

Small Project Erosion and Sedimentation Control Plan

Prepared by

**Columbia County Conservation District
702 Sawmill Road, Suite 204
Bloomsburg, Pa 17815
Phone 717-784-1310 Ext 102
Fax 717-784-3247
Revised Dec 2007**

This guide has been prepared for use by landowners in the preparation of Erosion and Sedimentation Pollution Control Plans for small construction projects. The proper use and completion of the sample plan may result in faster reviews of submissions.

Erosion Control Guidelines for Small Projects

Introduction

In an attempt to alleviate the growing problem of controlling sediment pollution, the Commonwealth of Pennsylvania, through the Department of Environmental Protection (DEP) adopted Chapter 102, the Erosion Control Rules and Regulations. Chapter 102 requires that anyone undertaking an earth disturbance activity develop and implement an Erosion and Sedimentation (E&S) Control Plan. The plan must be submitted to the Columbia County Conservation District if required by the local municipality, DEP permitting requirements, or if requested by the Conservation District. The E&S plan must be available at all times at the site of the earth disturbance activity regardless of the size of the project. Failure to have an E&S Plan on site is a violation of Chapter 102.

REMEMBER: Both landowners and contractors can be held responsible for any violation of Chapter 102 Regulations.

Use of this Guide

This pamphlet is intended for uses in the development of E&S plans for small projects where:

- **Disturbance is less than one acre.**
- **There are no steep slopes in excess of 10%**
- **There are no streams or major drainage courses within or immediately adjacent to the project area.**
- **No wetlands are involved**
- **The site is not part of a larger site with an approved E&S plan that addresses the proposed work.**

Contact the Conservation District if there is any question regarding the suitability of this guide for your project. Larger and more complex sites will require a site-specific plan prepared by someone familiar with erosion and sedimentation control techniques and controls. A detailed Erosion and Sediment Pollution Control Manual is available to assist in the development to assist in the development of more complex sites. In addition, check with local municipalities regarding specific ordinances or permit requirements.

Considerations in Plan Development

- **SAVE EXISTING VEGETATION** – Vegetative cover is the best and most economical protection against soil erosion. Vegetation to be saved should be protected during the construction process. Trees and shrubs should be marked and roped off to protect them from damage by construction equipment. Filling around trees should be avoided.
- **SAVE TOPSOIL FOR REVEGETATION** All of the topsoil from areas where cuts and fills have been made should be stockpiled and redistributed uniformly after grading. This is the key to revegetating a site
- **MINIMIZE THE TIME THE SITE IS DISTURBED** – Disturb as little of the area as is required to construct the project. The construction sequence should be planned to keep the size and time of exposure to a minimum. In other words, stabilize disturbed areas as they are completed.
- **AVOID STEEP SLOPES** – Steep sites generally require more grading and more controls. Avoid excessive cutting and filling and steep road grades where possible.
- **PROTECT ANY DITCHES, STREAM OR OTHER BODIES OF WATER** – Install temporary controls such as silt fence, straw bales, or rock filter berms to protect streams and other water sources from sediment pollution.
- **EROSION CONTROL MEASURES REQUIRE MAINTENANCE** – Hay bales deteriorate, filter fences clog and seeded areas wash out. Schedule regular maintenance to insure proper functioning of control measures.
- **PROVIDE A MUD FREE ACCESS** - Construction equipment, especially trucks, leaving the site often tend to carry mud onto public roadways and other areas where this sediment can flow freely into the “Waters of the Commonwealth”. Measures must be taken to assure that this will not happen. The need to construct a stable entrance area to the site will vary based on the expected traffic and existing conditions, but the contractor must be ready to take any steps necessary to prevent the mud from being tracked off the site.

Considerations Cont.

- **SOILS** - The characteristics of the soils on the site should be considered in the planning of the project. Wet areas should be avoided. Shallow soils or bedrock outcropping will require additional work and planning to assure successful restabilization of the area. Information on the soils and its characteristics are available on the web or from the Conservation District.
- **TOPOGRAPHY** - Water flowing onto the work area from land above the project should be directed around the work area.
- **RUNOFF** - Increased runoff from the site often is the result of changes in the land use. Appropriate measures must be taken to assure that the volume, rate and location of runoff leaving the property will not negatively impact downstream properties.

