

Appendix A-3.
**STORMWATER MANAGEMENT
SMALL PROJECT DESIGN/APPLICATION**

Borough of Denver, Lancaster County, Pennsylvania

This application pertains to projects that qualify as a Small Project (additional 1,000 square feet of impervious area (cumulative per property)). If a formal Stormwater Management Plan is required in accordance with the Borough of Denver Stormwater Management Ordinance, **please consult a qualified professional (ex. Engineer, Surveyor, Landscape Architect).**

****NOTE:** Application for a Small Project in no way exempts the applicant from the compliance the regulations of the Borough Zoning Ordinance.

Property Owner's Name _____

Address of Property _____

Parcel ID 140-_____

Phone Number: Home: _____ Cell: _____

Email Address: _____

1000 SF Exemption Used since February 9, 2004: _____ No _____ Yes: how much: _____

New Impervious Area Associated with this Project _____

Lot Size (Sq. Ft.) _____

Existing Impervious Coverage (Sq. Ft.) _____

Total New Impervious Area since Adoption of SWM Ordinance _____

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 declare that the proposed construction is not within an existing easement or wetland area. I also understand that false information may result in a stop work order or revocation of permits. Borough representatives are also granted reasonable access to the property for review and/or inspection of this project if necessary.

Signature _____

Date _____

*All property owners must sign.

Small Project Plan – Regulated activities on existing lots of record that, measured on a cumulative basis from March 31, 2014, create additional impervious areas 1,000 sq. ft. or involves an Earth Disturbance Activity such as removal of ground cover, grading, filling or excavation of an area less than 5,000 sq. ft. and do not involve the alteration of SWM Facilities or watercourses.

- Small projects are not required to provide for Rate Control.
- Small projects are required to address at least the first one (1) inch of runoff from new impervious surfaces or an equivalent volume shall be permanently removed from the runoff flow – i.e. it shall not be released into the surface Waters of this Commonwealth. Removal options include reuse, evaporation, transpiration and infiltration.

Disconnected Impervious Area (DIA) – An impervious or impermeable surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration.

Step 1: Determine the amount of new impervious surface area created by the proposed project. This includes any new impervious surface area that prevents or decreases infiltration of stormwater into the ground. New stone and gravel areas are considered impervious. Impervious surface areas existing before November 11, 2013 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		x		=	
Driveway		x		=	
Parking Areas		x		=	
Other		x		=	
Existing Impervious Area to be Removed (if applicable)					
Surface	Length (ft)	x	Width (ft)	=	Impervious Area (ft ²)
		x		=	
Total Proposed Impervious Surface Area (Sum of all new impervious areas – all existing impervious area to be removed)					

- Continue to Step 2.
- If total new impervious surface area is **greater than 2,001 ft² (total exemption and small project permits)**, then a Minor or Major Stormwater Management Plan shall be submitted

in accordance with the Borough of Denver Stormwater Management Ordinance, Chapter 160, Stormwater Management.

Step 2: Determine Disconnected Impervious Area (DIA). All or parts of new impervious surfaces may qualify as Disconnected Impervious Area if runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration. The volume of stormwater that needs to be managed could be reduced through use of DIAs.

Rooftop Disconnection Criteria

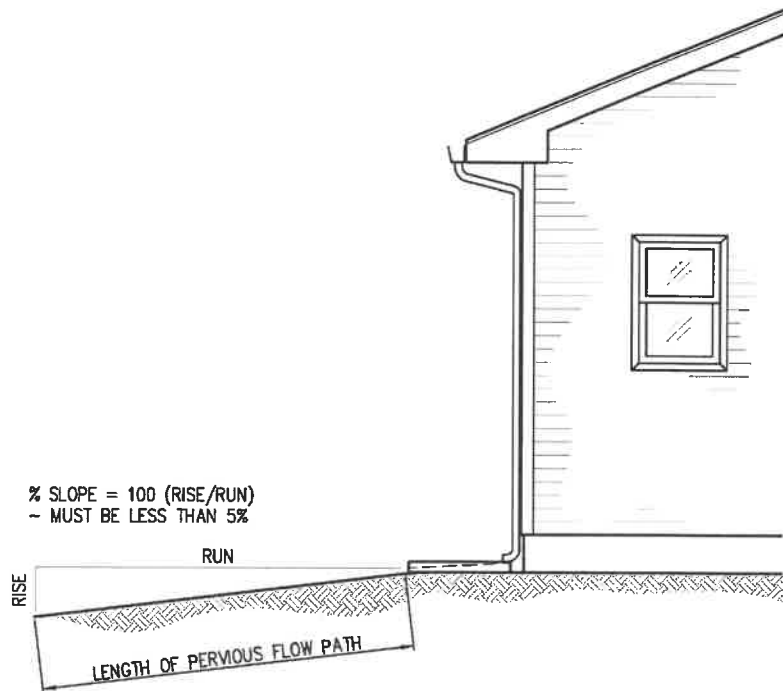
- Overland flow path from the discharge area or impervious area has a positive slope of 5% or less.
- Runoff is not directed towards dwellings or other occupied structures.
- Soils are not classified as hydrologic soil group “D”
- The receiving pervious area shall not include another person’s property unless written permission has been obtained and a copy is provided to the Borough from the affected property owner.

