

Subsection 10.02
Air and Water Pollution,
Soil Erosion and Siltation Control

I. Scope

This Subsection includes control measures as shown on the plans, Section 9, Sediment, Erosion Control, and Water Quality of the Design Criteria Manual of the City of Amarillo Stormwater Master Plan or as ordered by the Engineer or in the Contractor's opinion to mitigate pollution during a project. Projects over 5 acres in area shall comply with their Pollution Prevention Plans and Notices of Intent as required by the EPA General NPDES Permit for Texas. The measures shall control water pollution, soil erosion, and siltation by using berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

The temporary erosion control measures shall coordinate with the permanent erosion control measures to assure economical, effective, and continuous erosion control throughout the construction period and warranty period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, disposal areas, and temporary plant sites. Contractor shall obtain permission to implement temporary erosion control measures on property not owned by him.

II. Materials

A. Grass: Grass should not compete with the grasses sown later for permanent cover. Grass shall be a hardy quick growing species (such as rye grass, Italian rye grass, or cereal grasses) suitable to provide temporary cover.

B. Mulches: Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials.

C. Fertilizer: Fertilizer shall be a standard commercial grade and shall conform to all Federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

D. Slope Drains: Slope drains may be constructed of pipe, fiber mats, rubble, Portland cement concrete, bituminous concrete or other materials that will adequately control erosion.

E. Other: All other materials shall meet commercial grade standards and shall be approved by the Engineer before being incorporated into the project.

III. Equipment: Contractor shall provide whatever equipment is necessary to complete

this item.

IV. Construction Methods

A. General: Any conflict between these requirements and pollution control laws, rules, or regulations of other Federal, state, or local agencies causes the more restrictive laws, rules, or regulations to apply.

The Contractor shall be responsible for compliance for construction practices, construction operations, and construction work.

B. Schedule: Prior to the start of construction, the Contractor shall submit in writing schedules for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing, grading, construction, paving, and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of objectionable materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the Engineer.

The Contractor shall incorporate the following methods, where practicable, in his erosion control plan: exposing the minimum area of erodible earth; applying temporary mulch with or without seeding; using water sprinkler trucks; using covered haul trucks; using dust palliatives or penetration asphalt on haul roads; and using plastic sheet coverings.

C. Authority of Engineer: The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, to limit the surface area of erodible earth material exposed by excavation, borrow and fill operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment.

D. Construction Details: The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion is likely to be a problem, clearing and grubbing operations should be scheduled and performed so that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise,

temporary erosion control measures may be required between successive construction stages.

The Engineer will limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.

In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or are ordered by the Engineer, such work shall be performed at the Contractor's expense. The Engineer may increase or decrease the area of erodible earth material to be exposed at one time as determined by analysis of project conditions.

The erosion control features installed by the Contractor shall be acceptably maintained by the Contractor during the construction period.

Whenever construction equipment must cross watercourses at frequent intervals, and such crossings will adversely affect the sediment levels, temporary structures should be provided.

Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into or near rivers, streams, and impoundments or into natural or manmade channels leading thereto.

V. Measurement

A. Temporary erosion and pollution control work required which is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls will be performed as scheduled or ordered by the Engineer. Completed and accepted work will be measured as follows:

1. Temporary seeding and mulching will be measured by the square yard.
2. Temporary slope drains will be measured by the linear foot.
3. Temporary benches, dikes, dams, and sediment basins will be measured by the cubic yard of excavation performed, including necessary cleaning of sediment basins, and the cubic yard of embankment placed at the direction of the Engineer, in excess of plan lines and elevations.
4. All fertilizing will be measured by the ton.

B. Temporary control measures at construction areas outside the project limits,

such as borrow and disposal areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor with costs included in the contract prices bid for the items to which they apply.

C. Temporary and permanent control measures within the project limits shall be measured as shown on the plans.

VI. Payment

A. Accepted quantities of water pollution, soil erosion, and siltation control work and measured as provided will be paid for under:

1. Temporary seeding and mulching by the square yard
2. Temporary slope drains by the linear foot
3. Temporary benches, dikes, dams and sediment basins by the cubic yard
4. Fertilizing by the ton

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control measures not covered by contract items that are ordered by the Engineer will be paid for in accordance with the extra work provisions of the general conditions of the contract.

LAST PAGE OF THIS SUBSECTION