DIVISION 8
MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

This Work consists of furnishing, installing, maintaining, removing and disposing of water pollution and erosion control items in accordance with these Specifications and as shown in the Plans or as designated by the Engineer.

8-01.2 Materials

Materials shall meet the requirements of the following sections:

Seed	9-14.2
Fertilizer	9-14.3
Mulch and Amendments	9-14.4
Erosion Control Devices	9-14.5
Construction Geotextile	9-33
Quarry Spalls	9-13

8-01.3 Construction Requirements

8-01.3(1) General

Controlling pollution, erosion, runoff, and related damage requires the Contractor to perform temporary Work items including but not limited to:

1. Providing ditches, berms, culverts, and other measures to control surface water;
2. Building dams, settling basins, energy dissipaters, and other measures, to control downstream flows;
3. Controlling underground water found during construction; or
4. Covering or otherwise protecting slopes until permanent erosion-control measures are working.

To the degree possible, the Contractor shall coordinate this temporary Work with permanent drainage and erosion control Work the Contract requires.

The Engineer may require additional temporary control measures if it appears pollution or erosion may result from weather, the nature of the materials, or progress on the Work.

When natural elements rut or erode the slope, the Contractor shall restore and repair the damage with the eroded material where possible, and clean up any remaining material in ditches and culverts. When the Engineer orders replacement with additional or other materials, unit Contract prices will cover the quantities needed.

If the Engineer anticipates water pollution or erosion, the Contractor shall schedule the Work so that grading and erosion control immediately follows clearing and grubbing. The Engineer may also require erosion control Work to be done with or immediately after grading. Clearing, grubbing, excavation, borrow, or fill within the Right of Way shall never expose more erodible earth than as listed below, without written approval by the Engineer:

Area	Date	Location
17 Acres	April 1 - October 31	East of the Summit of the Cascade Range
	May 1 - September 30	West of the Summit of the Cascade Range
5 Acres	November 1 - March 31	East of the Summit of the Cascade Range
	October 1 - April 30	West of the Summit of the Cascade Range

The Engineer may increase or decrease the limits in light of project conditions.

Erodible earth is defined as any surface where soils, grindings, or other materials are capable of being displaced and transported by rain, wind, or surface water runoff.

Erodible soil not being worked, whether at final grade or not, shall be covered within the following time period, using an approved soil covering practice, unless authorized otherwise by the Engineer:

In western Washington (west of the Cascade Mountain crest):

October 1 through April 30	2-days maximum
May 1 to September 30	7-days maximum

In eastern Washington (east of the Cascade Mountain crest.):

October 1 through June 30	5-days maximum
July 1 through September 30	10-days maximum

If the Engineer, under Section 1-08.6, orders the Work suspended for an extended time, the Contractor shall, before the Contracting Agency assumes maintenance responsibility, make every effort to control erosion, pollution, and runoff during shutdown. Section 1-08.7 describes the Contracting Agency's responsibility in such cases.

Nothing in this section shall relieve the Contractor from complying with other Contract requirements.

8-01.3(1)A Submittals

When a temporary erosion and sediment control (TESC) Plan is included in the Plans, the Contractor shall either adopt or modify the existing TESC Plan. The Contractor shall provide a schedule for TESC Plan implementation and incorporate it into the Contractor's progress schedule. The Contractor shall obtain the Engineer's approval of the TESC Plan and schedule before any Work begins. The TESC Plan shall cover all areas the Contractor's Work may affect inside and outside the limits of the project (including all Contracting Agency-provided sources, disposal sites, and haul roads, and all nearby land, streams, and other bodies of water).

The Contractor shall allow at least 5-working days for the Engineer's review of any original or revised Plan. Failure to approve all or part of any such Plan shall not make the Contracting Agency liable to the Contractor for any Work delays.

