

Environmental Protection Section 1200

1210 Scope

This section covers the preventive measures required for protection of the environment during construction operations, except for those measures set forth in the other sections of these specifications.

1220 General

The Contractor shall provide environmental protection as required to insure the retention of the environment in its natural state to the greatest possible extent during project construction and to enhance the natural appearance in its final condition. Environmental protection shall include consideration of air, water, and land protection and involves solid-waste management as well as other pollutants. For the purpose of this specification environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the landscape of the area for aesthetic and recreational purposes.

1230 Applicable Regulations

The Contractor shall comply with all applicable Federal, State and local laws, and regulations concerning environmental pollution control and abatement. Contractor shall be responsible for obtaining LCRA Non-source Pollution Control/TCEQ NPDES permits and complying with the provisions of the Clean Water Act, as amended, (33 USC 1251), for sites larger than five acres. *Sites larger than five (5) acres shall have an approved erosion control plan on file with the City. Sites (5) acres or smaller shall use construction methods that prevent erosion and shall conform to this section.* Placement of fill or construction in a floodplain will require a separate permit from the City of Burnet and is subject to the requirements of the Flood Prevention Ordinance.

1240 Notification

The City Engineer or Public Works Inspector will notify the Contractor in writing of any observed noncompliance with the foregoing provisions. If the Contractor fails or refuses to promptly take corrective action, the City Engineer or PW Inspector may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be reason for extension of time or for excess costs or damages unless it is determined that the Contractor was in compliance.

1250 Subcontractors

Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1260 Protection of Land Resources

1260.01 General: The land resources within the right of way of the City but outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. Insofar as possible, the Contractor shall confine his construction activities to areas defined by the plans or specifications. At the onset of borrow excavation, topsoil shall be saved for use in restoring the borrow area. Waste and borrow areas shall be leveled or trimmed to regular lines and shaped to provide a neat appearance. In all instances the restored area shall be well drained, so as to prevent the accumulation of stagnant water.

1260.02 Prevention of Landscape Defacement: Except in areas shown on the plans or specified to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without approval. Trees designated to be saved shall be protected from either excavation or filling within the root zone closer than the normal drip line of the tree. No ropes, cables, or guys shall be fastened to or attached to any existing trees for anchorages unless approved. Where such use is permitted the Contractor shall first adequately wrap the trunk with burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall be responsible for any damage resulting from such use. Where, in the opinion of the Engineer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting, dumping, or other operations, he may direct the Contractor to protect adequately such trees by placing boards, planks, or poles around them. When earthwork operations are liable, in the opinion of the City Engineer, to cause rock to roll or otherwise be displaced into uncleared areas, the Contractor shall construct barriers to protect the trees. Rocks that are displaced into uncleared areas shall be removed. Monuments, markers, and works of art shall be protected similarly before beginning operations near them.

1260.03 Restoration of Landscape Damage: Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The City Engineer will decide what method of restoration shall be used, and whether damaged trees shall be treated or removed and disposed of under requirements for clearing and grubbing. All scars made on trees (not designated on the plans to be removed) by equipment, construction operations, or by the removal of limbs larger than 1 inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the City Engineer, shall be immediately removed and replaced with a nursery-grown tree of the same species and size approved by the City Engineer.

1260.04 Location of Temporary Field Offices, Storage, and Other Construction Buildings: The location on City property of the Contractor's temporary field office, storage, and other construction buildings, required temporarily in the performance of the work, shall require written approval of the City Engineer. The preservation of the landscape shall be maintained at all temporary building sites and in the construction of buildings.

1260.05 Post-Construction Cleanup or Obliteration: The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction, as directed by the City Engineer.