What to include in an Erosion and Sedimentation Control Plan

- **A DESCRIPTION OF THE WORK TO BE DONE** - This should include the type and amount of work to be performed.
- **NAMES OF PEOPLE ASSOCIATED WITH THE PROJECT** - This should include the property owner, the contractor, the person responsible for implementing the E&S controls, and the contact person for questions or concerns about E&S on the site.
- **THE TOPOGRAPHIC FEATURES ON AND NEAR THE SITE** – Describe the drainage patterns on and near the site. Identify the stream or drainage system where the runoff from the site will go. Take steps to prevent upslope runoff from flowing across disturbed areas uncontrolled.
- **AN EVALUATION OF THE SOILS ON THE SITE** – Soils characteristics that would impact the success of the project should be listed and steps taken to address them. Such items as poor drainage, high water table, shallow depth to bedrock, and stoniness should be considered.
- **A STAGING OF EARTHMOVING ACTIVITIES** - Determine the sequence in which the project will be occur, keeping in mind that the most effective way to control erosion is to limit the time that a particular area is disturbed and to disturb only the areas necessary. Immediate stabilization of any disturbed area is recommended. State regulations required that where activity ceases, interim stabilization measures must be implemented promptly. Also remember that necessary controls to collect and treat sediment must be in place before disturbing a work area.
- **TYPES OF CONTROL MEASURES TO BE USED** - List the controls, both temporary such as straw bales, silt fence, mulching and stone filters, and permanent controls such as seeding and paving that will be used to control sedimentation during construction and to stabilize the site after completion of the project. Special consideration should be given to the topography and soils on the site and any special concerns or precautions that would need to be taken because of them.
- **A MAINTENANCE PLAN FOR ALL THE CONTROLS TO BE USED ON THE SITE** - This should include required cleaning of sediment traps when 1/3 full of sediment, inspection and repair of silt fence and other controls after each rain event, and reseeding of disturbed areas where vegetation does not become established within a normal period of time.
- **RECYCLING PLAN** – A program for addressing the recycling and disposal of all materials associated with the proposed project should be supplied.
- **A SKETCH PLAN FOR THE SITE** - This sketch should clearly show the extent of the project, the access to the site, the location of all E&S controls, stockpile areas, staging areas, and sufficient landmarks and dimensions to allow all parties to determine the location of all necessary work and controls.
- **A LOCATION MAP FOR THE SITE** – A Topo map or other suitable map with the project area identified should be attached.

Suggested Order of Earthmoving Activities

1. Construct a stabilized construction entrance to prevent sediment from being tracked off site.
2. Install necessary E&S controls for the site including silt fence, and upslope water diversion.
3. Rough grade the site and stockpile topsoil. Temporary protection (hay bales and filter fence) should be installed downslope (lower side) of stockpile and stockpiles should be immediately stabilized with temporary seed mixture and/or mulch.
4. Install and stabilize any water courses (swales, ditches, etc.) with appropriate lining such as seed and mulch, matting, netting, sod, stone, or a combination of these.
5. Construct building(s).
6. Finish grade and permanently stabilize (seed, mulch, sod, pave etc.) the site.
7. Remove E&S controls after vegetation becomes established.

Seeding and Mulching Specifications

- **Seed immediately after completion of project** - All sites should be seeded and mulched immediately after completion of the project. If the ground is frozen, seeding may be delayed until spring but the site still must be mulched immediately after completion of the project.
- **Lime and Fertilizer** - Lime and fertilizer are needed to assure dense vegetation. In areas void of topsoil, add 150lbs. of lime and 25 lbs. of 10-20-20 fertilizer per 1000 sq ft. In areas where 4 inches of topsoil are present, reduce the above amounts by 50%.
- **Mulching** - All disturbed areas not protected by rock, gravel or other materials must be mulched at the rate of 100 lbs. of straw per 1000 sq ft. For vegetative areas, apply mulch immediately after seeding.
- **For more Information** – See “Erosion Control & Conservation plantings on Noncropland” available from the extension office or contact your local extension office or the County Conservation District.

