weight aggregates in sizes and shapes indicated.

D. Accessories.

1. Plastic Edge Restraints. Manufacturer's standard triangular polyvinyl chloride extrusions designed to serve as edge restraints for unit pavers, rigid type for straight edges and flexible type for curved edges, with pipe connectors and 3/8- inch diameter by 12-inch-long steel spikes. Size of edging as follows:

a. 1-3/4 inches high by 3-1/2 inches wide.

E. Aggregate Setting-Bed Materials.

See Section 4 for specifications for concrete base.

1. Graded Aggregate for Base. Quality-controlled graded aggregate complying with ASTM D 2940 for Base material.

2. Sand for Leveling Course. Fine, sharp, nonplastic aggregate complying with ASTM C 33.

3. 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.

8. EXAMINATION.

A. Examine surfaces indicated to receive paving, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of unit pavers. Do not proceed with installation until unsatisfactory conditions have corrected.

1. Where pavers are to be installed over waterproofing, examine waterproofing installation with waterproofing installer present, for protection from paving operations. Examine areas where waterproofing system is turned up or flashed against vertical surfaces as well as horizontal waterproofing. Do not proceed with installation until protection is in place.

9. PREPARATION

A. Clean concrete substrates to remove dirt, dust, debris, and loose particles.

B. Proof-roll prepared subgrade surface to check for unstable areas and areas requiring additional compaction. Do not proceed with installation of unit pavers until deficient subgrades have been corrected and are ready to receive subbase for unit pavers.

10. INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

C. 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.

D. Joint Pattern. As indicated.

E. Tolerances. Do 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.

F. Provide edge restraints as indicated. Install edge restraints prior to placing unit pavers.

1. 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.

11. AGGREGATE SETTING-BED PAVER APPLICATIONS

A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 1557 laboratory density.

B. Place aggregate base in thickness indicated. Compact by tamping with plate vibrator and screed to depth required to allow setting of pavers.

C. Place sand for leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted.

D. Set pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling base. 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.

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

E. Vibrate pavers into leveling course with a low amplitude plate vibrator capable of a 3500- to 5000- lbf (16- to 22-kN) compaction force to 80 to 90 Hz. Perform at least 3 passes across paving with vibrator. Vibrate under the following conditions:

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

2. 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.

F. 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.

G. Do not allow traffic on installed pavers until sand has been vibrated into joints.

H. Repeat joint-filling process 30 days later.

12. REPAIR, CLEANING, AND PROTECTION.

A. 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.

B. Provide final protection and maintain conditions in a manner acceptable to installer that ensures that unit paver work is without damage or deterioration at the time of Substantial Completion.