Stormwater Management Operations and Maintenance Manual

For

Arny Associates, LLC

Proposed Warehouse Development

322 & 326 Cranbury Half Acre Road Block 8, Lots 1.02 & 1.03 Township of Cranbury Middlesex County, New Jersey

Prepared By:



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- Maintenance Work Order & Checklist
- Maintenance Log
- Inspection Log

PROJECT DETAILS

I. Introduction and Description of Facilities:

The purpose of this report is to provide guidelines and information regarding the required maintenance for the proposed stormwater management facilities to be constructed in association with the development of Block 8, Lots 1.02 & 1.03 in the Township of Cranbury, Middlesex County, New Jersey. The scope of the project includes the proposed 85,053 SF footprint (94,287 SF GFA) warehouse building on Lot 1.02, and the associated driveways, parking areas, landscaping and other related site improvements as shown on the accompanying engineering drawings. The proposed stormwater management system includes three (3) above ground bioretention basins with underdrains systems.

The proposed stormwater management facilities will contribute toward the conveyance, storage, treatment and discharge of runoff generated by the proposed development. Every stormwater management system, whether at grade or below grade, requires that basic periodic maintenance be performed in order to maintain the proper functioning and operation of the system. This report will outline these procedures, further discuss responsibilities and highlight those responsible for performing said maintenance.

Based upon the fact that the proposed improvements will result in more than one (1) acre of land disturbance, this project is classified as a "major development"; and therefore, the bioretention basin systems have been designed to meet the stormwater runoff quantity, quality and groundwater recharge standards, set forth by the Township of Cranbury Land Use Ordinance and NJAC 7:8. Please refer to the accompanying Stormwater Management, Groundwater Recharge and Water Quality Analysis for additional information.

These facilities will require periodic inspections and maintenance. The following information can be considered a guideline for the continued maintenance including suggested inspection scheduling as well as performance objectives.

Hydrology Design Targets for Small Scale Bioretention Basin Systems

Per prior discussions with the Township Engineer, our office has prepared the basin design to comply with the minimum seasonal high water table separation requirements to the maximum extent feasible with the soil testing results considered. However, in efforts to reduce the amount of non-native fill necessary to be imported for construction, the proposed basin bottoms have been designed with less than the minimum seasonal high water table elevation separation. Impermeable liners are proposed at the bottom and sides of all three (3) aboveground bioretention basins to prevent groundwater intrusion into the proposed basin systems. Please refer to the accompanying Stormwater Management, Groundwater Recharge and Water Quality Analysis for additional information.

Hydraulic Design Targets

1. Design parameters

RUNOFF VOLUME (AC-FT)							
BASIN	WQ Runoff Volume (acre-ft)	2 YR Runoff Volume (acre-ft)	10 Yr Runoff Volume (acre-ft)	100 Yr Runoff Volume (acre-ft)			
Basin A	0.078	0.134	0.160	0.190			
Basin B	0.110	0.210	0.257	0.325			
Basin C	0.078	0.145	0.187	0.241			

PEAK FLOW RATE (CFS)							
BASIN	WQ Runoff	10 Yr Runoff	100 Yr Runoff				
Basin A	0.00	0.88	2.44	4.63			
Basin B	0.00	0.66	2.44	5.21			
Basin C	0.00	0.58	1.65	3.88			

WATER SURFACE ELEVATION (FT)							
BASIN	WQ Elev	10 Yr Elev	100 Yr Elev				
Basin A	103.05	103.67	103.92	104.20			
Basin B	102.23	103.31	103.81	104.52			
Basin C	100.01	100.71	101.11	101.56			

Basin Configuration Targets

- 1. Basins are designed to have a maximum net contributory area of 2.5 acres.
- 2. The basins are designed with an underdrain and outlet pipe to promote positive drainage

Critical Maintenance Features (Bioretention Basins)

1. Corrective action should be taken if standing water remains in the basin 72 hours after a storm event.

II. Project Contacts:

The applicant is responsible to maintain a detailed log of all preventative and corrective maintenance actions for the constructed stormwater facilities incorporated into the design, including record of all inspections and copies of all maintenance-related work orders.

The applicant is also responsible for maintenance to evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and deed as needed. The applicant shall retain a copy of this report onsite should a public entity request this report or documentation of said maintenance in the future.

Property/System Owner: Arny Associates, LLC.

