

PART 1 – GENERAL

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| 1.1 <u>RELATED SECTION</u> | .1 | Section 013300 - Samples and procedures to submit |
| | .2 | Section 313221 – Geotextiles |
| | .3 | Section 329121 - Topsoil bank and finish grading |
| | .4 | Section 329222 - Terraseeding |
| 1.2 <u>BASIS FOR PAYEMENT</u> | .1 | Item 1: The erosion control systems and soils stabilization will be paid based on the actual quantities measured on site and the unit prices in the unit prices stated in the Bid and Acceptance Form. |
| | .2 | The Contractor shall provide all materials, equipment, workers and surveillance necessary to perform a complete erosion control on steep slope around the areas that have been disturbed by the work of naturalization. |
| 1.3 <u>PERFORMANCE REQUIREMENTS</u> | .1 | Erosion and sediment control should achieve the following objectives: |
| | .1 | Prevent soil erosion that can result from rainwater runoff or erosion by wind during construction. |
| | .2 | The work must be guaranteed throughout contract period. The Contractor shall perform regularly maintenance to preserve maximum efficiency of erosion control during this period or until the growth of new plantations has been approved by the Departmental Representative. |
| 1.4 <u>SAMPLE AND PROCEDURES</u>
<u>TO SUBMIT</u> | .1 | Submit samples and procedures in accordance with Section 013300 - Samples and procedures to submit. |
| | .2 | Technical data sheets: |
| | .1 | Submit manufacturer's installation and specifications instructions for: |
| | .1 | Mulch; |
| 1.5 <u>QUALITY INSURANCE</u> | .1 | Conformity and acceptance certificates. |
| | .1 | The Contractor shall provide a conformity certificate from the Manufacturer stating that the product supplied meets the requirements of specifications. This one will be submitted to a control and acceptance procedure prior to installation. |

1.6 DELIVERY, STORAGE AND
HANDLING

- .1 Geosynthetic rolls should be packed and transported appropriately to avoid damage.
- .2 The unloading and storage of geosynthetic materials are the responsibility of the Contractor under the supervision of the Departmental Representative. The following points should be checked before unloading:
 - .1 Make sure that the equipment used for unloading do not damage geosynthetics;
 - .2 Make sure that personnel handle the rolls with care;
 - .3 Make sure that the storage area is adequate.
- .3 The Contractor shall, following the unloading of rolls, performs a visual inspection to make sure that each of the rollers will be unscathed, and correctly identified by the following information:
 - .1 Product Type
 - .2 Roll dimensions
 - .3 Roll Manufacturer
 - .4 Roll Number
- .4 The Contractor shall provide on the site, an adequate place to store geosynthetics. This place must be dry and free of debris that can damage geosynthetics. In addition, it has to be chosen to minimize transport, handling on site and risk of vandalism. The rolls have to be stack in accordance with the Manufacturer's recommendations.

PART 2 – PRODUCTS

2.1 ANTI-EROSION MULCH MAT

- .1 Across all planting area, except where the rock outcrops, the mulch should be set up overlapping the geotextile that protects the root system of plants.
 - .1 Mulch recommended for the project is a coconut mulch. Mulch lifetime is estimated between 3-6 years and the planting slope can reach 1V: 1H.
 - .1 Thickness: 7,11mm / 0.28 po
 - .2 Mass per Unit Area: 270 g/m² / 0.50 lb/vg²
 - .3 Mesh openings: 19.1 mm x 19.1 mm / 0.75 po x 0.75 po
 - .4 Light Penetration: 23.1 %
 - .5 Germination Improvement: 414 %
 - .6 MD - Tensile Strength : 4.59 kN/m / 313.2 lbf/pi
 - .7 TD - Tensile Strength: 2.51 kN/m / 171.6 lbf/pi
 - .8 MD - Elongation: 29 %

- .9 TD - Elongation : 44%
- .10 Shear resistance: 108 Pa / 2.25 lbs/pi²
- .11 Resiliency: 83%
- .12 Water Absorption: 234%
- .13 Swell: 20.3%

2.2 SURFACE STABILIZATION FOR BARE SOIL

- .1 All surfaces with final grading is to be sown as soon as possible to avoid the erosion of natural soils. Soil cannot be left bare for more than seven days after the final grading without being sown or stabilized.

2.3 INCREASED SURFACE ROUGHNESS

- .1 To prevent erosion and reduce runoff, all surfaces of the ground that are exposed should be made unequal. They have to be made perpendicularly to the existing slope with hand tools to create depressions.

2.4 CONTROL OF WATERS

- .1 The Contractor shall at his costs and expenses, take care of infiltration, runoff and ditch water, or otherwise.
- .2 The Contractor shall never pump the sediment-laden water into the street.

PART 3 – EXECUTION

3.1 MULCH INSTALLATION

- .1 Surface preparation
 - .1 All surfaces to be treated should be loosened to a depth of 25 mm and leveled. The surfaces must be maintained in this state as long as they have not been protected by the materials provided for this purpose. They must be cleared of stones (max: 50 mm diameter) and any other debris that may prevent good contact silt materials with the soil surface.
 - .2 All bare ground surfaces with no vegetation must be prepared, seeded and have anti-erosion mulch mats installed in phase 1. Additional installation of anti-erosion mulch mats will be done in phases 2 and 3 if bare areas (with no vegetation on the ground) are present on site or if the anti-erosion mat is damaged.

- .2 Seeding
 - .1 The designated areas must be fertilized and properly seeded before the mulch installation.
 - .2 Additionnal seeding may be performed over the mulch mats after the installation of the anti-erosion mulch mats if certains areas are bare (no vegetation on the ground) and need new seeding.
- .3 Mulch installation
 - .1 The Contractors shall place the mulch on the surface to be protected so that the fibers are in intimate contact with the ground and the plastic mesh on top. The mulch strips will be butted and stapled together carefully. The staples (150 mm X 25 mm X 150 mm), have to be inserted vertically through the mulch and pressed completely into the ground. Each roll will be maintained at ground using minimum 2 staples per square meter, arranged according to the manufacturer's recommendations. Mulch should ideally be installed vertically in the direction of the slope. However in some cases installation in the horizontal direction may be acceptable. To prevent displacement of the seeds by wind or by excessive rain, the mulch should be placed 2 to 4 hours after seeding.
- .4 Installation conditions
 - .1 The Contractor shall not proceed with the work during high winds or when the ground is frozen and covered with snow, ice or water.

3.2 CLEANING

- .1 After implementation and performance control, the Contractor shall remove the products, materials and extra materials, rubbish, tools and equipment.

***** END OF SECTION *****