

B. Topography and Soils

1. Site Specific Soils

The hydrologic soil characteristics of the site drainage areas were derived from the USDA Table 7.1, New York State Guidelines for Urban Erosion and Sediment Control, and from the Sullivan County Soil and Water Conservation District publications and maps. In general, the major soil types in the watershed study area are as follows:

Symbol	Description	Hydrologic Soil Group	Approximate Percent of Study Area
<i>SaB</i>	<i>Scio</i>	B	43
<i>Po</i>	<i>Pope</i>	B	2
<i>Wd</i>	<i>Wayland</i>	C/D	13
<i>Re</i>	<i>Red Hook</i>	C	14
<i>Mdc</i>	<i>Mardin</i>	C	5
<i>ChB; C</i>	<i>Chenango</i>	A	10
<i>PmB</i>	<i>Pompton</i>	B	0.3
<i>SeB</i>	<i>Scriba/Morris</i>	C	0.7
<i>Nf</i>	<i>Neversink/Alden</i>	D	8
<i>ScB</i>	<i>Scriba</i>	C	2
<i>Wic</i>	<i>Wellsboro/Wurtsboro</i>	C	2

2. Topography Changes to the Project Site

The proposed topographic changes to the site are limited to cut and fill grading for roadways and residences. In addition utility trenches will be excavated.

In accordance with the Sullivan County Soil Survey, the soils in the study area have the following pertinent elements:

Scio-SaB, the Scio series consists of 2 to 6% slopes that are very deep, moderately well drained soils. The high water Table is 1.5 to 2.0 feet below grade and depth to bedrock is greater than 5 feet.

Pope – Po, the Pope series consists of 0 to 3 percent slopes and are very deep, well rained soils. The high water table is greater than 6 feet below grade and depth to bedrock is greater than 5 feet.

Wayland –Wd, The Wayland series consists of 0 to 3 percent slopes and very deep, poorly drained and very poorly drained soils. The high water table is 0 to .5 feet below grade and depth to bedrock is greater than 5 feet.

Red Hook – Re, The Red Hook series consists of 0 to 3 percent slopes and very deep, somewhat poorly drained soils. The high water table is 0.5 to 1.5 feet below grade and depth to bedrock is greater than 5 feet.

Mardin – Md(C), the Mardin complex consists of 8 to 15% slopes. The Mardin Complex is a very deep, nearly level moderately well drained soil. The high water table resulting from perched water is 1.5 to 2 feet below the surface and the depth to bedrock is greater than 5 feet.

Chenango – Ch (B, C), The Chenango series consists of 0 to 25% slopes. The Chenango series is a very deep, well drained and somewhat excessively drained soils. The high water table is greater than 6 feet below grade and depth to bedrock is greater than 5 feet.

Pompton – PmB, The Pompton series consists of 0. To 8 percent slopes and very deep, moderately well drained to somewhat poorly drained soils. The high water table is 1.0 to 2.0 feet below grade and depth to bedrock is greater than 5 feet.

Scriba/Morris – SeB, The Scriba series consists of 0 to 8 percent slopes and very deep, somewhat poorly drained soils. The high water table is 0.5 to 1.5 feet below grade and depth to bedrock is greater than 5 feet. Morris series consists of 0 to 15 percent slopes and very deep, somewhat poorly drained soils. The high water table is 0.5 to 1.5 feet below grade and depth to bedrock is greater than 5 feet.

Neversink/Alden – Nf, The Neversink series consists of 0 to 3 percent slopes and very deep, poorly drained or very poorly drained soils. The high water table is 0 to 0.5 feet below grade and depth to bedrock is greater than 5 feet. The Alden Series consists of 0 to 3 percent slopes and very deep, very poorly drained soils. The high water table is 1 foot above to 0.5 feet below grade and depth to bedrock is greater than 5 feet.

Scriba-ScB, the Scriba series consists of 0 to 8 percent slopes and very deep, somewhat poorly drained soils. The high water table is 0.5 to 1.5 feet below grade and depth to bedrock is greater than 5 feet.

Wellsboro/Wurtsboro – WiC, the Wellsboro series consists of 0 to 15 percent slopes and very deep, moderately well drained soils. The high water table is 1.5 to 3.0 feet below grade and depth to bedrock of greater than 5 feet. The Wurtsboro series consists of 0 to 15 percent slopes and very deep, moderately well drained soils. The high water table is 1.0 to 3.0 feet below grade and depth to bedrock is greater than 5 feet.