8-01.3(1)B Erosion and Sediment Control (ESC) Lead

The Contractor shall identify the ESC Lead at the preconstruction discussions and in the TESC Plan. The ESC Lead shall have, for the life of the Contract, a current Certificate of Training in Construction Site Erosion and Sediment Control from a course approved by the Washington State Department of Ecology. The ESC Lead shall be listed on the Emergency Contact List required under Section 1-05.13(1).

The ESC Lead shall implement the Temporary Erosion and Sediment Control (TESC) Plan. Implementation shall include, but is not limited to:

1. Installing and maintaining all temporary erosion and sediment control Best Management Practices (BMPs) included in the TESC Plan to assure continued performance of their intended function. Damaged or inadequate TESC BMP's shall be corrected immediately.
2. Updating the TESC Plan to reflect current field conditions.

When a TESC Plan is included in the Contract Plans, the Contractor shall inspect all on-site erosion and sediment control BMP's at least once every calendar week and within 24-hours of runoff events in which stormwater discharges from the site. Inspections of temporarily stabilized, inactive sites may be reduced to once every calendar month. The Erosion and Sediment Control Inspection Form (Form Number 220-030 EF) shall be completed for each inspection and a copy shall be submitted to the Engineer no later than the end of the next working day following the inspection.

8-01.3(1)C Water Management

1. Ground Water

   When ground water is encountered in an excavation, it shall be treated and discharged as follows:

   a. When the ground water conforms to Water Quality Standards for Surface Waters of the State of Washington (Chapter 173-201A WAC), it may bypass detention and treatment facilities and be routed directly to its normal discharge point at a rate and method that will not cause erosion.
   b. When the turbidity of the ground water is similar to the turbidity of the site runoff, the ground water may be treated using the same detention and treatment facilities being used to treat the site runoff and then discharged at a rate that will not cause erosion.
   c. When the turbidity is greater than the turbidity of the site runoff, the ground water shall be treated separately until the turbidity is similar to or better than the site runoff, and then may be combined and treated as in B, above.

2. Process Water

   All water generated on site from construction or washing activities that is more turbid than site runoff shall be treated separately until the turbidity is the same or less than the site runoff, and then may be combined and treated as in 1B, above. Water may be infiltrated upon the approval of the Engineer.

3. Offsite Water

   The Contractor shall, prior to disruption of the normal watercourse, intercept the offsite stormwater and pipe it either through or around the project site. This water shall not be combined with onsite stormwater and shall be discharged at its pre-construction outfall point in such a manner that there is no increase in erosion below the site. The method for performing this Work shall be submitted by the Contractor for the Engineer's approval.

8-01.3(1)D Dispersion/Infiltration

Water shall be conveyed only to dispersion or infiltration areas designated in the TESC Plan or to sites approved by the Engineer. Water shall be conveyed to designated dispersion areas at a rate that when runoff leaves the area, turbidity standards are achieved. Water shall be conveyed to designated infiltration areas at a rate that does not produce runoff.

8-01.3(1)E Detention/Retention Pond Construction

Whether permanent or temporary, ponds shall be constructed before beginning other grading and excavation Work in the area that drains into that pond. Temporary conveyances shall be installed concurrently with grading in accordance with the TESC Plan so that newly graded areas drain to the pond as they are exposed.

8-01.3(2) Seeding, Fertilizing, and Mulching

8-01.3(2)A Preparation For Application

Seeding

Areas to be cultivated are shown in the Plans or specified in the Special Provisions. The areas shall be cultivated to the depths specified to provide a reasonably firm but friable seedbed. Cultivation shall take place no sooner than 2-weeks prior to seeding.

All areas to be seeded, including excavated slopes shall be compacted and prepared unless otherwise specified or ordered by the Engineer. A cleated roller, crawler tractor, or similar equipment, approved by the Engineer that forms longitudinal depressions at least 2-inches deep shall be used for compaction and preparation of the surface to be seeded.

The entire area shall be uniformly covered with longitudinal depressions formed perpendicular to the natural flow of water on the slope. The soil shall be conditioned with sufficient water so the longitudinal depressions remain in the soil surface until completion of the seeding.

