

## STORMWATER MANAGEMENT FOR SMALL PROJECTS INSTRUCTIONS

### GENERAL INFORMATION:

Small projects are defined as those projects which have new or replacement impervious surface between 500 and 999 square feet, or earth disturbance between 5,000 square feet and under 1 acre. Projects with less than 500 square feet of new or replacement impervious surface or earth disturbance less than 5,000 square feet are exempt from stormwater management requirements. Projects with new or replacement impervious surface 1,000 square feet or more or earth disturbance of 1 acre or more require full stormwater management and a licensed design professional is needed for those projects. There are two conditions that should be noted: (1) the threshold for impervious surface does not include replacement of existing impervious surface. The existing impervious surface to be replaced cannot be deducted from impervious surface calculations. (2) the calculation of impervious surface is accumulated over time. If 200 square feet of shed is added this year, it is exempt. If a 400 square foot patio is added next year, stormwater management must be provided.

A Guide to Stormwater Management for Small Projects is available from the Township for more information. For convenience, this packet includes the documents from the Guide that are needed to submit to the Township.

### WHAT TO SUBMIT:

1. Application Form
  - For small projects, an engineer is not required. Please note N/A
2. Fee (check payable to Nether Providence Township)
3. Site Plan (sample drawing is attached)
  - An aerial image from online source may be used
4. Simplified Method Worksheet
5. Calculation Table (B-1, B-2, or B-3)
  - Use Table B-1 for rain barrels or cisterns
  - Use Table B-2 for rain garden or bioretention facilities
  - Use Table B-3 for infiltration trenches or beds

**APPLICATION AND SCHEDULE OF FEES FOR  
STORMWATER MANAGEMENT FACILITIES  
REVIEW AND INSPECTION**

Address or Location \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Contact Name \_\_\_\_\_ Phone No. \_\_\_\_\_

Contact Email Address \_\_\_\_\_

Engineer's Information \_\_\_\_\_

Filing Fees

Residential -	\$25.00	Amt. Paid _____
Non-Residential -	\$100.00	Amt. Paid _____

Review and Inspection Fees - Applicant shall pay the actual cost of any review and inspection by the Township consultant subject to the following minimum fees:

Proposed Impervious Area

500 to 999 Sq. feet -	\$150.00 minimum	Amt. Paid _____
1,000 sq. feet and above -	\$500.00 minimum	Amt. Paid _____

Proposed Earth Disturbance

5,000 sq. feet to 1 acre -	\$500.00 minimum	Amt. Paid _____
Greater than 1 acre -	\$1,000.00 minimum	Amt. Paid _____

Stormwater Control Measure Fees - \$25.00 each minimum plus the actual cost of any fees associated with the Township's related use of consultants.

Amt. Paid \_\_\_\_\_

Operation /On-Going Maintenance Fees and Enforcement of Agreements

Review, Inspection and Legal Fees - \$25.00 plus the actual cost of any fees associated with the Township's related use of consultants and legal counsel.

