

STORMWATER MANAGEMENT DESIGN ASSISTANCE MANUAL

For Regulated Activities in Salisbury Township
Lancaster County, Pennsylvania

SIMPLIFIED APPROACH

TABLE OF CONTENTS

Contents

Introduction	3
Importance of Stormwater Management.....	3
Standard Terms Used in the Manual	3
Determining What Type of Stormwater Management Plan is Needed.....	4
Using Stormwater Management Worksheets	5
Selecting BMPs	7
Stormwater Management Worksheets	12
Small Project Permit Application Worksheet A.....	13-14
Stormwater Management Worksheet B.....	15
Owner Acknowledgment.....	17
SWM/BMP Facilities O&M Agreement	18-33
Site Sketch and BMP Samples:	34-39
Guide to Choosing Stormwater BMP's	40

Introduction

This design manual has been created as a tool to help property owners manage stormwater on their property and streamline the process of designing on-site stormwater management facilities for new, relatively minor residential and accessory structure projects. Through the use of this manual, residents have the ability to determine the appropriate facilities for their property, project and budget. This design method is not intended to be used with large-scale subdivision/ land development or activities that include infrastructure such as roadways.

The best management practices (BMPs) listed in this manual should be used as a guide and are not a comprehensive list of options. Residents should contact the Salisbury Township or the Lancaster County Conservation District to discuss alternative solutions for site specific applications.

Importance of Stormwater Management

Stormwater is the runoff produced by precipitation, snow melt, or ice melt. When land is developed or changed, the flow patterns of water and quality of water are also changed. Land development activities can affect characteristics of stormwater runoff, including the rate of runoff, volume of runoff, and quality of runoff. When runoff is not managed, the increased volume may aggravate flooding and cause pollution downstream.

The objective of stormwater management is to prevent or mitigate the adverse impacts of the increase in rate and volume of stormwater runoff, while also protecting health, safety, and property. Stormwater Best Management Practices aim to maintain water quality, encourage infiltration in appropriate areas, promote groundwater recharge, maintain the natural drainage characteristics of the site to the maximum extent practicable, and protect stream banks and beds.

Standard Terms Used in the Manual

Best Management Practice (BMP) - Activities, facilities, control measures, planning or procedures used to minimize accelerated erosion and sedimentation and managed stormwater to protect, maintain, reclaim and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities.

Disturbed Area – A land area where an earth disturbance activity is occurring or occurred.

Earth Disturbance Activity – A construction or other human activity which disturbs the surface of the land, including, but not limited to: clearing and grubbing; grading; excavations; embankments; land development; agricultural plowing or tilling; operation of animal heavy use areas; timber harvesting activities; road maintenance activities; oil and gas activities; well drilling; mineral extraction; building construction; and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

Impervious Surface (Impervious Area) – Surfaces which prevent the infiltration of water into the ground. All structure, buildings, parking areas, driveways, roads, streets, sidewalks, decks and any areas of concrete, asphalt, packed stoned, and compacted soil shall be considered impervious surface if they prevent infiltration..

Karst - A type of topography or landscape characterized by features including, but not limited to surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage and

caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

Qualified Person - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by the Stormwater Management Ordinance.

Regulated Activity(ies) – Activities that involve the alteration or development of land in a manner that may affect stormwater runoff. Regulated activities shall include, but not be limited to:

- A. Subdivision and/or Land Development subject to the requirements of the Salisbury Township Subdivision and Land Development Ordinance;
- B. Removal of ground cover, grading, filling or excavation (over 1-acre);
- C. Construction of new or additional impervious or semi-impervious surfaces (driveways, parking lots, etc.), and associated improvements;
- D. Construction of new buildings or additions to existing buildings;
- E. Installation or alteration of SWM Facilities and appurtenances thereto;
- F. Diversion or piping of any watercourse; and,
- G. Any other regulated activities where the Township determines that said activities may affect any existing watercourses SWM Facilities, or stormwater drainage patterns.

Runoff - Any part of precipitation that flows over the land surface.

Small Project - Regulated activities that do not create more than 2,000 square feet of impervious area or involve the removal of ground cover, grading, filling, or excavation of more than 1-acre, and do not require the submission of a subdivision or land development plan.

Small Project Site Plan - A site plan prepared and submitted to the municipality for proposed projects which qualify to use the Simplified Approach. The plan depicts existing conditions on the property, proposed impervious areas, and, if required, the location of proposed BMPs. See also Small Project.

Determining What Type of Stormwater Management Plan is Needed

The chart on the following page provides a guide to determine what type of stormwater plan is needed. Some projects will be exempt from preparing a stormwater management plan, but documentation of the project must still be filed with the municipality. Completion of the **Stormwater Management Worksheets** will determine what type of documentation is required for each project.

This manual is designed to assist those with projects that qualify for the use of a Small Project Site Plan. If a formal stormwater management plan is required, **a qualified professional must be contacted (ex. Engineer, Landscape Architect, Surveyor).**

SWM Plan Requirement	New Impervious Area ^A	Disturbed Area ^B	Next Steps
<u>LEVEL 1</u> Exempt	Up to 500 ft ²	Less than 1 acre	Submit Worksheet A and Level 1 Site Sketch Plan
<u>LEVEL 2</u> Small Project Site Plan	500 ft ² to ≤ 2,000 ft ²	Less than 1 acre	Submit Small Project Site Plan, Including Worksheets A&B, BMPs, and O&M Agreement
<u>LEVEL 3</u> Formal Stormwater Management Plan	Greater than 2,000 ft ² of impervious area if Level 1 and Level 2 criteria are not met, or if improvements are associated with a Land Development and/or Subdivision Plan	N/A	Consult a Qualified Person

^A New Impervious Area must be cumulatively calculated, starting at the date of adoption of the Salisbury Township Stormwater Management Ordinance, (June 17, 2014).

^B The above table is only applicable to projects with disturbed areas of less than one (1) acre. Any projects that propose more than one (1) acre of disturbed area are subject to E&S and NPDES Permit requirements and will require a Formal Stormwater Management Plan.

Using Stormwater Management Worksheets

Determining the impervious area of a proposed project is the first step in using this Manual. Stormwater Management Worksheets have been included in the Simplified Approach, which will assist the property owner or applicant, and the Township to determine the impervious area of a proposed project and provide guidance through the next steps.

Level 1 Project Requirements– If the proposed project adds up to 500 square feet of impervious, complete Step 1. This exemption is only applicable once. Upon the use of the exemption, any improvements must complete the requirements of a Level 2 or 3 Project, as necessary.

Step 1 – Small Project Permit Application Worksheet A:

If the total proposed surface area is up to 500 square feet, the project may be exempt from the requirements in this guide as a Level 1 project. The owner shall provide a completed Worksheet A as well as a Level 1 Site Sketch Plan (refer to requirements as well as provided examples listed below for these plans) and file it with the Township for approval. If determined to be exempt by the Township, the application will be considered complete. These items must be included with the applicable zoning/building permit application.

Level 2 Project Requirements – If the proposed impervious area does not qualify for the Exemption listed above, does not exceed 2,000 square feet and is not associated with a Subdivision and/or Land Development, proceed to Steps 2 and 3.

Step 2 –Stormwater Management Worksheet B:

If the proposed project does not exceed 2,000 square feet of impervious area, involve disturbance of 1 acre or more, involve alteration to existing stormwater facilities or watercourses and/or is not associated with a Land Development and/or Subdivision Plan, a Level 2 Small Project Site Sketch Plan is required. This Site Sketch Plan must show the location of any proposed stormwater BMPs (full list of required items to be shown on sketch located below), an O&M Agreement will be drafted for the

proposed BMPs (as included in this Workbook). Stormwater Management BMPs may be selected from the sample BMPs provided within this document or within the Guide to Choosing Stormwater BMPs (provided on the Township Website). Completed Worksheets A and B, a completed Owner Acknowledgment and a Level 2 Small Project Site Plan and corresponding BMP detail(s) must then be submitted to Salisbury Township for review and approval. These items must be included with the applicable zoning/building permit application.

