

STORMWATER MANAGEMENT

158 Attachment 6

Township of Palmer

Appendix F

Stormwater Management Permit Application

APPENDIX F

STORMWATER MANAGEMENT PERMIT APPLICATION

The Pennsylvania Department of Environmental Protection (PADEP) requires all municipalities enact a Stormwater Management Ordinance (SWMO) meeting PADEP's requirements. Palmer Township's full SWMO can be reviewed on the Township's website (www.palmerwp.com) under Codes & Permits. This guidance is intended to assist you in determining what level of stormwater management will be required for your project in accordance with the Township's SWMO. If there are any conflicts between this Guidance and the SWMO, the provisions of the SWMO will govern.

Applicant:

Name:

Project Address:

Tax Map Reference:

Mailing Address:

Phone #:

Email Address:

**Assisting Professional (Professional Engineer, Landscaper, Builder, Pool Company, etc.)
(If Applicable)**

Name:

Mailing Address:

Phone #:

Email Address:

Description of Project:

Estimated Total Project Cost:

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Is a Stormwater Management Permit required?

Proposed Impervious Area on Your Project:

1. Previous impervious surface installed since 12/19/20xx	sq. ft.
2. Proposed new pavement (parking, driveway, etc.)	sq. ft.
3. Proposed Building (new building, addition, garage, shed, etc.)	sq. ft.
4. <u>Proposed sidewalk or patio (gravel, concrete, brick, pavers, etc.)</u>	sq. ft.
5. TOTAL ADDED IMPERVIOUS AREA (1+2+3+4-5)	sq. ft.

Impervious Square Footage Stormwater Permit Tiers:

- If the Total Added Impervious is between 0-999 sq. ft, a Stormwater Permit is not required.
- If the Total Added Impervious is between 1,000-4,999 sq. ft., a Minor Stormwater Permit is required.
- If the Total Added Impervious is 5,000 sq. ft. or greater, a Major Stormwater Permit is required.

***Refer to Palmer Townships SWMO for additional disturbances that would require a Stormwater Permit.**

As applicable, provide latitude and longitude of proposed Stormwater Management Facilities:

-
-
-
-

Stormwater Management Permit Options:

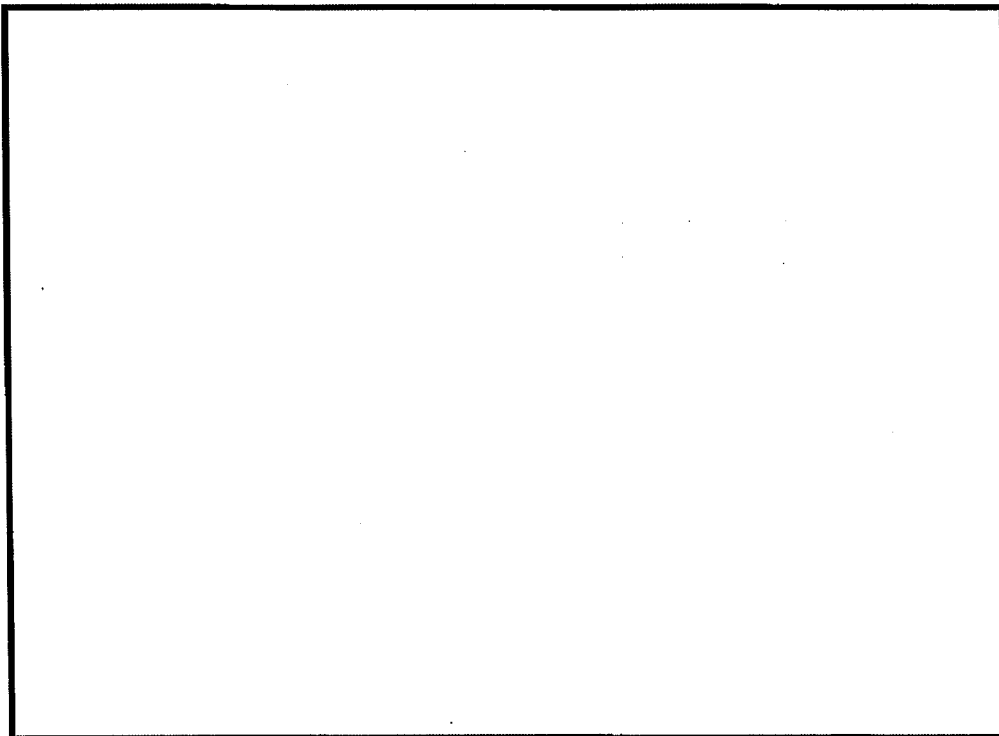
- Exemption – Refer to Section 302 of the SWMO
- Minor SWM Permit – Refer to Section 401.b of the SWMO
- Major SWM Permit – Refer to Section 402.a of the SWMO

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APPENDIX C MINOR SWM PERMIT SITE DESIGN WORKSHEET



Draw a general site plan including the following: 1. The general layout of the property, including approximate lot lines and existing improvements; 2. All proposed improvements; 3. Flow arrows showing the direction of runoff; 4. The location of the proposed stormwater facilities. An example site plan is available on the following page.