37 West Cherry Street

Rahway, New Jersey, 07065

Design Engineer: James E. Henry, PE, PP

Dynamic Engineering Consultants, PC

1904 Main Street

Lake Como, NJ 07719

(732) 974-0198

As previously mentioned, this manual, including any future revisions, must be recorded upon the deed of record of the property.

Proposed Best Management Practices:

A. Routine Inspection and maintenance of Stormwater Management Facilities

Without proper routine inspection and maintenance, the stormwater management system may lose some or all of its capability to function to its full capacity. Lack of adequate maintenance at these facilities could lead to system failures.

Regularly scheduled maintenance inspections of the stormwater facilities should occur at least four times each year. In addition to the regular scheduled inspections, inspections shall also occur after any major storm events. Major storm events are defined as storm events exceeding 1" of rainfall. The primary purpose of these inspections is to ascertain the operational condition and safeties of the facilities, particularly the condition of embankments, outlet structure, rip rap and other safety-related aspects. Inspections will also provide information on the effectiveness of regularly scheduled Preventative and Aesthetic Maintenance Procedures, and will help to identify where changes in the extent and scheduling of the procedures are warranted. Finally, the facility inspections should also be used to determine the need for and timing of Corrective Maintenance procedures.

Routine maintenance of this facility should be separated into two (2) basic types: Functional Maintenance and Aesthetic Maintenance. Functional Maintenance is further broken down into two (2) categories: Preventative and Corrective. Aesthetic Maintenance, which is necessary to maintain the visual appeal and aesthetic quality of these facilities should be incorporated on the same schedule as the preventative maintenance efforts. Listed below are the Preventative, Corrective and Aesthetic Maintenance Procedures to be performed on a routine basis:

1. Preventative Maintenance Procedures Inlets and Conveyance Pipes:

a) Removal and Disposal of Trash/Debris and Sediment:

All storm water management 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 one inch of rainfall.

Such components may include stormwater conveyance network (piping & inlet), flared end sections and outlet control structure.

These stormwater management components shall be visually inspected for the accumulation of excessive sediment as well as damage in the form of cracking, erosion and rutting. Sediment build up within the stormwater conveyance network shall be removed with the use of flushing. Sediment laden water is to be captured with the use of a pipe plug, or approved equal, prior to the storage bed and simultaneously pumped out with the use of pump with sediment bag. Sediment should be disposed of in accordance with all applicable local, state and federal regulations.

Removal of trash and debris will prevent possible damage to trash racks and outlet structure openings and eliminate potential mosquito breeding habitats. Debris and trash must be properly hauled off the site and transferred to an approved disposal site.

The system should also be evaluated for excessive deposition of sediment. Accumulated sediment should be removed utilizing light weight equipment to avoid soil compaction before it threatens the storage volume of the system. Before de-sedimentation activities are performed, consideration should be given to evacuating all standing water from the system. This may be accomplished by clearing any blocked openings of the outlet structure or by mechanical means (pumping). Disposal of discharged water and sediment must comply with all local, county, state and federal regulations. Only suitable disposal sites should be utilized. If stable soil conditions exist on site, sediment deposition should not be an excessive maintenance issue. Should a recurrent stabilization situation develop, the inspector should identify the upstream sources of sediment and recommend required stabilization measures.

b) Sediment Removal and Disposal:

The inlets and stormwater conveyance pipes should also be evaluated for excessive deposition of sediment. Accumulated sediment should be removed before it threatens the capacity capabilities of the pipes. Before de-sedimentation activities are performed, consideration should be given to evacuating all standing water from the system. This may be accomplished by clearing any blocked openings of the outlet structure or by mechanical means such as pumping. If stable soil conditions exist on-site, sediment

deposition should not be an excessive maintenance issue. Should a recurrent stabilization situation develop, the inspector should identify the upstream sources of sediment and recommend required stabilization measures.

c) Mechanical Components:

Mechanical components such as valves, sluice gates, pumps, fence gates, locks, and access hatches, should remain functional at all times. Regularly scheduled maintenance should be performed in accordance with the manufactures' recommendations. Additionally, all mechanical components should be operated at least once every three months to assure their continued performance.

d) Elimination of Potential Mosquito Breeding Habitats:

The most effective mosquito control program is one that eliminates potential breeding habitats. Almost any stagnant pool of water can be attractive to mosquitoes, and may become the source of a large mosquito population. A maintenance program dedicated to eliminating potential breeding areas is preferable to chemical means of controlling mosquitoes. The most important maintenance functions, is removal of all obstructions to natural flow patterns before stagnant water conditions can develop.

e) Observation After Rainfall:

This management measure involves monitoring the amount of time the aboveground bioretention basins takes to drain to ensure the basin is working properly. The aboveground bioretention basins should drain to the bottom in less than 72 hours. If significant increases or decreases are observed in the drawdown time, a qualified licensed Professional Engineer shall be contacted to evaluate the basin's bottom surface, subsoil and both groundwater and tailwater elevations to determine what corrective measures may need to be implemented.