Level 3 Project Requirements – If the proposed project proposes greater than 2,000 square feet of impervious area and/or the project is associated with a Land Development and/or Subdivision Plan, then the project does not meet the criteria of an Exemption or Small Project Site Plan. A Qualified Person must be contacted to prepare a stormwater management plan in accordance with the Salisbury Township Stormwater Management Ordinance as adopted and amended. This must be submitted in accordance with the provisions of the Salisbury Township Stormwater Management Ordinance as amended.

Site Sketch Plan Requirements – Level 1 and Level 2

A Site Sketch Plan depicting the key features of the site must be drawn, or depicted, to scale to show the following:

Level 1 Site Sketch Plan Requirements:

- 1) Property boundary, address, and name of landowner (and/or) developer.
- 2) Date of Small Project Application submission.
- 3) Name of individual and/or firm that prepared the sketch, if different than the landowner and/or developer.
- 4) Location of all existing and proposed structures (house, shed, addition, etc.) and any proposed downspouts. Include the dimensions and square footage of proposed structures, impervious surfaces (driveways, etc.) and land disturbance and associated distance(s) to property lines.
- 5) Site conditions and land covers (grassed areas, agricultural fields, existing SWM Facilities, direction of slope and stormwater flow on the subject property).
- 6) Natural features such as floodplains, streams, wetlands, tree lines and other vegetation on the property.
- 7) Utility lines, sewer or water service location, or wells and on-site septic systems.
- 8) Any easements, rights-of-ways within property boundaries and their associated sizes.
- 9) Scale and North arrow.

Level 2 Site Sketch Plan Requirements (Including all Level 1 requirements):

- 10) Approximate footprint and location of all structure on adjacent properties, if located within fifty (50) feet of the proposed impervious area or land disturbance.
- 11) Approximate slopes of overland stormwater flow paths.
- 12) Distance from proposed structures or improvements along the stormwater flow path to any stream or wooded area.
- 13) Natural features such as floodplains, streams, wetlands, tree lines and other vegetation within 50 feet of the property line.
- 14) Any other pertinent information that may be significant to the project site (existing drainage ways, steep slopes, etc.).
- 15) Soil boundaries and types for the project area [may be obtained from PA Soil Map (soilmap.psu.edu) or NRCS Web Soil Survey (websoilsurvey.nrcs.usda.gov)].

A Small Project Stormwater Site Plan depicts the existing conditions of a property and the location of proposed impervious surfaces. Depicting the relationship between the proposed

activities and distances to things like property lines, streams, and vegetated areas will help determine if the stormwater runoff created by the proposed project can be managed naturally within the property or if additional best management practices (BMPs) are needed to accommodate the stormwater runoff.

Level 2 Project Stormwater Site Plan Requirements:

If a project qualifies for use of a Small Project Site Plan, the applicant may prepare and submit to the Township a Small Project Site Plan along with the applicable Stormwater Management Worksheets. The Lancaster County GIS Office can also provide assistance to applicants to obtain property maps of existing features. A Site Sketch Plan depicting the key features of the site must be drawn or depicted, to scale to show the information required for Levels 1 and 2 Site Sketch Plans along with the following additional information when BMPs are required:

- 1) Any proposed tree or shrub plantings and species.
- 2) Location, size, and depth of proposed stormwater BMPs.
- 3) Details of proposed stormwater BMPs, including materials to be used.

Other Considerations for Minor Plans:

- While soil testing is not mandatory for the simplified approach, soil testing is highly recommended to select and apply the appropriate stormwater BMPs. The use of soil maps, infiltration tests, and/ or percolation tests may provide the applicant basic information about soil characteristics.
- Proposed stormwater management facilities must be designed to handle flows from the contributing area.
- The site shall not have any pre-existing stormwater drainage-related problems (as verified by the municipality).
- Water quality shall be protected per Chapter 93 of PA Code (<http://www.pacode.com/>).
- The municipality may inspect all BMPs during and after construction/ installation.
- Infiltration BMPs should not be constructed nor receive runoff until the entire contributory drainage area has achieved final stabilization.
- Ensure that infiltration in geologically susceptible areas such as, but not limited to, carbonate geology/ karst topography does not cause adverse effects. The Small Project Site Plan should incorporate steps to ensure that salt or chloride will not contaminate the groundwater.
- Selected BMPs shall be designed, constructed, and maintained in accordance with the manufacturer's recommendation, the BMP Manual, or other written guidance acceptable to the municipality.
- Proposed sump pumps shall discharge to infiltration or vegetative BMPs to the maximum extent practicable.

Selecting BMPs

If BMPs are required, the Owner/ Designer should review the compiled information in the "Guide to Choosing Stormwater BMPs", as taken from the *PA Handbook of Best Management Practices for Developing Areas* and the *PA Stormwater Management BMP Manual*. This document is available at the Township or download from the Township's website (www.salisburytownship.org). These documents identify stormwater BMPs that have been deemed to be of a nature and cost that will accomplish the goals of the Lancaster County Stormwater Management Plan, while not unduly burdening the residents. It will then be the Owner's responsibility to select a facility, determine the appropriate size and agree to construct and maintain that facility or facilities. The property owner is encouraged to utilize both multiple and hybrid versions of the facilities, as outlined in the documents mentioned above.

Stormwater
Management Worksheets

Permit Number: _____

Small Project Permit Application Worksheet A

APPLICANT INFORMATION

Applicant Name: _____ Date Submitted: _____

Applicant Address: _____

Applicant Phone: (____) _____ Applicant Email: _____

PROPERTY INFORMATION

Property Address: _____

Property Owner Name: _____

Property Owner Phone: (____) _____ Property Owner Email: _____

Property Owner Address: _____

Zoning District: _____ Acreage: _____

Existing Use of Property: _____ Proposed Use of Property: _____

PROPOSED ACTIVITY

Addition of Impervious (Up to 500 sq. ft.)

New Impervious Area Associated with this Project: _____

Removal of Ground Cover, grading, filling or excavation of an area greater than 1-acre

Type of Regulated Activity: Removal of Ground Cover Grading Filling Excavation

Other: _____

Addition of Impervious (500 – 2,000 sq. ft.)

New Impervious Area Associated with this Project: _____

Estimated Project Disturbed Area (Square Feet or Acres): _____

Total New Impervious Area since Adoption of SWM Plan: _____

Please list the date of any previous Small Project Applications Permit Nos. for the Subject Property:

Stormwater Project Type: Level 1
Exempt

Level 2
Small Project

Level 3
Formal Plan

Acknowledgement - I declare that I am the property owner, or representative of the owner, and that the information provided is accurate to the best of my knowledge. I understand that stormwater may not adversely affect adjacent properties or be directed onto another property without written permission. I also understand that false information may result in a stop work order or revocation of any associated permits. Municipal representatives are also granted reasonable access to the property for review and / or inspection of this project as necessary.

Applicant/Owner Printed Name: _____ Date: _____

Applicant/Owner Signature: _____

Step 1: Determine the amount of new impervious area created by the proposed project. This includes any new surface areas that prevent infiltration of stormwater into the ground. New stone and gravel areas are considered impervious. Impervious areas existing before (June 17, 2014) are not included in this calculation. Use additional sheets if necessary.

Calculate NEW impervious area by completing this table.

