CHAPTER 3
EROSION AND SEDIMENT CONTROL

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Section 300 General Summary

All projects constructed within the Town of Essex shall be constructed in strict accordance with State and Town erosion and sediment control requirements and adhere to all requirements within the Town of Essex Storm Water Ordinance, Chapter 10.20. Whether a project requires a State or Town erosion control permit and/or plan, or not, the Town will require the Developerøs Contractor to be responsible for preventing or minimizing soil erosion of disturbed land and preventing the discharge of sediment and other construction related pollutants to waters of the State, and any violations will be immediately addressed by the Developerøs Contractor.

The Town shall accept a State of Vermont General Permit for construction site runoff as evidence of meeting Town erosion and sediment control permit requirements for those projects which fall under the jurisdiction of the State requirements of 1.0 acre and above. If a state permit is accepted as evidence of compliance with the Town Ordinance, a separate Town application will not be required and Town storm-water permit fees shall be waived.

For all projects that have over 0.5 acres of disturbance but under 1.0 acre, a Town Erosion and Sediment Control Permit will be required. Furthermore, if the total new impervious disturbance is between 0.5 ï 1.0 acres, the Developer will be required to provide a Storm Water Management Plan. Additional requirements regarding both documents can be found in the current version of the Town of Essex Storm Water Ordinance, Chapter 10.20.

Development or construction plans shall include detailed information on limits and locations of soil disturbance, topsoil stockpiles, construction staging areas, and the proposed methods for erosion control. Appendix A of this document contains standard details for erosion and sediment control that should be incorporated into all Development projects constructed within the Town of Essex.

Boundaries for any undisturbed riparian buffer zone shall be clearly established on the construction plans, and on site. No work shall be started in areas which are highly susceptible to erosion, as indicated by the Town, or within existing drainage channels until the methods of erosion control to be employed on the project have been approved.

The Town Engineer has the authority to limit the surface area of erodible earth material exposed by excavation, borrow and fill operations and to order the

Contractor to provide immediate erosion control measures to prevent contamination of adjacent streams or other watercourses, and areas of water impoundment. These measures shall include but not be limited to; silt fence, stone check dams, hay mulch and matting. As the excavation proceeds, cut slopes shall be seeded and mulched to the extent considered desirable and practicable by the Town. The exposure of uncompleted cut slopes and embankments to the elements shall be as short as practicable. Seeding, mulching, installation of erosion control shrubbery or other designed treatment should be initiated promptly, and concurrently with the other work.

If and when conditions develop that will suspend construction operations for any appreciable length of time, the excavation and embankment areas shall be shaped in such a manner that the runoff of water may be intercepted and diverted to points where least erosion shall result. Slope drains shall be installed as soon as possible to assist in carrying this runoff. If these preventative measures should fail and an appreciable amount of material begins to erode into a river, stream or impoundment, the Contractor shall act immediately to correct and prevent further erosion.

Erosion control measures shall be continued until the permanent drainage facilities have been constructed and until grass on seeded slopes or specially installed shrubbery is established sufficiently to be an effective deterrent against erosion.

Unless otherwise approved in writing, mechanized equipment shall not be operated in live streams except as may be required to construct changes in channel and permanent or temporary structures. Rivers, streams and impoundments shall, as soon as construction will allow, be cleared of all false work, piling and debris caused by the construction operations.

Section 310 Regulations and Permits

The Project Developer or the Town of Essex, as applicable, shall be responsible for all the necessary State and Town Erosion and Sediment Control permits as required by each project. The Contractor shall be responsible to adhere to permit requirements throughout the duration of the project.

It shall be the responsibility of the Project Developer to verify the need of a State Erosion and Sediment Control Permit. For Town projects, the Town of Essex will obtain all necessary State permits for construction.

It shall be the responsibility of the Project Developer to verify his or her project has been designed and constructed in accordance with the Town of Essex Storm Water Ordinance, Chapter 10.20 of the municipal code for the Town of Essex.

Section 320 Project Conditions

The Contractor shall sequence all construction activities to minimize the extent of disturbed soils left exposed to erosion at any given time. A construction-phasing plan shall be submitted to the Project Engineer for review of conformance with any erosion and sediment control permits and this document.

The Contractor shall schedule earthwork completion, site stabilization, and establishment of perennial cover and installation of other protection measures no later than September 15. If the Contractorôs site construction activities extend beyond September 15, the Contractor shall limit exposure of soils and minimize additional earthworks. All work between September 15 and October 15 shall be temporarily restored until final restoration can be performed the following spring.

