Division 30: Soil Reinforcement and Filter Material

30.01 **SCOPE:** The contractor shall furnish all materials, equipment and labor necessary to install fabric for use as soil reinforcement and erosion control.

30.02 **SUBMITTALS:** Certificates of conformance or compliance shall be submitted for approval prior to installation.

30.03 **MATERIALS:** Shall be woven or nonwoven, polypropylene or polyster and shall contain stabilizers and/or inhibitors added to make the fabric resistant to deterioration from ultraviolet and heat exposure. Fabric shall be inert to commonly encountered chemicals, hydrocarbons, and mildew, resistant to rot, ultraviolet light, abrasion, insects and rodents and with the following properties.

A. Non Woven:

1. Minimum ASTM D 1682 grab tensile strength in the machine and transverse directions of 200 lbs.

2. ASTM D 1682 grab elongation in the machine and transverse directions between 50 and 140 percent.

3. Minimum ASTM D 3786 trapezoidal tear strength in the machine and transverse direction of 50 pounds.

4. Minimum ASTM D 3786 mullen burst strength of 320 psi.

5. Minimum ASTM # 3787 puncture resistance strength of 80 lbs.

6. COE CW-02215 equivalent opening size greater than/or equal to U.S. Standard Sieve No. 50.

B. Woven:

1. Minimum ASTM D 1682 grab tensile strength in both the machine and transverse directions of 300 lbs.

2. ASTM D 1682 grab elongation in the machine and transverse directions between 15 and 35 percent.
3. Minimum ASTM D 3786 trapezoidal tear strength in the machine and transverse direction of 100 lbs.

4. Minimum ASTM D 1117 mullen burst strength of 425 psi.

5. Minimum ASTM 3787 Puncture resistance strength of 120 lbs.

6. COE CW-02215 equivalent opening size greater than/or equal to U.S. Standard Sieve No. 50.

30.04 **EXECUTION:** Install fabric in accordance with manufacturer's instructions unless indicated or specified otherwise. For fabric damaged during installation, repair or provide new fabric, as directed by the Engineer.

Soil Reinforcement:

1. Fabric Placement: Place fabric in contact with the subgrade with minimal wrinkles or folds. If mechanized methods are used, the equipment shall be capable of laying the fabric without damaging the fabric and without forming excessive wrinkles and folds. Overlap fabric at joints a minimum of 2 feet. At transverse joints, tuck the following roll under the previously placed fabric. Do not place more fabric than can be covered up with the fill that same working day. Repair damaged fabric by placing an additional layer of fabric over the damaged area, overlapping two feet in all directions.

2. Placement of fill over fabric: The fill placement shall closely follow the fabric placement. Failure to

comply shall require providing new fabric at no cost to the City. Place the fill on the fabric in the direction of the overlaps and spread in uniform lifts.

A. Erosion Control:

1. Fabric Placement: Place fabric in contact with the subgrade with minimal wrinkles or folds. Place fabric by hand, unrolling the fabric perpendicular to the direction of the primary erosive forces. Overlap fabric a minimum of 2 feet, with the overlaps in the direction of flow. Do not place more fabric than can be covered with bedding that same working day. Repair damaged fabric by placing an additional layer of cloth to cover the damaged area with a minimum two foot overlap in all directions.

30.05 MANUFACTURER'S REPRESENTATIVE: A fabric manufacturer representative of the fabric shall be on the project site to train the Contractor's personnel in procedures and techniques of installing the fabric and to insure that the fabric is placed in accordance with the manufacturer's installation instructions.

30.06 MEASUREMENT AND PAYMENT: Fabric shall be measured by the square yard of surface area in place as directed by the Engineer and paid for as specified in the Unit Price Table.

30.07