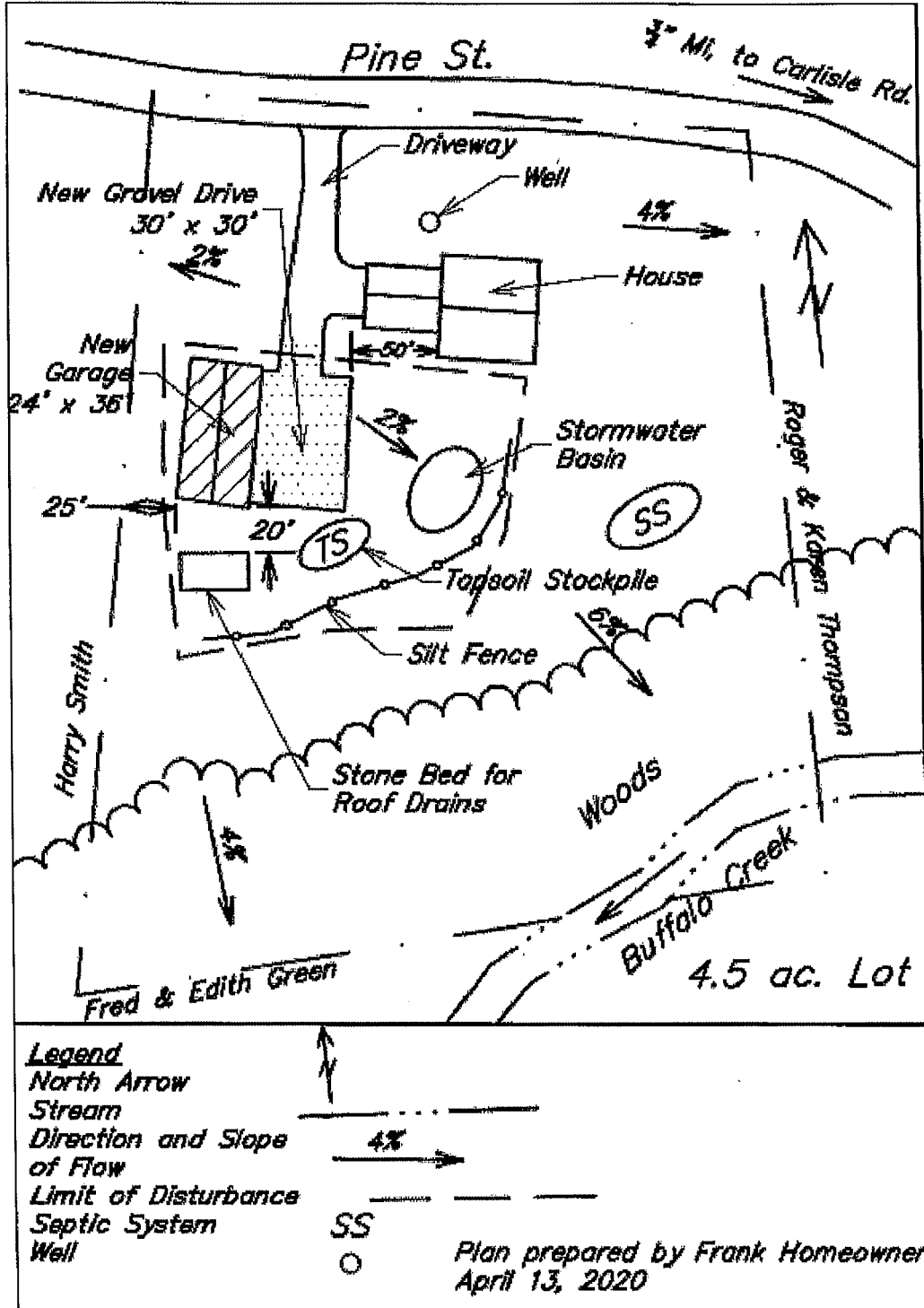
By submitting this worksheet, the Applicant agrees:

1. To submit a Minor SWM Permit for Municipal approval with this Site Design Worksheet.
2. To direct all runoff from proposed impervious areas to the proposed stormwater facilities.
3. To construct the stormwater facilities in conformance with the details and calculations within this worksheet.
4. That the proposed regulated activity conforms to the requirements of the Palmer Township Stormwater Management Ordinance, including but not limited to the setback provisions for stormwater facilities, and an O&M agreement.
5. That stormwater flows onto adjacent properties shall not be created, increased, relocated, significantly concentrated, or otherwise detrimentally altered without written approval from the affected property owner(s).
6. That stormwater management facilities are permanent fixtures and may not be modified, removed, filled, landscaped, have improvements placed within them, or otherwise be altered without written approval of Palmer Township.
7. To provide Palmer Township or its representatives access to the property for the purposes of inspecting SWM and ESC facilities.
8. That all construction shall follow the PADEP BMP Manual and E&S Manual, and that an E&S plan will be sent to the Northampton County Conservation District for review of adequacy if earth disturbance is equal to or greater than 5,000 square feet.
9. That identification of sensitive natural features, such as wetlands or karst features, is the Applicant's responsibility, and that sensitive natural features on the site will not be encroached upon without proper permitting and/or Municipal approval.
10. That Palmer Township and its representatives bear no design responsibility for the proposed improvements, including proposed SWM facilities. All design responsibility is borne by the Applicant. It is recommended the Applicant consult with a certified professional.
11. That the designs produced by utilizing this worksheet are likely conservative in nature.
12. To indemnify Palmer Township and its representatives from any damage that may result from the proposed improvements, including stormwater management facilities.

Signature of Applicant: _____ Date: _____

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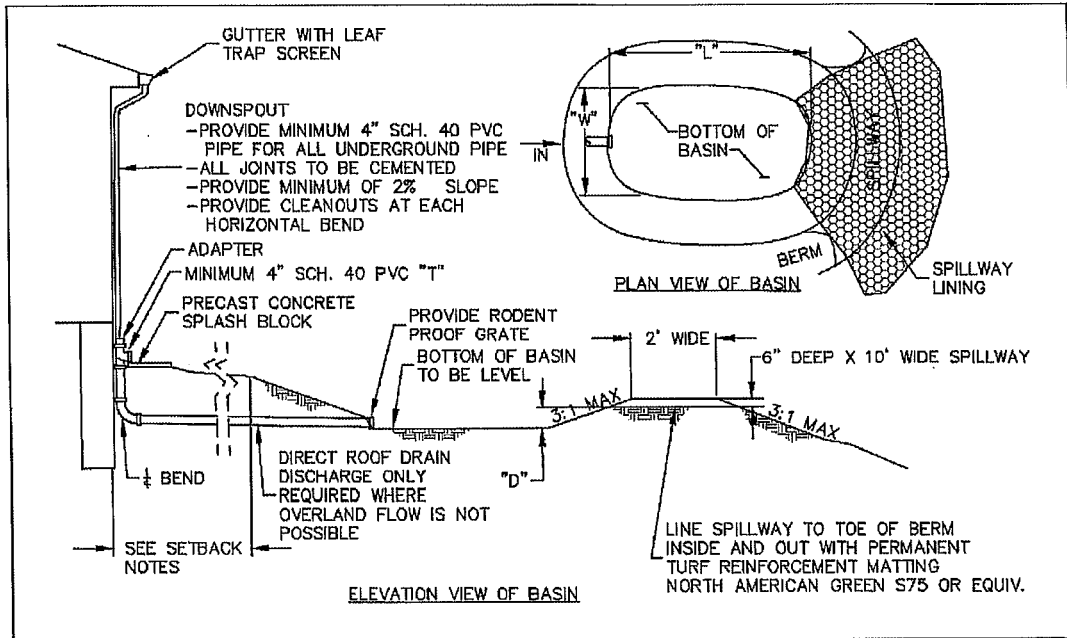
Example Minor SWM Permit Site Plan



