San Antonio River Authority  
Amendment 21  
2013 IDIQ Professional Services Agreement  
County: Bexar  
Lower Olmos Creek Trash and Floatables Capture Device  

List of Governing Specifications  

All Specifications and Special Provisions applicable to this project are identified as follows:  

**Standard Specifications:** Adopted by the City of San Antonio, June 1, 2008. Standard Specifications are incorporated into the contract by reference.  

**DIVISION I – EARTHWORK**  
Item 100.1 – Mobilization  
Item 100.2 – Insurance and Bond  
Item 101.1 – Preparing Right-of-Way  
Item 103.4 – Remove Miscellaneous Concrete  

**DIVISION II – BASE & SURFACE COURSES**  
Item 200.1 – Flexible Base  
Item 210 – Rolling  
Item 234.1 – Base Reinforcement  

**DIVISION IV – STORM SEWERS**  
NONE  

**DIVISION III – CONCRETE & CONCRETE STRUCTURES**  
Item 300 – Concrete  
Item 301 – Reinforcing Steel  
Item 302.1 – Metal for Structures  
Item 306.1 – Structural Excavation  
Item 307.1 – Concrete Structure  
Item 311.5 – Concrete Surface Finish – Epoxy Paint Finish  

**DIVISION V – INCIDENTAL CONSTRUCTION**  
Item 505.1 – Concrete Riprap  
Item 515.1 – Topsoil – per cubic yard  
Item 520.1 – Hydromulching (Residential or Commercial)  
Item 530.1 – Barricades, Signs and Traffic Handling  
Item 540.1 - Rock Filter Dams (Install/Remove)  
Item 540.6 – Construction Exits (Install/Remove)  
Item 540.9 – Temporary Sediment-Control Fence  
Item 554.1 – Erosion Control Matting – per square yard  

**DIVISION VI – TRAFFIC SIGNALS**  
NONE  

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DIVISION VI – TRAFFIC SIGNALS
NONE

DIVISION VII – PROJECT SCHEDULING & DATA MANAGEMENT
Item 700 – Cost Loaded Project Schedules

Standard Specifications: Adopted by the Texas Department of Transportation, June 1, 2014. Standard Specifications are incorporated into the contract by reference.

Item 432 Riprap – Stone Protection (247) (420) (421) (431) (440)

Special Specifications: Special Specifications will govern and take precedence over the specification enumerated hereon wherever in conflict therewith.

Item 5033 – Bollards (Removable)

SS250 – Pervious Flexible Paving
SS450 – Netting Trash Trap
ITEM SS250 PERMEABLE FLEXIBLE PAVING

SS250.1. DESCRIPTION: Construct a permeable flexible grass fill pavement surface course as shown on the plan. The pavement shall be constructed on the newly constructed subgrade or base course as herein specified and in accordance with the details shown on the plans.

SS250.2. GENERAL:
   A. Description of work
      1. Work Included
         • Provide and install base material as shown on drawings. See SS250.3. Materials.
         • Provide permeable pavement, TRUEGRID PRO PLUS or approved equal, and installation per the manufacturer’s instructions and other available specification material.
         • Provide and install specified fill material for permeable pavement grass fill.
      2. Related Work
         • Subgrade preparation under Division 1 Earthwork.
         • Item 200 Flexible Base.
   B. Quality assurance
      1. Follow Contract submittal procedure and requirements.
      2. Installation performed to provided specification or accepted alternative specification
      3. Certificates: Manufacturer signed certificate stating the product is MADE IN THE USA.
   C. Delivery, storage and handling: Protect permeable pavement materials from damage during delivery and unloading.
   D. Project conditions
      1. Review installation and coordinate permeable paver work with other work affected.
      2. All hard surface paving adjacent to permeable paver areas, including concrete walks and asphalt paving should be completed prior to installation of permeable pavers.
      3. For permeable paving grass fill applications, install turf when ambient air temperatures is at least 55 degrees.
      4. In wet weather, do not build on wet, saturated or muddy subgrade.
      5. In cold weather, do not use on frozen materials or materials mixed or coated with ice or frost, and do not build on a frozen base or wet, saturated or muddy subgrade.
      6. Protect partially completed paving against damage from other construction traffic when work is in progress.
   E. Limited warranty
      1. The permeable pavement material manufacturer shall warrant that all products furnished will be free from defects in material and/or workmanship.
      2. This warranty shall extend for a period of (10) years following the date of shipment.
SS250.3. MATERIALS:
A. Permeable Pavers, TRUEGRID PRO PLUS for grass or gravel applications.
   1. Manufactured in the USA.
   2. High density polyethylene (HDPE): 100% post consumer recycled materials
   3. Recycled and recyclable content: 100%
   4. Color: black- carbon black additive for long term UV stabilization
   5. Paver size: 24” x 24” x 1.8”;
   6. Pre-assembled: 4’ x 4’ sections
   7. Cylindrical cell design for column strength
   8. Cell size: 3.30” inside diameter
   9. Co-joined cells at forty eight (48) places for strength
   10. Wall thickness: 0.150”/.250” nominal
   11. A minimum of two (2) co-joined common walls per cell for structural integrity
   12. Connections:
       a. No clips or stakes necessary
       b. No additional parts or tools needed
       c. Integral male-female three point locking system
       d. Wall thickness at tabs: 0.290”
   13. Molded in X-anchors to stabilize pavers: no stakes necessary
   14. S-Flexural joints molded in for soil seasonal expansion and contraction
   15. Nominal Coverage per Paver: 4 square feet
   16. Weight per paver: 5.25 lbs
   17. Permeability of System: 100%
   18. Compressive Strength (empty)- 990,720 psf; 6880 psi
   19. Compressive Strength (filled)- 1,152,000 psf; 8000 psi
   20. Material Safety: ground water neutral, 100% inert
   21. Chemical Resistant: Excellent: highly resistant to hydrocarbons, oils