The Contractor shall be required to develop a special winter erosion and sediment control plan if construction activities are planned between October 15 and April 15th. This plan must be filed with, and approved by the appropriate permitting authority by September 15. If it is determined by the permitting authority, Project Engineer, or the Town Engineer that winter construction would have adverse effects on the environment, the Contractor shall stabilize the entire site and implement a winter shut down.

Discharges of any material other than stormwater, such as equipment maintenance spills, equipment fuel, wash water, construction debris, wet concrete, (including wash out water from concrete trucks), and all other substances are strictly prohibited.

Failure to promptly abate the discharge of sediment or any other waste which cause a visible discoloration of surface waters, including wetlands, or is found to exceed water quality standards based on monitoring is prohibited. The disposal of sediment in a wetland, or any sediment removal from a wetland due to a discharge is strictly prohibited.

The Contractor shall carry out all direction regarding the maintenance of erosion control measures by the Project Engineer or the Town Engineer in a prompt and professional manner.

Section 330 Construction Sequence

As construction progresses, implement temporary erosion controls as shown on the contract plans including temporary slope drains, temporary channel linings, seeding and mulching, stone check dams, sediment settling structures, silt fence and inlet protection. Appendix A of this document contains standard erosion and sediment control details that shall be referenced, and implemented throughout

the project construction. The State of Vermontôs Low Risk Site Handbook may be referenced for all projects under 0.5 Acres.

The Contractor shall sequence construction activities to minimize the extent of disturbed soils left open to erosion at any given time as detailed in the erosion and sediment control plans.

During site clearing operations, the Contractor shall dispose of all stumps, excess soils, collected sediment and other pollutants, in a manner that will not result in sediments and pollutants entering waters of the State. The Contractor shall dispose of the above referenced material in the location designated on the erosion and sediment control plans or as directed by the Project Engineer and the Town Engineer.

Upon the completion of work, the Contractor shall restore any areas used as access roads, staging areas, material stock piling, and all other areas disturbed by construction activities. All final erosion and sediment controls shall be installed to stabilize the site, i.e., channel linings, slope drains, stone check dams, and outlet protection.

The Contractor shall remove all temporary erosion and sediment control measures upon project completion or final site stabilization as approved by the Project Engineer and the Town Engineer, whichever occurs last.

Section 340 Installation of Erosion Control Measures

The Contractor shall install all erosion and sediment control measures in accordance with the contract plans, these specifications, and all permits issued by local, and state regulatory agencies. Appendix A, Series 500, Erosion and Sediment Control Details, provide the Contractor with the preferred alternatives for erosion and sediment control measures, and instructions on their installation.

341.0 Installation

1. Seeding and Mulching
   a. General: All disturbed areas shall be seeded and mulched within 48 hours of being stripped or backfilled and graded. Stockpiles of excess or stockpiled material shall be mulched if they will not be disturbed for more than 48 Hours.
   b. Temporary seeding Procedures: Lime shall be spread evenly over the soil surface at a rate of 75 to 100 pounds per 1,000 square feet. Fertilizer shall be spread in the same manner with an application rate of 30 pounds per 1,000 square feet. Both the lime and fertilizer shall be thoroughly incorporated into the upper 2 inches of soil.

Temporary seed mixture shall be applied to treated soil at a rate of 2 pounds per 1,000 square feet, and surface shall be rolled.

2. Mulching Procedures: Apply mulch material promptly or within 24 hours after seeding operation in accordance with the following table.

Material	Application Rate
Hay or Straw	1.5 to 2.0 tons per acre (80 ï 100% coverage)
Wood Chips	2 to 6 inches deep (tree/shrub planting)
Hydraulic mulch	1.0 to 1.5 tons per acre (80 ï 100% coverage)
Rolled Erosion Control Products	Single layer or as directed

3. Silt Fence: Construction detail 500.06 provides direction on the proper installation of this erosion and sediment control measure.
4. Sediment Containment Bag: Sediment bags shall be placed on a 6 inch thick bed of washed ¾ò stone. Construction detail 500.03 provides direction on the proper installation of this erosion and sediment control measure.

