

ITEM 04608.10 M - PRECAST CONCRETE PAVERS
ITEM 04608.11 M - REMOVE, STORE AND RESET PRECAST CONCRETE PAVERS

DESCRIPTION: Under this item the Contractor shall remove, store and reset and/or furnish and install colored concrete pavers at locations shown on the plans or where directed by the Engineer, in accordance with the details shown on the contract documents, and to the lines and grades shown in the contract documents or as established by the Engineer.

Existing colored concrete pavers to be reset shall be removed and stored at a location and in manner that will protect them from damage until such time that they are reset.

MATERIALS: All the requirements of Standard Specification Section 608-2.05 shall apply with the following modification or additions:

Concrete Pavers

Precast concrete pavers shall be a 60 to 63 millimeter thick, exposed aggregate, concrete paver of the dimensions shown on the plans. The pavers shall meet or exceed the provisions of Section 714-13 of the Standard Specifications and the following additional requirements:

- Modulus of Rupture: 55 MPa average of samples
- Surface Imperfections: less than 3 mm across width of paver

The pavers shall be Hanover Preset pavers [Hanover M 1458 (Rose) and Super Black (Gray)] with a heavy tudor finish, Unilock S-3000 pavers [Unilock GT 050 (Rose) and GT 049A (Gray)] or approved equal. Color and texture shall match the existing concrete pavers. The Engineer will make the final determination as to the acceptability of the color and texture match to the existing. The Engineer will also randomly test for surface imperfections by visual observations and caliper testing.

Bedding Sand

Bedding Sand shall consist of clean, hard, durable, uncoated particles, free from lumps of clay and all deleterious substances or other contaminates. When dry, the Bedding Sand shall meet the following requirements:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
9.5 mm	100
4.75 mm	95 - 100
2.36 mm	80 - 100
1.18 mm	50 - 85
600 µm	25 - 60
300 µm	10 - 30
150 µm	5 - 15
75 µm	0 - 10

Concrete Paver Base

Materials and construction of the concrete base shall conform to Section 608 of the Standard Specifications for concrete sidewalks. No tooling or surface finishing is required for concrete paver base.

Stone Dust

Stone Dust shall consist of inert materials that are hard, durable stone free from surface coatings and deleterious

ITEM 04608.10 M - PRECAST CONCRETE PAVERS
ITEM 04608.11 M - REMOVE, STORE AND RESET PRECAST CONCRETE PAVERS

materials, meeting the following gradation requirements:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
4.75 mm	100
2.36 mm	95 - 100
1.18 mm	60 - 75
600 µm	35 - 50
300 µm	25 - 35
150 µm	15 - 20
75 µm	0 - 10

Filter Fabric

The filter fabric shall meet or exceed the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:

- a) Grab Tensile Strength (ASTM D 4632): 1201D
- b) Apparent opening size (ASTM D 4751): 150 µm U.S. Standard Sieve
- c) Permeability (ASTM D 4491): 4,482 liters per minute per square meter (110 gpm/ft²)

Filter Fabric Adhesive

Filter fabric adhesive shall be liquid mastic.

Drain Weep Pipe

Drain weep pipe shall be PVC (Polyvinyl chloride) plastic pipe, 2 NPS, schedule 40 conforming to ASTM D 2665.

Joint Sealant

Sealant shall be Dymeric 511 as manufactured by Tremco, Beachwood, OH or approved equal. Two colors will be needed; one to match the rose pavers and one to match the gray pavers. Submit samples for color approval.

Joint Backing - Bond Breaker

Joints shall be backed by round polyurethane foam, closed-cell polyethylene, non-bleeding neoprene or butyl rod under minimum 25% compression.

Retarder

The surface retarder shall be Rugasol-S as manufactured by Sika Corporation, or approved equal.

Concrete Sealer

Concrete sealer shall be Pentane 40 as manufactured by L & M Construction Chemicals, Inc., or approved equal.

ITEM 04608.10 M - PRECAST CONCRETE PAVERS

ITEM 04608.11 M - REMOVE, STORE AND RESET PRECAST CONCRETE PAVERS

CONSTRUCTION DETAILS: Construction details shall conform to the requirements of Standard Specifications Section 608-3.05, except as modified herein.

New Concrete Pavers

Install subbase and concrete paver base in accordance with Standard Specifications Section 608. Concrete paver base slab shall be laid true to grade. A 50 mm diameter PVC drain pipe shall be set at the curb line prior to placement of the concrete base as shown on the details. The drain pipe shall be covered with filter fabric and shall be placed at intervals of 3.05 m on center. Following placement of the concrete paver base, the PVC drain pipes shall be cut flush with the top of the concrete. A 300 mm square piece of filter fabric shall be centered over each PVC drain pipe and adhered to the concrete and back face of the curb around its perimeter using liquid mastic.

