Stormwater Operation & Maintenance Report

For a

Preliminary and Final Major Subdivision of Hemingway Estates

Located on

Wilbur Avenue

LOT 1242, 1267, 1268, 1272, 1276 BLOCK 23 LOT 1134, 113, 1165, 1206, 1216, 1234 BLOCK 24 LOT 1286, PART OF 1291, AND PART OF 1307 BLOCK 26 LOT 1201, 1204, PART OF 1197 AND PART OF 1168 BLOCK 27 LOTS 1071,1084 AND PART OF 1091 BLOCK 28

Township of Manchester
Ocean County, New Jersey

April 20, 2026

Prepared for:
Arya Properties at Wilbur, LLC

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A. Description of Site

The project site is known as Lots 1242, 1267, 1268, 1272, 1276 block 23 lot 1134, 113, 1165, 1206, 1216, 1234 in Block 24, Lot 1286, part of 1291, and part of 1307 in Block 26, Lot 1201, 1204, part of 1197 and part of 1168, Block 27, Lots 1071,1084 and part of 1091 in Block 28 according to the Township of Manchester tax map 1.01. The site address is 3044 Wilbur Avenue however the parcel includes additional lots and blocks listed above. The property is currently predominantly wooded. The site consists of 15.152 acres. This report will focus on stormwater management for the proposed improvements. The project has a frontage on the northerly side of Wilbur Avenue, approximately 400 feet north of Holly Hill Road. The applicant intends to construct a fourteen (14) lot residential subdivision with associated improvements on the 11.659 acres parcel with an open space conservation lot of 3.493 acres. The site is located within the R-40 Residential Zone. This report has been prepared to summarize how the proposed development complies with the applicable local, county, and state stormwater management regulations.

B. Existing Land Characteristics

a) Soils

According to the "Soil Survey of Ocean County, New Jersey", the soil type found on site consists of approximately 100% Downer Loamy Sand, a hydrologic group ”A”.

The Hydrologic Soil Group (HSG) ‘A’ soils having a high infiltration rate (low runoff potential when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands and gravelly sands. These soils have a high rate of water transmission.

b) Topography

The site is relatively gently sloping approximately two (0) to five (5) percent slopes which meander from the middle of the property to the east and from the middle of the property to the west and shown on the existing drainage map. A Pre-Develeoped

Drainage Area Map is included as part of this report which shows where the drainage areas are located.

C. Maintenance Notes

A. Copies of this maintenance manual must be kept on-site by the property owner and operator of the stormwater management measure and be available for inspection to all reviewing agencies as may be required. A copy should also be provided to the local mosquito control or extermination commission upon request.

B. The title and date of this maintenance manual and the name and/or title and address of the person with overall maintenance responsibility must be recorded on the deed of the property on which the stormwater management measure is located. Any change in the name or title must also be recorded on the deed, particularly if there is a change of property ownership.

C. This maintenance manual must be evaluated for effectiveness at least annually and must be revise as needed.

D. A detailed, written log of all preventative and corrective maintenance performed at the stormwater management measure must be kept, including a record of all inspections and copies of maintenance work orders.

E. The person with overall maintenance responsibility must make this maintenance manual logs and other records available for review upon request from a public entity with jurisdiction over activities at the site.

D. Required Maintenance

a) Responsible Party

Entity responsible for the overall maintenance of the stormwater management measures shall be the property owner. Should the property be sold, the subsequent owner will, upon closing, assume responsibility for the operations and maintenance of the stormwater management system. At the time of this report, the party who will be responsible is as follows:

- Home Owners Association
- (Home owners association to be provided prior to deed filing)

b) Schedule of Maintenance Inspections and Maintenance Tasks

General Maintenance

All detention basin components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation at least four times annually as well as after every storm exceeding 1 inch of rainfall. Such components may include bottoms, trash racks, low flow channels, outlet structures, riprap or gabion aprons, and inlets, sediment removal should take place when the basin is thoroughly dry. Disposal of debris and trash should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

Vegetated Areas

Mowing and/or trimming of vegetation must be performed on a regular schedule based on specific site conditions. Grass should be mowed at least once a month during the growing season. Vegetated areas must also be inspected at least annually for erosion and scour. Vegetated areas should also be inspected at least annually for unwanted growth, which should be removed with minimum disruption to the bottom surface and remaining vegetation. When establishing or restoring vegetation, biweekly inspections of vegetation health should be performed during the first growing season or until the vegetation is established. Once established, inspections of vegetation health, density and diversity should be performed at least twice annually during both the growing and non-growing seasons. The vegetative cover should be maintained at 85%. If vegetation has greater the 50% damage, the area should be reestablished in accordance with the original specifications and the inspection requirements presented above. All use of fertilizers, mechanical treatments, pesticides and other means to assure optimum vegetation health shall not compromise the intended purpose of the detention basin. All vegetation deficiencies should be addressed without the use of fertilizers and pesticides whenever possible.