Surface	Length (ft)	x	Width (ft)	=	Impervious Area (ft ²)
Buildings/Structures:					
1.		x		=	
2.					
3.					
4.					
Driveway		x		=	
Parking Areas		x		=	
Patios/ walkways		x		=	
Other		x		=	
Total Existing Impervious Surface Area to be Removed (if applicable)					(Subtract)
Total Proposed Impervious Surface Area (Sum of all impervious areas)					

- Level 1 - If the total new impervious surface area is **up to 500 ft²**, the project is exempt from the requirement to submit a Small Project or SWM Plan for approval. Complete Worksheet A and file this application with the Township.
- Level 2 - If project **does not exceed 2,000 ft²** of impervious and is not associated with a subdivision or land development, complete Worksheet A and steps 1 through 3, sign Owner Acknowledgement and file with the Township.
- Level 3 - If project area is greater than **2,000 ft²** of added impervious area, the project does not qualify for the "Simplified Approach."

Stormwater Management Worksheet B

Step 2: To calculate the volume of stormwater runoff created by proposed impervious surfaces, see Simple BMP Sizing in Step 3.

Impervious Area (ft ²) to be Managed (Sum of Step 1)	X	1.0 in/12 in = 0.083	=	Amount of Stormwater to be Managed (ft ³)
	X	0.083	=	

Step 3: Select BMPs and size according to the volume of stormwater that needs to be managed. The Guide to Choosing Stormwater BMPs, included in the Simplified Approach, includes sizing calculations for specific techniques. The table below should be used only when a Small Project Site Plan is appropriate. Other BMPs may be utilized if selected out of the Guide to Choosing Stormwater BMPs provided calculations are provided to show that the required volume has been met.

Proposed BMP	Length (Feet)		Width (Feet)		Depth (Feet)		Void Ratio		Volume (ft ³) (≥ ft ³ from Step 2)
Infiltration Bed		x		x		x	0.4	=	
Infiltration Berm		x		x		x	1.0	=	
Rain Garden		x		x		x	1.0	=	
Rain Barrel	Gallons			x	Cubic Feet Per Gallon			=	
					0.134				
Total Volume Credit (Sum of Volume(s) above)									=
Required Volume (Calculated above in Step 2)									=
Surplus Volume (Total Volume – Required Volume)									=

Bring the worksheets, Site Sketch Plan, Owner Acknowledgement, and Stormwater Management Practices, Facilities, and Systems Maintenance and Monitoring Agreement to the municipality. If an area greater than 5,000 square feet of earth is disturbed, an erosion and sedimentation (E & S) control plan must be prepared and kept on site during construction activities. **If an area greater than 1.0 acres is disturbed during the project, an E&S and NPDES Permit will be required to be obtained from the Lancaster County Conservation District.**

OWNER ACKNOWLEDGMENT

- Development activities shall begin only after the Salisbury Township approves the plan.
- The installed BMPs will not adversely affect any property, septic systems, or drinking water wells on this or any other property.
- If a stormwater management alternative to the approved Small Project Site Plan is used, the applicant will submit a revised plan to the Salisbury Township for approval. If a site requires a more complex system or if problems arise, the applicant may need the assistance of a Qualified Person.
- The Applicant acknowledges that the proposed stormwater management BMPs will be a permanent fixture of the property that cannot be altered or removed without approval by the Township.

I (we) _____, hereby acknowledge the above statements and agree to assume full responsibility for the implementation, construction, operation, and maintenance of the proposed stormwater management facilities. Furthermore, I (we) also acknowledge that the steps, assumptions, and guidelines provided in this Simplified Approach Package (Small Project Site Plan & Stormwater Worksheet(s)) will be adhered to.

Signature: _____

Date: _____

STORMWATER
MANAGEMENT/
BMP FACILITIES &
MAINTENANCE
AGREEMENT

**APPENDIX A STORM WATER MANAGEMENT AGREEMENT
AND DECLARATION OF EASEMENT**

Prepared By: _____

Return To: _____

Parcel ID # _____

**STORM WATER MANAGEMENT AGREEMENT
AND DECLARATION OF EASEMENT**

THIS AGREEMENT AND DECLARATION OF EASEMENT made this _____ day of _____, 20___, by and between _____, a _____ with a mailing address at _____ (hereinafter whether singular or plural referred to as the “Grantor”), and **SALISBURY TOWNSHIP**, Lancaster County, Pennsylvania, a municipal corporation duly organized under the laws of the Commonwealth of Pennsylvania, with its municipal office located at 5581 Old Philadelphia Pike, Gap, Pennsylvania (hereinafter referred to as the “Township”).

BACKGROUND

Grantor is the owner of premises located _____, in the Township of Salisbury, Lancaster County, Pennsylvania, as more specifically described in a deed recorded in Deed or Record Book _____, Volume _____, Page _____, or at Document No. _____ in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, and as shown on the NAME OF PLAN _____, prepared by _____, Drawing No. _____, dated _____, last revised _____ (hereinafter referred to as the “Premises”).

Prior to beginning construction on any subdivision or land development, Grantor is required, under the Salisbury Township Subdivision and Land Development Ordinance and the Salisbury Township Storm Water Management Ordinance (collectively referred to as the “Ordinance”), to file a final plan with the Salisbury Township Board of Supervisors. Pursuant to the Ordinance, Grantor must include storm water management data in its subdivision and/or land development application. The Ordinance requires that Grantor’s final plan reflect and/or be accompanied with supporting documentation which identifies the ownership of, and the method of administering and maintaining, all permanent storm water management facilities. Drainage courses, swales, grassed waterways, storm water inlets, pipes, conduits, detention basins, retention basins, infiltration structures, and other storm water management facilities, including Best Management Practices facilities (“BMPs”), shall be included under the term “storm water management facilities” in this Agreement and Declaration of Easement.

The purpose of this Agreement and Declaration of Easement is to describe the ownership and maintenance responsibilities for the storm water facilities which will be installed on the Premises and to impose the ownership and maintenance responsibilities upon Grantor, his heirs, personal representatives and assigns and upon successor owners of the Premises, and set forth the rights of the Township.

NOW, THEREFORE, intending to be legally bound hereby and in consideration of receiving approval of its Subdivision and/or Land Development Plan or its Storm Water Management Plan (hereinafter referred to as the "Final Plan") from the Board of Supervisors, and in consideration of receiving permits from the Township to develop the Premises, Grantor, for Grantor and the heirs, personal representatives and assigns of Grantor, covenant and declare as follows:

1. The storm water facilities will be owned by Grantor, his heirs, personal representatives, successors and assigns.

2. All drainage courses, swales, storm water inlets, pipes, conduits, detention basins BMPs, and other storm water facilities shall be installed, constructed and maintained by Grantor, his heirs, personal representatives, successors and assigns, in a first-class condition in conformance with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, and in a manner sufficient to meet or exceed the performance standards and specifications set forth on the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County. These responsibilities shall include, but not be limited to, the following:

(a) Liming, fertilizing, seeding and mulching of vegetated channels and all other unstablized soils or areas according to the specifications in the "Erosion and Sediment Pollution Control Manual" published by the Pennsylvania Department of Environmental Protection, the Penn State Agronomy Guide, or such similar accepted standard.

(b) Reestablishment of vegetation by seeding and mulching or sodding of scoured areas or areas where vegetation has not been successfully established.

(c) Mowing as necessary to maintain adequate stands of grass and to control weeds. Chemical weed control may be used if federal, state and local laws and regulations are met. Selection of seed mixtures shall be subject to approval by the Township.

(d) Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, BMPs, and/or other facilities and thus reducing their capacity.

(e) Removal of silt from all permanent drainage structures, in particular BMPs, in order to maintain the design storage volumes. Regular programs shall be established and maintained.

