

Operation and Maintenance Instructions for Stormwater Management System

(The notes below are not inclusive of all erosion and sediment control requirements. It is the responsibility of the contractor to comply with the full requirements of the Florida Erosion and Sediment Control Manual, latest edition.)

- The installation of temporary erosion control barriers shall be coordinated with the construction of the permanent erosion control features to the extent necessary to assure economical, effective and continuous control of erosion and water pollution throughout the life of the construction phase
- The type of erosion control barriers used shall be governed by the nature of the construction operation and soil type that will be exposed. Silty and clayey material usually require solid sediment barriers to prevent turbid water discharge, while sandy material may need only silt screens or hay bales to prevent erosion. Floating turbidity curtains shall be used in open water situations. Diversion ditches or swales may be required to prevent turbid stormwater runoff from being discharged to wetlands or other water bodies. It may be necessary to employ a combination of barriers, ditches and other erosion / turbidity control measures if conditions warrant.
- Inlet protection shall be included for all proposed stormwater inlets and any existing stormwater inlets within the project limits. Inlet protection shall be via geotextile fabric sandwiched between the inlet and the inlet frame and shall overlap the top edges of the inlet.
- Where pumps are to be used to remove groundwater or turbid waters from construction areas, the water shall be treated prior to discharge. Treatment methods include and are not limited to, turbid water being pumped into grassed swales or appropriate vegetated areas, sediment basins, or confined by an appropriate enclosure such as turbidity barriers, and kept confined until its turbidity level meets state water quality standards.
- The contractor shall schedule his operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, unprotected construction to the elements shall be as short as practicable. Clearing and grubbing shall be so scheduled and performed that grading operations can follow immediately thereafter, and grading operations shall be scheduled and performed that permanent erosion control features can follow immediately thereafter if conditions on the project permit.
- The contractor and/or owner's representative shall provide routine maintenance of permanent and temporary erosion control features until the project is complete and all bare soils are stabilized.
- Silt fence shall be located at the perimeter of construction limits, locations as shown hereon and at locations as defined by field conditions. Erosion control must be installed prior to starting construction and must be maintained throughout the duration of the project. An erosion control inspection is required prior to the start of construction. Contractor to contact City of Orlando to schedule an inspection.
- Inlet structures, pipes and stormwater basins shall be inspected for siltation accumulation every six months (minimum). Accumulated silt (greater than 3 inches) shall be removed.
- A stone stabilized pad shall be located at points of vehicular ingress and egress on the construction site. FDOT No. 1 Coarse Aggregate (1.5 - 3.5 inch stone) shall be used. The aggregate layer shall be at least 6 inches thick, and extend the full width of the vehicular ingress and egress area. The length of the entrance must be at least 50 feet. The entrance must widen at its connection to the roadway in order to accommodate the turning radius of large trucks. If conditions on the site are such that most of the mud is not removed by the vehicles traveling over the gravel, then the tires of the vehicles shall be washed before entering a public road. Wash water will be carried away from the entrance to a settling area to remove sediment. A wash rack may also be used to make washing more convenient and effective. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way.
- Sediment trap(s) shall be located to obtain the maximum storage benefit from the terrain, for ease of clean out and disposal of trapped sediment and to minimize interference with construction activities. Sediment shall be periodically removed from the trap and placed in approved areas, based on composition of the material. Sediment traps, along with other perimeter controls, shall be installed before any land disturbance takes place in the drainage area. The sediment trap shall have an initial storage volume of 134 cubic yards, or 3600 cubic feet per acre of drainage area, measured from the low point of the ground to the crest of the gravel outlet. Sediment should be removed from the basin when the volume is reduced by one-half. The maximum height of the sediment trap embankment shall be 5 feet as measured from the low point. Side slopes of the embankment shall be 2:1 or flatter. The outlets shall be designed, constructed and maintained so that sediment does not leave the trap and that erosion of the outlet does not occur. A trap may have several different outlets with each outlet conveying part of the flow. The combined outlet capacity shall be sufficient for the drainage area. The structure shall be checked regularly to insure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the outlet shall be checked to ensure that its center is at least one foot below the top of the embankment.
- Sediment basins shall be located so as to intercept the largest possible amount of runoff from the disturbed area, generally low areas and natural drainageways below disturbed areas. Drainage into the basin can be improved by the use of diversion dikes and ditches. The basin shall not be located in a live stream and shall be located to trap sediment-laden runoff before entering streams. The basin shall not be located where its failure would result in the loss of life, damage to adjacent properties, or interruption of the use of public utilities or roads. The design capacity of the basin shall be at least 134 cubic yards or 3600 cubic feet per acre of drainage area measured from the bottom of the basin to the crest of the principal spillway (riser pipe). Sediment should be removed from the basin when the volume of the basin has been reduced to 55 cubic yards per acre of drainage area. The elevation of the sediment clean out level shall be calculated and clearly marked on the riser. In no case shall the sediment clean out level be higher than one foot below the top of the riser. The embankment shall have a minimum top width of 8 feet. The side slopes shall be 2:1 or flatter. The embankment may have a maximum height of 10 feet if the side slopes are 2:1. If the side slopes are 2.5:1 or flatter, the embankment may have a maximum height of 15 feet. The outlets for the basin may consist of a combination of principal and emergency spillways or a principal spillway alone. Dewatering shall be done in a way that removes relatively clean water without removing any of the sediment that has settled out and without removing any appreciable quantities of floating debris. The embankment of the basin should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. Additionally, no offsite discharges are allowed during dewatering activities. The General Contractor shall furnish a specific dewatering plan as necessary.
- Equipment maintenance areas: exceptional care shall be taken during each individual repair or maintenance operation to prevent potential pollutants from becoming available to be washed into streams or conveyance systems. Temporary waste disposal receptacles shall be provided and emptied as required.
- Where construction materials, chemicals, cements, solvents, paints, or other potential water pollutants are to be stored, they shall be isolated in areas where they will not cause runoff pollution. Toxic chemicals and materials, such as pesticides, paints, and acids, shall be stored according to manufacturers' guidelines. Overuse shall be avoided and great care shall be taken to prevent accidental spillage. Containers shall never be washed in or near flowing streams or stormwater conveyance systems. Groundwater resources shall be protected from leaching by placing a plastic mat, tar paper, or other impervious materials on any areas where toxic liquids are to be opened and stored.
- Runoff from the construction trailer shall be diverted to a temporary sediment trap or basin.
- Location of the temporary construction trailer, construction material, debris pile, fuel storage, etc. shall be approved by the local municipality prior to the start of construction.
- Dust control measures shall be implemented and maintained throughout construction. Dust control measures shall be as approved by the City of Orlando.
- Dewatering is not anticipated.
- No excavating material shall be stockpiled in a manner as to direct runoff directly off the project site or into any adjacent water body or stormwater collection facility.
- All excess fill material will be hauled offsite.
- Inspections by the contractor to determine the effectiveness of erosion/sediment control efforts shall be conducted daily and within 24 hours after each 0.50 inch or greater rainfall event. Any necessary remedies shall be performed immediately.
- Sedimentation controls/BMPs shall prevent stormwater runoff with turbidity greater than 29 NTUs from leaving the construction site.