Structural Components

All structural components must be inspected for cracking, subsidence, spalling, erosion, and deterioration at least annually.

E. Surface Infiltration Basin Maintenance

General Maintenance

The recharge system has been designed to function in conjunction with the engineered drainage system on-site, the existing soils and the topography of the immediately surrounding area. Upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system. Inspection for clogging and excessive debris and sediment accumulation should occur at least four times annually as well as after every storm exceeding 1 inch of rainfall.

Structural Components

All structural components must be inspected for cracking, subsidence, spalling, erosion, and deterioration at least annually.

Other Maintenance Criteria

The proposed basin, when filled to the initial orifice and relying solely on infiltration, should drain in approximately 24 hours. This normal drain or drawdown time should be used to evaluate the basin's actual performance. If significant increases or decreases in the drain time are observed, the basin's bottom surface, subsoil and both groundwater and tail water levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the basin. If the water fails to 72 hours after the end of the storm, corrective measures must be taken.

F. Corrective Maintenance Procedures

A. Problems found during maintenance inspections shall be corrected and the severity of the problem shall dictate the immediacy at which the repairs shall be made. These include but are not limited to the restoration of eroded areas, repair or replacement of the stormwater management measure components, and inspection and restoration of asphalt that has settled in the area of the underground system.

B. The equipment necessary to perform the maintenance tasks are as follows.

i. Lawn Mowing Equipment
ii. Flashlights
iii. Screwdrivers
iv. Stadia Rod
v. Powered Trimmers
vi. Powered Blowers
vii. Rakes
viii. Shovels
ix. Picks
x. Wheel Barrows
xi. Powered Hedge Trimmers
xii. Chain Saw
xiii. Fertilizer/Pesticide Application
xiv. Waste Receptacles
xv. Maintenance Vehicles

YEARLY BASIN MAINTENANCE SUMMARY
(BASED UPON 3 SMALL SCALE INFILTRATION BASINS)

ACTIVITY	OCCURANCE	COST / OCCURANCE	YEARLY COST
INSPECT BASINS	4 / YEAR	$150	$600
MOW GRASS	12 / YEAR	$150	$1,800
INSPECT SAND LAYERS	6 / YEAR	$75	$450
LOCALIZED DEBRIS REMOVAL	5 / YEAR	$75	$375
INSPECT INLET/OUTLET PIPING	2 / YEAR	$75	$150
INSPECT FENCE/BASIN ACCESS	2 / YEAR	$50	$100
TILL & RE-GRADE BASIN BOTTOMS	0.2 / YEAR	$3,000	$600
DRAIN TIME TESTING	0.2 / YEAR	$900	$180
TOTAL ESTIMATED YEARLY MAINTENANCE COSTS			$ 4,255

G. Maintenance Considerations

Access

All stormwater management measures components must be readily accessible for inspection and maintenance. Therefore, access must be provided to the entire stormwater measure via roadways and paths. Trees, shrubs, and underbrush must be pruned or trimmed as necessary to maintain this access. This includes pathways through the vegetation along permanent pool perimeters, including aquatic benches, to allow for the inspection and control of mosquito breeding. Inspection and maintenance easements connected to the street or right-of-way should be provided around the entire facility. The exact limits of the easements and rights-of-way should be specified on the project plans.

Access roads and gates should be wide enough to allow passage of necessary maintenance vehicles and equipment, including trucks, backhoes, grass mowers, and mosquito control equipment. To facilitate entry, a curb should be provided where an access road meets curbed roadway to allow safe movement of maintenance vehicles, access ramps should be provided to the shoreline or bottom of all facilities with side slopes greater than 3 feet in height. Access ramps should not exceed 10 percent in grade and should be suitably stabilized to prevent damage by vehicles and equipment. Turnarounds should be provided where backing up is difficult or dangerous. To expedite overall maintenance, vehicle and equipment staging areas should be provided at or near each facility site.