Prior to seeding, the finished grade of the soil shall be 1-inch below the top of all curbs, junction and valve boxes, walks, driveways, and other Structures. The soil shall be in a weed free and bare condition.

Temporary Seeding

A cleated roller, crawler tractor, or similar equipment, approved by the Engineer that forms longitudinal depressions at least 2-inches deep shall be used for compaction and preparation of the surface to be seeded. The entire area shall be uniformly covered with longitudinal depressions formed perpendicular to the natural flow of water on the slope. The soil shall be conditioned with sufficient water so the longitudinal depressions remain in the soil surface until completion of the seeding.

8-01.3(2)B Seeding and Fertilizing

Seed or seed and fertilizer shall be placed at the rate, mix and analysis specified in the Special Provisions or as designated by the Engineer. The Contractor shall notify the Engineer not less than 24-hours in advance of any seeding operation and shall not begin the Work until areas prepared or designated for seeding have been approved. Following the Engineer's approval, seeding of the approved slopes shall begin immediately.

Seeding shall not be done during windy weather or when the ground is frozen, excessively wet, or otherwise untillable. Seed or seed and fertilizer may be sown by 1 of the following methods:

1. An approved hydro seeder that utilizes water as the carrying agent, and maintains continuous agitation through paddle blades. It shall have an operating capacity sufficient to agitate, suspend, and mix into a homogeneous slurry the specified amount of seed and water or other material. Distribution and discharge lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic discharge spray nozzles that will provide a uniform distribution of the slurry.
2. Approved blower equipment with an adjustable disseminating device capable of maintaining a constant, measured rate of material discharge that will ensure an even distribution of seed at the rates specified.
3. Helicopters properly equipped for aerial seeding.
4. Approved power-drawn drills or seeders.
5. Areas in which the above methods are impractical may be seeded by approved hand methods.

When seeding by hand, the seed shall be incorporated into the top ¼-inch of soil by hand raking or other method that is approved by the Engineer.

The seed applied using a hydroseeder shall have a tracer added to visibly aid uniform application. This tracer shall not be harmful to plant and animal life. If wood cellulose fiber is used as a tracer, the application rate shall not exceed 250-pounds per acre.

Seed and fertilizer may be applied in 1 application provided that the fertilizer is placed in the hydro seeder tank no more than 1-hour prior to application.

8-01.3(2)C Liming

Agricultural lime shall be applied at the rates specified in the Special Provisions.

The method of application shall be in conformance with all air and water pollution regulations and shall be approved by the Engineer.

8-01.3(2)D Mulching

Mulch of the type specified in the Special Provisions shall be furnished, hauled, and evenly applied at the rates indicated and shall be spread on seeded areas within 48-hours after seeding unless otherwise specified.

Distribution of straw mulch material shall be by means of an approved mulch spreader that utilizes forced air to blow mulch material on seeded areas.

Mulch may be applied with seed and fertilizer West of the summit of the Cascade Range. East of the summit of the Cascade Range, seed and fertilizer shall be applied in 1 application followed by the application of mulch. Mulch shall be suitable for application with a hydro seeder as specified in Section 8-01.3(2)B.

Temporary seed applied outside the application windows established in 8-01.3(2)F, shall be covered with a mulch containing either BFM or MBFM, as designated by the Engineer.

Mulch sprayed on signs or sign Structures shall be removed the same day.

Areas not accessible by mulching equipment shall be mulched by approved hand methods.

8-01.3(2)E Tacking Agent and Soil Binders

Tacking Agents

Tacking agents shall be applied in accordance with the manufacturer's recommended requirements.

Soil Binders

Soil binders shall be applied in accordance with the manufacturer's recommended requirements.

Soil Binding Using Polyacrylamide (PAM)

The PAM shall be applied on bare soil completely dissolved and mixed in water or applied as a dry powder. Dissolved PAM shall be applied at a rate of not more than ⅔-pound per 1,000-gallons of water per acre. A minimum of 200-pounds per acre of cellulose fiber mulch treated with a non-toxic dye shall be applied with the dissolved PAM. Dry powder applications may be at a rate of 5-pounds per acre using a hand-held fertilizer spreader or a tractor-mounted spreader.