Partial Rooftop Disconnection	
Length of Pervious Flow Path (ft.)	DIA Credit Factor
75 or more	0
60 – 74	0.2
45 – 59	0.4
30 – 44	0.6
15 – 29	0.8
0 - 14	1.0
Pervious flow path must be at least 15 feet from any impervious surface	

Paved Disconnection

Criteria: Other impervious surfaces (driveways, walkways, swimming pools, porches, decks with porous ground surface, etc. to be confirmed by Borough Engineer or Zoning officer) and gravel can be considered disconnected if it meets the criteria above, and:

- Runoff does not flow over impervious area for more than 75 feet.
- The length of overland flow is greater than or equal to the contributing flow path.
- The slope of the contributing impervious areas is 5% or less.
- If discharge is concentrated at one or more discrete points, no more than 1,000 ft² may discharge to any one point. Non-concentrated discharges along the entire edge of paved



Disconnected Impervious Area - Rooftop Disconnection
NOT TO SCALE

surface must include provisions for the establishment of vegetation along the paved edge and temporary stabilization of the area until the vegetation is established.

- If these criteria can be met, the DIA credit = 0.

Using the calculations from Step 1, complete the table below. This will determine the impervious area that may be excluded from the area that needs to be managed through stormwater BMPs. If the total impervious area to be managed = 0, the area can be considered entirely disconnected.

Surface	Proposed Impervious Area	x	DIA Credit	=	Impervious Area (ft ²) to be Managed
Buildings (area to each downspout)		x		=	
Driveway		x		=	
Parking Areas		x		=	
Patios/ walkways		x		=	
Other		x		=	
Total Proposed Impervious Surface Area to be managed (Sum of all impervious areas)					

- If the total new impervious surface area can be entirely disconnected, sign Acknowledgement and file worksheets with the Borough.
- If the total new impervious surface area cannot be entirely disconnected, continue to Step 3.

Step 3: Calculate the volume of stormwater runoff created by new impervious surfaces. Use the following chart to determine this volume.

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

Step 4: Determine the techniques to be used to manage the stormwater volume calculated in Step 3. Use the following information to determine the BMPs to be used to manage the proposed stormwater volume.

Where permitted by Borough of Denver, planting of new trees may be used to manage a portion of the proposed stormwater volume. First, calculate the cubic feet of stormwater that can be managed by planting new trees. If the criteria below can be met, planting of new trees can be used to manage a portion of the proposed stormwater volume:

$$\text{Deciduous Trees} = 6 \text{ ft}^3 \text{ per tree} \quad \text{Evergreen Trees} = 10 \text{ ft}^3 \text{ per tree}$$

Criteria:

- Trees must be PA native species (See PA Stormwater BMP Manual for a list)
- Trees shall be a minimum 1” caliper tree (min)
- Trees shall be adequately protected during construction
- **No more than 25% of the required capture volume can be mitigated through the use of trees**
- Dead trees shall be replaced by the property owner within 12 months
- Please consider the specifications for each tree species when determining location and spacing

Amount of Stormwater to be Managed (ft ³) (Sum of Step 3)	-	Tree Planting Credit (ft ³)	=	Amount of Stormwater to be Managed (ft ³)
	-		=	

Second, subtract the stormwater volume that can be managed by tree planting from the overall stormwater volume calculated in Step 3. The remaining cubic feet of stormwater must be managed through the installation of properly sized Stormwater BMPs. Select BMPs and size according to the volume of stormwater that needs to be managed.