2. Corrective Maintenance Procedures Inlets and Conveyance Pipes:

a) Removal of Debris and Sediment:

Sediment, debris and trash which threaten the discharge capacity of the system should be

removed immediately with the use of light weight equipment to avoid soil compaction

and properly disposed. As noted previously, it is recommended that all water be

evacuated from the system with a pump before any significant amount of sediment,

settled debris or trash is removed from the system. The lack of an available disposal site

should not delay the removal of trash, debris and sediment. Temporary disposal sites

should be utilized if necessary.

b) Structural Repairs:

Structural damage to outlet and inlet structures, trash rack, access hatches, roadways and

walls as a result of vandalism, flood events, settlement or other causes must be repaired

promptly. The urgency of the repairs will depend upon the nature of the damage and its

effects on the safety and operation of the facility. The analysis of structural damage and

the design and performance of structural repairs should only be undertaken by the

consulting Professional Engineer.

c) Dewatering:

It may be necessary to remove ponded water from within a malfunctioning basin. This

ponding may be the result of a blocked principal outlet or poor bottom drainage.

Portable pumps may be necessary to remove the ponded water temporarily until a

permanent solution can be implemented.

d) Extermination of Mosquitoes:

If neglected, basins can become an ideal mosquito breeding area. The extermination of

mosquitoes will usually require the services of the County Mosquito Commission. If

mosquito control in the facility becomes necessary, the preventative maintenance

program should be re-evaluated, and more emphasis should be placed on control of

mosquito breeding habitats.

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e) Erosion Repair:

Vegetative cover or other protective measures are necessary to prevent the loss of soil due to the forces of wind and water. Where a re-seeding program has not been effective in maintaining a non-erosive vegetative cover, or other factors have exposed soils to erosion, corrective steps should be initiated to prevent further loss of soil that may result in danger to the stability of the facility. Soil loss can be controlled by a variety of materials and methods, including rip-rap, gabion lining, geotextile fabrics, sod, seeding, concrete lining and re-grading.

f) Elimination of Trees, Brush, Roots, and Animal Burrows:

The stability of embankments can be impaired by large roots and animal burrows. Additionally, burrows can present a safety hazard for maintenance personnel. Trees and brush with extensive, woody root systems should be completely removed to prevent destabilization and the creation of seepage routes. Roots should also be completely removed to prevent decomposition within the embankment. Root voids and burrows should be filled with material similar to the existing material, and capped just below grade with stone, concrete or other material. If the filling of the burrows does not discourage the animals from returning, further measures should be taken to either move the animal population or to make critical areas of the facility unattractive to them.

g) Snow and Ice Removal:

Accumulations of snow and ice can threaten the functioning of the pervious pavement, inlets, outlets and emergency spillways. Provision of the equipment, material and personnel to monitor and remove snow and ice from critical areas will assure the function of the facility during the winter months.

3. Aesthetic Maintenance Procedures

a) Graffiti Removal:

The timely removal of graffiti will restore the aesthetic quality of the facilities. Removal can be accomplished by paint or other cover, or removal with scrapers, solvents or

cleansers. Timely removal is important to discourage further graffiti and other acts of vandalism.

b) Grass Trimming/Landscape Maintenance:

If season prevents the re-establishment of turf cover, exposed areas should be stabilized with straw or salt hay mulch as described in the Soil Erosion and Sediment Control Plans until permanent seeding can be done. Seeding can be done between March 15th and June 15th and between September 15th and December 1st, only if adequate water is provided.

Pruning of shrubs should also be done on a regular basis to maintain the shape and appearance of the shrub masses. The height of the shrubs may vary according to the plants natural growth habits, but should not exceed 6-feet. Pruning should be done as necessary throughout the year to remove dead branches and to control new growth. Any pruning, other than the removal of dead branches, should be done in either late winter/early spring or after the shrub has flowered in the spring.