PAM shall be applied only to areas that drain to completed sedimentation control BMPs in accordance with the TESC Plan. PAM shall not be applied to the same area more than once in a 48-hour period, or more than 7 times in a 30-day period.

PAM shall not be applied during rainfall or to saturated soils.

Soil Binding Using Bonded Fiber Matrix (BFM)

The BFM shall be hydraulically applied in accordance with the manufacturer's installation instructions.

Soil Binding Using Mechanically-Bonded Fiber Matrix (MBFM)

The MBFM shall be hydraulically applied in accordance with the manufacturer's installation instructions and recommendations.

8-01.3(2)F Dates for Application of Final Seed, Fertilizer, and Mulch

Unless otherwise approved by the Engineer, the final application of seeding, fertilizing, and mulching of slopes shall be performed during the following periods:

West of the summit of the Cascade Range - March 1 to May 15 and September 1 to October 1. Where Contract timing is appropriate, seeding, fertilizing, and mulching shall be accomplished during the fall period listed above. Written permission to seed after October 1 will only be given when Physical Completion of the project is imminent and the environmental conditions are conducive to satisfactory growth.

East of the summit of the Cascade Range - October 1 to November 15. Seeding, fertilizing, and mulching shall be accomplished during this fall period only.

All Roadway excavation and embankment slopes, including excavation and embankment slopes that are partially completed to grade, shall be prepared and seeded during the first available seeding window. When environmental conditions are not conducive to satisfactory results, the Engineer may suspend Work until such time that the desired results are likely to be obtained.

When environmental conditions are conducive to satisfactory results, the Contractor may elect to perform seeding operations outside of the time periods specified. Inspection of seeding performed at the Contractor's option outside of the time periods specified will be made after 1 growing season has elapsed. Acceptance will be based on a uniform stand of grass at the time of inspection. The Contractor shall restore eroded areas, clean up

eroded materials, and reseed, fertilize, and mulch, at no additional cost to the Contracting Agency, the areas failing to show a uniform stand of grass.

Temporary seeding may be performed at any time approved by the Engineer.

8-01.3(2)G Protection and Care of Seeded Areas

The Contractor shall be responsible to ensure a healthy stand of grass, otherwise, the Contractor shall restore eroded areas, clean up eroded materials, and reapply the seed, fertilizer, and mulch, at no additional cost to the Contracting Agency.

In addition to the requirements of Section 1-07.13(1), the Contractor shall be responsible for performing the following duties:

1. Areas which have been damaged through any cause prior to final inspection, and areas failing to receive a uniform application at the specified rate, shall be reseeded, refertilized, and remulched at the Contractor's expense.
2. Seeded areas within the planting area shall be considered part of the planting area. Weeds within the seeded areas shall be controlled in accordance with Section 8-02.3(3).

8-01.3(2)H Inspection

Inspection of seeded areas will be made upon completion of seeding, fertilizing, temporary seeding, and mulching. The Work in any area will not be measured for payment until a uniform distribution of the materials is accomplished at the specified rate. Areas not receiving a uniform application of seed, fertilizer, or mulch at the specified rate, as determined by the Engineer, shall be reseeded, refertilized, or remulched at the Contractor's expense prior to payment.

8-01.3(2)I Mowing

When the Proposal contains the Bid item "Mowing" or mowing areas are defined, the Contractor shall mow all grass growing areas and slopes 2.5 (H) to 1 (V) or flatter except for naturally wooded and undergrowth areas. Trimming around traffic facilities, Structures, planting areas, or other features extending above ground shall be accomplished preceding or simultaneously with each mowing by use of power driven or hand operated machinery and tools to achieve a neat and uniform appearance.

