

PART 1 - GENERAL

1.1 SUMMARY

- .1 Control erosion to reduce negative impacts on water and air quality.
- .2 Prevent loss of soil during construction by storm water runoff and/or wind erosion.
- .3 Prevent sedimentation of receiving streams.
- .4 Prevent polluting the air with dust and particulate matter.
- .5 Temporary and/or permanent control measures to protect plants, watercourses and surrounding properties from environmental pollution and damage.
- .6 Project and site specific Erosion and Sedimentation Control (ESC) Plan.

1.2 REFERENCES

- .1 United States Environmental Protection Agency (USEPA) Document No. EPA 832/R-92-005 (September 1992), Storm Water Management for Construction Activities, Chapter 3.
- .2 Nova Scotia Environment Act. 1994-95, c. 1, s. 1. and Nova Scotia Water Resources Protection Act. 2000, c. 10, s. 1.

1.3 DEFINITIONS

- .1 Erosion: A combination of processes in which materials of the earth's surface are loosened, dissolved or worn away, and transported from one place to another by natural agents.
- .2 Sedimentation: The addition of soils to water bodies by natural and human related activities.
- .3 Storm Water Runoff: Precipitation that does not soak into the ground or evaporate, but flows along the surface of the ground as runoff.
- .4 Erosion and Sediment Control (ESC) Plan: Plan identifying the applicable stabilization and structural strategies that will be employed to limit sediment and erosion during construction.
- .5 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to human kind; or degrade environment aesthetically, culturally and/or historically.
- .6 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.4 EROSION AND SEDIMENTATION CONTROL PLAN (ESC)

- .1 Contractor is to provide and implement site specific Erosion and Sedimentation Control Plan (ESC) to the approval of the authority having jurisdiction.

1.5 WATERWAY PROTECTION

- .1 Do not operate construction equipment in waterways.
- .2 Do not dump excavated fill, waste material or debris in waterways.

1.6 POLLUTION AND DUST CONTROL

- .1 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads, parking areas, and staging areas.
- .2 Apply water with distributors equipped with means of shut-off and with spray system to ensure uniform application.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 EXECUTION

- .1 Maintain temporary erosion and pollution control features installed under this contract.

3.2 EROSION AND SEDIMENTATION CONTROL PLAN IMPLEMENTATION

- .1 Manager: Contractor to designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Erosion and Sediment Control (ESC) Plan for the Project.
- .2 Distribution: Contractor to distribute copies of the ESC Plan to the Job Site Foreman and each Sub-contractor.
- .3 Provide permanent and temporary measures identified by the Erosion and Sediment Control (ESC) Plan to:
 - .1 Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
 - .2 Prevent sedimentation of storm sewer or receiving streams.
 - .3 Prevent polluting the air with dust and particulate matter.
- .4 Limit initial earth disturbance to that necessary to install control measures.

3.2 EROSION AND SEDIMENTATION CONTROL PLAN IMPLEMENTATION (continued)

- .5 Stabilization: Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:
 - .1 Seven days for the surface of all perimeter controls, and all perimeter slopes.
 - .2 Fourteen days for all other disturbed or graded areas.
- .6 Use the permanent driveway or entrance location as a stabilized construction entrance. Top dress as necessary to prevent tracking of sediment onto public streets or rights-of way.
- .7 At any location where surface runoff from disturbed or graded areas flows off the property, install control measures to prevent sediment from being transported off-site.
- .8 Swales or other areas that transport concentrated flow to be sodded.
- .9 Construction Control Measures in Accordance with US EPA 832/R-92-005
- .10 Maintain permanent and temporary erosion and sediment control features installed under this contract. Remove only when authorized by Departmental Representative.
- .11 Remove control features when directed by the Departmental Representative. Take care to avoid causing turbidity, and excessive re-suspension of particles when removing control features.
- .12 Be responsible to provide and implement Erosion and Sedimentation Control Plan prior to start of construction. Provide all required documentation as required by Departmental Representative. Obtain written approval from Departmental Representative before implementation and start of any work.

3.3 FIRES

- .1 Fires and burning of rubbish on site not permitted.

3.4 DISPOSAL OF WASTE

- .1 Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal for procedures for disposal of regular and hazardous waste materials.
- .2 Do not bury rubbish and waste materials on site.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

3.5 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems without prior removal of contaminants.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with ESC Plan and local authority requirements.

3.6 SITE CLEARING AND GRADING

- .1 Minimize stripping of topsoil and vegetation.
- .2 Schedule Work to minimize exposure of subsoils to erosion.
- .3 Perform clearing and grading work to minimize the effects of erosion on site and to the requirements of the ESC Plan.
- .4 Grading shall not impair existing surface drainage, create an erosion hazard, or create a source of sediment to any adjacent watercourse of property.

3.7 PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties not indicated for removal.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 metres.
- .3 Protect roots of designated trees to drip line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Cleanly cut roots that need to be removed with sharp hand cutting tools. Cover roots exposed during construction and scheduled to remain with moist soil until permanent root cover is in place.
- .5 The Departmental Representative may retain an arborist to monitor the condition of trees and plants during construction, and to report on damage and remedial care.
- .6 Minimize stripping of topsoil and vegetation.

3.8 WORK ADJACENT TO WATERWAYS

- .1 Do not discharge waste waters derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines, directly into storm water system or adjacent waterways
- .2 Do not discharge rinse water from concrete trucks or mixing drums on site.
- .3 Do not use waterway beds for borrow material.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .7 Do not blast under water or within 100 metres of indicated spawning beds.
- .8 Provide a suitable method for silt protection reviewed by the Departmental Representative in areas where there is the possibility of silt entering the waterway.

3.10 AIRBORNE POLLUTION AND PARTICULATE CONTROL

- .1 Control emissions from equipment and plant to local authorities emission requirements.
- .2 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .3 Demolish to minimize dusting. Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .4 Provide dust control for temporary roads. Control dust by application of water, or calcium chloride after obtaining permission from the Departmental Representative.
- .5 Keep paved surfaces clean, including public roadways.
- .6 Install and make operational before any site work can commence a wheel/tire wash station for all vehicles leaving the site. Wash to Departmental Representative's approval all wheels/tires of all vehicles before leaving the site. Also wash vehicles (including underside) that Departmental Representative may deem as possible contaminants to adjacent sites, a rumble strip as described in ESC plan other pre-approved methods.
- .7 Cover all site materials and stockpiles with tarps at the end of each day.

3.11 SPILL CONTAINMENT

- .1 Take precautions to avoid contamination of the site from fuel and other petroleum products, fertilizers, paints and coatings, and other hazardous fluids.
- .2 Monitor on site vehicles for fluid leaks. Implement a preventative maintenance program to keep vehicles free from leaks.
- .3 Keep and maintain hydrocarbon containment and clean up materials on site for the duration of construction activities.
- .4 Ensure personnel are trained in the proper use of containment and clean up materials.
- .5 Be responsible for all spills and will be liable for any resulting property damage, any costs incurred by the Departmental Representative for contaminants and clean-up of the spilled material, and any costs, liability or penalties incurred by the Departmental Representative due to the Contractor's failure to comply with relevant legislation.

3.12 EMERGENCY NOTIFICATION

- .1 To report an environmental emergency in the Maritimes:
 - .1 Telephone 1-800-565-1633.

3.13 ENVIRONMENTAL PERMITS

- .1 Contractor responsible for all necessary environmental permits and associated permit costs.

END OF SECTION