In the event that a shrub should experience more than 2/3 die back, it should be replaced in kind as soon as possible in either the spring or fall planting season. The replacement shrub should be the same species as the original and installed at the size and condition as specified on the original landscape plans. If, for any reason, a substitution of species or size must be made, it shall be subject to the approval of the project Landscape Architect.

If a tree is severely damaged or experiences more than 2/3 die back, it should be replaced in either the spring or fall planting season, whichever comes first. The only exception to this is if the replacement tree has a fall transplanting hazard. In this case, it should be replanted in the spring. Replacement trees should be planted at the same size and condition as specified on the landscape plans. If it is necessary to make a substitution of species or size, it shall be subject to the approval of the project Landscape Architect.

c) Control of Weeds:

Although a regular grass maintenance program will minimize weed intrusion, some weeds will appear. Periodic weeding, either chemically or mechanically, will help to

maintain a healthy turf, and keep grassed areas looking attractive. Application of chemicals should be monitored closely so as not to affect the ecosystems within the system. Excessive growth of weeds within the system can be controlled mechanically as discussed in the previous section.

The recording of all maintenance work and inspections will provide valuable data on the facility's condition. Review of this information will also help to establish more efficient and beneficial maintenance procedures and practices. All recorded information should be directed to the owners of the system for review and subsequent follow-up on recommendations. Data obtained from informal inspections should be retained; however, this data does not have to be submitted to NJDEP.

4. Summary of Maintenance Procedures:

Preventative Maintenance Aboveground Bioretention Basin

- a) Removal and Disposal of Trash/Debris and Sediment
- b) Sediment Removal and Disposal
- c) Mechanical Components
- d) Elimination of Potential Mosquito Breeding Habitat
- e) Observation After Rainfall

Corrective Maintenance Aboveground Bioretention Basin

- a) Removal of Debris and Sediment
- b) Structural Repairs
- c) Dewatering
- d) Extermination of Mosquitoes
- e) Erosion Repair
- f) Elimination of Trees, Brush, Roots, and Animal Burrows
- g) Snow and Ice Removal

Aesthetic Maintenance

a) Graffiti Removal

- b) Landscape Maintenance
- c) Control of Weeds

B. Maintenance Equipment and Materials

1. Vegetative Maintenance Equipment

- a) Saws
- b) Pruning Shears
- c) Hedge Trimmers
- d) Wood Chippers
- e) Aquatic Weed Harvester (owned/operated by subcontractor)

2. Transportation Equipment

- a) Trucks for Transportation of Materials
- b) Trucks for Transportation of Equipment
- c) Vehicles for Transportation of Personnel

3. Debris, Trash and Sediment Removal Equipment

- a) Loader
- b) Backhoe
- c) Grader
- d) Dredging Equipment
- e) Portable Pump for Dewatering

4. Miscellaneous Equipment

- a) Shovels
- b) Rakers
- c) Picks
- d) Wheel Barrows
- e) Painting Equipment
- f) Gloves

5. Materials

- a) Topsoil
- b) Fill

- c) Seed & Soil Amenities (Fertilizer, Lime, etc.)
- d) Chemicals (Pesticides, Herbicides, etc.)
- e) Mulch
- f) Paint Removers
- g) Spare Parts for Equipment

6. Parking Maintenance Equipment

- a) Sweeping/Vacuuming Equipment
- b) Snow Plowing Equipment
- c) Snow Shovels

C. Checklists and Logs

The Appendix of this report contains sample checklists and logs regarding various aspects of the maintenance and inspection. A brief description of the use of each form is listed below:

- 1. "Maintenance Work Order and Checklist" a comprehensive form outlining both required and completed maintenance work.
- 2. "Maintenance Log" a summary table for recording the results of all maintenance of the system.
- 3. "Inspection Log" a summary table for recording the results of all inspections of the system.

An annual inspection shall be performed by a New Jersey licensed professional engineer that results in the submission of a report to Arny Associates, LLC and to the Township by Cranbury of the succeeding year indicating the condition of the stormwater measures and any items requiring repair or corrective action. Within 30 days of the report, Arny Associates, LLC shall submit a remedial action report to the Borough outlining the specific measures to be taken and the time required to complete these measures. If the corrective measures are not implemented in accordance with the remedial action report, the Stormwater Management Operation and Maintenance Manual shall grant the Borough the authority, but not the obligation, to implement those action and to establish a method of charging Arny Associates, LLC for the cost of those actions.