Training of Maintenance Personnel

Depending on the size, character, components, and location of a stormwater management measure, maintenance personnel may require specialized training to ensure that the measure is maintained in a manner consistent with its function. Such training may address specialized inspection or maintenance tasks and/or the operation of specialized maintenance equipment. Basic Stormwater Management Training to include:

i. Purposes and Functions of BMPs
    a. NJDEP Stormwater BMP Manual, Chapter Nine: Structural Stormwater Management Measures
    b. Chapter 9.7 Small-scale Bioretention Systems
    c. Chapter 9.8 Small-scale Infiltration Basins
ii. Vegetation Care
    a. NJDEP Stormwater BMP Manual, Chapter Seven: Landscaping
iii. Equipment and Tools Operation Training
    a. Equipment or tool manufacturer's Operation & Maintenance Manual
iv. Occupational Safety Training
    a. OSHA Confined Space Entry Certification
    b. Equipment or tool manufacturer's Operation & Maintenance Manual

Disposal

Collection and disposal of sediment, debris, and trash from stormwater management measures must comply with local, state, and federal waste handling and disposal regulations. All collected material must be sent to appropriate disposal/recycling facilities.

Aesthetics

The safety needs and aesthetic preferences of the adjacent community can help determine the type, amount, and frequency of necessary maintenance.

Emergency Maintenance

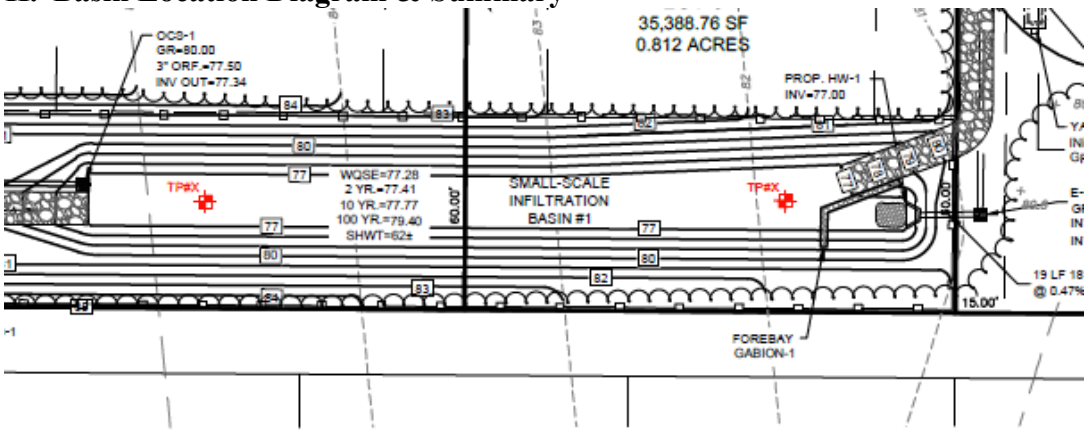
Emergency Maintenance and repairs must be performed in a timely manner.

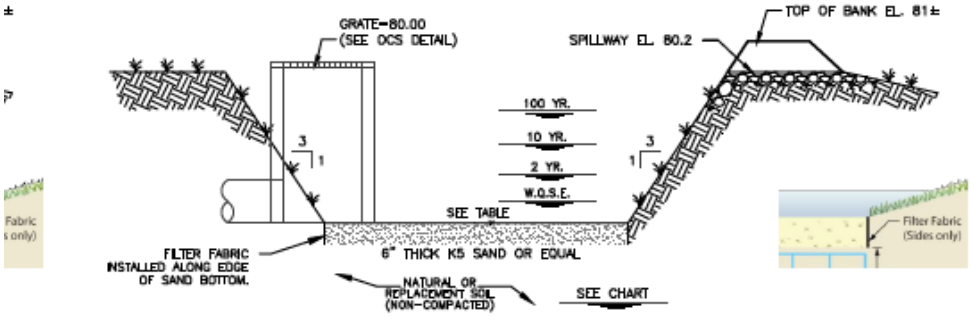
Safety

Development of a stormwater management measure design and the inspection and maintenance tasks necessary to keep the system functioning and reliably must include considerations for the safety of inspection and maintenance personnel who will be working in or near the stormwater system. All maintenance activities must comply with all local, state and federal regulations regarding occupational safety. These include but are not limited to the following:

i. N.J.A.C. 7:26G-1 – Hazardous Waste Regulations
ii. N.J.A.C. 7:8 – Stormwater Management
iii. O.S.H.A. Permit-Required Confined Spaces and all other OSHA regulations applicable to any work that is conducted on site

