NOTE TO CONSULTANTS: Edit with Track Changes turned on, any text in this section that appears in bold and italics then turn off the bold and italics for the final approved version. (Remove this Note).

PART 1 - GENERAL

1.01 Description: Furnish all material, labor, services and related items required to complete the installation of Pre-cast Concrete Reinforced Turf Unit Pavers as indicated on the Contract Drawings.

1.02 Related Sections:

Section 31 00 00 - Earthwork
Section 32 11 23 - Mineral Aggregates

1.03 References: This section references the latest revisions of the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail. Other references are as follows:

A. The City of Seattle Standard Specifications for Road, Bridge and Municipal Construction (most recent edition)

1.04 Submittals: The Contractor shall submit to the Engineer materials containing the following information:

A. Procedures to be used in the construction of the work of this Section with regard to the division of labor and the responsibilities of the Contractor and all sub-contractors involved.

B. Furnish samples of pre-cast units to be used, minimum one sample unit. Submit catalog sheets and test data for approval.

C. Qualification data for firms and persons specified in “Quality Assurance” paragraph to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of designers and owners.

1.05 Quality Assurance:

A. Installer Qualifications: An experienced installer who has successfully completed at least 3 unit paver installations similar in material, design, and intent to that indicated for the project.

B. Single Source Responsibility: Obtain one color, type, and variety of unit pavers from a single lot manufactured by a single source. Materials shall be available and be consistent in quality, appearance and physical properties without delaying progress of Work.

C. Prior to commencing the work of this Section, verify the accuracy of layout and grading. Verify that all sub-grade and base course aggregate conditions are as specified. Notify the Engineer of any discrepancies and coordinate the correction of those discrepancies with other trades as necessary.

1.06 Delivery, Storage and Handling: Protect unit pavers and aggregate during storage and construction against wetting by rain, snow, or ground water and against contamination from earth and other materials.

1.07 Surplus Material Stock: Following the Engineer's approval of submittal, deliver one unbroken pallet consisting of 84sf of unit pavers to the Extra Materials: Deliver one unbroken and shrink-wrapped pallet of unit pavers (enough pavers to cover approximately 84 square feet) to the **SPR Warehouse facility located at 4209 West Marginal Way SW, Seattle WA, 98106. Notify the SPR warehouse at least five (5) working days prior to delivery at 206-684-7034.** Call during normal business hours (7:00am to 3:30pm). This delivery is in addition to those necessary to complete the work of the Contract Drawings to be delivered to the work site.

PART 2 - PRODUCTS

2.01 Pre-cast Concrete Unit: Pre-cast Concrete Unit Turf Reinforcement system providing a minimum 70% soil surface, 30% void at base upon installation. ***Hastings' "Checker Block", as manufactured and distributed by Nicolock Paving Stones, Nicolia Industries, 1-800-669-9294***, or approved equal.

2.02 Other Materials:

A. Structural Soil Base as specified per Section 31 00 00 - Earthwork.

B. Sand for Leveling Course: Fine, sharp, washed concrete sand, free of foreign material, conforming to ASTM C 33. Under no circumstances should masonry mortar sand, limestone screenings or stone dust be used as a leveling course.

C. Turf Rooting Medium shall be "Playfield Soil" as specified per Section 02921 - Playfield Soil for Lawns.

2.03 Edge Restraint: All areas of this installation are contained within concrete curbing constructed under Section 32 13 13 - Concrete Paving or Division 03 - Concrete. Coordinate as necessary.

2.04 Mortar: Provide a commercially available, bagged pre-mixed concrete for wet-set installation where required.

PART 3 - EXECUTION

3.01 Examination: The Contractor shall examine surfaces indicated to receive Reinforced Turf for compliance with requirements for tolerances and other conditions affecting performance of pre-cast units. Do not proceed with installation until unsatisfactory conditions have been corrected. Prior to commencing the work, verify the approved completion of construction of Structural Soil Base per Section 32 00 00 - Earthwork.

3.02 Sand Leveling Course Placement: The Contractor shall place sand for leveling course over structural Soil Base to a depth of 2 inches, insuring that moisture content remains constant and the density is loose and consistent until pre-cast units are set and compacted. Do not use frozen, saturated, or overly dry sand for leveling. Does not use sand to fill in irregularities in the base material; base material must be added and compacted. The Contractor shall then screed the sand leveling course with a straight true strike board, to the design grades as shown on the plans. Mechanically compact and re-screed the surface repeatedly until a firm, uniformly sloping base is achieved. Remove excess materials.

3.03 Pre-cast Unit Installation:

A. Install Pre-cast Units only on an approved base and sand leveling course.

B. Alignment and Fit:

The Pre-cast Reinforced Turf system installation is to be aligned with the cast-in-place concrete band separating the installation from the adjacent asphalt paving. Begin the installation along this edge using whole Pre-cast Units. Adjust starting point to insure that the largest possible Pre-cast Units are installed at the ends of the initial course. This alignment is to be maintained throughout the installation.

1. Install Pre-cast Units with the tightest fit approved by the manufacturer.
2. Mechanically saw-cut Pre-cast Units to tightly fit the restraining edges of cast-in-place concrete.
3. Adjust to curves with two connecting angled cuts that bisect the curvature of the pre-cast unit / restraining edge joint.
4. Where the tightest approved fit results in cutting a unit to less than 1/3 of the manufactured size, remove the prepared base and wet-set the cut unit in a minimum 3” bed of approved Mortar. Do not overfill planting voids. Set the cut unit to the design grade. Do not disturb wet-set units for a minimum of 24 hours.

C. Backfill planting voids with approved Planting Soil. Work soil fill thoroughly to insure complete and uniform density as specified for the material.

D. Spread a thin cover of approved sand. Vibrate the Pre-cast Units into the sand leveling course with a plate vibrator capable of a 3,500 to 5,000 pound compaction force. Perform at least 3 passes across the installation with the compactor. Vibrate only after units are restrained and there is a completed surface and before surface is exposed to rain. Remove excess sand and soil.

E. Water settle the soil fill using a light sprinkling application method. Do not overly wet, flood, or unnecessarily erode the soil fill. Following water settlement, broom-in additional Planting Soil to achieve a fill elevation equal to the Pre-cast Units.

F. Finished Surface Approval: The final surface elevations shall not deviate more than 1/4 inch under a 10 feet long straight edge. The top surface of the pavers shall be 1/8 to 1/4 inch above the final elevations to compensate for possible minor settling.

3.04 Clean-up and Repair:

A. Repair and replace defective unit pavers which are loose, chipped, broken, stained with materials other than soil, or otherwise damaged, or as directed by Engineer. Provide new units to match adjoining units and install in the same manner as original units.

B. Protect and repair the work as necessary until seeding is applied per SPR Standard Specifications for Site Work.

END OF SECTION