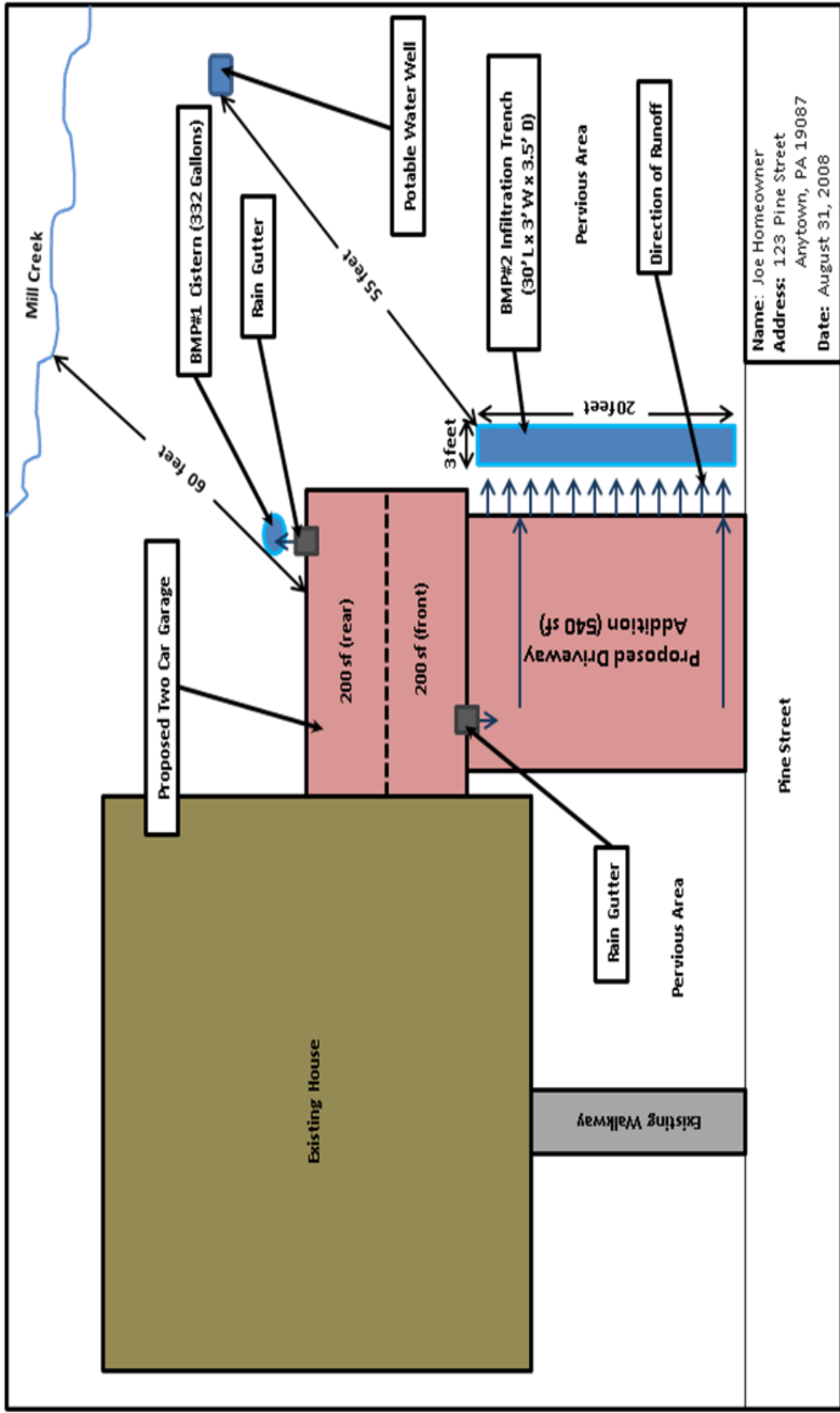
Amt. Paid \_\_\_\_\_

Approved for Processing By: \_\_\_\_\_.

**Table B-4: Simplified Method Worksheet**

Simplified Method Worksheet				
STEP 1				
Proposed Impervious Surface for BMP #1	Proposed Impervious Surface for BMP #2	Proposed Impervious Surface for BMP #3		
STEPS 2&3				
Rain Barrel or Cistern				
Proposed Impervious Surface from Column 1 in Table B-1	Volume from Column 2 or 3 in Table B-1			
Rain Garden/Bioretention or Dry Well #1				
Proposed Impervious Surface from Column 2 in Table B-2	Volume of BMP from Column 2 in Table B-2	Area of BMP from Column 3 in Table B-2	Depth of BMP from Column 3 in Table B-2	Types of Material to Be Used
Infiltration Trench or Dry Well #2				
Proposed Impervious Surface from Column 2 in Table B-3	Volume of BMP from Column 2 in Table B-3	Area of BMP from Column 3 in Table B-3	Depth of BMP from Column 3 in Table B-3	Types of Material to Be Used
Note: For additional BMPs, use additional sheets				

SAMPLE SITE PLAN



Name: Joe Homeowner  
 Address: 123 Pine Street  
 Anytown, PA 19087  
 Date: August 31, 2008

**Table B-1: Simplified Method - Calculating Rain Barrel/Cistern Storage Volume for 1” Rainfall<sup>1</sup>**

Column 1	Column 2	Column 3	
Regulated Impervious Area (square feet)	Volume of Rain Barrel/Cistern <sup>2</sup> (cubic feet)	Volume of Rain Barrel/Cistern (gallons)	
<i>I</i>	$V_{RBcf}$	$V_{RBgal}$	
Sum of all Regulated Impervious Areas	$(1*(1/12)*I)/0.75=V_{RBcf}$	$VRBcf * 7.48=VRBgal$	
50	6	42	↑ Rain Barrel ↓
100	11	83	
150	17	125	
200	22	166	
250	28	208	
300	33	249	Cistern ↓
350	39	291	
400	44	332	
450	50	374	
500	56	416	
550	61	457	
600	67	499	
650	72	540	
700	78	582	
750	83	623	
800	89	665	
850	94	706	
900	100	748	
950	106	790	
999	111	830	

<sup>1</sup>The typical volume of a rain barrel is between 50-200 gallons, so more than 1 rain barrel may be needed. Larger volumes may require a cistern.