3. Erosion and Sedimentation Control

Erosion and sediment control measures will be implemented during construction to minimize soil erosion and to control the offsite transport of sediment laden runoff during rainfall events. The Erosion and Sediment Control Plan and Details have been designed in compliance with the New York State Department of Environmental Conservation “New York Standards and Specifications for Erosion Control” April 2005. The Erosion and Sedimentation Control Plan and details are located in the “The Villages of Chestnut Ridge” site plans (bound separately). The sequence of construction is located on the Erosion and Sediment Control Plan in the site development plan set. The plans are all part of the SWPPP for the site.

The project owner, contractors, sub-contractors and operators need to be proactive in addressing erosion and sediment control issues as they arise during construction. The actual construction activities, timing, sequencing, rainfall events all affect erosion and sediment control issues and are beyond the control of the designer. The contract or owner and/or operator shall implement measures as necessary to mitigate erosion and sediment control issues. If assistance is required with implementation of erosion control measures, the designer should be contacted immediately.

The goals of the erosion and sediment control plan are three fold. The first objective is to control erosion by minimizing the opportunity for soil to be transported by wind, rainfall or stormwater runoff. The second measure includes measures to contain and trap sediment as close to its points of origin, preventing it from reaching off-site watercourses or lands. The third measure is to stabilize all disturbed areas on the site. The temporary structural measures for Erosion and Sediment Control that should be utilized are as follows:

Minimize the Disturbed Area

Areas to be disturbed by clearing or grading at any one time should be kept to a minimum during construction. A smaller disturbed area limits the opportunity for soil to be transported offsite. Additionally, in disturbed areas where work will be delayed or not initiated within 14 days are to be immediately stabilized with vegetative cover. No more than five (5) acres of area shall be disturbed at any time. If the developer or contractor wants to disturb greater than five (5) acres at any time, it must be approved by the local NYSDEC Regional office.

Construction Entrance(s)

The construction entrance(s) will be constructed and stabilized prior to any earthmoving being initiated at the site. The construction entrance(s) shall be a stabilized pad of aggregate underlain with filter cloth and located at any point where traffic will be entering or leaving the construction site to or from a public Right-of-Way, street, alley, sidewalk or parking area. The maximum length, width, and thickness of the construction entrance shall be as shown on the plans or increased as required to mitigate off-site sediment transport. Sediment tracked onto public streets should be removed or cleaned on a daily basis.

Silt Fence

Subsequent to the construction entrance being constructed, silt fence will be installed as shown on the Erosion and Sediment Control Plan to mitigate sediment from being transported off-site. Silt fence should be placed parallel to contours so

as to not concentrate stormwater runoff. The area below silt fence should typically be undisturbed ground. Additional silt fence will be installed around the soil stockpile areas and other areas as shown on the plans or as deemed necessary during construction. The sediment control fence shall be Mirafi 100X or an acceptable equal. Sediment must be removed when accumulations reach ½ the above ground height of the fence. Silt fence will remain in place and be maintained for the duration of the project until the entire disturbed area is stabilized with vegetation. After site stabilization, the silt fence shall be completely removed.

Seeding and Mulching/Stabilization

All areas will be stabilized by seeding and mulching. This stabilization will be executed at a minimum as specified in the sequence of construction or more frequently to ensure a stabilized site, proper site stabilization by seeding and mulching is often the key to efficient erosion and sediment control. Seeding and mulching shall be performed at a minimum in accordance with the specifications provided or as recommended by the Sullivan County Conservation District. Temporary seeding shall be utilized in the event that site grading operations are interrupted due to weather or other site conditions. Apply permanent seeding and mulching immediately on all disturbed areas when work is completed.

Mulching alone can also be used to temporarily stabilize exposed areas when seed germination is slow or not practical.

Slope Stabilization

All slopes shall be immediately stabilized to minimize erosion. All slopes steeper than three (3) horizontal to one vertical and other areas if required by site conditions, shall be lined with jute netting or matting before seeding and mulching. All geotextile netting or matting shall be installed in a “shingled” overlapped manner perpendicular to the slope unless the manufacturer’s instructions state otherwise. As much existing vegetation as possible shall be left undisturbed for slope stabilization purposes. Clean stormwater runoff from upslope areas shall be diverted from newly graded areas until a permanent ground cover has been established.

Channel Stabilization

Drainage channels and temporary diversion channels shall be stabilized in accordance with the seeding and mulching specifications, jute netting or rip rap as shown on the plan or as deemed necessary during construction.

Check Dam

Check dams should be utilized in drainage channels during construction to reduce erosion in a drainage channels by reducing the water velocity in the channel. Check dams shall be placed as shown on the plans, as needed, or as directed during construction by the engineer, or Village engineer.

Sediment Basins

Sediment basins are designed to collect and dewater sediments from stormwater runoff prior to offsite discharge. Sediment basins shall be cleaned out when the volume remaining is reduced to 900 cubic feet per acre of disturbed area draining to the basin or the level builds up higher than one foot below the principal spillway crest. All stormwater management basins to be used as sediment basins during construction shall be cleaned to the original design shape and volume as shown on the approved plans prior to turning the site over to the owner.