Small Project Erosion Control Plan

Property _____ Date _____

Address _____ City _____

Phone Number _____ Municipality _____

Contractor _____

Contact Person _____

Location (Use copy of Topo Map) _____

Name of Nearest stream or Waterbody _____

Estimated Start Date _____ Estimated Completion Date _____

Type of Project (House, addition, garage, etc.) _____

Project Acres _____ Disturbed Acres _____

Current Site Conditions (vegetative cover, land used, current earth disturbance, etc.)

Soil Type(s) (Include soils Map if available): _____

Soils limitations and how they will be addressed: Add additional sheets if needed.

Narrative (Give detailed description of proposed work): Add additional sheets if needed.

Sequence of Construction (Label each step in Numerical Order – **Be Specific**) Add additional sheets if needed.

Temporary Controls

Identify the temporary controls that will be utilized on this project. In the construction sequence list each control separately; when it is installed and when it can be removed. Make sure it's location is shown on the sketch plan. Drawing and designs for any practice not illustrated in this guide should be attached and referenced in this section. Add additional sheets if needed.

Silt Fence	Upslope diversion of water
Straw Bale Barrier	Rock outlets
Stabilized Construction entrance	Channel lining (netting)
Sediment trap	Minimizing area and time of disturbance
Mulching	Other
Temporary seeding	Other

Permanent Controls

State law requires any earthmoving project take steps to provide permanent stabilization. Reestablishment of vegetation, rip-rap, pavement, etc. are examples of permanent controls. Identify all controls to be used on this site. Identify the seeding mixture on the attached sheet or modify as needed. Add additional sheets to describe special controls as needed.

Vegetation	Diversions
Shale or pavement	Long term mulching
Rip Rap	Other
Waterways	Other

Maintenance Program

All erosion control measures require maintenance to function properly. Hay bale dikes deteriorate and clog with sediment. Silt traps need cleaning, filter fences need cleaning when half full of sediment, and seedings that fail to become established need to be reseeded. Describe the maintenance program that will be utilized on this site and who will be responsible for each item. Add additional sheets if needed.

Recycling Program

List the measures that will be utilized to recycle or properly dispose of waste and excess materials from the site.

Sketch Plan

Attach a sketch drawing for the site showing all important physical features, proposed improvements, and E&S controls for the site.

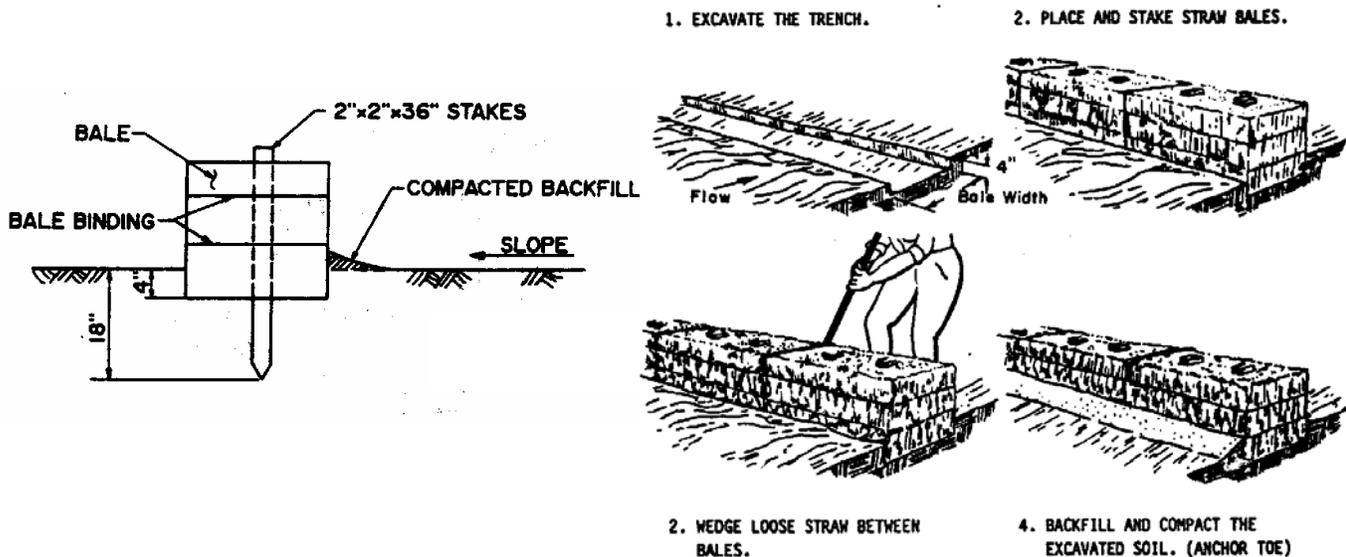
*** This plan must be on site at all times during the project***

