

SECTION 02270 EROSION, SEDIMENTATION AND DUST CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. WORK INCLUDED:

Provide all material, equipment and labor necessary to install erosion and sediment control elements as shown on Drawings and in accordance with this Specification. If more than one acre of land surface is disturbed, Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) for the project and submit a Notice of Intent to use Generic Permit with the Florida Department of Environmental Protection (FDEP). All costs for permit application shall be borne by the Contractor. Any permits required by the Contractor shall be available at the site at all times.

B. RELATED WORK:

1. 02050 Demolition
2. 02110 Clearing and Land Preparation
3. 02200 Earthwork
4. 02221 Trenching, Backfilling and Compacting

C. Provide erosion control measures so as to prevent pollution of water, detrimental effects to public or private property adjacent to the project, and damage to work on the project. Construct and maintain temporary erosion control features or, where practical, construct and maintain permanent erosion control features as shown in the Plans or as may be directed by the Engineer.

D. Coordinate the installation of temporary erosion control features with the construction of the permanent erosion control features to the extent necessary to ensure economical, effective, and continuous control of erosion and water pollution throughout the life of the Contract.

E. Do not disturb lands or waters outside the limits of construction.

PART 2 - PRODUCTS

2.1 SOD

The sod type shall match the type existing in other areas of the project. All sod and mulch shall be free of noxious weeds and exotic pest plants, plant parts or seed listed in the current Category I "List of Invasive Species" from the Florida Exotic Pest Plant Council (FLEPPC). It shall be well matted with roots. The sod shall be taken up in commercial-size rectangles, or rolls preferably 12 inches by 24 inches or larger, except where 6 inch strip sodding is called for, or as rolled sod at least 12 inches in width and length consistent with the equipment and methods used to handle the rolls and place the sod. Sod shall be a minimum of 1-1/4 inches thick including a 3/4 inch thick layer of roots and topsoil.

The sod shall be sufficiently thick to secure a dense stand of live turf. The sod shall be live, fresh and uninjured, at the time of planting. It shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. It shall be planted within 48 hours after being cut and kept moist from the time it is cut until it is planted.

2.2 FERTILIZERS

Fertilizers shall comply with the State fertilizer laws. Fertilizers shall meet the requirements of the FDOT Standard Specifications for Road and Bridge Construction SECTION 982.

2.3 SILT FENCING

A. Geotextiles shall be woven or nonwoven fabrics that will allow the passage of water. Geotextiles shall be packaged in a protective covering sufficient to protect it from sunlight, dirt, and other debris during shipment and storage, upon which the manufacturer's name, product name, style number, roll dimensions and LOT numbers are clearly labeled.

B. Posts: Posts for silt fences shall as shown in the drawings and be either wooden stakes or metal stakes with a minimum length of 3 feet. Steel posts shall have projections for fastening wire to them.

C. Silt Fence shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by manufacturer or supplier as conforming to the following requirements:

Physical Property	Test Requirements
Permittivity	ASTM-D-4491 .05 SEC ⁻¹
Grab tensile	ASTM-D-4632 90 lbs. (min. warp)
Grab Sewn Strength	ASTM-D-4884 2.1 lb/in (min)
Trapezoidal Tear	ASTM-D-4533 35 lbs. (min)
UV Resistance	ASTM-D-4355 80% (500 hrs)
Filtration Efficiency	ASTM-D-5141 75% (min)
Flow Rate	ASTM-D-5141 .3 gal (min)

The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultraviolet light, heat exposure and potential chemically damaging environment. The fabric shall be free of any treatment which may significantly alter its physical properties. The edges of the fabric shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the fabric.

D. Other materials: Select all other materials not specifically described but required for compliance with the erosion and sediment control plan, subject to approval by the Engineer.

2.4 FILTER FABRIC

Filter Fabric for inlet protection shall be Type D-1 per FDOT Section 985 of the Standard Specifications.

2.5 AGGREGATES

Aggregate for Truck Wash Out area shall be coarse aggregate as described in Section 901 excluding 901-2.3 of the FDOT Standard Specifications for Road and Bridge Construction. Aggregates shall be FDOT size No 1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing small aggregate will track off the project and are unsuitable.

PART 3 - EXECUTION

3.1 GENERAL

A. Contractor shall familiarize himself with all the stipulations and requirements of the erosion and sediment control plan. Contractor shall be held responsible for strict adherence to the FDEP generic permit. Contractor shall be deemed liable for any negligence or infringement, which results in non-compliance with this permit.

B. The location of all sediment and erosion control measures shall be left to the Contractor's discretion unless otherwise shown on the Drawings or required by the permit. Should there be no requirement of an erosion control plan, then Contractor shall be required to provide such measures necessary to prevent the formation of gullies or the spread of mud and debris across roads, into waterways or other areas where it may be considered a nuisance.

3.2 PLANNING OF CONSTRUCTION

A. Planning and coordination of the construction is needed to minimize sediment pollution. Clearing shall be kept to shortest distance possible ahead of construction. Cleared areas shall be kept to minimum required to facilitate construction.