Dust Control

Measures for dust control during construction shall be implemented by the contractor as needed or required. Daily water sprays shall be used during dry conditions on hard roads and access routes. Crushed stone can also be used for construction roads for dust control.

Tree Protection

All trees that are to remain in undisturbed areas shall be protected by temporary fencing. This fencing shall be placed outside of the drip line of the tree to protect the roots of the tree from construction equipment. This fence shall remain in place for the duration of construction.

Soil Stockpile Protection

Stockpiles of topsoil and sub-soil shall be stockpiled on-site in the areas as shown on the erosion and sediment control plan or other areas as approved by the Village Engineer or regulator having jurisdiction. Stockpiles shall be sited in upgradient areas away from storm drains, areas of stormwater concentration and water bodies. Stockpiles are to be protected with silt fence barriers completely surrounding the stockpiles. Topsoil stockpiles shall be seeded and mulched with temporary seeding to achieve stabilization.

Erosion Control Operation and Maintenance

To confirm the stability and effectiveness of all protective measures and practices during and after construction, all erosion control measures employed will be inspected on a regular basis.

During construction, the contractor shall inspect and maintain the erosion control structures to ensure all measures are adequately operational and maintained properly and that sediment is removed from all structures. Inspection and maintenance shall be performed as outlined in the following list:

- A “Qualified Professional” as determined by the NYSDEC and retained by the owner/operator or contractor shall inspect the erosion control structures every 7 days. Records of inspection must be kept at the site with a copy of this Stormwater Pollution Prevention Plan. Copies of the inspections are also to be sent to the Village of Bloomingburg.
- The contractor shall pay close attention to each erosion control measure to ensure that each measure maintains its structural integrity and its functioning properly. If erosion control measures are not functioning properly, immediate steps shall be taken to achieve proper erosion control which may include adding additional measures not shown on the plan.
- Required maintenance shall be completed in a timely manner.
- Accumulated sediment, debris, and litter shall be removed from the control structures, as required, in order to maintain the available stormwater management capacity and to preserve satisfactory performance of each structure.
- Silt fencing shall be replaced when it can no longer maintain its structural or functional integrity.
- Straw bales shall be removed when they have served their usefulness, so as not to block or impede drainage flow.
- Materials, which are not trapped by the stabilized construction entrance and are deposited onto public roads, shall be removed immediately.

Accumulated sediments removed from the control measures will be placed in such a manner that they will not erode from the site. Specifically, the sediment removed from the catch basins and other drainage features will be exported from the site, stockpiled for later use, or used immediately for general non-structural fill. Should stockpiling be necessary, material should be stored in a flat top, conical pile(s) surrounded by a silt fence or straw bale barrier.

The NYSDEC defined “Qualified Professional” retained by the owner/operator or contractor shall be responsible for conducting inspection and maintenance during construction. In accordance with the requirements of the permit, the site inspection needs to be every 7 days during construction. A copy of the inspection and maintenance reports shall be maintained onsite during construction with this Stormwater Pollution Prevention Plan.

