STORMWATER MANAGEMENT MAINTENANCE PLAN

BROADWAY & WALLIS
141 - 143 BROADWAY, JERSEY CITY NJ

Proposed Construction of a new 5-Story Multi-Family Building
With 32 Residential Units and Ground Floor Parking
Block 10301, Lots 40,41,42
Jersey City, New Jersey

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TABLE OF CONTENTS

1.0 Responsible Persons

Developer Information

Developer Name: BROADWAY + WALLIS

Developer's Address: 141 – 143 BROADWAY
JERSEY CITY, NJ 07306

Developer's Number: 551 208 2153

Development Name: BROADWAY AT MARION REALTY, LLC

2.0 Purpose of Document

This stormwater maintenance manual is being prepared as a part of the Final Site Plan Approval of the Branford Place. This project is a Proposed 5-story Mixed-Use Multifamily building with basement parking garage. It is located at First street, Jersey City, NJ. The project's official tax identification is Block 10301, Lots 40,41, & 42 as shown on the City of Jersey City, Hudson County, NJ Tax map. The entire tract area of the project is 10,000 sq. ft. (0.23-acre)

The stormwater management facility for the project consists of roof drains at building roof and a storm water detention system (Storage Vault, with a controlled outlet structure) which is located within the property limit (see sheet C-1.30 for layout of storm water detention system).

The developer shall maintain the facility, structures and land areas associated with the storm water management system during the construction and instillation process. After completion and approval of the facilities by the city, the maintenance and operation of the storm water management facility shall be the responsibility of the designated owner.

The storm water management facility shall be maintained in accordance with the operation and maintenance procedures outlined in this manual. This maintenance manual is in accordance with the N.J.D.E.P. Stormwater Best Management Practices Manual (September 2017), Chapters 8, 9.4, and 9.5.

3.0 Instructions for Responsible Party

The party responsible for the maintenance of the stormwater management facility shall follow through and abide by the following instructions in accordance with the NJDEP Stormwater Management Rules:

1. If there is a change in ownership, copies of this maintenance plan shall be provided to the future owner and operator of the stormwater management facility.
2. The responsible party shall provide the local mosquito control or extermination commission a copy of this maintenance manual upon request.
3. The title and date of this maintenance plan and the name, address, telephone number of the part responsible for the maintenance of the stormwater management facility must be recorded on the deed of the property on which the facilities are located. Any change in this information due, for example, to a change in property ownership, must also be recorded on the deed.
4. The party responsible for the maintenance of the stormwater management facility must evaluate this maintenance plan for effectiveness at least annually and revise as necessary.
5. A detailed written log of all preventative and corrective maintenance performed at the stormwater management facility must be kept, including a record of all inspections and copies of maintenance-related work orders.
6. The person responsible for the maintenance of the stormwater management facility must retain and upon request, upon request, make available this maintenance plan and associated logs and other records for review by a public entity with administrative, health, environment, or safe authority over the site.

4.0 Description of Stormwater Management Facility

The stormwater management facility has been designed to provide water flow reductions for the developed site through building roof drains and above ground storm water drainage detention vault system.

The storm drainage system consists of the following components: a series of roof drains that discharges the storm water to the storm water detention vault, and a controlled outlet structure. The Vault's outlet structure discharges the stormwater to the proposed manhole on Ocean Ave. The new roof drains, leaders are designed and sized in accordance with the National Standard Plumbing Code 2015. The lateral discharge pipes from the storm water vault to the manhole on Montgomery Street was sized based the Manning's Equation.

The following is a list of structures for the proposed on-site stormwater detention system:

1. Stormwater Detention Piping
2. Roof leader system
3. Roof drains at the roof drainage area
4. 8" dia. RCP discharge pipe

5.0 Maintenance of Stormwater Management Facilities

Maintenance procedures for stormwater management facility can be categorized as Functional Maintenance and Aesthetic Maintenance. Functional Maintenance includes preventative (routine) maintenance and corrective (emergency) maintenance. Aesthetic Maintenance can be considered maintenance, which enhances or maintains the visual appearance of the facilities. Aesthetic maintenance is not required for assuring the intended operation of the stormwater management facility, but it can improve the quality of life in the community and reduce the amount of required Functional Maintenance.