Suggested Seeding Mixtures

(Identify which seeding mixture will be used and attach to plan)

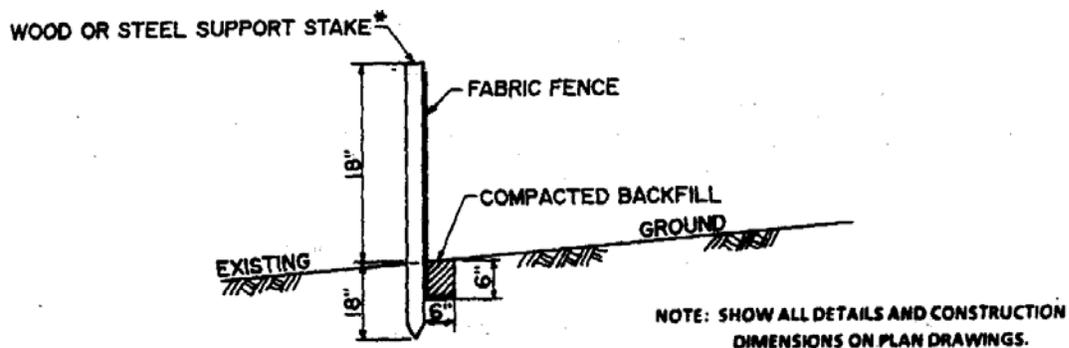
Species Mix	Pounds/1000 sq ft
Banks - Well Drained, mowed	
tall fescue plus perennial ryegrass plus annual ryegrass	1.5 .3 .25
or	
kentucky bluegrass plus perennial ryegrass plus annual ryegrass	.75 .3 .25
or	
birdsfoot trefoil plus tall fescue plus annual ryegrass	.15 .75 .25
Banks - Well Drained, nonmowed	
tall fescue plus fine fescue plus annual ryegrass	1 .25 .25
Banks - Variable Drainage	
birdsfoot trefoil plus tall fescue plus annual ryegrass	.15 .75 .25
<p>Note: There are many new varieties of brush and shrubs which provide excellent cover and protection of stream banks and are available from local sources</p>	

For more information contact:
 Columbia County Conservation District
 702 Sawmill Road, Suite 105
 Bloomsburg, PA 17815
 Ph 717-784-1310
 Fax 717-784-3247



- Straw bale barriers should not be used for more than 3 months.
- Straw bale barriers must be placed at level grades. Both ends of the barrier must be extended at least 8 feet upslope at 45 degrees to main barrier alignment.
- Sediment must be removed where accumulations reach 1/3 the height above the ground of the barrier.
- Any section of straw bale barrier which has been undermined or overtopped must be immediately replaced with a rock filter outlet. See Rock Filter Outlet Detail.