STORMWATER MANAGEMENT

Stormwater Facility Standard Details

Rain Garden



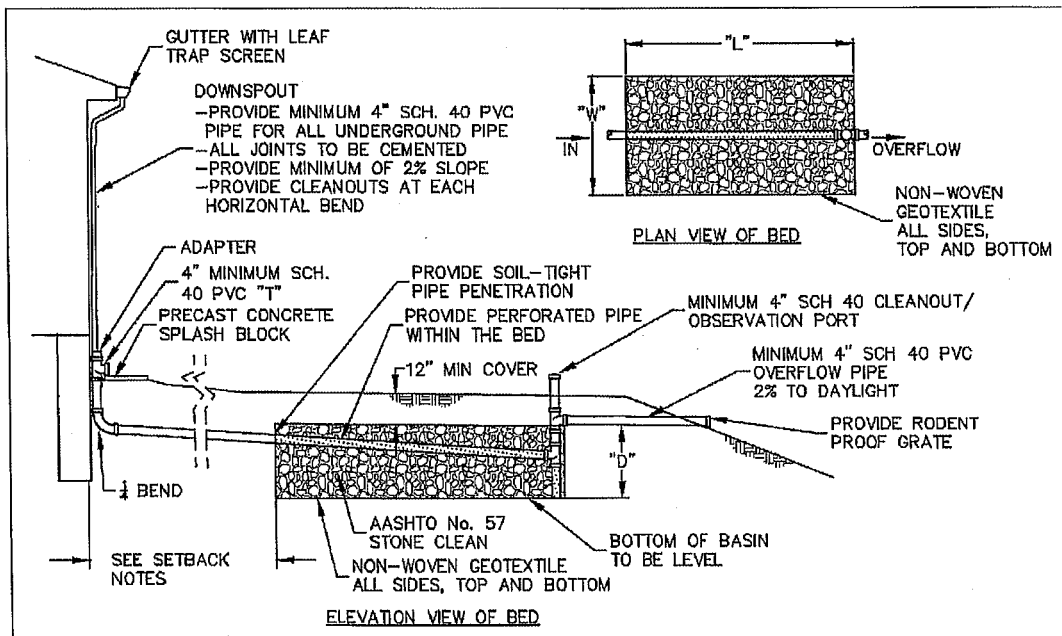
Notes

- NOTE 1: Infiltration trenches may only be used for structures; infiltration basins may be used for all surfaces, including structures.
- NOTE 2: Infiltration basins deeper than 3 feet may be required to be fenced upon guidance from the Township.
- NOTE 3: No stormwater facility may be deeper than 6 feet.
- NOTE 4: Any infiltration facilities located within HSG D, Applicant shall provide infiltration testing results that show adequate infiltration rates. See Appendix E for HSG map.

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Stormwater Facility Standard Details

Infiltration Trench



NOTE 1: Infiltration trenches may only be used for structures; infiltration basins may be used for all surfaces, including structures.

NOTE 2: Infiltration basins deeper than 3 feet may be required to be fenced upon guidance from the Township.

NOTE 3: No stormwater facility may be deeper than 6 feet.

NOTE 4: Any infiltration facilities located within HSG D, Applicant shall provide infiltration testing results that show adequate infiltration rates (minimum 0.5 inches per hour). See Appendix E for HSG map.

STORMWATER MANAGEMENT

Disconnected Impervious Area (DIA)

When rooftop or pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing rooftop or pavement area may qualify as a Disconnected Impervious Area (DIA). A rooftop or pavement area is considered to be a DIA if it meets the requirements listed below:

- The soil in proximity of the discharge area, is not designated as hydrologic soil group "D" or equivalent (see Appendix E – Hydrologic Soil Group Map).
- The overland flow path (pervious area serving as BMP) from discharge area has a positive slope of 10% or less.
- The length of overland flow path (pervious area serving as BMP) is greater than or equal to the contributing rooftop or pavement length.
- The length of overland flow path (pervious area serving as BMP) is greater than 25 feet.

If the discharge is concentrated at one or more discrete points, no more than 1,000 square feet of impervious area may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. For non-concentrated discharges along the edge of pavement, this requirement is waived; however, there must be a provision for the establishment of vegetation along the pavement edge and temporary stabilization of the area until vegetation becomes stabilized.

If rainspouts are discharged underground to provide infiltration, the portion of the impervious area draining to those rainspouts is waived from the DIA discharge requirements. Rainspouts discharged underground which are directly connected to a storm sewer system are not waived from the DIA requirements.

See Attached Disconnected Impervious Area worksheet.

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Disconnected Impervious Area (DIA) Worksheet

Applicant Address:	Brief Description of Project:				
Nearest Waterbody:	No more than 1,000 sq. ft can discharge to one point on the surface. Number of discharge points required:				
Total Proposed Impervious Area(A):	Discharge Point 1	Discharge Point 2	Discharge Point 3	Discharge Point 4	Discharge Point 5
Total Earth Disturbance:	Area:	Area:	Area:	Area:	Area:
Are rainspouts discharged underground? (Y/N)	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:	Impervious Path Length:
If yes, contributing impervious area (B):	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:	Pervious Path Length:
Total Impervious Area Discharged on Surface (A) – (B)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)	Pervious Path Slope <10%? (Y/N)
HSG Soil Group from Appendix E – Hydrologic Soils Group Map (Cannot be “D” Soils):					
Project Sketch: Only show discharge points, slopes, and pervious flow path lengths:					