H. Basin Location Diagram & Summary

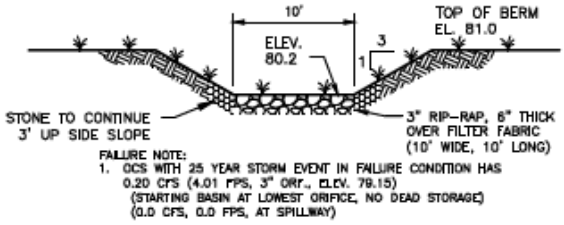




BASIN	S.H.W.T.	BOTTOM	TOP	W.Q.S.E.	2 YR.	10 YR.	100 YR.
"1"	62±	77.0	81.0	77.28	77.41	77.77	79.40
				FUTURE	77.52	78.04	80.12

NOTES:
1. NO CONSTRUCTION EQUIPMENT PERMITTED IN THE AREA OF THE BASIN BOTTOM.
2. SEE NOTES ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.
3. SEE GRADING AND DRAINAGE PLAN FOR PIPES AND STRUCTURES.

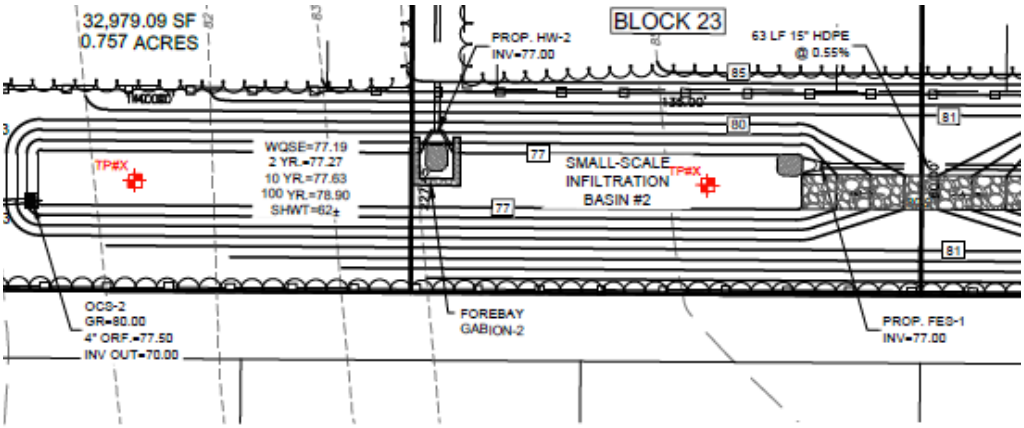
INFILTRATION BASIN #1 DETAIL
N.T.S.

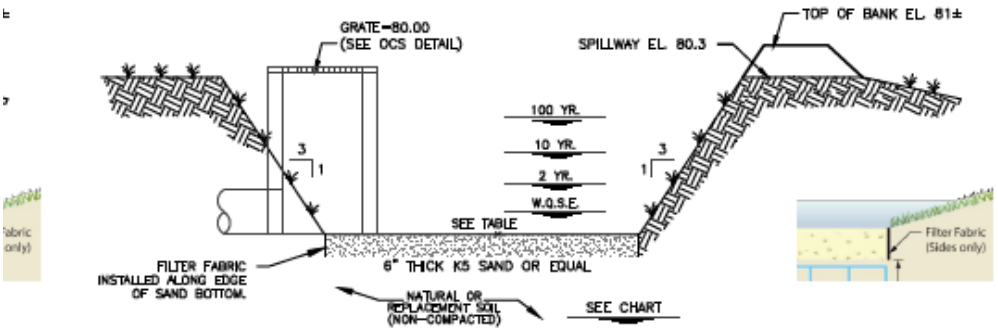


FAILURE NOTE:
1. OCS WITH 25 YEAR STORM EVENT IN FAILURE CONDITION HAS 0.20 CFS (4.01 FPS, 3" ORF., ELEV. 79.15) (STARTING BASIN AT LOWEST ORIFICE, NO DEAD STORAGE) (0.0 CFS, 0.0 FPS, AT SPILLWAY)

EMERGENCY SPILLWAY BASIN # 1 DETAIL
NOT TO SCALE

Basin # 1 – Surface Infiltration Basin
Bottom of Basin Elevation – 77.0
Top of Basin Elevation – 81.0





BASIN	S.H.W.T.	BOTTOM	TOP	W.Q.S.E.	2 YR.	10 YR.	100 YR.
"1"	62±	77.0	81.0	77.19	77.27	77.63	78.90
				FUTURE	77.34	77.83	80.06

NOTES:
1. NO CONSTRUCTION EQUIPMENT PERMITTED IN THE AREA OF THE BASIN BOTTOM.
2. SEE NOTES ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.
3. SEE GRADING AND DRAINAGE PLAN FOR PIPES AND STRUCTURES.