Alternatively, stormwater BMPs may be sized using the following Simple BMP Sizing table. (Source: Lycoming County Planning Department)

The Simple BMP Sizing table is used as follows. After subtracting the stormwater volume that can be managed through the planting of new trees (if desired), match the remaining stormwater volume to the “Amount of New Impervious Area to be Managed” in white boxes in the table (rounding up

BMP Type		Simple BMP Sizing - Amount New Impervious Area to be Managed (ft ²)											
		250	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000
Bioretention	Ex. Rain garden, Vegetated swale	21	42	62	83	125	166	208	249	291	332	374	415
		ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or	ft ³ or
Infiltration	Ex. Dry (40% well, Infiltration trench)	53	105	155	208	313	415	520	623	728	830	935	1,038
		ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³	ft ³

to the next value if the number is between two values). Then look in the light grey box to determine the required size of the type of Stormwater BMP (bioretention or infiltration) being considered. For example, 1,000 square foot of new impervious surface area could be accommodated by an 83 cubic foot bioretention system.

Infiltration Trench/Bed Criteria

- Stone bed shall not be located within 10 feet of any On-lot Sewage Disposal Systems.
- Stone used in the infiltration trenches shall be “clean” stone, i.e. #67, #57, #5 or clean 2B stone for the smaller facilities, and #1 or #3 ballast or R-3 for larger deeper facilities. Copies of the receipt(s) shall be provided to the Borough for their records. **NO MODIFIED STONE MIXES SHALL BE UTILITZED FOR INFILTRATION.**
- The standard void ratio for stone is 0.40 (40% storage for each CF) if calculating by hand or follow the BMP sizing table above.
- It is recommended that the property owner verify that the ground will infiltrate water, this can be accomplished by excavating the trench or pit and placing a large amount of water into the pit to see how long it take to infiltrate.

Once the sizing of necessary stormwater BMPs has been determined, prepare the required information and submit to the Borough for review and approval. Bring the worksheets, BMP information (size, location, etc.), Owner Acknowledgement, and BMP Facilities and Maintenance Agreement (if applicable) to the Borough.

If an area greater than 5,000 square feet of earth is disturbed, the project qualifies as a minor stormwater management plan and shall be prepared as outlined in the Borough’s Code of Ordinances.

All projects that include earth disturbance shall be stabilized after five (5) days, no project site shall be left unstabilized (un-vegetated or mulched) over the winter. A form of sediment control shall be placed along the downstream side of the proposed disturbance area to prevent sediment and debris from leaving the site until the disturbed areas are stabilized.

OWNER ACKNOWLEDGMENT

- Development activities shall begin only after Borough of Denver approves the Small Project.
- The installed Stormwater BMPs will not adversely affect any property, septic systems, or drinking water wells on this or any other property.
- The landowner shall keep on file with the Borough the name, address and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted to the Borough within 10 days of the change.
- If, after approval of the Small Project by the Borough, the applicant wishes to pursue alternative stormwater management measures in support of the project, the applicant will submit revised Small Project information and worksheets to Borough of Denver for approval. If a site requires a more complex system or if problems arise, the applicant may need the assistance of a licensed professional engineer, landscape architect or surveyor.
- The applicant acknowledges that the proposed Disconnected Impervious Area and/or Stormwater BMPs will be a permanent fixture of the property that cannot be altered or removed without approval by Borough of Denver.

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 submission, including but not limited to Borough of Denver Stormwater Worksheet, and the Stormwater Management / BMP Facilities and Maintenance Agreement (if applicable) will be adhered to.

Applicant Acknowledgement of Submission

Signature: _____

Date: _____

*All property owners must sign.

Borough of Denver Acknowledgement of Receipt

Signature: _____

Date: _____

Prepared By: _____

Return To: Same
Parcel ID # _____

**SMALL PROJECT STORMWATER MANAGEMENT AGREEMENT
AND DECLARATION OF EASEMENT**

THIS AGREEMENT AND DECLARATION OF EASEMENT made this _____ day of _____, 20____, by and between _____ with a mailing address of _____

_____ (hereinafter, whether singular or plural, referred to as the "Grantor"), and **DENVER BOROUGH**, Lancaster County, Pennsylvania, a municipal corporation duly organized under the laws of the Commonwealth of Pennsylvania, with its municipal office located at 501 Main Street, Denver, Pennsylvania (hereinafter referred to as the "Borough").

BACKGROUND

Grantor is the owner of premises located at _____, _____, in the Borough of Denver, 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 (hereinafter referred to as the "Premises"). Grantor is proceeding to build on and develop the Premises in such manner as requires the submission of a Small Project Stormwater Site Plan pursuant to the Denver Borough Stormwater Management Ordinance (hereinafter "SWM Ordinance").