(f) Regular inspection of the areas in question to assure proper maintenance and care, including but not limited to proper implementation of BMPs. **ADD ANY SPECIFIC INSPECTION REQUIREMENTS IN THE PCSM PLAN.**

(g) Regular maintenance to insure that all pipes, swales and detention facilities shall be kept free of any debris or other obstruction. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN.**

(h) Regular maintenance of all facilities designed to improve water quality to insure that such facility function in accordance with their design. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN SUCH AS IF APPLICABLE:** Maintenance of the infiltration bed and infiltration system by mowing grass regularly over the infiltration bed; keeping the yard drains and roof drains free of debris in good repair at all times; flushing the infiltration system using a water hose at the cleanouts once every 90 days to insure the infiltration system is clear of debris; keeping the sumps in the yard inlets and downspout sumps free of debris; and inspecting the infiltration bed four times per year or after each rain event exceeding one inch.

(i) Repair of any subsidence, including subsidence caused by sinkholes.

(j) **IF APPLICABLE:** Replacement of displaced riprap within the outlet energy dissipater immediately after it is displaced, particularly after major storm discharge events.

(k) **IF APPLICABLE:** Vacuum sweeping of areas of porous paving to keep surface free of

sediment as needed, typically three to four times per year and maintaining all areas of porous paving free from sealing, surfacing or re-paving with non-porous materials.

(l) **IF APPLICABLE:** Aerate areas of amended soils annually. No impervious surfaces may be placed or installed on any area of amended soils.

(m) Removal of trash and debris on a regular basis.

Include a statement that the approved Operations and Maintenance (O&M) Plan is attached as an exhibit if there are any requirements in addition to those in Paragraph 2. Paragraph 2 may be revised to simply incorporate an exhibit if all post construction inspection, operations, and maintenance requirements are included on the exhibit.

Grantor, his heirs, personal representatives, successors and assigns, shall be responsible for performing the foregoing maintenance.

3. ***Grantor, his heirs, personal representatives, successors and assigns, shall be responsible for maintaining records of all inspections of and maintenance to BMPs and other storm water management facilities. Grantor, his heirs, personal representatives, successors and assigns, shall be responsible to prepare all annual BMP and post construction storm water management facility reports which are required by the terms of any NPDES permit or other state or federal regulation or require and submit such reports to the Township on or before DATE of each calendar year, together with any fee which the Township may impose for the review and processing of such report. It is the responsibility of Grantor to inform successors owners of the Premises or any lot created from the Premises of this reporting requirement. The failure to submit an annual report is a violation of this Agreement. The Township may prepare any required report and recover all costs required to prepare such report from the then-owner of the Premises or any lot created from the Premises, plus a penalty of ten (10%) percent of such costs and may file a municipal claim to secure payment of such costs.***

4. Grantor, for himself, his heirs, personal representatives, successors and assigns, agrees that the failure to maintain all drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water management facilities in a first-class condition in conformance with this Agreement and approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, shall constitute a nuisance and shall be abatable by the Township as such.

5. Grantor, for himself, his heirs, personal representatives, successors and assigns, authorizes the Township, at any time and from time to time, by its authorized representatives, to enter upon the Premises to inspect the storm water facilities.

6. The Township may require that Grantor, and assigns or any future owner or occupier of the Premises or any part thereof, take such corrective measures as the Township may deem reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County.

7. Upon the failure of the owner or occupier of the Premises or any part thereof to comply with the terms of this Storm Water Management Agreement or to take corrective measures following reasonable notice from the Township, the Township, through its authorized representatives, may take such corrective measures as it deems reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, including, but not limited to, the removal of any blockage or obstruction from drainage pipes, swales, detention basins, and BMPs, and may charge the cost thereof to Grantor, his heirs, personal representatives, successors and assigns, or any owner of the Premises or any part thereof and, in default of such payment, may cause a municipal lien to be imposed upon the Premises or any part thereof. Any municipal lien filed pursuant to this Agreement shall be in the amount of all costs incurred by the Township, plus a penalty of ten (10%) of such costs, plus the Township's reasonable attorneys' fees.

8. ***The storm water management facilities have been designed to allow a maximum impervious surface coverage***

– [if a single lot] of _____ square feet. Any proposal to add additional impervious surface

coverage to the Premises will require the submission of a storm water management plan meeting all requirements of applicable regulations in effect at the time such application is filed.

– [if multiple lots with the same coverage] of ____ square feet for each lot to be created from the Premises. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage, such lot owner must submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.

– [if multiple lots with different coverage limits] as set forth in Exhibit A attached hereto and incorporated herein. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage beyond that allocated to such lot in Exhibit A, such lot owner must submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.

9. If ownership or maintenance responsibility of the storm water management facilities is assigned to a home owners' association, condominium unit owners' association, or similar entity, the Township shall be notified. If such association fails to properly maintain the storm water management facilities, the Township shall have the same rights granted to municipalities under Section 705 of the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, with reference to maintenance of common open space, to maintain the storm water management facilities. Any association so formed shall enter into an agreement with the Township recognizing its duties and the Township's rights under this Agreement.

10. Grantor hereby imposes upon the Premises for the benefit of all present and future owners of the Premises or part of the Premises, the Township, and all other property owners affected by the storm water facilities, the perpetual right, privilege and easement for the draining of storm water in and through the drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water facilities depicted on the plan or plans submitted to the Township or hereafter made of record and now or hereafter installed on or constructed upon the Premises and, in addition, easements of access to the storm water facilities.

11. Grantor agrees to indemnify the Township and all of its elected and appointed officials, agents and employees (hereafter collectively referred to as the "Indemnitees") against and hold Indemnitees harmless from any and all liability, loss or damage, including attorneys' fees and costs of investigation and defense, as a result of claims, demands, costs or judgments against Indemnitees which arise as a result of the design, installation, construction or maintenance of the storm water facilities.

12. Grantor's personal liability under this Agreement shall cease at such time as (a) all storm water management facilities have been constructed in accordance with the specifications of the Township Subdivision and Land Development Ordinance, the Township Storm Water Management Ordinance and the approved plans; (b) the storm water management facilities have been inspected and approved by the Township Engineer; (c) all financial security, including any maintenance security, posted by Grantor has been released by the Township; and (d) Grantor has transferred all lots to be created from the Premises to third parties. Notwithstanding the foregoing, Grantor's personal liability shall continue for any violations of this Agreement and Declaration of Easement which occurred during the time that Grantor owned the Premises or any lot created from the Premises or in the event the storm water management facilities were not completed, inspected or approved as set forth in (a) through (c) herein.

13. It is the intent of the parties to this Agreement that personal liability and maintenance obligations shall pass to subsequent title owners upon change in ownership of the Premises or any lot created from the Premises, and such subsequent owners shall assume all personal liability and maintenance obligations for the time period during which they hold title. Personal liability shall remain for any violations of this Agreement and Declaration of Easement which occurred during the period in which an owner held title.

14. The Township may, in addition to the remedies prescribed herein, proceed with any action at law or in equity to bring about compliance with the Township Storm Water Management Ordinance, the Township Subdivision and Land Development Ordinance and this Agreement.

15. This Agreement and Declaration of Easement shall be binding upon the Grantor, the successors and assigns of Grantor, and all present and future owners of the Premises or any part thereof and is intended to be recorded in order to give notice to future owners of the Premises of their duties and responsibilities with respect to the storm

water facilities. Grantor shall include a specific reference to this Agreement in any deed of conveyance for the Premises or any part thereof.

16. This Agreement and Declaration of Easement may be amended only by written instrument signed on behalf of all owners of the Premises and the Township.

17. When the sense so requires, words of any gender used in this Agreement and Declaration of Easement shall be held to include any other gender, and the words in the singular number shall be held to include the plural, and vice versa.

IN WITNESS WHEREOF, the undersigned have caused this Agreement and Declaration to be executed on the day and year first above written.