Each mowing shall be considered as 1 coverage of all grass areas to be mowed within a defined area. Prospective Bidders shall verify the estimated acreage, the topography, irregularity of the area, slopes involved, and access limitations to determine the appropriate equipment to use for mowing. Equipment and tools shall be provided such as, but not limited to, tractor operated rotary or flail-type grass cutting machines and tools or other approved equipment. Power driven equipment shall not cause ruts or deformation of improved areas. Sickle type grass cutters will be permitted only on slopes of drainage ditches, berms, or other rough areas. The equipment and tools shall be in good repair and maintained so that a clean, sharp cut of the grass will result at all times. The Engineer will determine the actual number of mowings. The height of mowing will be 4 to 6-inches or as designated in the Plans or in the Special Provisions.

Mowing equipment shall be operated and equipped with suitable guards to prevent throwing rocks or debris onto the Traveled Way or off the Right of Way. Equipment, which pulls or rips the grass or damages the turf in any manner will not be permitted. The Engineer will be the sole judge of the adequacy of the equipment, safeguards, and methods of use. The Contractor will not be required to collect or remove clippings from

the project except on the Traveled Way, Shoulder, walkway, or other areas designated by the Engineer.

8-01.3(3) Placing Erosion Control Blanket

The slope rating of the blanket, as specified by the manufacturer, shall be appropriate for the intended slope and installed according to the Standard Plans. Temporary erosion control blankets as defined in 9-14.5, having an open area of 60-percent or greater, may be installed prior to seeding. Blankets with less than 60-percent open space shall be installed immediately following the seeding and fertilizing operation.

8-01.3(4) Placing Compost Blanket

Compost blanket shall be placed to a depth of 3-inches over bare soil. Compost blanket shall be placed before seeding or other planting.

Compost shall be Coarse Compost and meet the requirements of 9-14.4(8).

8-01.3(5) Placing Plastic Covering

Plastic meeting the requirements of Section 9-14.5(3) shall be placed with at least a 12-inch overlap of all seams.

Clear plastic covering shall be used to promote growth of vegetation. Black plastic covering shall be used for stockpiles or other areas where vegetative growth is unwanted.

The cover shall be maintained tightly in place by using sandbags on ropes in a 10-foot, maximum, grid. All seams shall be weighted down full length.

8-01.3(6) Check Dams

Check dams shall be installed as soon as construction will allow, or when designated by the Engineer. The Contractor may substitute a different check dam for that specified with approval of the Engineer. Check dams shall be placed in ditches perpendicular to the channel. Check dams shall be of sufficient height to maximize detention, without causing water to leave the ditch.

8-01.3(6)A Geotextile-Encased Check Dam

The geotextile-encased check dam shall meet the requirements in Section 9-14.5(4) Geotextile-Encased Check Dam.

Installation of geotextile-encased check dams shall be in accordance with the Plans, and shall be anchored to hold it firmly in place under all conditions.

8-01.3(6)B Rock Check Dam

The rock used to construct rock check dams shall meet the requirements for quarry spalls, in accordance with Section 9-13.6.

8-01.3(6)C Sandbag Check Dam

Sandbags shall be placed so that the initial row makes tight contact with the ditch line for the length of the dam. Subsequent rows shall be staggered so the center of the bag is placed over the space between bags on the previous lift.

8-01.3(6)D Wattle Check Dam

Wattles used to construct wattle check dams shall meet the requirements for 8-01.3(10).

8-01.3(6)E Coir Log

Coir logs shall meet the requirements of 9-14.5(7) Coir Log . Install coir log as shown in the Plans.

8-01.3(7) Stabilized Construction Entrance

Temporary stabilized construction entrance shall be constructed in accordance with the Plans, prior to beginning any clearing, grubbing, earthwork or excavation.

When the stabilized entrance no longer prevents track out of sediment or debris, the Contractor shall either rehabilitate the existing entrance to original condition, or construct a new entrance.