Grantor's Small Project Stormwater Site Plan, which is expressly made a part hereof, as approved or to be approved by the Borough, provides for detention of stormwater within the confines of the Premises through the use of Stormwater Best Management Practices ("Stormwater BMPs").

In the interest of protecting the health, safety, and welfare of the residents of the Borough, the Borough requires that on-site Stormwater BMPs as shown on the Small Project Stormwater Site Plan be constructed and adequately maintained by Grantor, his heirs, personal representatives, successors and assigns. Any additional requirements imposed by the Borough are considered part of the Small Project Stormwater Site Plan.

The purpose of this Agreement and Declaration of Easement is to describe the ownership and maintenance responsibilities for the on-site Stormwater BMPs, which will be located 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 Borough.

NOW, THEREFORE, intending to be legally bound hereby and in consideration of

receiving approval of its Small Project Stormwater Site Plan from the Borough Council, and in consideration of receiving permits from the Borough to develop the Premises, Grantor, for Grantor and the heirs, personal representatives, successors and assigns of Grantor, covenant and declare as follows:

1. In accordance with the specifications identified within the Small Project Stormwater Site Plan, Grantor shall construct the on-site Stormwater BMPs, which will be owned by Grantor, his heirs, personal representatives, successors and assigns.

2. Grantor, his heirs, personal representatives, successors and assigns, shall adequately maintain the Stormwater BMPs, including all pipes and channels built to convey stormwater, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as good working condition so that these facilities are performing their design functions.

3. Grantor, his heirs, personal representatives, successors and assigns, shall inspect the Stormwater BMPs after all rainfall events exceeding 4-inch of precipitation in a 24-hour period.

4. Grantor agrees that this Agreement creates upon the Premises, for the benefit of all present and future owners of the Premises or part of the Premises, the Borough, and all other property owners affected by the stormwater facilities, the perpetual right, privilege and easement for the draining of stormwater in and through the Stormwater BMPs, and other stormwater facilities depicted on the Small Project Stormwater Site Plan submitted to the Borough by Grantor.

5. Grantor, his heirs, personal representatives, successors and assigns, hereby grants permission to the Borough, by its authorized agents and employees, to enter upon the Premises without prior notification at reasonable times and upon presentation of proper identification to inspect the Stormwater BMPs whenever the Borough deems necessary.

6. In the event the Grantor, or his heirs, personal representatives, successors and assigns, fails to maintain the Stormwater BMPs as shown on the Small Project Stormwater Site Plan and in good working condition, the Borough may enter upon the Premises and take whatever action it deems necessary to maintain said Stormwater BMPs and to charge the costs of such repairs to the Grantor, his heirs, personal representatives, successors and assigns. This provision shall not be construed to allow the Borough to erect any structure of permanent nature on the Premises unless such structure(s) were part of the approved Small Project Stormwater Site Plan. It is expressly understood and agreed that the Borough is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Borough.

7. In the event that the Borough, 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 Grantor shall reimburse the Borough within thirty (30) days of receipt of invoice for all expenses incurred. The Borough has the right to file a municipal lien for unpaid costs and expenses that have not been reimbursed thirty (30) days after receipt of invoice. Any municipal lien filed pursuant to this Agreement shall be in the amount of all costs incurred by the Borough, plus a penalty of ten percent (10%) of such costs, plus the Borough's reasonable attorneys' fees.

8. The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater BMPs by the Grantor. This Agreement shall not be deemed to create any additional

liability upon any party for damage(s) alleged to result from or be caused by nonpoint source pollution runoff. Furthermore, this Agreement imposes no liability of any kind whatsoever on the Borough, or its elected and appointed officials, agents and employees.

9. Grantor agrees to indemnify the Borough 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 Stormwater BMPs or any omissions relating thereto. In the event that a claim arising from Grantor's actions or omissions relating to the installation, construction or maintenance of Stormwater BMPs on the Premises is asserted against Indemnitees, the Borough shall promptly notify Grantor, and Grantor shall defend, at his own expense, any suit based on the claim. If any judgment against Indemnitees shall be entered as a result of such claim, the Grantor agrees to indemnify Indemnitees and pay all costs and expenses stemming from said judgment.

10. This Agreement is not intended to, nor shall operate to limit the Borough's rights and remedies under the SWM Ordinance. The Borough may, in addition to the remedies prescribed herein, proceed with any action at law or in equity to bring about compliance with the Borough SWM Ordinance and this Agreement.