HAY OR STRAW BALE BARRIERS

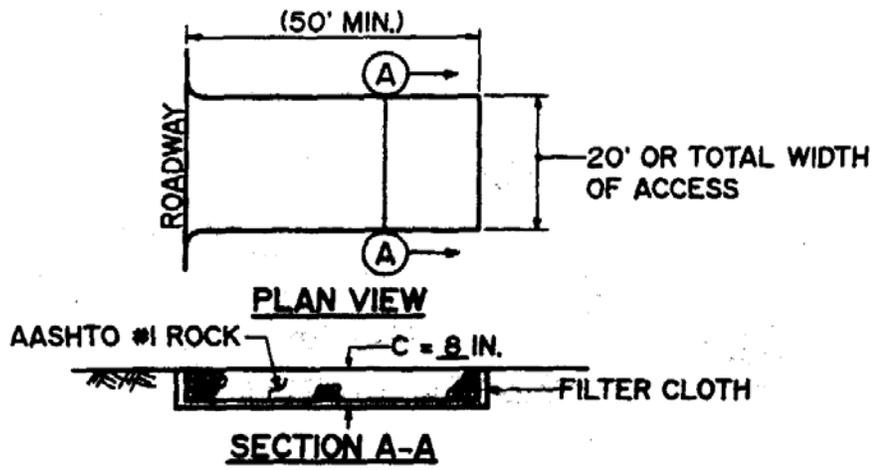


- Filter Fabric Fence must be placed at level grades. Both ends of the barrier must be extended at least 8 feet upslope at 45 degrees to main barrier alignment.
- Sediment must be removed where accumulations reach 1/3 the height above the ground of the Filter Fabric Fence.
- Any section of Filter Fabric Fence which has been undermined or overtopped must be immediately replaced with a rock filter outlet. See Rock Filter Outlet Detail.

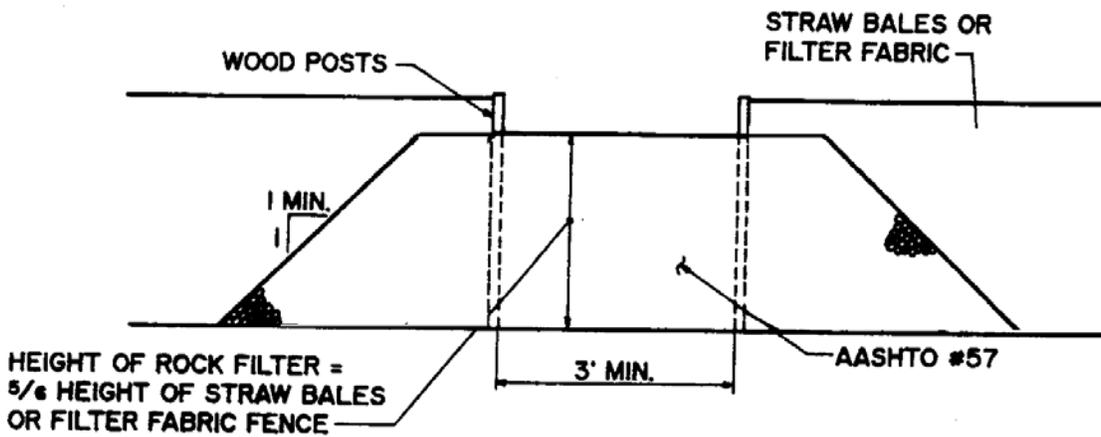
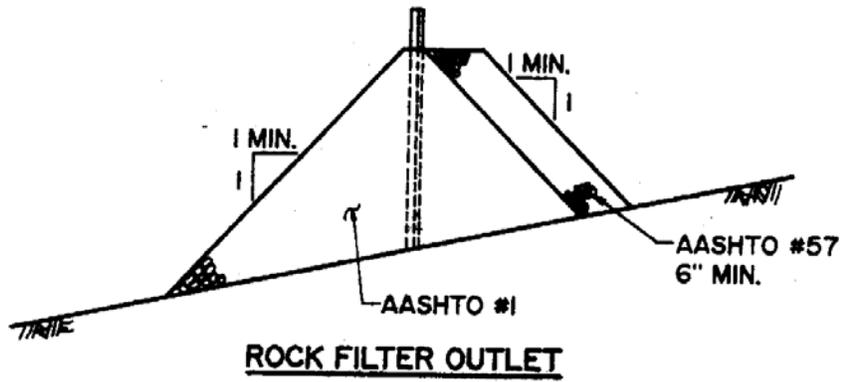
FILTER FABRIC FENCE

NOTE:

Maximum length of water flow to bale barrier or filter fabric fence should not exceed 250 feet for slopes less than 5% or 100% for slopes greater than 5%.



ROCK CONSTRUCTION ENTRANCE (RCE)



ROCK FILTER OUTLET

To be used only where filter fabric fence or hay bale barriers are undermined or overtopped.