When the Contract requires a tire wash in conjunction with the stabilized entrance, the Contractor shall include details for the tire wash and the method for containing and treating the sediment-laden runoff as part of the TESC Plan. All vehicles leaving the site shall stop and wash sediment from their tires.

8-01.3(8) Street Cleaning

Self-propelled pickup street sweepers shall be used, whenever required by the Engineer, to prevent the transport of sediment and other debris off the project site. Street sweepers shall be designed and operated to meet air quality standards.

Street washing with water will require approval by the Engineer.

8-01.3(9) Sediment Control Barriers

Sediment control barriers shall be installed in accordance with TESC Plan or manufacturer's recommendations in the areas of clearing, grubbing, earthwork or drainage prior to starting those activities.

The sediment control barriers shall be maintained until the soils are stabilized.

8-01.3(9)A Silt Fence

Silt fence shall be installed in accordance with the Plans.

When backup support is used, steel wire shall have a maximum mesh spacing of 2-inches by 4-inches, and the plastic mesh shall be as resistant to ultraviolet radiation as the geotextile it supports. The strength of the wire or plastic mesh shall be equivalent to or greater than that required in Table 6 for unsupported geotextile (i.e., 180 lbs. grab tensile strength).

The geotextile shall be attached to the posts and support system using staples, wire, or in accordance with the manufacturer's recommendations. Geotextile material shall meet the requirements of Section 9-33 Table 6.

The geotextile shall be sewn together at the point of manufacture, or at a location approved by the Engineer, to form geotextile lengths as required. All sewn seams and overlaps shall be located at a support post.

Posts shall be either wood or steel. Wood posts shall have minimum dimensions of 1¼-inches by 1¼-inches by the minimum length shown in the Plans. Steel posts shall have a minimum weight of 0.90 lbs/ft

When sediment deposits reach approximately ⅓ the height of the silt fence, the deposits shall be removed and stabilized in accordance with Section 8-01.3(15).

8-01.3(9)B Gravel Filter, Wood Chip or Compost Berm

The gravel filter berm shall be a minimum of 1-foot in height and shall be maintained at this height for the entire time they are in use.

The wood chip berm shall be a minimum of 2-feet in height and shall be maintained at this height for the entire time they are in use. Wood chips shall meet the requirements in Section 9-14.4(3).

The Compost Berm shall be constructed in accordance with the detail in the Standard Plans. Compost shall be Coarse Compost in accordance with Section 9-14.4(8).

8-01.3(9)C Straw Bale Barrier

Straw shall conform to Section 9-14.4(1).

8-01.3(9)D Inlet Protection

Inlet protection can be performed below and above the inlet grate, or as a prefabricated cover. All devices shall be installed prior to clearing, grubbing or earthwork activities and shall be as shown in the Plans.

Geotextile fabric in all prefabricated inlet protection devices shall meet or exceed the requirements of Table 1 for Moderate Survivability, and the minimum filtration properties of Table 2, in Section 9-33.2.

When the depth of accumulated sediment and debris reaches approximately ½ the height of an internal device or ⅓ the height of the external device (or less when so specified by the manufacturers), the deposits shall be removed and stabilized on site in accordance with Section 8-01.3(16).

Below Inlet Grate

Below Inlet Grate devices shall be prefabricated units specifically designed for inlet protection and shall remain securely attached to the drainage Structure when fully loaded with sediment and debris, or at the maximum level of sediment and debris specified by the manufacturer.

Above Inlet Grate

Above Inlet Grate devices may be silt fence, sandbags, or prefabricated units specifically designed for inlet protection.

The device shall remain securely in place around the drainage Structure under all conditions.

Inlet Grate Cover

Inlet Grate Cover devices shall be prefabricated units specifically designed for inlet protection and have the following features:

1. Be a sewn geotextile fabric unit fitted to the individual grate and completely enclosing the grate.
2. Have built-in lifting devices to allow manual access of the stormwater system.
3. Utilize an orange monofilament geotextile fabric.

Check dams or functionally equivalent devices may be used as inlet protection devices with the approval of the Engineer.

