

Bid #1165 McMahon Wintonbury Library Children's Garden, Site and Parking improvements

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1. Failures include, but are not limited to, the following:
 - a. Structural failures, including raveling of surface materials and failure of binder agent.
2. Warranty Period: 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GEOTEXTILE

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made 100% Spunbonded Polypropylene; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 1. Tensile Strength: 73(lbs)
 2. Puncture Strength (lbs): 23
 3. Air Opening Size (equivalent sieve): 30/40
 4. Air Opening Size (mm): 0.52
 5. Trap Tear (lbs): 35
 6. Air Permeability (cm/sec): 10x10-2
 7. Flux (gal/ft²/min): 200
 8. Permitivity (sec-1): 3.0
 9. Color: Black

2.2 POROUS FLEXIBLE PAVING SYSTEM

- A. The Basis of Design Standard for Porous Flexible Paving is "Perk E Pave", **Mix 11**, Pottstown, PA – www.perkEpave.com and is a flexible porous paving system comprised of a combination of three components: recycled passenger car tires, aggregate and urethane binder, and provides a strong, pervious yet flexible pavement. Other manufacturers/products will be considered if determined to be an Equal Product by the Landscape Architect. Equivalency includes the color options of the recycled rubber tire shreds and stone aggregate.
- B. Base Aggregate Stone
 1. Graded Aggregate for Base Course: Sound crushed stone or gravel complying with 1 ½" Open Graded Stone – No Fines, AASHTO # 57.
 - a. 100% passing 1 ½" screen and
 - b. 95-100% passing 1" screen and
 - c. 0-10% passing #4 screen and
 - d. 0-5% passing #8 screen.
 2. Do not use rounded river gravel.
 3. All stone materials shall be washed with less than 1% passing the No. 200 sieve.
- C. Porous Flexible Paving Aggregate
 1. Triple-washed and dried coarse aggregate (1/4 to 3/8 inch) per ASTM C33. Bagged in 50 lb. quantity. Nominal maximum aggregate size shall not exceed 1/3 of the specified paving thickness.

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- D. Porous Flexible Paving Rubber
 - 1. Recycled passenger tires ground to $\frac{1}{4}$ " nominal with wire remnants removed
 - 2. Colors:
 - a. Type 1 – PerkEPave #11, Brown & Tan rubber with Beige Stone.
 - b. Type 2 – PerkEPave #11, Gray & Green rubber with S&P Stone.
- E. Binding Agent
 - 1. Urethane liquid prepolymer based upon diphenylmethane Diisocyanate.
- F. Mix Design
 - 1. Using materials mix ratio as acceptable by the Manufacturer for the intended application. The volume by weight of aggregate shall be as required by the Manufacturer for the intended application.

2.3 EDGE RESTRAINTS

- A. StrypRail Geo-Tension Paver Edge Restraint Anchoring System: Versa Heavy Edge Restraint System as manufactured by Fortress Engineered Edge Restraints, Prior Lake Minnesota (612) 940-0370 www.fortressedging.com
 - 1. Comprised of a polyester bi-directional Geo-Grid mechanically connected to the back of the edge restraint using stainless steel screws provided by the manufacturer.
 - 2. Edge Restraint Dimensions
 - a. Width: 4.25 inches
 - b. Height: 2.625 inches
 - c. Length: 84 inches
- B. Anchoring Spikes: 12 inch long by 3/8 inch diameter galvanized steel spikes.
 - 1. Maximum spike spacing – 12 inches on curved sections and 24 inches on straight sections.

2.4 PLANTING SOIL AND TREES

- A. Conform to Section 329115 “Soil Preparation (Performance Specifications).
- B. Conform to Section 329300 “Plants”.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that subgrades below the area to receive the Porous Flexible Paving have been achieved as indicated in the Drawings.
- B. Compact subgrade material to 95% compaction per AASHTO T-180.
- C. Place Geotextile over subgrade and vertically as indicated in the drawings.

3.2 BASE AGGREGATE STONE

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- A. Install in the locations and to the depths indicated in the drawings.
- B. Compact to 95% compaction per AASHTO T-180.
- C. Place Base aggregate and structural soil in equal lifts to maintain edge conditions between the two for the depths of each material.

3.3 STRUCTURAL SOIL FOR PLANTINGS

- A. Install structural soil per Section 319117.
- B. Compact to 95% compaction per AASHTO T-180.

3.4 GEO-GRID

- A. Install Geo-grid on top of the base aggregate Stone per Manufacturer's recommendations.

3.5 EDGE RESTRAINT

- A. Install the edge restraint per the manufacturer's recommendations and at the locations indicated in the Drawings.
 - 1. Place edging on top of the bi-directional polyester Geo-Grid and fold grid over edging and secure per manufacturer's instructions.
 - 2. Slide the retention lip under the bedding layer. Edging must not be installed on top of the bedding layer

3.6 PLANTING MIX AND TREE PLANTING

- A. Coordinate the placement of the planting soils with the structural soil to allow for formation of the tree pits.
- B. Plant trees in the tree pits prior to the installation of the porous flexible paving as indicated in the drawings.
- C. Base aggregate stone place over the planting soil should be compacted to a range of 75%-82%.
- D. Hand tamp stone over the root ball. Do not compact the root ball.

3.7 FLEXIBLE POROUS PAVING

- A. Flexible Porous Paving can be installed from 45°F to 95°F temperatures. Important: When curing, the temperature should not fall below 35°F.
- B. Flexible Porous Paving shall be installed by installers who have undergone training provided by the Manufacturer.

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C. Flexible Porous Paing is a construction paving material that is dynamic in its physical construction which is mixed directly at the installation site.

3.8 INSTALL AS SHOWN ON THE DRAWINGS AND PER MANUFACTURERS RECOMMENDATIONS.

3.9 MAINTENANCE MATERIALS

A. Turn over to the Owner attic stock materials as indicated in Article 1.8 above for future repairs.

END OF SECTION 321243