SALISBURY TOWNSHIP
Lancaster County, Pennsylvania

Attest: _____
(Assistant) Secretary

By: _____
(Vice) Chairman Board of Supervisors

[TOWNSHIP SEAL]

(Individual or Husband and Wife Developer)

Witness:

_____(SEAL)
(Signature of Individual)

_____(SEAL)
(Signature of Spouse if Husband and Wife
are Co-Developers)

IF APPLICABLE
Trading and doing business as:

(Partnership Developer*)

(Name of Partnership)

Witness:

By: _____(SEAL)
Partner

By: _____(SEAL)
Partner

By: _____(SEAL)
Partner

*All Partners must execute this Agreement

(Corporation Developer)

(Name of Corporation)

ATTEST:

By: _____
(Assistant) Secretary

By: _____
(Vice) President

[CORPORATE SEAL]

(Limited Liability Company Landowner***)

(Name of Limited Liability Company)

Witnesses:

By: _____
Member

By: _____
Member

By: _____
Member

***All members must sign.

JOINDER BY MORTGAGEE

_____ (“Mortgagee”), as holder of a certain mortgage on the premises of [NAME OF GRANTOR] within Salisbury Township, Lancaster County, Pennsylvania, described in the Deed recorded in/at _____, in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, which mortgage, in the amount of \$_____, dated _____, and recorded at _____ in the Recorder of Deeds Office in and for Lancaster County, Pennsylvania, as well as any other mortgages which Mortgagee may now or hereafter hold on the Premises (all such mortgages hereinafter collectively referred to as the “Mortgages”), joins in, consents to, and expressly approves the grant of easements and other rights and privileges described in the attached Storm Water Management Agreement and Declaration of Easement (the “Agreement”).

The Mortgagee, for itself, its successors and assigns (which shall include any assignee of the Mortgages and any purchaser of the Premises at a sale in foreclosure of the Mortgages or otherwise), hereby covenants and agrees that the rights and privileges herein granted with respect to the Premises shall not be terminated or disturbed by reason of any foreclosure or other action which may be instituted by the Mortgagee, its successors and assigns, as a result of any default under the Mortgages or the debt instruments that such Mortgages secure. Mortgagee by consenting to the Agreement shall not by virtue of its interest as Mortgagee be deemed to have undertaken any of the obligations of the Grantor under the Agreement, including but not limited to construction, maintenance, inspection or indemnification.

IN WITNESS WHEREOF, Mortgagee hereby joins in the execution of the Agreement as of this _____ day of _____, 20____.

(Name of Mortgagee)

ATTEST: _____

By: _____

[SEAL]

SAMPLES:

SITE SKETCH PLAN
STORMWATER MANAGEMENT BMPs

SAMPLE SITE SKETCH PLAN FOR LAND USE PERMIT AND LEVEL 1 STORMWATER MANAGEMENT PLAN

SCALE: N.T.S.

EXISTING

HOUSE=2400 SQ. FT.
SIDEWALK=240 SQ. FT.
DRIVEWAY=4000 SQ. FT.

PROPOSED

GARAGE=750 SQ. FT.
DRIVEWAY=150 SQ. FT.
(5' x 30' ADDED)

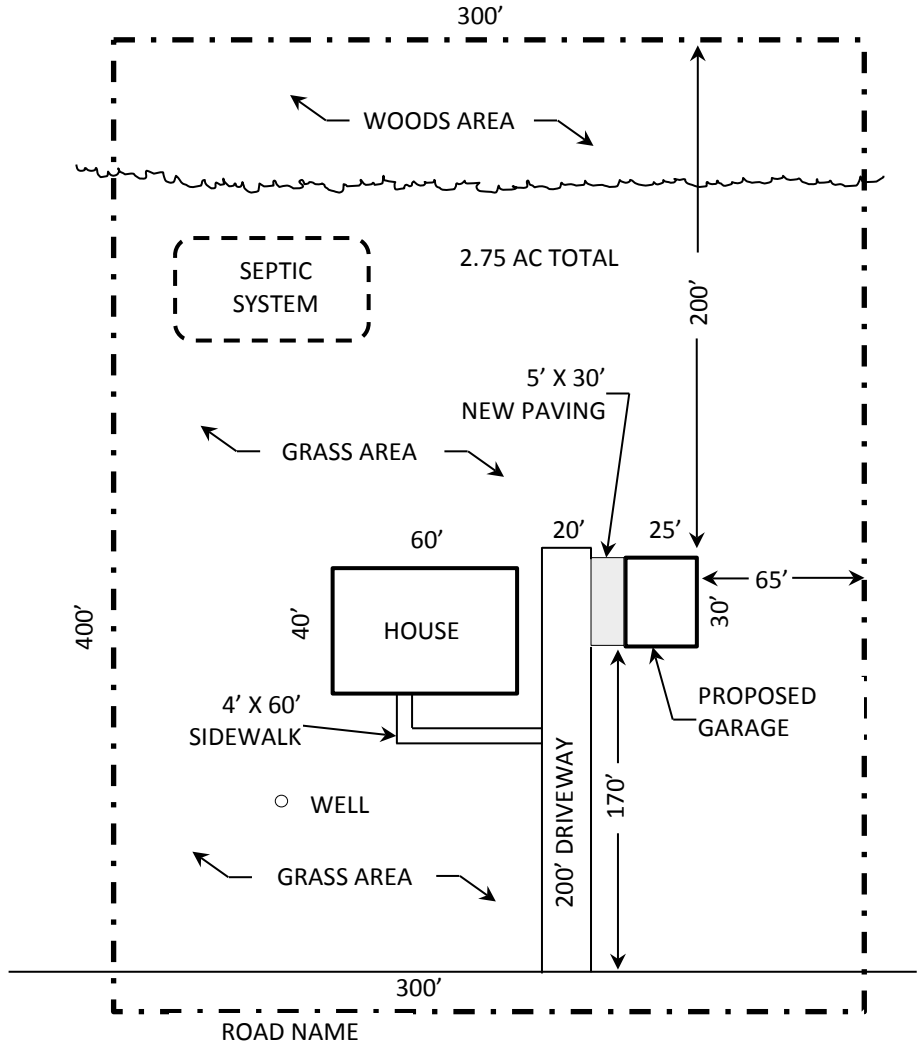
TOTAL EXISTING AND
PROPOSED=7540 SQ. FT.

NOTE:

