

DRESDNER ROBIN

STORMWATER MANAGEMENT SYSTEM OPERATION AND MAINTENANCE MANUAL

PUBLIC STORAGE NO. NJ20016

BLOCK 111, LOTS 1.08

TOWNSHIP OF WEST ORANGE, ESSEX COUNTY, NEW JERSEY

DRESDNER ROBIN PROJECT No. 10461-003

PREPARED FOR

PUBLIC STORAGE ATLANTIC COAST, LLC
701 WESTERN AVENUE
GLENDALE, CA 91201

PREPARED BY

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DATE

August 2021

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1.0 INTRODUCTION

The Applicant, Public Storage Atlantic Coast, LLC, is proposing to construct a 3-story self-storage facility. The first floor will consist of the rental office space, the lobby, restrooms, elevators, and mechanical spaces, as well as storage units. The 2nd, and 3rd floors will consist of storage spaces. On the west side of the building will be 19 secure parking spaces within a vehicular gated area and 8 parking spaces for office use and visitors outside said gated area. An emergency access drive will encircle the building. Existing parking along the entrance drive will remain. New landscaping and buffers will be provided.

As part of the project, a subsurface stormwater detention system and associate pipes and structures will be constructed to attenuate stormwater runoff from the project site and provide a controlled discharge to Crystal Lake to the north. As such, maintenance personnel should be properly trained, equipped, certified and supervised when performing maintenance on or within the stormwater management system.

This manual has been prepared in accordance with the New Jersey Stormwater Management Rules (N.J.A.C. 7:8) to describe on-going maintenance procedures that must be undertaken to ensure the successful continued operation of the stormwater management features and should be reviewed in conjunction with the following drawings from a certain set of drawings titled “*Preliminary/Final Site Plan; Public Storage; Lot 1.08, Block 111; Township of West Orange, Essex County, New Jersey*” and prepared by Dresdner Robin.

- C-401 “Grading & Drainage Plan”
- C-402 “Grading & Drainage Plan”
- C-501 “Utility Plan”
- C-901 “Construction Details I”
- C-902 “Construction Details II”

The effectiveness of this maintenance plan should be evaluated at least once a year and be adjusted as necessary to ensure proper maintenance and function of the system.

2.0 RESPONSIBLE ENTITY

In accordance with N.J.A.C. 7:8-5.8(b), the following information is provided to identify the person responsible for preventative and corrective maintenance (including replacement) of the stormwater management measures for this project:

Public Storage Atlantic Coast, LLC
701 Western Avenue
Glendale, CA 91201
(T): (800) 688-8057

3.0 MAINTENANCE PLAN EFFECTIVENESS

In accordance with N.J.A.C. 7:8-5.8(g), the person responsible for maintenance identified above shall evaluate the effectiveness of this maintenance plan at least once per year and adjust the plan and the recorded deed as needed.

The maintenance person responsible shall evaluate the frequency of inspections, specified herein, for any element of the stormwater management system. Upon completion of the first few inspections, the maintenance personnel shall determine the specific elements of the stormwater management system that may require more frequent inspections. Maintenance issues, such as the accumulation of sediment within the stormwater pipes and structures, are potential instances that would require an increase in inspection or maintenance frequency.

Additionally, the maintenance person responsible shall evaluate the frequency of inspections during less than average rainfall events of more than 1-inch of precipitation.

If any modifications to this report are required based on the above, they shall be properly recorded with the deed of the subject property.

4.0 RECOMMENDED TOOLS AND EQUIPMENT

A variety of tools and equipment will be necessary to observe the efficiency of the stormwater management system for the subject property and make repairs if necessary. A typical list of recommended tools and equipment are provided below. Note that this list may not be all inclusive and may require other tools and equipment based on the maintenance being performed:

- Rake
- Manhole pick
- Standard hand tools, including:
 - Flashlight
 - Screw drivers
 - Ratchets
 - Hammer
- Shovel
- Ladder
- Masonry tools and equipment
- Vacuum truck

5.0 KEY MAINTENANCE ITEMS

5.1 Inlets and Outlet Control Structure

Regular site maintenance should remove debris covering the drainage structure rims, grates and curb boxes. Trash, sediment, leaves and other debris should be removed from the rims, grates and curb boxes when the depth of this debris exceeds 6-inches above the bottom of the structure or 20% of the diameter of the outflow pipe, whichever is less. The rims, grates and curb boxes should also be inspected for signs of structural damage, settling or misalignment. Missing, damaged or misaligned grates should be replaced or repaired. Ladder-rungs must be in sound structural condition. If ladder-rungs are

deemed to be unsafe, these items must be repaired or replaced. Debris removed from the rims, grates and curb boxes must be disposed of in a manner which complies with applicable local, state and federal laws and regulations.

Personnel must not enter stormwater management structures unless properly trained, equipped and qualified to enter a confined space as identified by local Occupational Safety and Health Regulations. Maintenance personnel must be aware of and avoid contact with any overhead utilities or obstructions when inspecting the stormwater management structures with long sampling devices. Stormwater management structures are designed so inspection of the facility can be performed from grade (i.e. inspect for obstructions, debris accumulation, etc.).

5.2 Stormwater Manholes

Trash, sediment, leaves and other debris should be removed from the manhole when the depth of this debris exceeds 6-inches above the bottom of the structure or 20% of the diameter of the outflow pipe, whichever is less. The manhole should also be inspected for signs of structural damage, settling or misalignment. Missing, damaged or misaligned manhole covers should be replaced or repaired. Ladder-rungs must be in sound structural condition. If ladder-rungs are deemed to be unsafe, these items must be repaired or replaced. Debris removed from the manhole must be disposed of in a manner which complies with applicable local, state and federal laws and regulations.