Small Project Erosion Control Plan

Property Iwanna House Date XX-XX-XXXX

Address RR #1 City Anytown

Phone Number XXX-XXXX Municipality Growing Township

Contractor Joe Homebuilder

Contact Person Iwana Home

Location (Use copy of Topo Map) 68, My Dream Home Road

Name of Nearest stream or Waterbody Crystal Clear Creek

Estimated Start Date April 1, XXXX Estimated Completion Date Nov 1, XXXX

Type of Project (House, addition, garage, etc.) House

Project Acres 1 acre Disturbed Acres 3/4 acre

Current Site Conditions (vegetative cover, land used, current earth disturbance, etc.)

Abandon cropland - currently weeds and grass

Soil Type(s) (Include soils Map if available): clay

Soils limitations and how they will be addressed: Add additional sheets if needed.

1. High water table - tile drains installed as needed

2. Poor drainage - add compost to soils to improve infiltration.

3. Acid soils - lime and fertilize according to a soil test to establish lawn areas.

Narrative (Give detailed description of proposed work): Add additional sheets if needed.

Construct 38 x 40 foot house on lot along with 2 car garage, septic system, and well.

Driveway will be 150 feet long from existing paved road.

Sequence of Construction (Label each step in Numerical Order - **Be Specific**) Add additional sheets if needed.

1. Install construction entrance where shown on sketch plan. (1 day)

2. Install hay bale barrier and filter fabric fence as per specifications where shown on drawings. (1 day)

3. Strip topsoil from driveway and excavate for house and parking area. (2 days)

4. Stabilize road with shale and temporary seed all other disturbed areas and stockpiles. (1 day)

5. Construct house (120 days)

6. Install septic system and well, backfill house and regrade lawn (1 week)

7. Seed all disturbed areas immediately. Lime and fertilizer according to soil test. (2 days)

8. Remove all temporary controls after vegetation is established.

Temporary Controls

Identify the temporary controls that will be utilized on this project. In the construction sequence list each control separately; when it is installed and when it can be removed. Make sure it's location is shown on the sketch plan. Drawing and designs for any practice not illustrated in this guide should be attached and referenced in this section. Add additional sheets if needed.

<input checked="" type="checkbox"/>	Silt Fence	<input checked="" type="checkbox"/>	Upslope diversion of water
<input checked="" type="checkbox"/>	Straw Bale Barrier		Rock outlets
<input checked="" type="checkbox"/>	Stabilized Construction entrance		Channel lining (netting)
	Sediment trap	<input checked="" type="checkbox"/>	Minimizing area and time of disturbance
<input checked="" type="checkbox"/>	Mulching		Other
<input checked="" type="checkbox"/>	Temporary seeding		Other

Permanent Controls

State law requires any earthmoving project take steps to provide permanent stabilization. Reestablishment of vegetation, rip-rap, pavement, etc. are examples of permanent controls. Identify all controls to be used on this site. Identify the seeding mixture on the attached sheet or modify as needed. Add additional sheets to describe special controls as needed.

<input checked="" type="checkbox"/>	Vegetation		Diversions
<input checked="" type="checkbox"/>	Shale or pavement (on driveway)		Long term mulching
	Rip Rap		Other
	Waterways		Other

Maintenance Program

All erosion control measures require maintenance to function properly. Hay bale dikes deteriorate and clog with sediment. Silt traps need cleaning, filter fences need cleaning when half full of sediment, and seedings that fail to become established need to be reseeded. Describe the maintenance program that will be utilized on this site and who will be responsible for each item. Add additional sheets if needed.

Contractor will check all controls weekly and after each rain event. Remove sediment from filter fence area when 1/3 full. Add additional stone to construction entrance as needed to control mud. Reseed area as needed to assure good vegetative cover on all areas. Make all corrections immediately.

Recycling Program

List the measures that will be utilized to recycle or properly dispose of waste and excess materials from the site.

All waste materials and excess construction supplies will be recycled or disposed of in an approved landfill. Excess concrete and rinseate from The concrete delivery trucks must not be allowed to enter drainage swales or other water courses.