11. This Agreement shall be binding on Grantor, his heirs, personal representatives, administrators, executors, assigns, and any other successors in interests, in perpetuity.

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

DENVER BOROUGH
Lancaster County, Pennsylvania

Attest: _____
(Assistant) Secretary

By: _____
(Vice) Chairman
Borough Council

[BOROUGH SEAL]

Witness:

GRANTOR:

_____ (SEAL)

Print Name: _____

_____ (SEAL)

Print Name: _____

All property owners must sign the Stormwater Management Agreement in the presence of a notary public who must complete the acknowledgment on the following page. If the property is jointly owned by husband and wife, both must sign.

Small Project Worksheets

- Option #1 – Infiltration Bed
- Option #2 – Infiltration Trench
- Option #3 – Infiltration Basin
- Option #4 – Rain Garden

Infiltration Bed Option #1

Step 3a:

Design Calculations:

Amount of Stormwater to be Managed from Step 2 \div 0.40 (stone void) = Required volume of infiltration bed

Required Bed Volume = _____

Step 3b:

Infiltration Bed Sizing:

Length (Feet) = _____

Width (Feet) = _____

Depth (Feet) = _____

Bed Volume (Cubic Feet): Length x Width x Depth = _____

Sizing Check:

Proposed Bed Volume = _____ \gt Required Bed Volume = _____

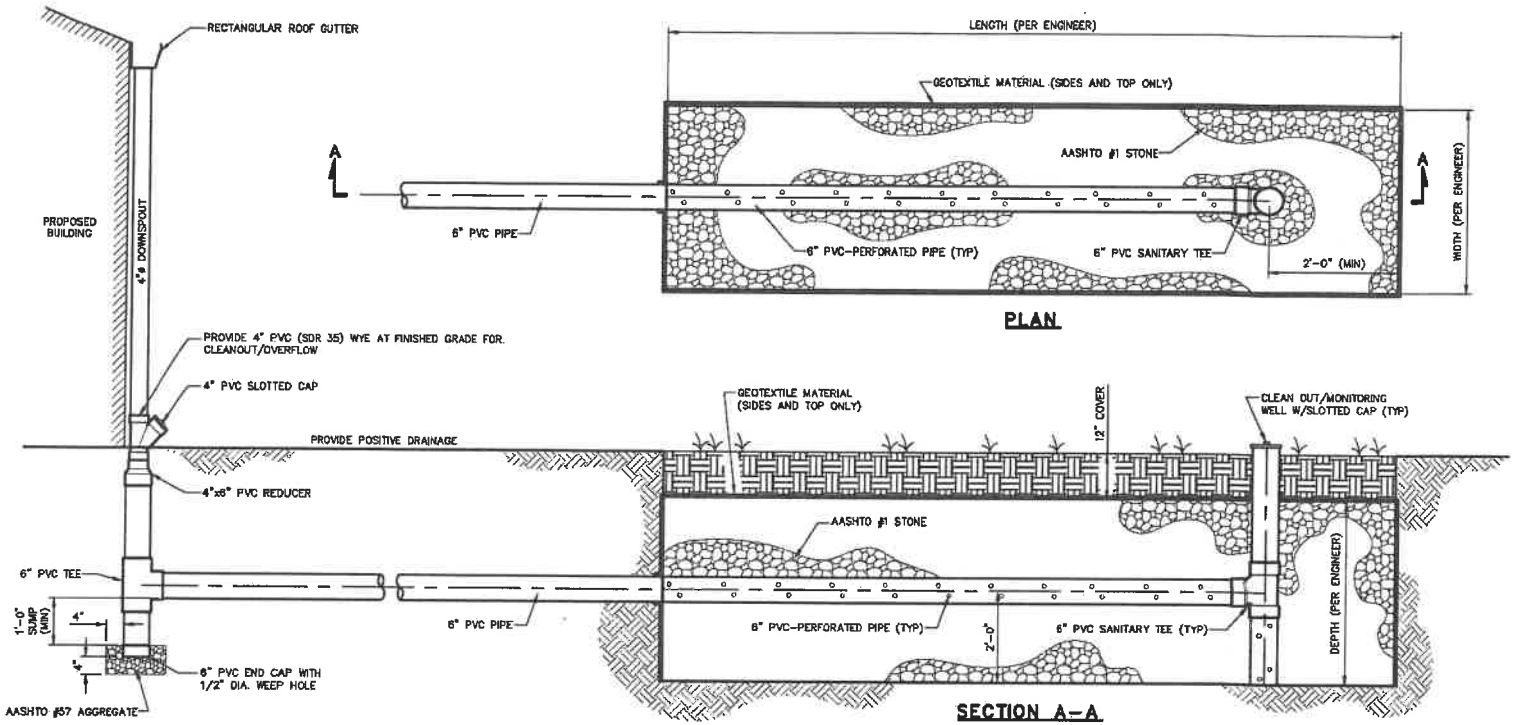
Step 4:

Infiltration Bed Criteria

- Stone bed shall not be located within 10 feet of any On-lot Sewage Disposal Systems.
- Stone used in the infiltration bed shall be "clean" stone, i.e. #67, #57, #5 or clean 2B stone for the smaller facilities, and #1 or #3 ballast or R-3 for larger deeper facilities. Copies of the receipt(s) shall be provided to the Borough for their records. **NO MODIFIED STONE MIXES SHALL BE UTILIZED FOR INFILTRATION.**
- The standard void ratio for stone is 0.40 (40% storage for each CF), this is accounted for in the calculations in Step 3.
- It is recommended that the property owner verify that the ground will infiltrate water; this can be accomplished by excavating a pit and placing a large amount of water into the pit to see how long it takes to infiltrate (seep into the ground).

(Standard Infiltration Bed Detail on Back of Worksheet)

Infiltration Bed Detail



A completed copy of this Worksheet shall be provided to the Borough as part of the Small Project Application (Appendix A-2.)

Infiltration Trench Option #2

Step 3a:

Design Calculations:

Amount of Stormwater to be Managed from Step 2 \div 0.40 (stone void) = Required volume of infiltration trench

Required Trench Volume = _____

Step 3b:

Trench Sizing:

Length (Feet) = _____

Width (Feet) = _____

Depth (Feet) = _____

Trench Volume (Cubic Feet): Length x Width x Depth = _____

Sizing Check:

Proposed Trench Volume = _____ \gt Required Trench Volume = _____

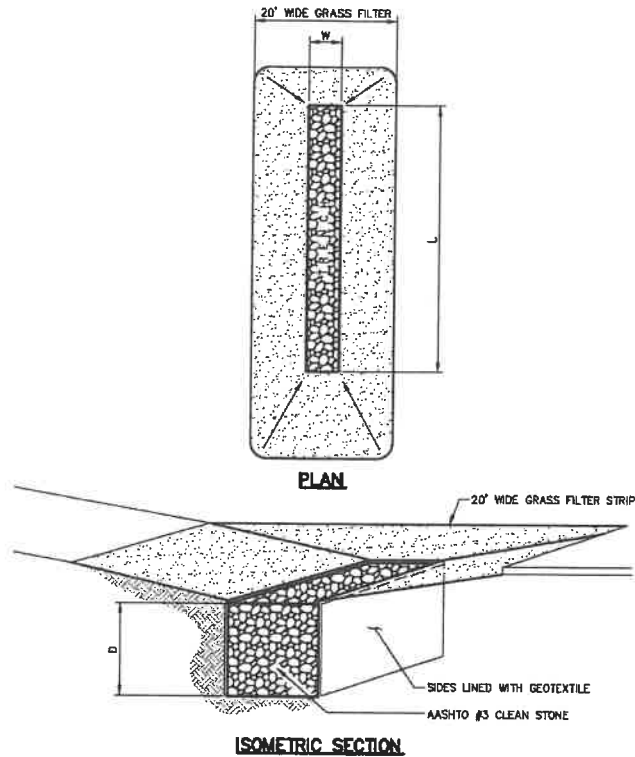
Step 4:

Infiltration Trench Criteria

- Stone trench shall not be located within 10 feet of any On-lot Sewage Disposal Systems.
- Stone used in the infiltration trenches shall be “clean” stone, i.e. #67, #57, #5 or clean 2B stone for the smaller facilities, and #1 or #3 ballast or R-3 for larger deeper facilities. Copies of the receipt(s) shall be provided to the Borough for their records. **NO MODIFIED STONE MIXES SHALL BE UTILIZED FOR INFILTRATION.**
- The standard void ratio for stone is 0.40 (40% storage for each CF), this is accounted for in the calculations in Step 3.
- It is recommended that the property owner verify that the ground will infiltrate water; this can be accomplished by excavating the trench or a pit and placing a large amount of water into the pit to see how long it takes to infiltrate (seep into the ground).

(Standard Infiltration Trench Detail on Back of Worksheet)

Infiltration Trench Detail



A completed copy of this Worksheet shall be provided to the Borough as part of the Small Project Application (Appendix A-2.)