INFILTRATION BASIN #2 DETAIL
N.T.S.

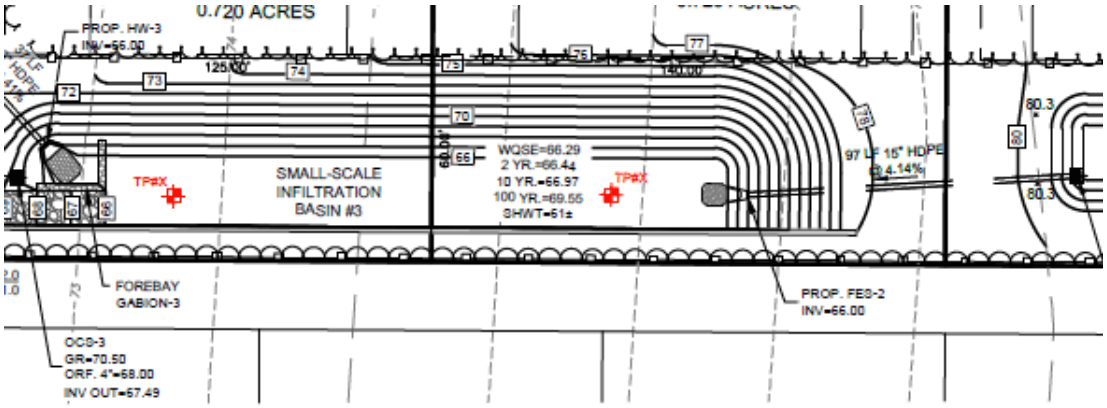
FAILURE NOTE:
1. OCS WITH 25 YEAR STORM EVENT IN FAILURE CONDITION HAS 0.40 CFS (4.64 FPS 4"ORF., ELEV. 78.50) (STARTING BASIN AT LOWEST ORIFICE, NO DEAD STORAGE) (0.0 CFS, 0.0 FPS, AT SPILLWAY)

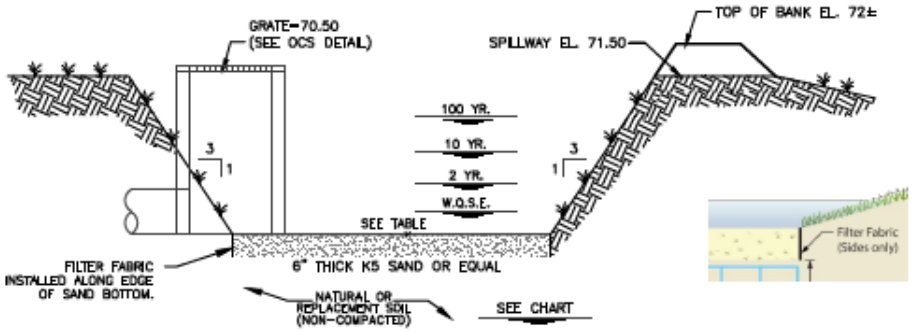
EMERGENCY SPILLWAY BASIN # 2 DETAIL
NOT TO SCALE

Basin # 2 – Surface Infiltration Basin

Bottom of Basin Elevation – 77.0

Top of Basin Elevation – 81.0

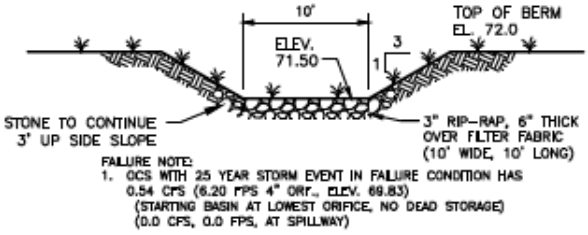




BASIN	S.H.W.T.	BOTTOM	TOP	W.Q.S.E.	2 YR.	10 YR.	100 YR.
"1"	61±	66.0	72.0	66.29	66.44	66.97	69.55
				FUTURE	66.56	67.68	70.57

NOTES:
1. NO CONSTRUCTION EQUIPMENT PERMITTED IN THE AREA OF THE BASIN BOTTOM.
2. SEE NOTES ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.
3. SEE GRADING AND DRAINAGE PLAN FOR PIPES AND STRUCTURES.