1260.06 Erosion Control: Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas shall be graded to control erosion within acceptable limits. Vegetative strips (widths determined and delineated on construction plans by Engineer) shall be maintained throughout construction for erosion control. Temporary erosion and sediment control measures such as berms, dikes, drains, or sedimentation basins, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall be held to a minimum. Grass and vegetation areas designated as not being disturbed shall be revegetated immediately by drill seeding, sodding or other means acceptable to the City Engineer. The street right of ways must be covered with six inches (6") of top soil, reseeded (by drill seeding only) or resodded, and grass established before the City will accept the proposed subdivision. Additionally, an erosion control plan must be submitted to the City Engineer for all construction.

1260.07 Janitorial Services: The Contractor shall furnish daily janitorial services for the temporary field office, storage, and other construction buildings on the project site. The Contractor shall also provide daily trash collection and cleanup of the buildings and adjacent outside areas, snow removal in season, and shall

dispose of all discarded debris, aggregate samples and concrete test samples in a manner approved by the City Engineer.

1260.08 Burning: No material shall be burned at the project site unless otherwise specified in other sections of these specifications or authorized by the Fire Marshall of the City of Burnet.

1260.09 Dust and Mud Control: The Contractor will be required to maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which would cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs. Contractor shall provide measures to prohibit the off-site tracking of mud. Measures may include placement of rock or gravel at exits to site and provision of street sweeping equipment to remove dirt and mud which is tracked onto public streets. Streets adjacent to the working site shall remain free of mud and dust at all time during prosecution of the contract.

1260.10 Maintenance of Pollution Control Facilities During Construction: During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

1260.11 Pesticides (Insecticides, Fungicides, Herbicides, etc.): Application of all pesticides shall be accomplished by certified pest control personnel or under the supervision of a certified pest control operator. Delivery and storage of pesticides will be monitored by certified personnel to insure the adequacy of containers and the safe storage of toxic materials. Disposal of containers and chemicals will be monitored to prevent pollution of natural drainage systems.

1260.12 Seeding for Erosion Control:

A. Description

This item shall govern the preparation of a seed bed to the lines and grades indicated on the Drawings, drill seeding, fertilizing, watering and other management practices along and across such areas as indicated in the Drawings or as directed by the Engineer or designated representative. In general, seeding or sodding must begin immediately after final grade when six inches of topsoil has been achieved.

B. Submittals

The submittal requirements for this specification item shall include:

- 1) Identification of the type, source, mixture, pure live seed (PLS) and rate of application of the seeding.
- 2) Type and rate of application of fertilizer.

C. Materials

- 1) Seeds: All seed must meet the requirements of the Texas Seed Law including the labeling requirements for showing PLS, name and type of seed. The seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of delivery to the project. Each variety of

seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer or designated representative.

- 2) Water: Water shall be clean and free of industrial wastes and other substances harmful to the growth of grass or the area irrigated.
- 3) Top Soil. Topsoil shall be fertile soil, be easily cultivated, be free from objectionable material, have a relatively high erosion resistance and be readily able to support the growth of planting, seeding or sodding. Existing topsoil on site shall be kept separate from other excavated materials to that it can be reused when backfilling the ditch.
- 4) Fertilizer. The fertilizer shall be delivered in bags or containers clearly labeled showing the analysis. The figures in the analysis represent the percent of nitrogen, phosphoric acid, and potash nutrients.

D. Construction Methods

- 1) Preparing Seed Bed: After the designated areas have been completed to the lines, grades and cross sections shown on the plans and as provided for in other items of this contract, drill seeding shall be performed in accordance with the requirements hereinafter described. All areas to be seeded shall be done using a seed drill suitable for seeding into untilled soil. The seedbeds shall be cultivated sufficiently to reduce the soil to a state of good tilth when the soil particles on the surface are small enough and lie closely enough together to prevent the seed from being covered too deeply for optimum germination.
- 2) Watering: All watering shall comply with City Ordinances. Broadcast seeded areas shall immediately be watered with a minimum of 5 gallons of water per square yard or as needed and in the manner and quantity as directed by the Engineer or designated representative. Hydraulic seeded areas and native grass seeded areas shall be watered commencing after the tackifier has dried with a minimum of 5 gallons of water per square yard or as needed to keep the seedbed in a wet condition favorable for the growth of grass.