Infiltration Basin Option #3

Infiltration basins are shallow depressions that store and infiltrate runoff.

Step 3a:

Design Calculations:

Amount of Stormwater to be Managed from Step 2 = Required volume in infiltration basin

Required Basin Volume = _____

Step 3b:

Basin Sizing:

Length (Feet) = _____ Width (Feet) = _____

Depth (Feet) = _____

Approximate Basin Volume (Cubic Feet): Length x Width x Depth = _____

Sizing Check:

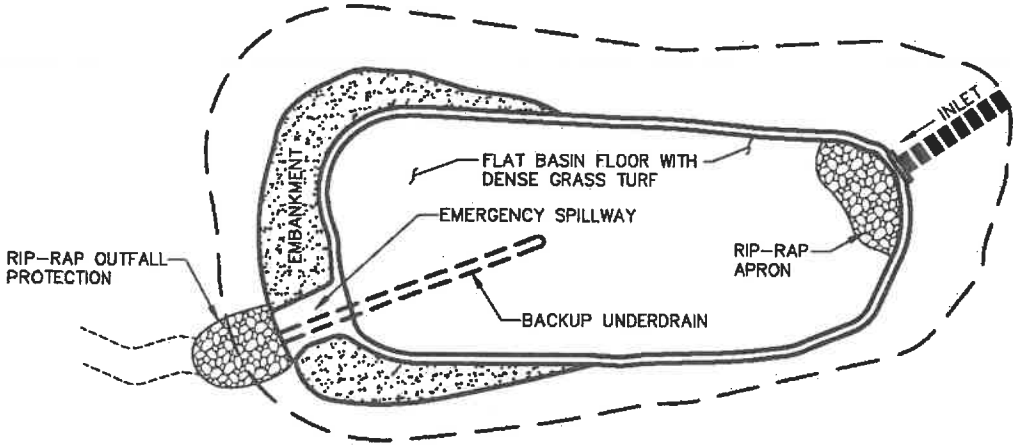
Proposed Basin Volume = _____ > Required Basin Volume = _____

Step 4:

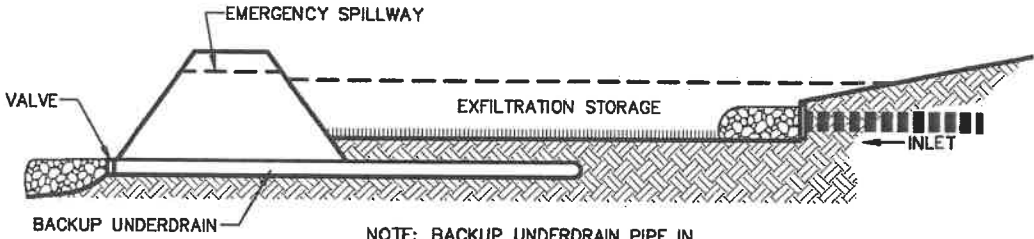
Infiltration Basin Criteria

- Compaction of soil must be prevented to maintain the infiltration capabilities of the soils.
- The basin/impoundment area must be stabilized to prevent erosion and aid in dewatering the stormwater runoff.
- The bottom of the infiltration basin should be level or have a slope no greater than 1%.
- The basin overflow shall be designed to discharge away from any houses, buildings or roadways.
- The basins shall have embankment slopes no steeper than 3:1, but 5:1 is recommended for maintenance.
- The top width of the berm shall be a minimum of two (2) feet wide.
- The use of fertilizers in the basin shall be avoided.
- Maintenance: Vehicles shall not be parked or driven through the basin. The owner should avoid excessive compaction by mowers.
- The owner should inspect the basin after large storms and verify the basin dewater within 72 hours.
- Any proposed basin plantings shall be native to the area.
- It is recommended that the property owner verify that the ground will infiltrate water; this can be accomplished by excavating a pit and placing a large amount of water into the pit to see how long it takes to infiltrate (seep into the ground).

Infiltration Basin Detail



PLAN VIEW



NOTE: BACKUP UNDERDRAIN PIPE IN CASE OF STANDING WATER PROBLEMS.

SECTION VIEW

A completed copy of this Worksheet shall be provided to the Borough as part of the Small Project Application (Appendix A-2.)

Rain Garden Option #4

Rain Garden – A shallow excavated surface depression planted with specific selected native vegetation to capture and treat runoff.