INFILTRATION BASIN #3 DETAIL
N.T.S.



FAILURE NOTE:
1. OCS WITH 25 YEAR STORM EVENT IN FAILURE CONDITION HAS 0.54 CFS (6.20 FPS 4" ORF., ELEV. 69.83)
(STARTING BASIN AT LOWEST ORIFICE, NO DEAD STORAGE)
(0.0 CFS, 0.0 FPS, AT SPILLWAY)

EMERGENCY SPILLWAY BASIN # 3 DETAIL
NOT TO SCALE

Basin # 3 – Surface Infiltration Basin

Bottom of Basin Elevation – 66.0

Top of Basin Elevation – 71.0

DURATION OF INFILTRATION						
Basin "1" (Infiltration Basin)						
Volume to be infiltrated (cf)	X	12 in./ft				
33822	X	12	405864		Duration	
4060	X	2	8120	=	49.98	hr.
infiltration Area (sf)	X	Perm Rate				

DURATION OF INFILTRATION						
Basin "2" (Infiltration Basin)						
Volume to be infiltrated (cf)	X	12 in./ft				
25669	X	12	308028		Duration	
3573	X	2	7146	=	43.10	hr.
infiltration Area (sf)	X	Perm Rate				

DURATION OF INFILTRATION						
Basin "3" (Infiltration Basin)						
Volume to be infiltrated (cf)	X	12 in./ft				
37316	X	12	447792		Duration	
3879	X	2	7758	=	57.72	hr.
infiltration Area (sf)	X	Perm Rate				

APPENDIX A

Maintenance Checklist and Work Order

for

Stormwater Management Facilities

Name of Facility: _____

Location: _____

Date: _____

A. Preventative Maintenance

Items Work Item	Items Required (√)	Done (√)	Comments and Special Instructions
1. Grass Cutting			
A. Bottoms			
B. Embankments and Side Slopes			
C. Perimeter Areas			
D. Access Areas and Roads			
E. Other:			
2. Grass Maintenance			
A. Fertilizing			
B. Re-Seeding			
C. De-Thatching			
D. Pest Control			
E. Other:			
3. Vegetative Cover			
A. Fertilizing			
B. Pruning			
C. Pest Control			
D. Other:			
4. Trash and Debris Removal			
A. Bottoms			
B. Embankments and Side Slopes			
C. Perimeter Areas			
D. Access Areas and Roads			
E. Inlets			
F. Outlets and Trash Racks			
G. Other:			

A. Preventative Maintenance (Cont.)

Items		Items Required	Done
Work Item	(√)	(√)	Comments and Special Instructions

5. Sediment Removal

A. Inlets			
B. Outlets and Trash Racks			
C. Bottoms			
D. Other:			

6. Mechanical Components

A. Valves			
B. Sluice Gates			
C. Pumps			
D. Fence Gates			
E. Locks			
F. Access Hatches			
G. Other:			

7. Elimination of Potential Mosquito Breeding Habitats

A.			
B.			
C.			

8. Pond Maintenance

A. Aeration Equipment			
B. Debris and Trash Removal			
C. Weed Removal			
D. Other:			

9. Other Preventative Maintenance

A.			
B.			
C.			

B. Corrective Maintenance

Work Item	Items Required (√)	Done (√)	Comments and Special Instructions
1. Removal of Debris & Sediment			
2. Structural Repairs			
3. Dam, Embankment & Slope Repairs			
4. Dewatering			
5. Pond Maintenance			
6. Control of Mosquitoes			
7. Erosion Repair			
8. Fence Repair			
9. Trees, Brush, Roots & Animal Burrows			
10. Snow & Ice Removal			
11. Other			

C. Aesthetic Maintenance

Work Item	Items (√)	Items Required Done (√)	Comments and Special Instructions
1. Graffiti Removal			
2. Grass Trimming			
3. Weeding			

Remarks (Refer to Item No. , If Applicable):