STORMWATER MANAGEMENT

Stormwater Facility Calculations

(The following worksheets is only applicable to Minor SWM Permits)

How to calculate the size of your stormwater facility

1. Determine the area of your property available for the installation of stormwater facilities in terms of length and width (in feet). If large areas of your property are available, determine how much you would like to dedicate to the installation of stormwater facilities in terms of length and width.
2. Enter the length and width chosen into #1: (Facility Area) in the table below, and multiply them together. This will tell you the area (in square feet) that your stormwater facility will take up.
3. Determine the area of impervious surfaces you are proposing to construct that will discharge into the stormwater facility. For example, a 30 foot x 40 foot garage would be 1200 square feet. For surfaces that are not simple geometric shapes, you may need to get the area of impervious surfaces from your contractor.
4. Enter the area of impervious surfaces into #2: (Runoff Volume) in the table below, and multiply this by 0.2. This will tell you the volume of stormwater runoff the impervious surfaces are generating (in cubic feet).
5. Enter the runoff volume (#2 below) and the stormwater facility area (#1 below) into #3: (Facility Depth) in the table below. Divide #2 by #1. This will tell you how deep (in feet) your stormwater facility will need to be if it is an infiltration basin. **If you are proposing to construct an infiltration basin, skip step 6 and proceed to step 7.**
6. **If you are proposing to construct an infiltration trench**, enter the facility depth (#3 below) into #4: (Depth w/ Stone) in the table below, and divide by 0.4. This will tell you how deep (in feet) your stormwater facility will need to be since it is using stone. Stone takes up approximately 60% of the volume within an infiltration trench, so only 40% of the volume of the infiltration trench is available to actually store stormwater. Dividing by 0.4 compensates for this loss of runoff storage.
7. If your stormwater facility depth is greater than 6 feet, you will need to expand the area for the stormwater facility determined in #1 above, and repeat the above process until the depth is equal to or lesser than 6 feet.

Facility Name or #	1: Facility Area	_____ (L) x _____ (W)	SF
	2: Runoff Volume	_____ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	_____ (#2) / _____ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) _____ (#3) / 0.4	F

NOTE: Extra tables provided below for repeat calculations or for extra facilities.

Facility Name or #	1: Facility Area	_____ (L) x _____ (W)	SF
	2: Runoff Volume	_____ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	_____ (#2) / _____ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) _____ (#3) / 0.4	F

Facility Name or #	1: Facility Area	_____ (L) x _____ (W)	SF
	2: Runoff Volume	_____ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	_____ (#2) / _____ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) _____ (#3) / 0.4	F

Facility Name or #	1: Facility Area	_____ (L) x _____ (W)	SF
	2: Runoff Volume	_____ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	_____ (#2) / _____ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) _____ (#3) / 0.4	F

STORMWATER MANAGEMENT

158 Attachment 1

Township of Palmer

Appendix A

Operation and Maintenance (O&M) Agreement Stormwater Management Best Management Practices (SWM BMPs)

THIS AGREEMENT, made and entered into this day of _____, 20_____, by and between _____ (hereinafter the "Landowner"), and _____ County, Pennsylvania (hereinafter "Municipality");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of _____ County, Pennsylvania, Deed Book _____ at page _____, (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM BMP Operation and Maintenance (O&M) Plan approved by the Municipality (hereinafter referred to as the "O&M Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provides for management of stormwater within the confines of the Property through the use of SWM BMPs; and

WHEREAS, the Municipality, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, the Municipality requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said SWM Site Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the SWM BMPs in accordance with the plans and specifications identified in the SWM Site Plan.
2. The Landowner shall operate and maintain the SWM BMPs as shown on the SWM Site Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.
3. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the SWM BMPs per paragraph 2, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said SWM BMP(s). It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.
5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Municipality.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site SWM BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

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- 7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the SWM BMP(s) by the Landowner or Municipality.
- 8. The Municipality intends to inspect the SWM BMPs at a minimum of once every three years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of _____ County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs, and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the Municipality:

For the Landowner:

ATTEST:

_____ (City, Borough, Township)

County of _____, Pennsylvania

I, _____, a Notary Public in and for the county and state aforesaid, whose commission expires on the ____ day of _____, 20____, do hereby certify that _____ whose name(s) is/are signed to the foregoing Agreement bearing date of the ____ day _____, 20____, has acknowledged the same before me in my said county and state.

GIVEN UNDER MY HAND THIS _____ day of _____, 20____.

NOTARY PUBLIC

(SEAL)