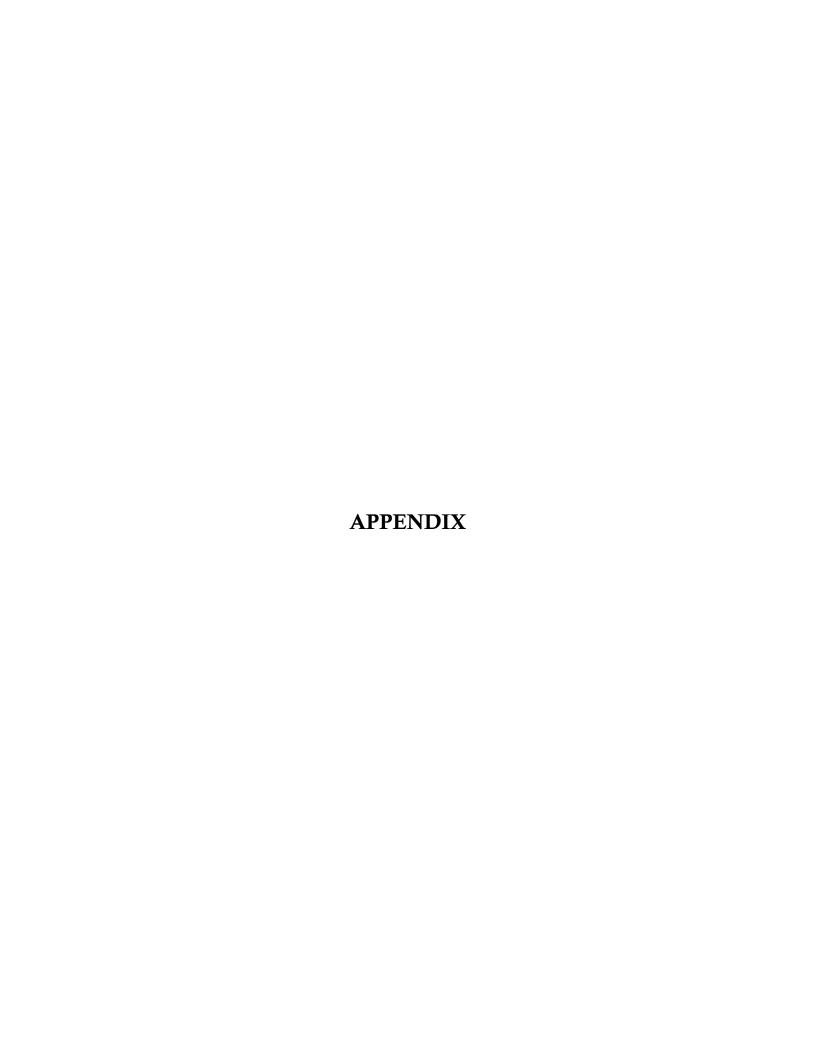
D. Estimated Maintenance Costs and Tasks

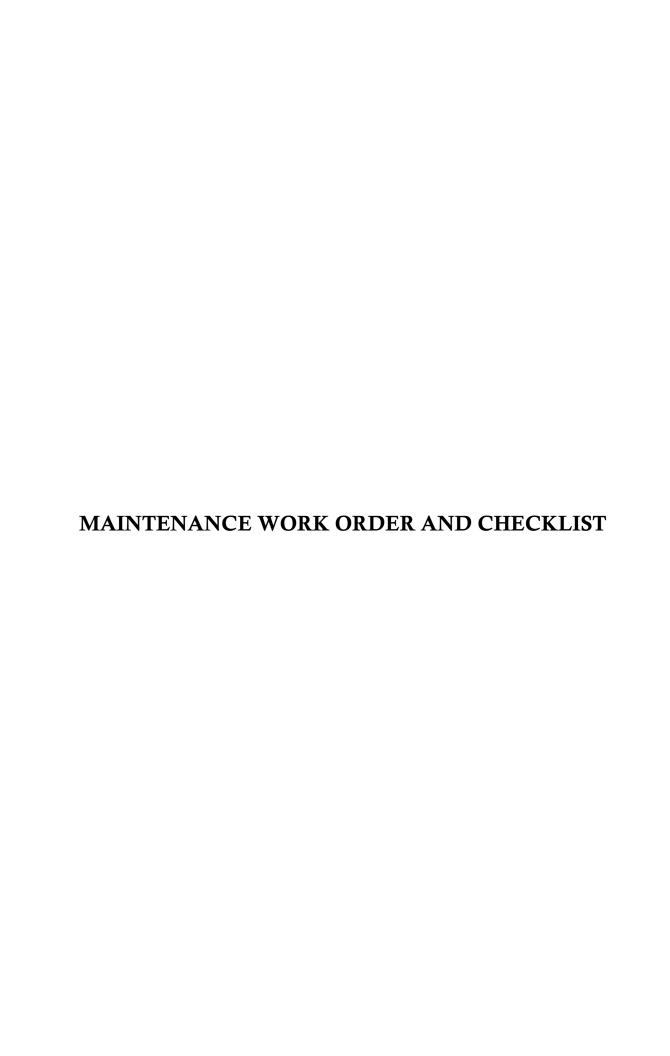
The following is a summary of the required maintenance tasks and associated costs in written and tabular form:

- Inspections to be performed by a consulting engineer on a bi-annual basis. \$6,000.00.
- Inspections for debris and sediment to be performed by the property owner and/or a maintenance designee on a monthly basis and/or after a storm event exceeding 1 inch of rainfall—Minimal cost associated Owners responsibility \$500.00 per inspection.
- Stormwater conveyance system and outlet control structure access for debris removal to be performed on an annual basis and/or as inspection routine dictates \$2,000.00 per inspection plus cost of debris removal.
- Surface debris removal including garbage and organic matter to be performed in conjunction with lawn and grounds maintenance, includes leave removal in the Fall and removal of excessive amounts of snow, if necessary, in the Winter. These tasks are encouraged as necessary to maintain safe operating conditions (twice a month from Spring through Winter recommended or on as needed basis) \$1,000.00 \$5,000.00 budget annually.

Maintenance Schedule Summary

Task Identification	Task Frequency	Task Estimated Cost
Inspection by licensed professional consulting engineer	Two (2) per year	\$6,000.00
Inspection by property owner and/or maintenance designee	Once (1) per month (or after a storm event exceeding 1 inch of rainfall)	\$500.00 per inspection
Debris removal from stormwater conveyance system (inlets, pipes, manholes, flared end sections, and outlet control structure)	Four (4) times per year (or after storm event exceeding 1 inch of rainfall)	\$2,000.00 per inspection plus cost of debris removal
Surface debris removal (garbage & organic matter) including leaves in the Fall and snow in the Winter	Twice (2) per month (or on an as needed basis)	\$1,000.00 - \$5,000.00 budget annually





MAINTENANCE WORK ORDER AND CHECKLIST FOR STORMWATER MANAGEMENT FACILITIES

NAME OF FACILITY:		
LOCATION:	DATE:	
WEATHER:	WORK STARTED:	
MAINTENANCE PERFORMED BY:	WORK COMPLETED:	

A	. PREVENTATI	VE MAINTE	NANCE
WORK ITEMS	ITEMS REQUIRED	ITEMS DONE	COMMENTS AND SPECIAL INSTRUCTIONS
1. GRASS CUTTING			
A. BOTTOMS			
B. EMBANKMENTS AND SIDE SLOPES			
C. PERIMETER AREAS			
D. ACCESS AREAS AND ROADS			
E. OTHERS			
2. GRASS MAINTENANCE			
A. FERTILIZING			
B. RE-SEEDING			
C. DE-THATCHING			
D. PEST CONTROL			
E. OTHERS			
3. VEGETATIVE COVER			
A. FERTILIZING			
B. PRUNING			"
C. PEST CONTROL			
D. POISONOUS PLANTS E. OTHERS			
Company of the Compan			
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. OTHERS			
5. SEDIMENT REMOVAL			
A. INLETS			
B. OUTLETS AND TRASH RACKS			
C. LOW FLOW CHANNELS			
D. BOTTOMS			
E. OTHERS			
6. PEST CONTROL			
A. GEESE			
B. MOSQUITO BREEDING			
C. RODENTS / RODENT HOLES			
D. OTHERS			
7. STRUCTURAL REPAIRS			
A. VALVES			
B. SLUICE GATES			
C. PUMPS			
D. FENCE GATES			
E. LOCKS			
F. ACCESS HATCHES			
G. OTHER:			
8. POND MAINTENANCE			
A. AERATION EQUIPMENT			
B. DEBRIS AND TRASH REMOVAL			
C. WEED REMOVAL D. OTHER:	-		
	TO A COMPANY OF THE PARTY OF TH		
9. OTHER PREVENTIVE MAINTENANCE A. PARKING LOT SWEEPING			
B. EMPTYING TRASH RECEPTACLES		A. 45 11 15 11 11 11 11 11 11 11 11 11 11 11	
C. PUMPS AND VALVES	 		
D. ELECTRICAL PANEL AND WIRING			
E. DEWATERING			
F. GRAFFITI REMOVAL			
E. OTHER:			
			L