B. Restoration work shall be performed as the Project progresses and not be left until the end of the Project. No areas shall be left unprotected for longer than 10 days without some form of temporary seeding or, if during a non-growing season, some other form of stabilization, such as mulch.

3.3 EXCAVATION AND BACKFILL

Excavation shall be closely controlled. The material removed from the excavation shall be selectively stockpiled in areas where a minimum of sediment will be generated and where other damage will not result from piled earth. Drainage swales and ponds shall be protected at all times and the piling of soil in drainageways shall not be allowed. Repaving shall be placed promptly following completion of backfilling and compaction in improved areas.

3.4 STOCKPILES

A. Stockpile areas shall be selected and maintained by on-site personnel. Site selection and stockpile design shall incorporate sediment and erosion control considerations to prevent the potential direct production and delivery of sediment to waterways, and damage to vegetation. Temporary stabilization of stockpiles shall be promptly instituted. The existence of critical slopes on stockpiles shall be avoided. Stockpiling in or immediately adjacent to diversion channels shall not be allowed. If a stockpile is to remain for over sixty (60) days, it shall be stabilized by soil stabilizing chemicals, temporary vegetation, interim structures or other approved practices.

B. Temporary vegetative measures planned for implementation on stockpiles shall be established immediately after stockpile completion. Proper mulching and soil stabilization in conjunction with these seeding operations shall also be carried out.

3.5 SILT FENCES

Place silt fences in a continuous row, parallel to the slope, waterway, roadway or other area being protected. Anchor the silt fence fabric to posts set at a minimum of 10 ft. apart. Embed the bottom of the fabric a minimum of 4" deep and backfill and compact soil over the embedded portion. Replace or repair any sections of fence, which collapse or are washed out during the construction period as soon as reasonably possible.

Inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfall. Immediately correct any deficiencies. In addition, make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, install additional silt fences as directed by the Engineer.

Remove sediment deposits when the deposit reaches approximately 1/2 of the volume capacity of the silt fence or as directed by the Engineer. Dress any sediment deposits remaining in place after the silt fence is no longer required to conform to the finished grade, and prepare and sod them in accordance with the requirements of this section.

3.6 SODDING

Place the sod on the prepared surface, with edges in close contact. Do not use sod which has been cut for more than 48 hours. Monitor placed sod for growth of pest plants and noxious weeds. If pest plants and/or noxious weeds manifest themselves within 30 days of placement of the sod during the months April through October, within 60 days of placement of the sod during the months of November through March treat affected areas by means acceptable to the Owner at no expense to the City. If pest plants and/or noxious weeds manifest themselves after the

time frames described above from date of placement of sod, the Engineer, at his sole option, will determine if treatment is required and whether or not the Contractor will be compensated for such treatment.

3.7 DUST CONTROL

- A. It shall be the Contractor 's responsibility to control dust by watering and sweeping at the end of each and every workday or as directed by the Engineer.
- B. Dust Control:
 - 1. If appropriate to the site location, and at the discretion of the City, provide positive methods and apply dust control materials to minimize raising dust from construction operations.
 - 2. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
 - 3. Schedule operations so that dust and other contaminants will not fall on wet or newly-coated surfaces.
 - 4. Cover materials transported to and from site as necessary to prevent depositing material on offsite roadways or creating dust.

3.8 INLET PROTECTION

The Contractor shall protect from sediment and debris any existing catch basin with filter fabric while work is in progress. Filter fabric shall be removed after completion of work or sod has established. Filter fabric must be cleaned periodically to avoid excessive accumulation of sediment and debris. Extreme care shall be taken when removing filter fabric to avoid sediments and debris entering catch basin. Any sediments falling inside the drainage system shall be removed.

3.9 MUD CONTROL

A Truck Wash Out area shall be constructed at locations designated by the engineer for points of egress from un-stabilized areas of the project to public roads where off-site tracking of mud could occur. Traffic from un-stabilized areas of the project shall be directed thru the Truck Wash Out area. All materials spilled, dropped or tracked onto public roads shall be removed daily, or more frequently if so directed by the Engineer. The Contractor shall maintain the Truck Wash Out area in a condition that will allow it to perform its function. To prevent off-site tracking, the Truck Wash Out area shall be rinsed daily (daily when in use) to move accumulated mud downward thru the stone.

4.0 CLEAN UP

- A. A spill kit must be provided during the entire duration of the project. The spill kit is to be used in the immediate response and clean-up of spills, leaks or other discharges of hazardous wastes or other hazardous materials (chemical spills). Spill kits shall be maintained in close proximity to areas where chemicals are managed or stored to enable prompt response and clean-up of spills. The contents of a spill kit shall be tailored to the types and quantities of chemicals that can potentially spill. As a minimum Granular absorbent or oil-specific absorbent pads shall be kept on site.
- B. Upon project completion, remove all temporary erosion and sediment control devices. Remove from job site all excess materials, debris, surplus tools and equipment. Leave site in a neat and orderly condition acceptable to the Engineer.
- C. Upon removal of temporary erosion and sediment control devices, perform all required finish grading, seeding, and mulching as specified under Section 02200.

END OF SECTION