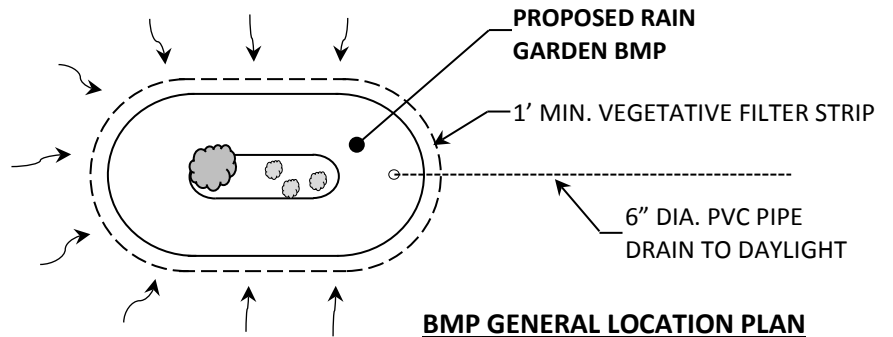
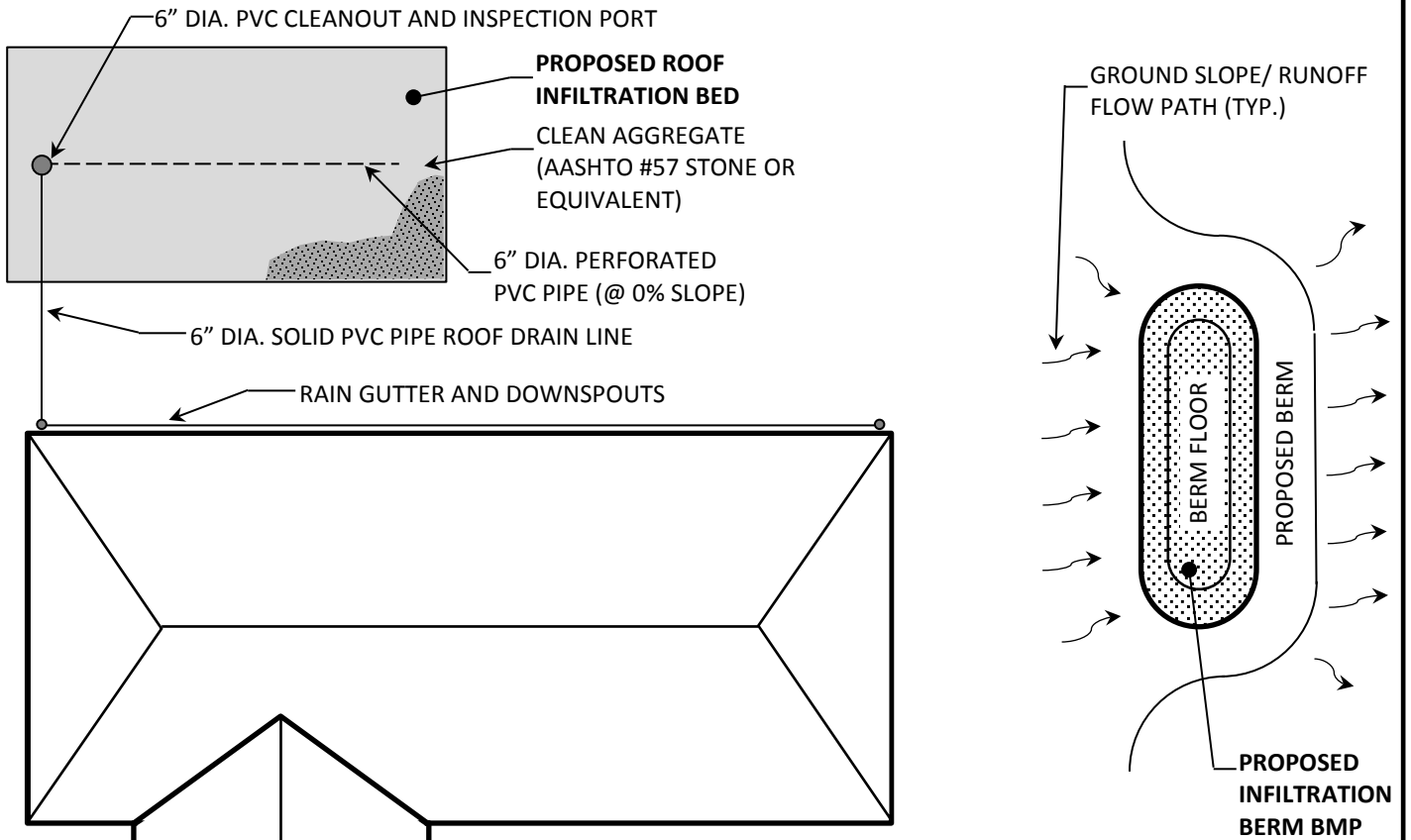
THERE ARE NO STREAMS,
WETLANDS, OR FLOODPLAINS
ON THE PROPERTY.

CONTACT INFORMATION:

PROPERTY OWNER(S)
ADDRESS
PHONE NUMBER(S)
EMAIL ADDRESS



REVISIONS	PLAN PREPARATION		SAMPLE SITE SKETCH PLAN	SCALE: AS SHOW
	DRAWN BY: DSC	DATE: 4/2/2014		LEVEL 1 STORMWATER MANAGEMENT PLAN SALISBURY TOWNSHIP, LANCASTER COUNTY
	DESIGN BY: DSC	CHECKED BY: DSC		



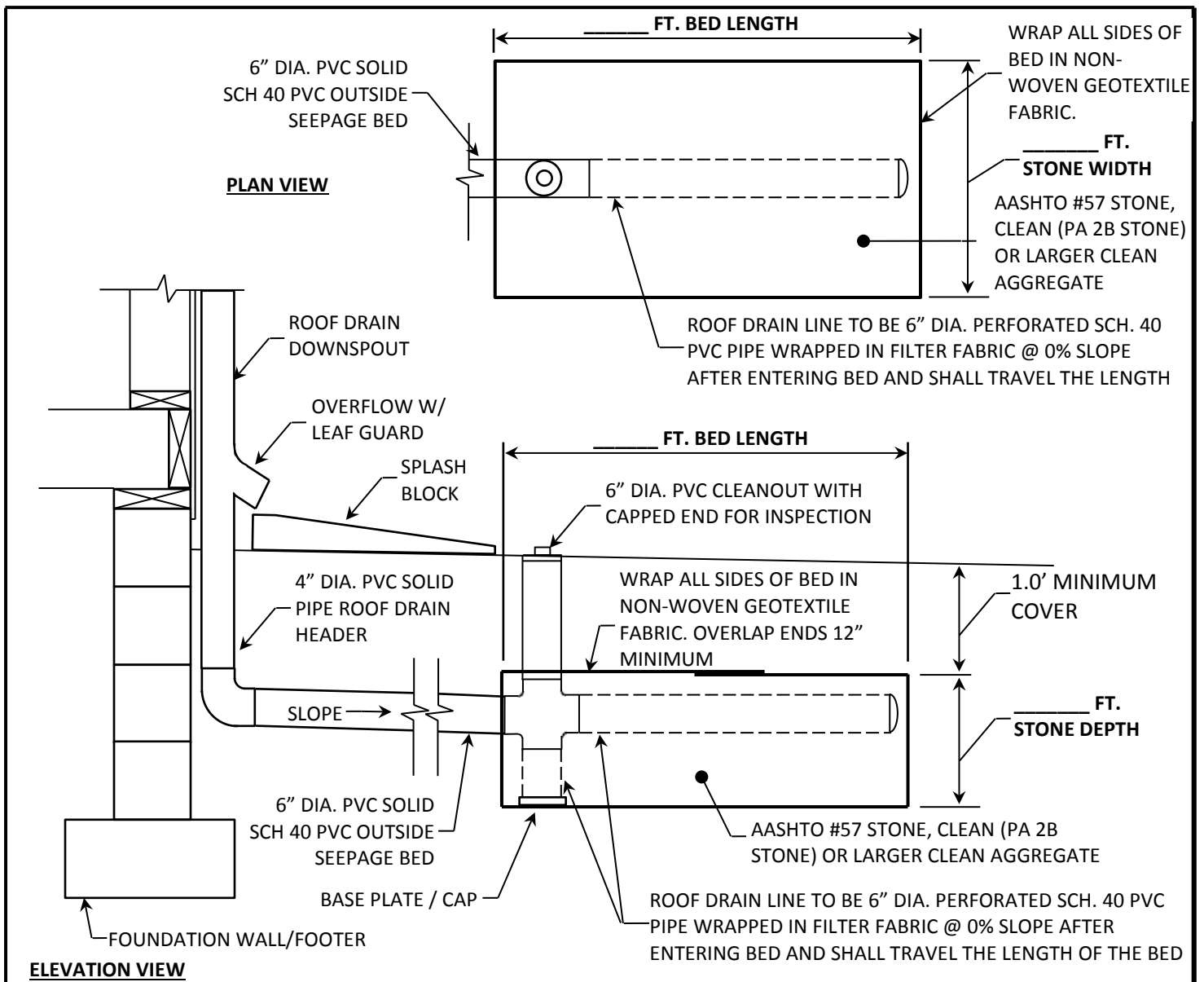
BMP GENERAL LOCATION PLAN
SCALE: N.T.S.