8-01.3(10) Wattles

Wattles shall be installed as soon as construction will allow or when designated by the Engineer. Trench construction and wattle installation shall begin from the base of the slope and work uphill. Excavated material shall be spread evenly along the uphill slope and compacted using hand tamping or other method approved by the Engineer. On gradually sloped or clay-type soils trenches shall be 2 to 3-inches deep. On loose soils, in high rainfall areas, or on steep slopes, trenches shall be 3 to 5-inches deep, or half the thickness of the wattle.

8-01.3(11) Vacant

8-01.3(12) Compost Sock

The Contractor shall exercise care when installing compost sock to ensure that the method of installation minimizes disturbance of waterways and prevents sediment or pollutant discharge into streambed.

Compost socks shall be laced together end-to-end with coir rope to create a continuous length. Loose ends of the continuous length shall be buried 3 to 5 feet laterally into the bank. The upper surface of the compost sock shall be parallel to the slope. Finished grades shall be of a natural appearance with smooth transitions.

The compost sock shall be secured with wood stakes and live stakes of species as indicated in the Plans.

Wood stakes for compost socks shall be installed and driven into place centered on the top of the compost sock and spaced 3-feet on center throughout the length of the compost sock.

Compost for compost socks shall be Coarse Compost and meet the requirements of Section 9-14.5(6).

8-01.3(13) Temporary Curb

Temporary curbs may consist of asphalt, concrete, sand bags, compost socks, wattles, or geotextile/plastic encased berms of soil, sand or gravel, or as approved by the Engineer.

Temporary curbs shall be installed along pavement edges to prevent runoff from flowing onto erodible slopes. The redirected water shall flow to a BMP designed to convey concentrated runoff. The temporary curbs shall be 4-inches in height.

8-01.3(14) Temporary Pipe Slope Drain

Pipe slope drain shall be constructed in accordance with the Plans and shall meet the requirements of Section 9-05.1(6).

Water interceptor dikes or temporary curbs shall be used to direct water into pipe slope drain. The entrance to the drain may consist of a prefabricated funnel device specifically designed for application, rock, sand bags, or as approved by the Engineer.

Pipe shall be securely fastened together and have gasketed watertight fittings, and secured to the slope with metal “T” posts, wood stakes, sand bags, or as approved by the Engineer.

The water shall be discharged to a stabilized conveyance, sediment trap, stormwater pond, rock splash pad, vegetated strip, or as approved by the Engineer.

Placement of drain shall not pond water on road surface.

8-01.3(15) Maintenance

Erosion and sediment control BMP's shall be maintained so they properly perform their function until the Engineer determines they are no longer needed.

The BMP's shall be inspected on the schedule outlined in Section 8-01.3(1)B for damage and sediment deposits. Damage to or undercutting of BMP's shall be repaired immediately.

In areas where the Contractor's activities have compromised the erosion control functions of the existing grasses, the Contractor shall overseed at no additional cost to the Contracting Agency.

Unless otherwise specified, when the depth of accumulated sediment and debris reaches approximately ⅓ the height of the BMP the deposits shall be removed. Debris or contaminated sediment shall be disposed of in accordance with Section 2-03.3(7)C. Clean sediments may be stabilized on site using approved best management practices when the Engineer approves.

Erosion and sediment control BMP's that have been damaged shall be repaired or replaced immediately by the Contractor, in accordance with Section 1-07.13(4).

8-01.3(16) Removal

When the Engineer determines that an erosion control BMP is no longer required, the Contractor shall remove the BMP and all associated hardware from the project limits. When the materials are biodegradable the Engineer may approve leaving the temporary BMP in place.

The Contractor shall permanently stabilize all bare and disturbed soil after removal of erosion and sediment control BMP's. If the installation and use of the erosion control BMP's have compacted or otherwise rendered the soil inhospitable to plant growth, such as construction entrances, the Contractor shall take measures to rehabilitate the soil to facilitate plant growth. This may include, but is not limited to, ripping the soil, incorporating soil amendments, or other horticultural practices.