<sup>2</sup>Assume that the rain barrel/cistern is 25% full

Table B-2: Simplified Method - Calculating Rain Garden/Bioretenention and Dry Well #1 Storage Volume and Surface Area for 1" Rainfall

Column 1	Column 2	Column 3									
Proposed Impervious Area (square feet)	Volume of Rain Garden/Bioretenention or Dry Well #1 (cubic feet)	Surface Area of Rain Garden/Bioretenention or Dry Well #1 (square feet)									
		Area Required for a BMP with a Depth(D) of 0.5'	Area Required for a BMP with a Depth(D) of 1.0'	Area Required for a BMP with a Depth(D) of 1.5'	Area Required for a BMP with a Depth(D) of 2.0'	Area Required for a BMP with a Depth(D) of 2.5'	Area Required for a BMP with a Depth(D) of 3.0'	Area Required for a BMP with a Depth(D) of 3.5'	Area Required for a BMP with a Depth(D) of 4.0'	Acceptable Depths for Each BMP are indicated by the arrows below	
											<p style="text-align: center;">Rain Garden /Bioretenention (0.5'-1.0')</p> <p style="text-align: center;">Dry Well #1 (1.5'-4.0')</p>
<i>I</i>	<i>V</i>	<i>A(S)</i>									
Sum of all Proposed Impervious Areas	$1*(1/12)*I=V$	$V/D=A$									
50	4	8	4	3	2	2	1	1	1	1	1
100	8	17	8	6	4	3	3	2	2	2	
150	13	25	13	8	6	5	4	4	4	3	
200	17	33	17	11	8	7	6	5	5	4	
250	21	42	21	14	10	8	7	6	6	5	
300	25	50	25	17	13	10	8	7	7	6	
350	29	58	29	19	15	12	10	8	8	7	
400	33	67	33	22	17	13	11	10	10	8	
450	38	75	38	25	19	15	13	11	11	9	
500	42	83	42	28	21	17	14	12	12	10	
550	46	92	46	31	23	18	15	13	13	11	
600	50	100	50	33	25	20	17	14	14	13	
650	54	108	54	36	27	22	18	15	15	14	
700	58	117	58	39	29	23	19	17	17	15	
750	63	125	63	42	31	25	21	18	18	16	
800	67	133	67	44	33	27	22	19	19	17	
850	71	142	71	47	35	28	24	20	20	18	
900	75	150	75	50	38	30	25	21	21	19	
950	79	158	79	53	40	32	26	23	23	20	
999	83	167	83	56	42	33	28	24	24	21	

<sup>1</sup>Assume that the rain garden/bioretenention or the dry well #1 are 0% full

Table B-3: Simplified Method - Calculating Infiltration Trench and Dry Well #2 Storage Volume and Surface Area for 1" Rainfall

Column 1	Column 2	Column 3
Total Proposed Impervious Area (square feet)	Volume of Infiltration Trench or Dry Well #2 <sup>1</sup> (cubic feet)	Surface Area of Infiltration Trench or Dry Well #2 Acceptable Depths for Each BMP are indicated by the arrows below (square feet)
<i>I</i>	<i>V</i>	<i>A</i> (sf)
Sum of all Proposed Impervious Areas	$(1*(1/12)*I)/\text{Void Ratio } (0.4)^3=V$	$V/D=A$
50	10	7 3 4 5 7 8 10 12 14 15 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
100	21	14 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
150	31	21 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
200	42	28 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
250	52	35 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
300	63	42 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
350	73	49 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
400	83	56 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
450	94	63 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
500	104	69 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
550	115	76 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
600	125	83 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
650	135	90 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
700	146	97 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
750	156	104 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
800	167	111 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
850	177	118 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
900	188	125 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
950	198	132 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83
999	208	139 6 8 10 13 16 17 18 21 24 28 31 35 38 42 46 50 54 58 63 67 71 75 79 83

<sup>1</sup> Assume a void ratio of 40%