Work Order Prepared By: _____

Work Completed By: _____

APPENDIX B

Maintenance Log
for
Stormwater Management Facilities

Name of Facility: _____

Location: _____

A. Preventative Maintenance

Work Item	Date:									
	(√) Completed									
1. Grass Cutting										
A. Bottoms										
B. Embankments and Side Slopes										
C. Perimeter Areas										
D. Access Areas and Roads										
E. Other:										
2. Grass Maintenance										
A. Fertilizing										
B. Re-Seeding										
C. De-Thatching										
D. Pest Control										
E. Other:										
3. Vegetative Cover										
A. Fertilizing										
B. Pruning										
C. Pest Control										
D. Other:										
4. Trash and Debris Removal										
A. Bottoms										
B. Embankments and Side Slopes										
C. Perimeter										
D. Access Areas and Roads										
E. Inlets										
F. Outlets and Trash Racks										
G. Other:										

Work Item										
5. Sediment Removal										
A. Inlets										
B. Outlets and Trash Racks										
C. Bottoms										
D. Other:										
6. Mechanical Components										
A. Valves										
B. Sluice Gates										
C. Pumps										
D. Fence Gates										
E. Locks										
F. Access Hatches										
G. Other:										
7. Elimination of Potential Mosquito Breeding Habitats										
8. Pond Maintenance										
A. Aeration Equipment										
B. Debris and Trash Removal										
C. Weed Removal										
D. Other:										
9. Other Preventative Maintenance										
A.										
B.										
C.										

B. Corrective Maintenance

Work Item										
1. Removal of Debris and Sediment										
2. Structural Repairs										
3. Dam, Embankment & Slope Repairs										
4. Dewatering										
5. Pond Maintenance										
6. Control of Mosquitoes										
7. Erosion Repair										
8. Fence Repair										
9. Elimination of Trees, Brush, Roots & Animal Burrows										
10. Snow & Ice Removal										
11. Other										

C. Aesthetic Maintenance

Work Item										
1. Graffiti Removal										
2. Grass Trimming										
3. Weeding										
4. Other:										

Remarks (Refer to Item No. , If Applicable):

APPENDIX C

Considerations

When planning a small-scale infiltration basin, consideration should be given to soil characteristics, depth to the groundwater table, sensitivity of the region and inflow water quality. It is also important to note that the use of small-scale infiltration basins is recommended in this manual only where the WQDS or smaller storm events are contained below the first outlet control structure. Use of these basins to store larger volumes below the first outlet control structure should only be considered when another applicable rule or regulation requires the infiltration of a larger storm event. In such a case, the small-scale infiltration basin should be designed to store the minimum storm event required to address that rule or regulation, below the first outlet control structure.

In addition to the prohibition of recharge in the areas with high pollutant loading or with runoff exposed to source material as defined in N.J.A.C. 7:8-5.4(b)3, the utilization of small-scale infiltration basins should consider the impact of infiltration on subsurface sewage disposal systems, water supply wells, groundwater recharge areas protected under the Ground Water Quality Standards rules at N.J.A.C 7:9C, streams under antidegradation protection by the Surface Water Quality Standards rules at N.J.A.C. 7:9B, or similar facilities or areas geologically and ecologically sensitive to pollutants or hydrological changes. Furthermore, the location and minimum distance of the small-scale infiltration basin from other facilities or systems shall also comply with all applicable laws and rules adopted by Federal, State and local government entities.

Pretreatment

As with all other best management practices, pretreatment may extend the functional life and increase the pollutant removal capability of a small-scale infiltration basin by reducing incoming velocities and capturing coarser sediments. Note that pretreatment is a requirement for small-scale surface infiltration basins that include exfiltration in the stormwater routing calculations and small-scale subsurface infiltration basins. Pretreatment requirements specific to these types of infiltration basins can be found in the above section entitled *"Individual Types of Small-Scale Infiltration Basins."*

- Pretreatment may consist of a forebay or any of the BMPs found in *Chapters 9 or 11.*
- There is no adopted TSS removal rate associated with forebays; therefore, their inclusion in any design should be solely for the purpose of facilitating maintenance. Forebays may be earthen, constructed of riprap, or made of concrete and must comply with the following requirements:
  - The forebay must be designed to prevent scour of the receiving basin by outflow from the forebay.
  - The forebay should provide a minimum storage volume of 10% of the WQDS and be sized to hold the sediment volume expected between clean-outs.
  - The forebay should fully drain within nine hours in order to facilitate maintenance and to prevent mosquito issues. Under no circumstances should there be any standing water in the forebay 72 hours after a precipitation event.
  - Surface forebays must meet or exceed the sizing for preformed scour holes in the *Standard for Conduit Outlet Protection* in the *Standards for Soil Erosion and Sediment Control in New Jersey* for a surface forebay.
  - If a concrete forebay is utilized, it must have at least two weep holes to facilitate low level drainage.