В	. CORRECTIV	E MAINTEN	NANCE
WORK ITEMS	REOUIRED	DONE DONE	COMMENTS AND SPECIAL INSTRUCTIONS
1. REMOVAL OF DEBRIS AND SEDIMENT			
2. STRUCTURAL REPAIRS			
3. EMBANKMENTS AND SIDE SLOPES			
4. DEWATERING			
5. BASIN MAINTENANCE			
6. CONTROL OF MOSQUITOES			
7. EROSION REPAIR			
8. FENCE REPAIR			
9. SNOW AND ICE REMOVAL			
10. SAND LAYER REPLACEMENT			
11. OTHER			
WORK ITEMS	C. AESTHETIC	TIEMS	ANCE COMMENTS AND SPECIAL INSTRUCTIONS
	REQUIRED	DONE	COMMENTS AND ST DEATH INSTRUCTIONS
1. GRAFFITI REMOVAL			
2. GRASS TRIMMING			
3. WEEDING			
4. OTHERS			
GI	ENERAL NOT	ES AND REA	MARKS:
WORK ORDER PREPARED BY:			
OR ORDER FREI FIRED DT.			
WORK COMPLETED BY:			



MAINTENANCE LOG FOR STORMWATER MANAGEMENT FACILITIES

IAME OF FACILITY:					
LOCATION:					
	DATE:				

	A. PREVENTATIVE MAINTENANCE
WORK ITEM	(√) COMPLETED
1. GRASS CUTTING	
A. BOTTOMS	
B. EMBANKMENTS AND SIDE SLOPES	
C. PERIMETER AREAS	
D. ACCESS AREAS AND ROADS	
E. OTHERS	
2. GRASS MAINTENANCE	
A. FERTILIZING	
B. RE-SEEDING	
C. DE-THATCHING	
D. PEST CONTROL	
E. OTHERS	
3. VEGETATIVE COVER	
A. FERTILIZING	
B. PRUNING	
C. PEST CONTROL	
D. POISONOUS PLANTS	
E. OTHERS	
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. OTHERS	
5. SEDIMENT REMOVAL	
A. INLETS	
B. OUTLETS AND TRASH RACKS C. LOW FLOW CHANNELS	
D. BOTTOMS	
E. OTHERS	
6. PEST CONTROL	
A. GEESE	
B. MOSQUITO BREEDING	
C. RODENTS / RODENT HOLES	
D. OTHER:	
7. MECHANICAL COMPONENTS	
A. VALVES	
B. SLUICE GATES	
C. PUMPS	
D. FENCE GATES	
E. LOCKS	
F. ACCESS HATCHES	
G. OTHER:	
8. POND MAINTENANCE	
A. AERATION EQUIPMENT	
B. DEBRIS AND TRASH REMOVAL	
C. WEED REMOVAL	
D. OTHER:	
9. OTHER PREVENTIVE MAINTENANCE	
A. PARKING LOT SWEEPING	
B. EMPTYING TRASH RECEPTACLES	
C. PUMPS AND VALVES	
D. ELECTRICAL PANEL AND WIRING	
E. DEWATERING	
F. GRAFFITI REMOVAL	
E. OTHER:	

B. CORRECTIVE MAINTENANCE								
WORK ITEM	(√) COMPLE	TED						
1. REMOVAL OF DEBRIS AND SEDIMENT								
2. STRUCTURAL REPAIRS								
3. EMBANKMENTS AND SIDE SLOPES								
4. DEWATERING								
5. BASIN MAINTENANCE								
6. CONTROL OF MOSQUITOES								
7. EROSION REPAIR						Ι		
0 PENOP DEDAID	Г							
8. FENCE REPAIR								
9. SNOW AND ICE REMOVAL								
10. SAND LAYER REPLACEMENT		T						
11. OTHER								
	C AESTHETIC MAI	NITENIANCE					constitution and a	

