SECTION 313500 – Slope Protection

1. GENERAL
   * + 1. SUMMARY
          1. Related Documents:

Drawings and general provisions of the Subcontract apply to this Section.

Review these documents for coordination with additional requirements and information that apply to work under this Section.

* + - * 1. Section Includes:

Rolled Erosion Control Products (RECP) on all new cut and fill slopes of 2:1 or greater slope, and Rock Slope Protection (RSP), as indicated on the Drawings.

* + - * 1. Related Sections:

Division 01 Section "General Requirements."

Division 01 Section "Special Procedures."

Division 31 Section "Rough Grading".

Division 31 Section "Excavation".

Division 32 Section "Hydraulic Seeding".

* + - 1. REFERENCES
         1. General:

The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.

Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.

Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.

* + - * 1. State of California - California Department of Transportation (CALTRANS):

Standard Specifications.

* + - * 1. Erosion Control Technology Council (ECTC):

Installation Guide for Rolled Erosion Control Products Including Mulch Control Nettings, Open Weave Textiles, Erosion Control Blankets, and Turf Reinforcement Mats.

* + - 1. SUBMITTALS
         1. Submit under provisions of Division 01 Section "General Requirements."
         2. Manufacturer's product data, specifications, installation instructions and recommendations.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Deliver manufactured materials in their original packages, clearly marked with the manufacturer's name, and store in an area protected from the elements.

1. PRODUCTS
   * + 1. ROLLED EROSION CONTROL PRODUCTS
          1. Rolled Erosion Control Products: RECP must be long-term, degradable, open-weave textile manufactured or fabricated into rolls designed to reduce soil erosion and assist in the growth, establishment, and protection of vegetation. RECP must conform to the classification system established by the Erosion Control Technology Council.

Rolled Erosion Control Product

|  |  |  |
| --- | --- | --- |
| Property | Requirements | Test Method |
| Classification | ECTC Type 3B |  |
| Minimum Roll Width | 48 inches |  |
| Matrix | Unbleached and undyed woven degrading natural fiber |  |
| Universal Soil Loss Equation (USLE) C-factor for a 1.5:1 (H:V) Unvegetated Slope | ≤0.25 |  |
| Maximum Shear Stress | 2.0 psf | ASTM D6460 |
| Minimum Tensile Strength | 100 plf | ASTM D 5035 |
| Functional Longevity | 12-24 months |  |

Manufacturers:

Hanes Geo Components

Tensar North American Green, or equal.

* + - 1. ROCK SLOPE PROTECTION (RSP)
         1. ROCK SLOPE PROTECTION: RSP must be durable rock, free from cracks and seams complying with Caltrans Standard Specifications (CSS), Section 72-2. The breadth and thickness of each piece of RSP shall be at least one third its length. The RSP shall be graded for Light class, Method B placement described in CSS, Section 72-2.
         2. Rock Slope Protection Fabric: Conform to CSS Section 88.

Product: US Fabrics US 225NW Nonwoven Geotextile, or equal.

1. EXECUTION
   * + 1. ROLLED EROSION CONTROL PRODUCTS (RECP)
          1. Proceed with netting installation only when weather conditions comply with the manufacturer's recommendations.
          2. INSTALLATION PROCEDURES:

Prepare a stable and firm soil surface free of rocks and other obstructions.

Apply soil amendments as necessary to prepare the seedbed.

Place fertilizer, water, and seed in accordance with manufacturer, as directed by the University, or the Landscape Architect.

Typically, RECPs are unrolled parallel to the primary direction of flow.

Ensure the product maintains intimate contact with the soil surface over the entirety of the installation.

Do not stretch or allow the material to bridge over surface inconsistencies.

Overlap edges by a minimum of 1 foot.

Staple/stake RECPs to the soil such that each staple/stake is flush with the underlying soil.

Install anchor trenches, seams, and terminal ends according to the manufacture’s recommendations and as defined by this Section.

Bury top and bottom edges in 6 inch **(**150 mm) deep trench.

Staple outside edges at 2 foot **(**0.60 m)intervals.

* + - 1. Cover outside edges lightly with soil.ROCK SLOPE PROTECTION
         1. Place the RSP in a manner that will produce a reasonably well graded mass of rock with the minimum practicable percentage of voids. The desired distribution of the various sizes of rocks throughout the mass shall be obtained by selective loading of the material at the source. The finished RSP will be free of pockets of smaller stones and clusters of larger stones.
         2. Place RSP to its full course thickness in one operation without using chutes or other methods which will cause segregation. Placing RSP in layers will not be accepted.
         3. Where a concrete slab is indicated on the Drawings below the RSP, place the RSP by forcing the rock into the wet concrete.
         4. Maintain the RSP and replace material displaced by any cause, until Final Acceptance by the University.
         5. Place RSP fabric in conformance with CSS Section 72.
         6. Place RSP fabric loosely upon or against the surface to receive the fabric so that the fabric conforms to the surface without damage when the cover material is placed.

END OF SECTION 313500