- When using another BMP for pretreatment, it must be designed in accordance with the design requirements outlined in its respective chapter. For additional information on the design requirements of each BMP, refer to the appropriate chapter in this manual.
- Any roof runoff that discharges to the small-scale infiltration basin may be pretreated by leaf screens, first flush diverters or roof washers. For details of these pretreatment measures, see Pages 5 and 6 of *Chapter 9.1: Cisterns.*
    - The pretreatment requirement for roof runoff can be waived by the review agency if the building in question has no potential for debris and other vegetative material to be present in the roof runoff. For example, a building that is significantly taller than any surrounding trees and does not have vegetative roof should not need the pretreatment. However, in making this determination, the review agency must consider the mature height of any surrounding trees.

Soil Characteristics

Soils are perhaps the most important consideration for site suitability. In general, County Soil Surveys may be used to obtain necessary soil data for planning and preliminary design of small-scale infiltration basins. However, as previously mentioned, for final design and construction, soil tests are required at the exact location of the proposed basin in order to confirm its ability to function properly without failure. In order to confirm reasonable data consistency, the results of soil testing should be compared with the County Soil Survey data that was used in the computation of runoff rates and volumes and the design of on-site BMPs. If significant differences exist between the soil test results and the County Soil Survey data, additional soil tests are recommended to determine and evaluate the extent of the data inconsistency and whether there is a need for revised site runoff and BMP design computations. All significant inconsistencies should be discussed with the local Soil Conservation District prior to proceeding with such a redesign to help ensure that the final site soil data is accurate.

Geology

The presence or absence of Karst topography is an important consideration when designing a small-scale infiltration basin; in areas of the State with this type of geology, the bedrock is composed of highly soluble rock. If Karst topography is present, infiltration of runoff may lead to subsidence and sinkholes; therefore, careful consideration must be taken in these areas. For more information on design and remediation in areas of Karst topography, refer to the *Standards for Soil Erosion and Sediment Control in New Jersey: Investigation, Design and Remedial Measures for Areas Underlain by Cavernous Limestone.*

Maintenance

Regular and effective maintenance is crucial to ensure effective small-scale infiltration basin performance; in addition, maintenance plans are required for all stormwater management facilities on a major development. There are a number of required elements in all maintenance plans, pursuant to N.J.A.C. 7:8-5.8; these are discussed in more detail in *Chapter 8: Maintenance of Stormwater Management*

Measures. Furthermore, maintenance activities are required through various regulations, including the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A. Specific maintenance requirements for small-scale infiltration basins are presented below; these requirements must be included in the basin's maintenance plan.

General Maintenance

- Proper and timely maintenance is essential to continuous, effective operation; therefore, an access route must be incorporated into the design and it must be properly maintained.
- All structural components must be inspected, at least once annually, for cracking, subsidence, spalling, erosion and deterioration.
- Components expected to receive and/or trap debris and sediment must be inspected for clogging at least four times annually, as well as after every storm exceeding 1 inch of rainfall.
- Sediment removal should take place when all runoff has drained and the basin is dry.
- Disposal of debris, trash, sediment and other waste material must be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.
- Access points for maintenance are required on all enclosed areas within a small-scale infiltration basin; these access points must be clearly identified in the maintenance plan. In addition, any special training required for maintenance personnel to perform specific tasks, such as confined space entry, must be included in the plan.
- Stormwater BMPs may not be used for stockpiling of plowed snow and ice, compost, or any other material.

Drain Time

- The basin must be inspected at least twice annually to determine if the permeability of the basin has decreased.
- The design drain time for the maximum design storm runoff volume must be indicated in the maintenance manual.
- If the actual drain time is longer than the design drain time, the components must be evaluated and appropriate measures taken to return the small-scale infiltration basin to the original tested as-built condition.
- If the small-scale infiltration basin fails to drain the WQDS within 72 hours, corrective action must be taken and the maintenance manual revised accordingly to prevent similar failures in the future. Note that annual tilling of the sand layer, using lightweight equipment, may assist in maintaining the infiltration capacity of a surface type system by breaking up clogged surfaces.

APPENDIX D

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