- RECOMMENDED BMP SETBACKS
 10' DOWNHILL FROM FOUNDATION
 100' UPHILL FROM FOUNDATION
 50' FROM SEPTIC SYSTEM AREAS
 50' FROM WATER SUPPLY WELLS

GENERAL NOTES:

1. FOR ROOF INFILTRATION BED, ALL ROOF DRAINS SHALL BE PIPED TO THE PROPOSED ROOF INFILTRATION BED AREAS.
2. FOR THE INFILTRATION BERM OR RAIN GARDEN, RUNOFF FROM THE IMPERVIOUS AREAS SHALL BE DIRECTED TO FLOW INTO THESE STORMWATER BMPS.
3. THE CONCEPTUAL LOCATION OF BMPS SHOWN ABOVE ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL LOCATION OF ALL PROPOSED BMPS SHALL BE DEPICTED ON THE SITE SKETCH PLAN SUBMITTED TO THE MUNICIPALITY.

REVISIONS	PLAN PREPARATION		LEVEL 2	SCALE: AS SHOWN
	DRAWN BY: DSC	DATE: 4/2/2014	BMP CONCEPTUAL LOCATION PLAN	SHEET NO. 2 OF 5
	DESIGN BY: DSC	CHECKED BY: DSC		



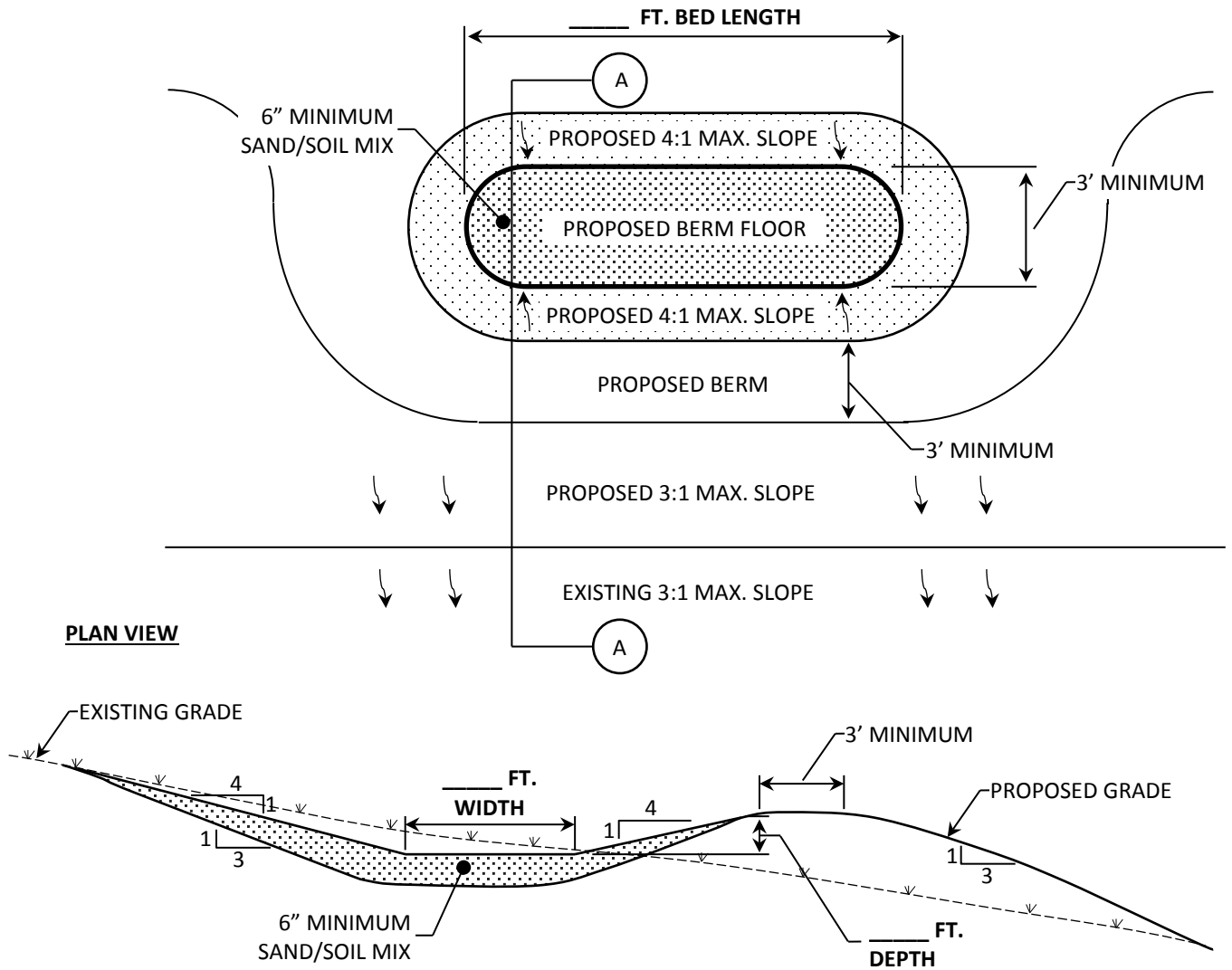
ROOF DRAIN SEEPAGE BED DETAIL

SCALE: N.T.S.

GENERAL NOTES:

1. INFILTRATION BEDS SHALL BE CONSTRUCTED WITH A FLAT BOTTOM.
2. DEPTH OF STONE SHOULD BE 2.5' OR LESS UNLESS SOIL TESTING HAS BEEN PERFORMED.
3. ALL SCHEDULE 40 PVC PIPE SHALL BE ASTM D-1785.
4. ALL ROOF DRAIN LINES SHALL BE SOLID PVC PIPE PRIOR TO ENTERING THE STONE INFILTRATION BED. UPON ENTERING THE BED, ALL PIPE SHALL BE PERFORATED PVC PIPE.
5. LEAF GUARDS ARE TO BE PROVIDED ON GUTTERS.
6. ANY MODIFICATIONS TO THE DEPICTED INFILTRATION BED SHALL BE ONLY AS APPROVED BY THE TOWNSHIP OR DESIGNATED REPRESENTATIVE.
7. THE TOWNSHP SHALL BE CONTACTED PRIOR TO INSTALLATION OF THE INFILTRATION BED TO COORDINATE ANY NECESSARY INSPECTIONS.

REVISIONS		PLAN PREPARATION		BMP – SEEPAGE BED DETAIL	SCALE: AS SHOWN
		DRAWN BY: DSC	DATE: 4/2/2014		SAMPLE STORMWATER MANAGEMENT BMPS SALISBURY TOWNSHIP, LANCASTER COUNTY
		DESIGN BY: DSC	CHECKED BY: DSC		