Sketch Plan

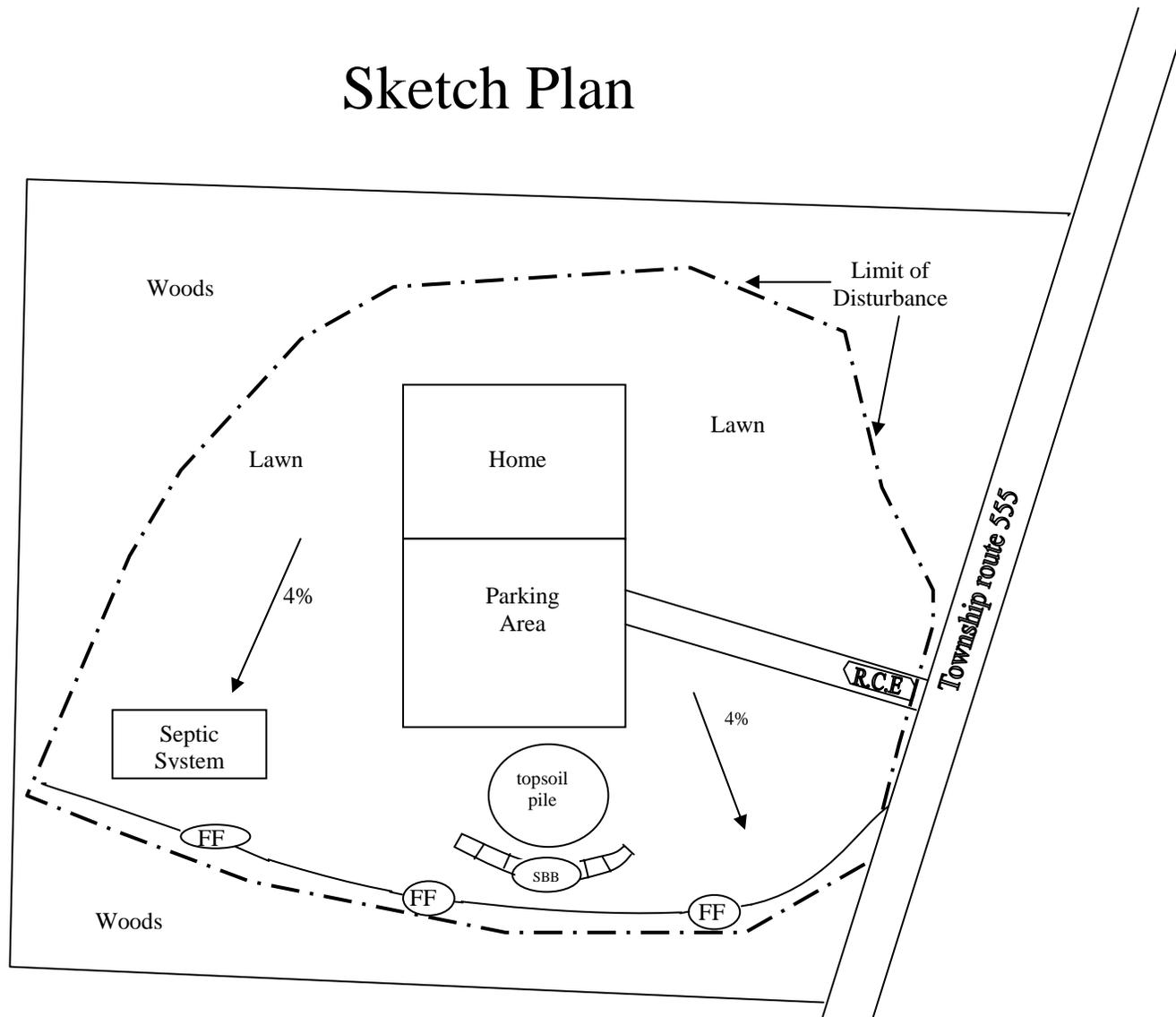
Attach a sketch drawing for the site showing all important physical features, proposed improvements, and E&S controls for the site.

Other items

Attach seeding recommendation and construction specifications (sheet 3,4,and 5 from this package and other items as needed)

*** This plan must be on site at all times during the project***

Sketch Plan



Legend

Road

Rock construction entrance R.C.E.

Straw bale barrier SBB

Filter fabric fence FF

Property Owner _____

Project: _____

Municipality _____

Date: _____

Approximate Scale 1" = _____