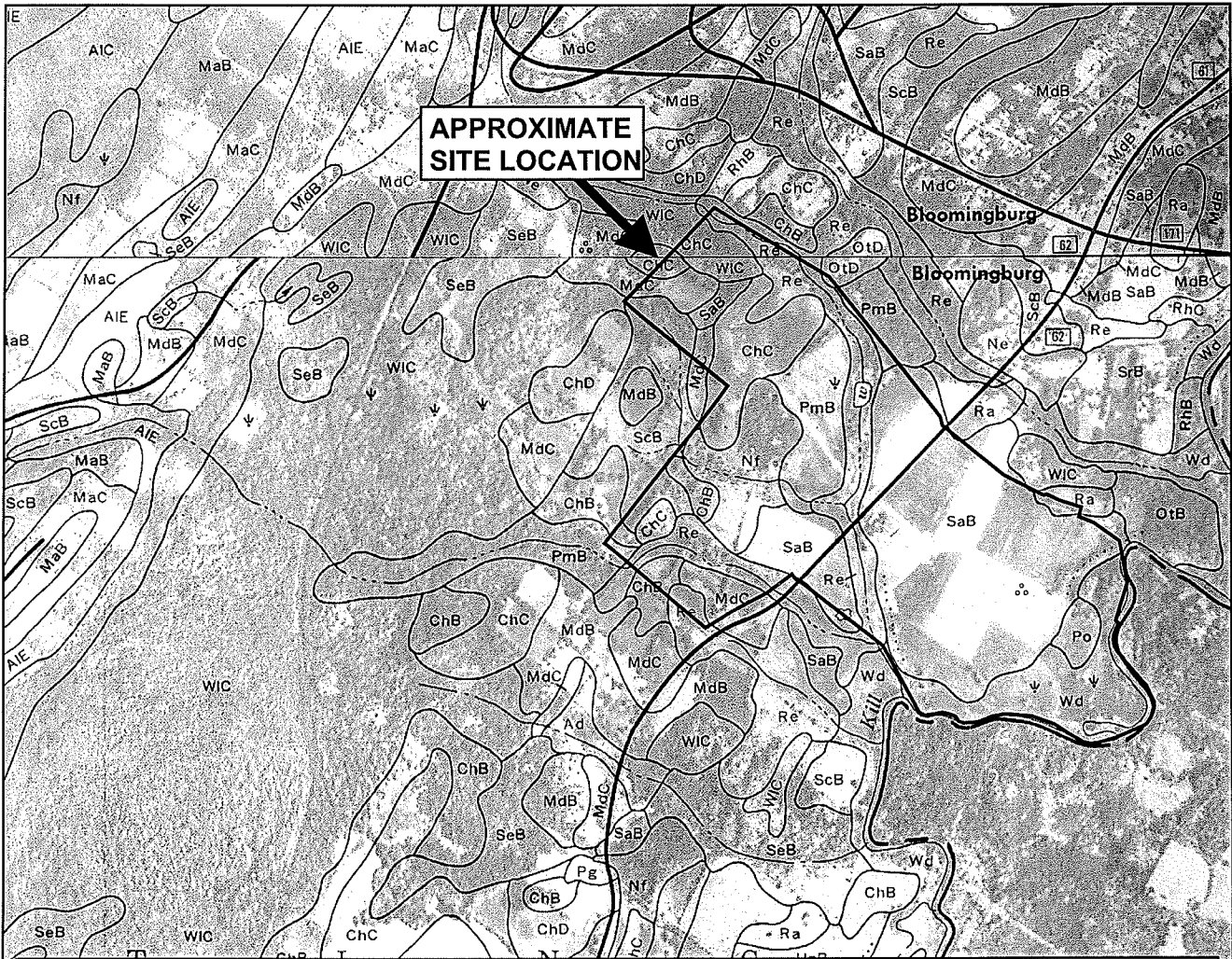
Records of all inspections must be kept at the site and shall be available for review by the Village or NYSDEC or other regulators having jurisdiction.

Post-Construction Erosion Control Inspection and Maintenance

The post construction erosion measures are the responsibility of the Home Owner’s Association (HOA). The following measures shall be implemented following the completion of construction:

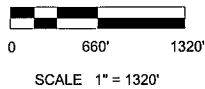
- The stormwater collection and conveyance systems need to be inspected to maintain proper operation.
- All catch basin sumps should be cleaned when they have filled to 50% of their capacity.
- Silt or sediment accumulations will be removed from culverts, drainage channels and detention basins, annually or more often if required.
- All drainage areas damaged by erosion should be repaired and re-stabilized with vegetation and/or appropriately sized rip-rap.
- Any slopes or embankments which have cracks, erosion rilling and damaged vegetation will be repaired and reseeded as necessary.

The post-construction inspection and report preparation of all of the site stormwater pollution prevention measures should occur quarterly and after each significant storm event. During site inspections, the inspector should note the quantity of sediments accumulated within all sediment traps and basins. Detention basins should be dredged as needed, and culverts cleared of accumulated sediment when their capacity has been significantly reduced or the function of the basin or inlet has been compromised. Also, drainage swales will be cleared of any debris or obstruction to maintain proper flow or maintained, repaired or re-constructed as needed. Suggested operation and maintenance checklists for stormwater basins and open channels are presented in Appendix K.



Soil Legend

- ChB - Chenango gravelly loam, 3 to 8 percent slopes
- ChC - Chenango gravelly loam, 8 to 15 percent slopes
- MdC - Mardin gravelly silt loam, 8 to 15 percent slopes
- **Nf - Neversink and Alden soils, very stony
- *PmB - Pompton gravelly fine sandy loam, 3 to 8 percent slopes
- Po - Pope silt loam, occasionally flooded
- ** hydric soil
- * soil with potential hydric inclusions
- ** Ra - Raynham silt loam
- * Re - Red Hook sandy loam
- SaB - Scio silt loam, 2 to 6 percent slopes
- *ScB - Scriba loam, 3 to 8 percent slopes, stony
- **Wd - Wayland silt loam
- WIC - Wellsboro and Wurtsboro soils, strongly sloping, extremely stony



Soil Survey Map
 U.S. Soil Conservation Service
 Sullivan County Soil Survey
 1989
 Sheets 102 and 111