Watering applications shall constantly maintain the seedbed in a wet condition favorable for the growth of grass. Watering shall continue until the grass is uniformly 1 1/2 inches in height or accepted by the City Engineer or designated representative. Watering can be postponed immediately after a 1/2 inch (12.5 mm) or greater rainfall on the site but shall be resumed before the soil dries out.

E. Method of Drill Seeding

Seed shall be drilled at a depth of from 1/4 inch to 3/8 inch utilizing a pasture or rangeland type drill. All drilling shall be along the contour of the slope.

**SEEDING MIXTURES IN POUNDS
OF PURE LIVE SEED PER ACRE**

Warm Season Feb 1 – May 1		Cool Season Sept 1 – Nov 30	
Rural	Urban	Temporary	
Green Sprangletop 0.9	Green Sprangletop 1.1	Tall Fescue 4.0	
Bermudagrass 1.2	Bermudagrass 1.5	Oats 21.0	
Buffelgrass 2.0	Sideoats 3.7	Wheat (red, winter) 30.0	
K-R Bluestem 1.0			

F. Measurement: Work and acceptable material for "Seeding for Erosion Control" will be measured by the square yard complete in place, with a minimum of 70 percent coverage.

260.13 Construction Exits: Rock used for construction exits shall consist of crushed stone ranging in sizes of a minimum of 3 inches to maximum of 6 inches in diameter. The aggregates shall be clean, hard, durable materials free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.

Exits shall be maintained in a condition that will prevent tracking or flowing of sediment onto public right of way.

1260.14 Sediment Control Fence: The fence shall be a net-reinforced fence, using woven geotextile fabric. The silt fence shall be supplied by an approved manufacturer listed in Section 26 of the Texas Department of Transportation's Material Producer List of *Prequalified Manufacturers for Silt Fence, Filter Fabric, and Fabric Underseal*.

The posts shall be a minimum of 48 inches long, and shall be wood or steel. Soft wood posts shall be at least 3 inches in diameter or nominal 2 X 4 inches. Hardwood posts shall have a minimum cross section of 1.5 X 1.5 inches. Steel posts shall be "T" or "L" shaped with a minimum weight of 1.3 pounds per linear foot. The posts shall be imbedded 18 inches deep with spacing of 6 to 8 feet and installed on a slight angle toward the anticipated run-off source.

Trenches shall be dug along the uphill side of the fence to anchor 6 to 8 inches of fabric. The trench shall have a minimum cross section of 6 X 6 inches. The fabric shall be installed in the trench such that 4 to 6 inches of fabric is against the side of the trench and approximately 2 inches of fabric is across the bottom in the upstream direction. The trench shall then be backfilled and hand tamped.

The net reinforcement shall be galvanized welded wire mesh of a minimum 12.5 gauge wire or equal with a maximum opening size of 2 inches by 4 inches and shall be at least 24 inches wide. The reinforcement shall be attached to the end posts at a minimum of 4 locations and to the top strand of reinforcement at a maximum spacing of 15 inches. Splices shall occur at a fence post and shall have a minimum lap of 6 inches attached in at least 6 places.

The temporary sediment control fence shall be used during construction near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. The fence shall be maintained in good condition by the Contractor. When the accumulated sediment deposit reaches a depth of approximately 6 inches, it shall be removed and disposed of at approved sites in a manner that will not contribute to additional siltation.

Temporary sediment control fence will be measured by the linear foot, complete in place. The work performed and the materials furnished as prescribed by this Item will be paid for at the unit price bid for "Silt Fence", which price shall be full compensation for furnishing, placing and maintenance of the fence; for all required trenching, fence posts, fabric and backfill; and for all labor, tools, equipment and incidentals necessary to complete the work.