Personnel must not enter stormwater manholes unless properly trained, equipped and qualified to enter a confined space as identified by local Occupational Safety and Health Regulations. Maintenance personnel must be aware of and avoid contact with any overhead utilities or obstructions when inspecting the structures with long sampling devices. Manholes are designed so inspection of the facility can be performed from grade (i.e. inspect for obstructions, debris accumulation, etc.).

5.3 Stormwater Pipes

Stormwater pipes are used to convey stormwater runoff. Accumulated sediment and/or debris that exceed 20% of the diameter of the pipe should be removed. Corrective action must be taken when joints are visibly misaligned or disrupted. Structural damage or pipe corrosion must be addressed promptly when identified.

6.0 INSPECTION AND MAINTENANCE SCHEDULE

The person responsible for maintenance identified herein shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders. The person responsible for maintenance identified herein shall retain and make available, upon request by any public entity with administrative, health, environmental or safety authority over the site, the maintenance plan and the documentation specified herein.

Inlets will be visually inspected four times annually to ensure debris and obstructions do not impede proper function of these features. While debris removal and structural repairs should be addressed immediately, regular cleaning and maintenance of these features should be conducted on a semiannual basis.

The stormwater manholes, and stormwater pipes will be inspected semiannually. Maintenance items will be identified during the inspection and will be addressed immediately.

Inlets will be inspected after minor storms which produce less than 1 inch of rainfall in 30 minutes to ensure debris and obstructions do not impede proper function of these features. The stormwater manholes and stormwater pipes will be inspected after major storms which produce 1 inch of rainfall in 30 minutes or more to ensure debris and obstructions do not impede proper function of these features.

Paved areas, including parking lots and walkways will be swept, at a minimum, twice per year. At least once a week, collect and remove litter from the walkways and platforms in addition to regular sweeping.

TASK FREQUENCY	INSPECT AND MAINTAIN (IF NECESSARY)
Four Times Annually	Inlets and area drains.
Semi-annually	Storm water manholes, storm water pipes.
After Minor Storms (Less than 1 inch in 30 minutes)	Inlets and area drains
After Major Storms (More than 1 inch in 30 minutes)	storm water manholes, storm water pipes

7.0 OPINION OF PROBABLE ANNUAL MAINTENANCE COSTS

Maintenance costs given on the following page are estimates for standard stormwater management facility maintenance. Costs of major or emergency repairs are not considered within the Opinion of Estimated Annual Maintenance Cost Summary Table.

OPINION OF ESTIMATED ANNUAL MAINTENANCE COSTS SUMMARY			
	Cost per Task	Number of Times/Year	Total Yearly Cost Estimate
Storm Sewer System			
Inspect inlets for trash and debris. Clean as necessary.	\$300	4	\$1,200
Removal of sediment, trash and debris.	\$500	1	\$500
Subsurface Detention Facility			
Inspect and remove trash and debris from basin.	\$5000	2	\$1,000
Removal of sediment, trash and debris.	\$2,000	1	\$2,000
Total Estimated Cost of Standard Maintenance Tasks			\$4,500

APPENDIX A

Inspection Checklist for Stormwater Management Facilities

Name of Facility: Public Storage – West Orange

Location: 424 Eagle Rock Avenue, West Orange, NJ Date: _____

Weather: _____

Facility Item

O.K.¹ Routine² Urgent³ Comments⁴

1. Inlet Structures

A. Condition of Structure				
B. Trash & Debris				
C. Sediment				
D. Aesthetics				
E. Backflow Preventers:				
F. Other:				

2. Surface Parking Lot

A. Trash & Debris				
B. Aesthetics				
C. Other:				

3. Outlet Structure

A. Condition of Structure				
B. Trash & Debris				
C. Sediment				
D. Mechanical Components				
E. Aesthetics				
F. Other:				

4. Miscellaneous

A. Effectiveness of Exist. Maint. Program				
B.				
C.				
D.				
E.				
F.				

¹ The item checked is in good condition, and the maintenance program is adequate.

² The item checked requires attention, but does not present an immediate threat to the facility function or other facility components.

³ The item checked requires immediate attention to keep the facility operational or to prevent damage to other facility components.

⁴ Provide explanation and details if columns 2 or 3 are checked.

Remarks (Refer to Item No., If Applicable)

Inspector:

Maintenance Log for Stormwater Management Facilities

Name of Facility: Public Storage – West Orange

Location: 424 Eagle Rock Avenue, West Orange, NJ

A. Preventative Maintenance

Date:

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Work Item

(v) Completed

1. Trash and Debris Removal

A. Surface Lot										
B. Inlets										
C. Outlet Structure & Trash Rack										
D. Inlet Filter										
E. Other:										

2. Sediment Removal

A. Inlets										
B. Outlets and Trash Racks										
C. Subsurface Detention Basin										
D. Inlet Filter										
E. Other:										

3. Other Prevention Maintenance

A.										
B.										
C.										

B. Corrective Maintenance

Work Item

1. Removal of Debris & Sediment

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2. Structural Repairs

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3. Dewatering

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4. Basin Maintenance

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5. Inlet Filter Replacement

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6. Snow & Ice Removal

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7. Other

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