342.0 Materials

1. Mulch Material
   a. Straw ï Shall be dry, free from rot and mold, and come from wheat or oats, free from weeds, twigs and debris.
   b. Hay - Shall be dry, free from rot and mold, and consist of mowed and properly cured grass or legume mowing's, free from weeds, twigs, and debris.
   c. Wood or Bark Chips ï Shall be dry, free of soil and other foreign debris.
2. Mulch Netting ï Shall be made of paper, twine, plastic, or plastic and wood fiber.
3. Rolled Erosion Control Product ï Shall be dry, and made of straw or hay, coconut and related fibers, wood excelsior, jute, polypropylene, nylon, or and approved combination of different materials.
4. Fertilizer ï Shall be a commercial fertilizer, (10-20-10 Grade).
5. Lime ï Shall be ground limestone containing not less than 95% calcium and magnesium carbonates.
6. Seed Mixture

   a. Temporary (Conservation Mix)

Kind of Seed	Lbs. Per Acre
Red Fescue	76
Tall Fescue	54
Annual Rye Grass	33
Perennial Rye Grass	26
Kentucky Bluegrass	22
White Clover	7

b. Permanent (Green Mountain Special Mix)

Kind of Seed	Lbs. Per Acre
Creeping Red Fescue	70
Perennial Rye Grass	70
Kentucky Blue Grass	35

c. Or as approved for a specific project due to non-standard conditions.

7. Silt Fence ï Geosynthetic filter fabric material a minimum of 24ò in height above grade.
8. Sediment Containment Bag ï Geosynthetic filter bag with sewn in spout. Bag shall be ñDirt Bagò as manufactured by SI Geosolutions or approved equal.
9. Inlet Protection ï For projects involving existing or proposed storm catch basins, inlet protection devices shall be installed in accordance with the details in Appendix A.

Section 350 Inspection

The Contractor shall inspect all erosion and sediment control measures, at least once every seven (7) calendar days, and no later than 24 hours after any storm event, which generates a discharge of stormwater runoff from the construction site, to ensure they are operating correctly. The Contractor shall submit copies of reports to the Project Engineer and the Public Works Director/Town Engineer once a month. A copy of an erosion and sediment control inspection report has been provided in Appendix C of this document.

The following items should be inspected on a regular basis.

1. Inspect all sites that have been temporarily or finally stabilized.
2. Inspect channel linings, embankments, and channel beds daily for any sign of erosion.

3. Inspect all discharge points daily to visually assess whether erosion control measures are effective in preventing impacts to waters of the State.
4. Inspect for evidence of, or the potential for, sediment leaving from all disturbed areas or construction staging areas.

Section 360 Maintenance

The Contractor shall keep all seeded areas watered and in good condition until a uniform growth is established over the entire area seeded. All erosion and sediment control measures that have been determined to be failing, or not functioning as designed, shall be repaired by the Contractor within 24 hours of being notified of deficiency. The Contractor shall remove all accumulated sediment and debris from erosion containment systems and other sediment control measures as required. All damage to erosion and sediment control measures by soil erosion or construction equipment shall be repaired by the Contractor, at the end of each workday.

Section 370 Corrective Actions

The Project Engineer and Town Engineer shall be notified within 24 hours by the Contractor of any evidence of measurable amounts of sediment or sediment-laden water leaving the construction site or any visible discoloration of surface waters, (including wetlands). The Contractor shall document and take immediate action to correct the discharge, including halting or reducing construction activities as necessary until the discharge and/or the condition is fully corrected. The Town Engineer shall reserve the right to stop construction, if proper erosion and sediment control measures are not utilized.

Section 380 Violations

The Contractor shall carry out all corrective measures issued by the Project Engineer and/or the Town Engineer. If the Contractor fails to respond to any request for corrective action, the Town of Essex will issue a Stop Work Order as specified under section §10.20.111 of the Town of Essex Storm Water Ordinance. The Town will provide the Contractor the opportunity to take all corrective actions to bring the site into compliance.

The Town of Essex can collect fines from any person or Contractor that is in violation of the Town's Stormwater Ordinance. Section §10.20.112 Violation and Penalty, of the ordinance states: *Any person violating any of the provisions of this Ordinance or a permit issued hereunder shall be subject to a civil penalty of Five Hundred Dollars ($500.00) for each violation of this Civil Ordinance.*

It is the Project Developer and Contractorôs responsibility to review and understand the Townôs stormwater ordinance. A copy can be found on the Town Website at www.essex.org , or a hard copy can be acquired at the Town of Essex Public Works Office, at 5 Jericho Road, Essex Junction, Vermont.