The bedding sand shall be placed on the concrete base, the sand bedding shall be spread loose in a uniform layer. The thickness of sand bedding following compaction shall be 19 mm. The spread sand shall be carefully maintained in a loose condition and protected against pre-compaction.

Carefully place the pavers on the screened sand bed by hand. The pavers shall be laid in straight courses with hand-tight joints and uniform top surface. Alignment of joints must be maintained to the pattern that is shown on the plans. Failure to maintain joint alignment and layout as shown on the plans to the satisfaction of the Engineer shall be cause for rejection of a group of pavers. The Engineer will approve the start of paver layouts. Pavers shall be tamped down and leveled with mechanical vibrator to true grade and free of any movement. Pavers rows shall be laid by placing a full, uncut paver flush with the back edge of the curb and then laying successive full, uncut pavers out toward the right-of-way. With the exception of placing pavers around surface features, generally there are to be no cut pavers until the final pavers are laid against the backer curb, building face or podium face. The pavers shall be cut so that no greater than a 25 mm gap separates the back edge of the last paver from the edge of the backer curb, building face or podium face. The gap shall be filled with the joint backing and the corresponding color of joint sealant. Cut blocks which produce gaps larger than 25 mm shall be removed and discarded and another block shall be cut to achieve a better fit.

Newly laid pavers shall be protected at all times by panels of plywood on which the installer stands. These panels can be advanced as work progresses. However, the plywood protection shall be kept in areas which will be subject to continued movement of materials and equipment.

Pavers shall be brought to the finished grade as shown on the plan. There shall be no deviation from a true grade greater than 0.2 %.

All cutting and patching of straight edges required to complete the work shall be done (including the filling and closing of all openings) with a water cooled radial cut-off type masonry saw for a sharp, straight edge. All cutting and patching of circular openings required to complete the work shall be done with a concrete hole saw which produces a sharp, circular edge.

Avoid fitting pieces smaller than 150 mm in the dimension parallel to the curb line. In field areas where cutting is required to re-establish the paving module, cut pavers each side of match line equally.

Where surface features (manholes, hydrants, valve boxes, handholds, light poles, sign poles, parking meters, etc.) are encountered in the sidewalk they shall be brought to the proper finished grade. Paver blocks shall be cut to

ITEM 04608.10 M - PRECAST CONCRETE PAVERS

ITEM 04608.11 M - REMOVE, STORE AND RESET PRECAST CONCRETE PAVERS

fit around the surface features using a hole saw (for circular features) or a water cooled radial cut-off type masonry saw. Blocks shall be cut so that no gap greater than 25 mm separates the cut block edge from the edge of the surface feature. The gap shall be filled with the joint backing and the corresponding color of joint sealant. Cut blocks which produce gaps larger than 25 mm shall be removed and discarded and another block shall be cut to achieve a better fit.

Sweep stone dust into paver joints until joints are filled solid. Fog lightly with water and repeat a minimum of (3) times or until joints are compacted and full.

Remove, Store and Reset Concrete Pavers

At the locations shown on the plans or as directed by the Engineer, existing concrete pavers that are to be reset shall be carefully removed in a manner that will prevent them from being damaged. Upon removal, the concrete pavers shall be wiped clean of joint sealant, sand or other deleterious material. Concrete pavers shall be removed from the work site for storage in a safe, secure manner so as to prevent loss and/or damage, including damage to the finished surfaces. Any concrete paver damaged or lost due the Contractor's operations, including damage or loss during removal, storage or transport between the work site and the storage site, shall be replaced with new concrete pavers in accordance with these specifications at the Contractor's expense.

Concrete pavers that are to be reset shall be installed in the same manner and in accordance with the same details and requirements as under New Concrete Pavers, above.

METHOD OF MEASUREMENT: This work will be measured as the number of square meters of precast concrete pavers furnished and installed, or removed, stored and reset.

BASIS OF PAYMENT:

The unit price bid shall include the cost of all materials, labor and equipment necessary to complete the work, including, but not limited to; saw cutting, sand setting bed, joint backing and joint sealant, PVC pipe drain, filter fabric, stone dust for joints and clean-up.

Altering the elevation of surface features, excavation and subbase course will be paid for separately under the appropriate payment items. Concrete base and backer curb for pavers will be paid for separately under Item 608.0101 M, Concrete Sidewalks and Driveways.