8-01.4 Measurement

ESC lead will be measured per day for each day that an inspection is made and a report is filed.

Compost blanket, erosion control blanket and plastic covering will be measured by the square yard along the ground slope line of surface area covered and accepted.

Check dams will be measured by the linear foot along the ground line of the completed check dam.

Stabilized construction entrance will be measured by the square yard for each entrance constructed.

Tire wash facilities will be measured per each for each wash installed.

Street cleaning will be measured by the hour for the actual time spent cleaning pavement, as authorized by the Engineer. Time to move the equipment to or from the area on which street cleaning is required will not be measured.

Inlet protection will be measured per each for each initial installation at a drainage Structure.

Silt fence, gravel filter, compost, and wood chip berms, and will be measured by the linear foot along the ground line of completed barrier.

Straw bale barrier will be measured per each for each bale placed.

Wattle and compost sock will be measured by the linear foot.

Temporary curb will be measured by the linear foot.

Temporary Pipe slope drain will be measured by the linear foot.

Seeding, fertilizing, liming, mulching, mowing, and soil binder or tacking agent will be measured by the acre by ground slope measurement or through the use of design data.

Seeding and fertilizing by hand will be measured by the square yard. No adjustment in area size will be made for the vegetation free zone around each plant.

Coir log will be measured by the linear foot along the ground line of the completed installation.

8-01.5 Payment

Payment will be made in accordance with Section 1-04.1, for each of the following Bid items that are included in the Proposal

"ESC Lead", per day.

"___ Erosion Control Blanket", per square yard.

"Compost Blanket", per square yard.

"Plastic Covering", per square yard.

The unit Contract price per square yard for "Plastic Covering" shall be full pay for all equipment, labor, and materials to perform the Work as specified, including removal and disposal at an approved disposal site.

"Check Dam", per linear foot.

"Stabilized Construction Entrance", per square yard.

"Tire Wash", per each.

The unit Contract price per each for tire wash shall include all costs associated with constructing, operating, maintaining, and removing the tire wash.

"Street Cleaning", per hour.

"Inlet Protection", per each.

"Silt Fence", per linear foot.

"Gravel Filter Berm", per linear foot.

"Wood Chip Berm", per linear foot.

"Compost Berm", per linear foot.

"Straw Bale" , per each.

"Wattle", per linear foot.

"Compost Sock", per linear foot.

The unit Contract price for "Compost Sock" shall include removal and disposal of the compost sock fabric if photodegradable fabric is used.

"Coir Log", per linear foot"

"Erosion/Water Pollution Control", by force account as provided in Section 1-09.6.

Maintenance and removal of erosion and water pollution control devices including removal and disposal of sediment, stabilization and rehabilitation of soil disturbed by these activities, and any additional Work deemed necessary by the Engineer to control erosion and water pollution will be paid by force account in accordance with Section 1-09.6.

To provide a common Proposal for all Bidders, the Contracting Agency has entered an amount in the Proposal to become a part of the Contractor's total Bid.

"Temporary Curb", per linear foot.

The unit Contract price per linear foot for temporary curb shall include all costs to install, maintain, remove, and dispose the temporary curb.

"Temporary Pipe Slope Drain", per linear foot.

The unit Contract price per linear foot shall be full pay for all Work to complete and remove the installation of the pipe slope drain as shown in the Plans. All materials shall become the property of the Contractor after removal.

"Mulching", per acre

"Mulching with PAM", per acre

"Mulching with BFM", per acre.

"Mulching with MBFM", per acre.

"Temporary Seeding", per acre.

"Seeding, Fertilizing and Mulching", per acre.

"Seeding and Fertilizing", per acre.

"Seeding and Fertilizing by Hand", per square yard.

"Second Application of Fertilizer", per acre.

"Liming", per acre.

"Mowing", per acre.

"Seeding and Mulching", per acre.

"Soil Binder or Tacking Agent", per acre.