PLAN VIEW

SECTION A - A

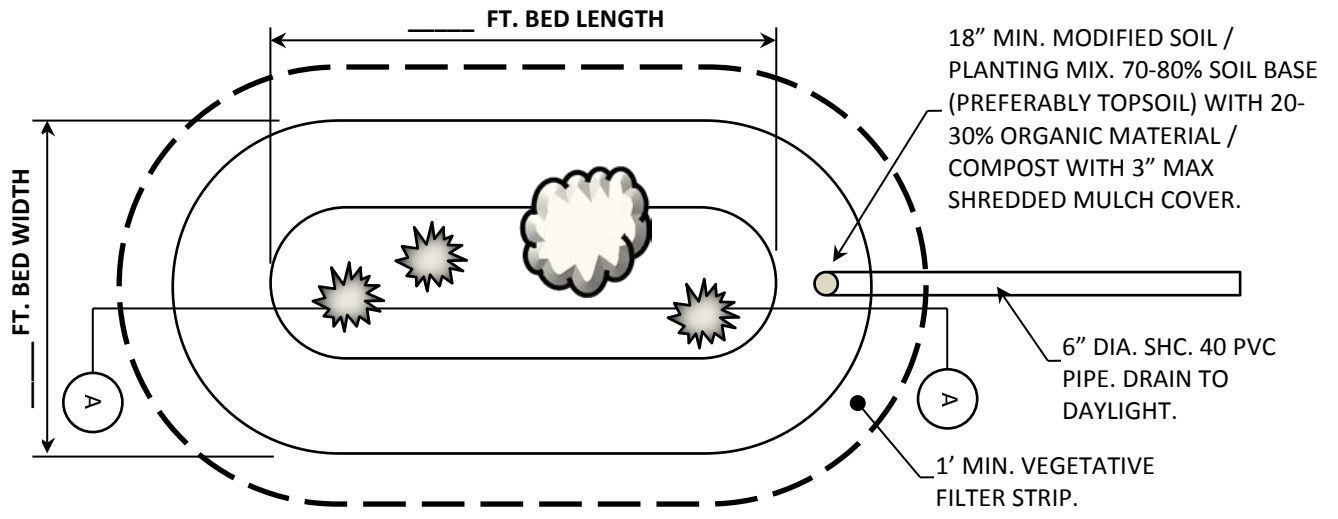
INFILTRATION BERM DETAIL

SCALE: N.T.S.

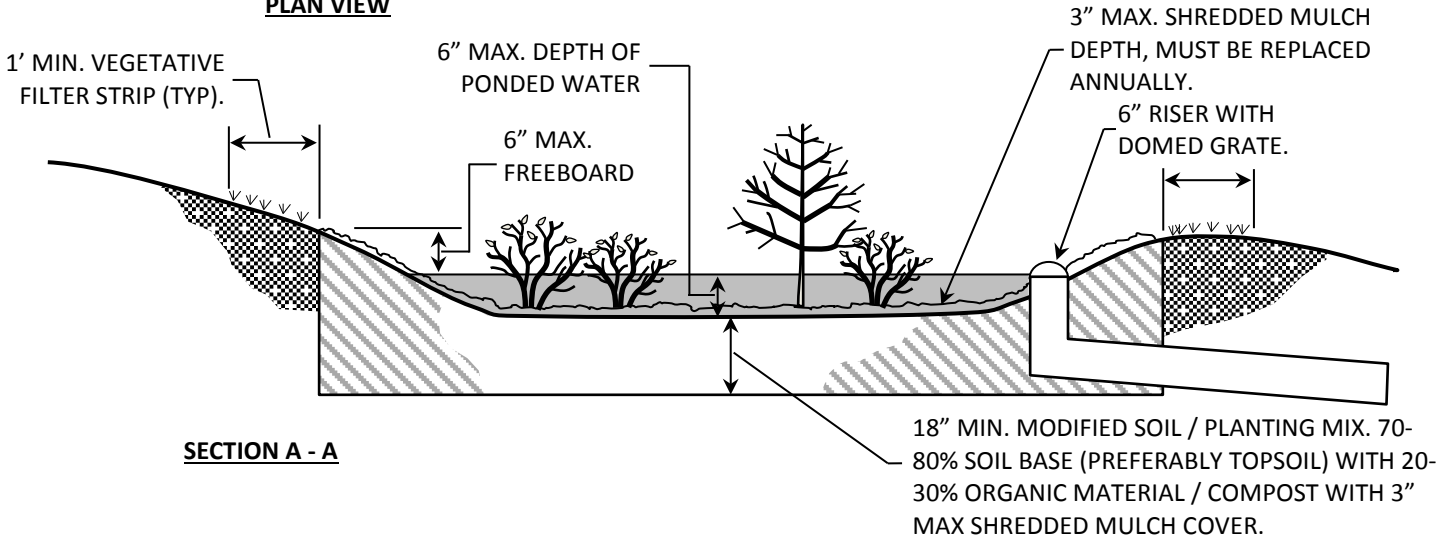
GENERAL NOTES:

1. INFILTRATION BERM SHALL BE INSTALLED WITH THE TOP OF THE BERM AT A LEVEL GRADE ALONG THE ENTIRE BED TO ENSURE AN EVEN OVERFLOW DISTRIBUTION.
2. ENTIRE LENGTH OF INFILTRATION BERM SHALL BE UNDERLAIN WITH SIX (6) INCHES MINIMUM OF A 2:1 SAND SOIL MIXTURE.
3. IF THE LANDOWNER DESIRES, TREES AND/OR SHRUBS MAY BE PLANTED IN THE INTERIOR OF THE INFILTRATION BERM. CARE SHOULD BE TAKEN TO ENSURE THAT ALL TREES OR SHRUBS PLANTED WITHIN THE BERM ARE WATER TOLERANT.
4. ANY MODIFICATIONS TO THE DEPICTED INFILTRATION BERM SHALL BE ONLY AS APPROVED BY THE TOWNSHIP OR DESIGNATED REPRESENTATIVE.
5. THE TOWNSHIP SHALL BE CONTACTED PRIOR TO INTALLATION OF THE INFILTRATION BERM TO COORDINATE ANY NECESSARY INSPECTIONS.

REVISIONS		PLAN PREPARATION		BMP – INFILTRATION BERM DETAIL	SCALE: AS SHOWN
		DRAWN BY: DSC	DATE: 4/2/2014		SAMPLE STORMWATER MANAGEMENT BMPS SALISBURY TOWNSHIP, LANCASTER COUNTY
		DESIGN BY: DSC	CHECKED BY: DSC		



PLAN VIEW



SECTION A - A

RAIN GARDEN DETAIL

SCALE: N.T.S.

GENERAL MAINTENANCE AND NOTES:

1. RAIN GARDENS REQUIRE INITIAL MAINTENANCE TO STAY HEALTHY. FOR THE FIRST 2 WEEKS, WATER THE GARDEN EVERY OTHER DAY (UNLESS IT RAINS).
2. FOR THE FIRST YEAR, THE RAIN GARDEN REQUIRES WEEDING AND ABOUT AN INCH OF WATER A WEEK.
3. REMULCH RAIN GARDEN ANNUALLY. RAKE REGULARLY TO PREVENT WEED GROWTH.
4. ONCE DURING SPRING AND FALL, DEAD VEGETATION SHOULD BE REMOVED FROM THE RAIN GARDEN AND REPLACEMENT PLANTS SHOULD BE PLANTED.
5. A MIX OF TREES AND SHRUBS IS RECOMMENDED FOR PLANTING. A RATIO OF ABOUT ONE TREE FOR EVERY THREE SHRUBS IS RECOMMENDED.
6. UNDER DRAINS SHOULD NOT BE USED EXCEPT WHERE EXISTING SOILS FAIL TO DRAIN SURFACE WATER.
7. ANY MODIFICATION TO THE DEPICTED RAIN GARDEN SHALL BE ONLY AS APPROVED BY THE TOWNSHIP OR DESIGNATED REPRESENTATIVE.
8. THE TOWNSHIP SHALL BE CONTACTED PRIOR TO INSTALLATION OF THE RAIN GARDEN TO COORDINATE ANY NECESSARY INSPECTIONS.

REVISIONS	PLAN PREPARATION		BMP – RAIN GARDEN DETAIL	SCALE: AS SHOWN
	DRAWN BY: DSC	DATE: 4/2/2014		SAMPLE STORMWATER MANAGEMENT BMPS SALISBURY TOWNSHIP, LANCASTER COUNTY
	DESIGN BY: DSC	CHECKED BY: DSC		

Guide to Choosing Stormwater BMPs

The Guide to Choosing Stormwater BMPs can be found at the
Salisbury Township Office or at the Salisbury Township
Website: www.salisburytownship.org