Step 3a:

Design Calculations:

Amount of Stormwater to be Managed from Step 2 = Required volume in Rain Garden

Required Rain Garden Volume = _____

Step 3b:

Rain Garden Sizing:

Length (Feet) = _____ Width (Feet) = _____

Depth (Feet) = _____

Approximate Rain Garden Volume (Cubic Feet): Length x Width x Depth = _____

Sizing Check:

Proposed Rain Garden Volume = _____ > Required Rain Garden Volume = _____

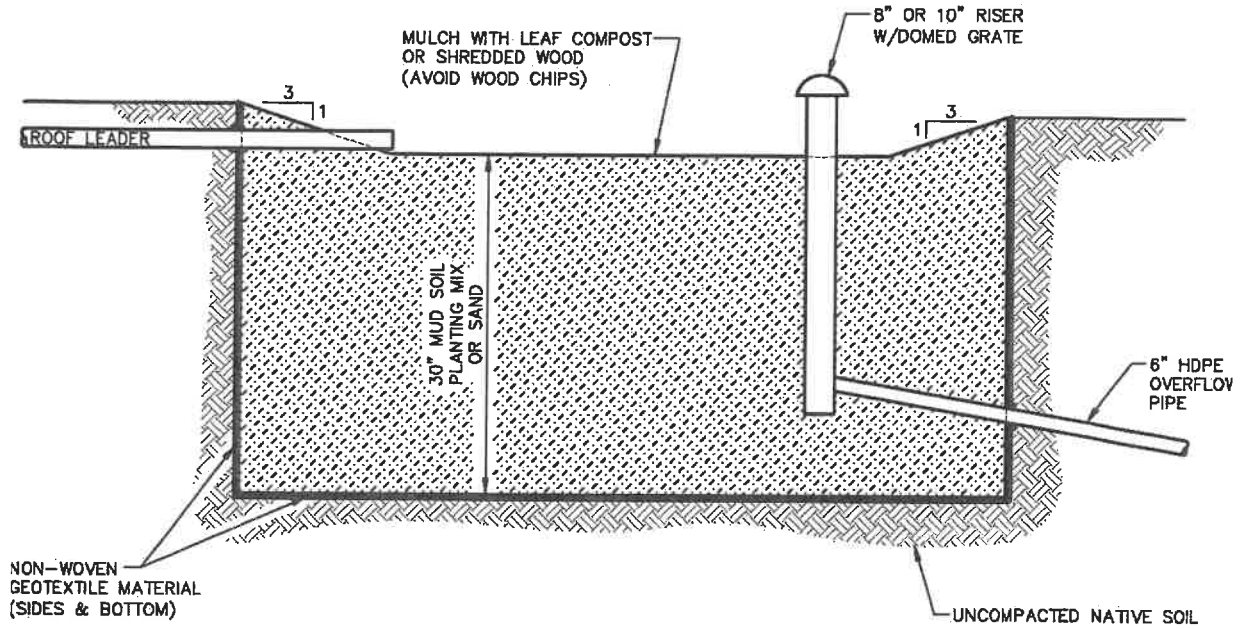
Step 4:

Rain Garden Criteria

- Typically 12 inch depth.
- Soils are modified with compost.
- The rain garden overflow shall be directed away from houses, buildings and roadways.
- The minimum recommended side slope is 3:1.
- The rain garden shall be designed to dewater in 72 hours.
- The ponding area should not exceed six (6) inches.
- Underdrains shall NOT be used.
- It is recommended that the property owner verify that the ground will infiltrate water; this can be accomplished by excavating the trench or pit and placing a large amount of water into the pit to see how long it takes to infiltrate.
- Maintenance: Mulch, if used, should be re-spread when erosion is evident or about once every two (2) to three (3) years.
- The rain garden area shall be inspected several times a year to check for sedimentation.

(Standard Rain Garden Detail on Back of Worksheet)

Rain Garden Detail



NOTES:

1. MOISTURE-TOLERANT PLANT MATERIAL SHALL BE USED AT BOTTOM EDGE. PLANT MATERIAL SHALL BE TOLERANT OF FLUCTUATING WATER CONDITIONS.
2. SOIL BENEATH RAIN GARDEN SHALL REMAIN UNCOMPACTED.
5. AS AN ALTERNATIVE, SAND OR GRAVEL CAN BE USED AS BEDDING FOR THE RAIN GARDEN.
6. IF SAND IS TO BE USED, ADDITIONAL DESIGN ELEMENTS AND VEGETATION PLANTINGS WILL NEED TO BE USED.

A completed copy of this Worksheet shall be provided to the Borough as part of the Small Project Application (Appendix A-2.)