C. AESTHETIC MAINTENANCE								
FACILITY ITEM (√) COMPLETED								
1. GRAFFITI REMOVAL								
2. GRASS TRIMMING								
3. WEEDING								
4. OTHERS								

GENERAL NOTES AND REMARKS (REFER TO ITEM NUMBER IF APPLICABLE)	



INSPECTION LOG FOR STORMWATER MANAGEMENT FACILITIES

NAME OF FACILITY:					
LOCATION:					
	DATE:				

FACILITY ITEM	INDICATE CONDITION (i.e 1, 2 OR 3)							
1. EMBANKMENTS AND SIDE SLOPES								
A. VEGETATION		VIII III III III III III III III III II			1030400-3038-3038-0000	10001111111010101	210111011111111111111111111111111111111	Benefit State State
B. LININGS								
C. EROSION								
D. SETTLEMENT								
E. SLOUGHING								
F. TRASH AND DEBRIS								
G. SEEPAGE								
H. AESTHETICS								
I. OTHER:								
2. BOTTOMS (DETENTION AND INFILTRATION))							
A. VEGETATION	/	NAMES OF THE OWNERS OF THE OWN			1	PERFECUENCIA SIGNALIA		
B. EROSION						_		
C. STANDING WATER								
D. SETTLEMENT								
E. TRASH AND DEBRIS						-		
F. SEDIMENT								
G. AESTHETICS								
H. OTHER:								
3. LOW FLOW CHANNELS (DETENTION)								
A. VEGETATION		1			I			
B. LININGS								
C. EROSION								
D. SETTLEMENT				_				
E. STANDING WATER								
F. TRASH AND DEBRIS								
G. SEDIMENT								
H. OTHER:								
4. PONDS (RETENTION)								
A. VEGETATION		1						
B. SHORELINE EROSION					-			
C. AERATION EQUIPMENT							-	
D. TRASH AND DEBRIS								
E. SEDIMENT							_	
F. WATER QUALITY								
G. OTHER:								
5. INLET STRUCTURE								and security
A. CONDITION OF STRUCTURE								
B. EROSION								
C. TRASH AND DEBRIS								
D. SEDIMENT								
E. AESTHETICS		+						
F. OTHER:		+						
6. OUTLET STRUCTURE					***************************************		THE RESIDENCE AND ADDRESS.	
A. CONDITION OF STRUCTURE	T T	T						
B. EROSION								
PERSONAL PROPERTY OF THE PERSON OF THE PERSO				_				
C. TRASH AND DEBRIS								
D. SEDIMENT								
E. MECHANICAL COMPONENTS								
F. AESTHETICS								
G. OTHER:								

7. EMERGENCY SPILLWAY					
A. VEGETATION					0019900001900001900
B. LINING					
C. EROSION					
D. TRASH AND DEBRIS					
E. OTHER:					
8. PERIMETER					
A. VEGETATION					
B. EROSION					
C. TRASH AND DEBRIS					
D. FENCES AND GATES					
E. AESTHETICS					
G. OTHER:					
9. ACCESS ROADS					
A. VEGETATION					
B. ROAD SURFACE					
C. FENCES AND GATES					
D. EROSION				2.0	
E. AESTHETICS					
F. OTHER:					
10. MISCELLANEOUS					
A. EFFECTIVENESS OF EXIST. MAINT. PROGRAM					
B. DAM INSPECTIONS					
C. POTENTIAL MOSQUITO HABITATS					
D. MOSQUITOES					

- (1) ITEM CHECKED IS IN GOOD CONDITION, AND THE MAINTENANCE PROGRAM IS
- (2) ITEM CHECKED REQUIRES ATTENTION, BUT DOES NOT PRESENT AN IMMEDIATE THREAT FUNCTION OR OTHER FACILITY COMPONENTS.
- (3) THE ITEM CHECKED REQUIRES IMMEDIATE ATTENTION TO KEEP THE FACILITY DAMAGE TO OTHER FACILITY COMPONENTS.
- (4) PROVIDE EXPLANATION AND DETAILS IF COLUMNS 2 OR 3 ARE CHECKED.

GENERAL NOTES AND REMARKS (REFER	TO ITEM NUMBER I	IF APPLICABLE)	