A. Base Course: Flexible Base (Grade 4) per Item 200 and gradation table in plans.
   1. Geogrid reinforcement per plans and Item 234.

C. Grass Fill: A sandy loam or loam soil should be used to fill the empty grass paver cells. The selection of sandy loam or loam soil should be made based upon the soil requirements of the turf variety selected for the project. Other soils if compatible with type of seed or sod are acceptable.

SS250.4. CONSTRUCTION:
A. Preparation:
   1. Examine sub-grade course installed conditions. Do not start permeable paver installation until unsatisfactory conditions are corrected. Check for improperly compacted trenches, debris, and improper gradients.
   2. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance. If existing conditions are found unsatisfactory, contact Quality Control Manager for resolution.
   3. Place base course material in accordance with specification 200. Leave minimum 1.8” for permeable paver unit for final elevation.

B. Installation of Permeable Pavers: Install permeable paver units and soil fill per manufacturer’s recommendations for grass fill pavers.
C. Installation of Grass Fill: See Item 515 Topsoil and Item 520 Hydromulching.
   1. Apply seed mixture onto the site at rates shown in specification Item 520
      Hydromulching. Coverage should be uniform and complete. Seeded areas must be
      fertilized and kept moist during development of the turf.

D. Protection
   1. Grass Fill / Seeded: Seeded areas must be protected from any traffic, other than
      emergency vehicles, for a period of 4 – 6 weeks, or until the grass is mature to
      handle traffic. Avoid sharp turns or “jack knifes” in trailered vehicles when cells
      are empty. Damage due to buckling can occur.

E. Field Quality Control
   1. Any damaged sections of the permeable pavers during install shall be removed
      and replaced with no evidence of replacement apparent.
   2. Remove all excess materials, debris, and equipment from site upon completion of
      install.
ITEM SS450 NETTING TRASH TRAP

SS450.1. DESCRIPTION: Furnish and install Storm X Netting Trash Trap, or approved equal, devices as shown in the plans. This system is composed of metal units and removable nets that collect trash and floatable debris and keep it from continuing downstream.

SS450.2. METAL CONSTRUCTION:
   A. All devices shall be constructed with type 316 stainless steel
   B. Plate for cylindrical hubs shall be rolled from sheet, using minimum .187” thickness materials, with mounting frame to be constructed using .250” thickness plate
   C. All stainless steel materials shall meet ASTM A-240 Standard Specification
   D. All welders of stainless materials shall meet AWS A-5.1 Standard Specification
   E. All welders of carbon steel materials shall meet AWS A-5.1 Standard Specification
   F. Galvanized Zinc Hot Dip Coating shall meet ASTM 123-09/ASTM-09 Standard Specification

SS450.3. NETS:
   A. All reusable nets shall be 1” HDPE (high density polyethylene) containing a minimum of 2.3% carbon black and shall be a minimum of 5’ long and shall meet ASTM D-792 Standard Specification having an average density of 0.95 and shall have a tensile strength of 4,600 psi per ASTM D-638 Standard Specification
   B. Contractor to provide extra set of additional nets (7 additional nets)

SS450.4. OTHER:
   A. Provide trash trap device that includes a lifting lug on top to allow removal of litter trap with a lifting device for routine emptying of collected trash.