6.0 Preventative Maintenance Procedures

The purpose of preventative maintenance is to assure that a stormwater management facility always remains operational and safe, while minimizing the need for emergency or corrective maintenance. The preventative maintenance plan for the stormwater management facility in this project should comply with the following schedule:

6.1 Vegetation Maintenance

Vegetated areas will be inspected. Any areas of dead or dry vegetation will be noted as well as any areas without ground cover. An assessment by the inspection personnel shall be made to determine the cause of any observed problems and corrective measures will be implemented and may include fertilizing, de-thatching and soil conditioning in order to maintain healthy growth. Additionally, provisions will be made to replace green roof patch to reestablish ground cover in areas damaged by severe weather conditions, stormwater flow, or other causes.

6.2 Removal and Disposal of Trash and Debris

A regular scheduled program of debris and trash removal from the stormwater management facility will reduce the chance of roof drains and outlet pipes from becoming clogged and inoperable during storm events. Trash and debris

will be removed during the monthly inspections or on an as need basis whenever it is present within the system. Additionally, removal of trash and debris will prevent possible damage to pipe system and eliminate potential mosquito breeding habitats. Disposal of debris and trash must comply with all local, county, state, and federal waste flow control regulation. Only suitable disposal and recycling sites will be utilized.

6.3 Sediment Removal and Disposal

Accumulated sediment will be removed before it threatens the operation of the storage volume in the stormwater management facility. Sediment removal may be required once a year or after major storm events (if the amount of accumulated sediment requires removal). Sediment is to be removed in accordance with the manufacturer's recommendations. If a large amount of sediment has accumulated, the use of a commercial vacuum truck may be required. A commercial vacuum truck shall perform sediment removal from the stormwater detention vault. Disposal of the sediment will be performed in accordance with local and state regulations.

6.4 Parking Lot Sweeping

The parking lot should be swept once every three months or after heavy storm events as needed to remove the accumulated sediment and debris that could enter the collection system. This will reduce the volume of sediment entering the drainage system.

6.5 Mechanical Components

The detention basin of the proposed development facility has been designed to have a limited number of mechanical components. However, access hatches and cleanouts should always remain functional. Regularly scheduled maintenance will be performed in accordance with the manufacturer's recommendations. Additionally, all mechanical components will be operated at least once every three months to assure their continued performance.

6.6 Elimination of Potential Mosquito Breeding Habits

The most effective mosquito control program is one that eliminates potential breeding habitats. If proper sediment and debris removal practices are followed, water will not lay stagnant, limiting mosquito breeding habitats. Areas exhibiting stagnant ponds of water must be remedied in accordance with the inspector's recommendation.

6.7 Inspection

Regularly scheduled inspections of the facility will be performed, minimum once every three months. The primary purpose of the inspection is to ascertain the operational condition and safety of the facility, particularly the condition of roof drains, storm water vault, conveyance system, 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 any changes in the extent and scheduling of the procedures, if warranted. Finally, the facility inspections will also be used to determine the need for, and timing of, Corrective Maintenance procedures.

6.8 Reporting

The recording of all maintenance work and inspections provide valuable data on the facility condition. Review of this information will also help to establish more efficient and beneficial maintenance procedures and practices. A written log should be kept of the work performed during inspections. An annual maintenance report should be prepared summarizing the work performed during that calendar year, current condition of the vault and any improvements proposed for the upcoming year.

7.0 Corrective maintenance procedures

Corrective Maintenance may be required on an emergency or non-routine basis to correct problems or malfunctions and to restore the intended operation and safe condition of a stormwater management facility. Corrective Maintenance should be performed for stormwater detention vault in accordance with manufacturer's recommendations.

7.1 Removal of Debris and Sediment

Sediment, debris and trash, which threaten the discharge capacity of a stormwater management facility, will be removed immediately and properly disposed of in a timely manner. Equipment and personnel must be available to perform the removal work on short notice. Debris and sediment will be disposed of off-site at a predetermined location, which accepts refuse in an appropriate manner consistent with all local, state and federal regulations.

7.2 Structural Repairs

Structural damage shall be repaired immediately to vault structure, cracks in pipes, broken or warped lids or roof drains. Equipment, materials and personnel must be available to perform these repairs on short notice. The immediacy of the repairs will depend upon the nature of 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 shall be undertaken by qualified personnel. The industry standard of life expectancy of outlet structures is 40 years.

7.3 Embankment and Slope Repairs

Damaged embankments and side slopes will be repaired promptly. This damage can result from rain or flood events, vandalism, animals, vehicle or neglect. Typical problems include settlement, sloughing, seepage and rutting. Equipment, materials and personnel must be available to perform these repairs on short notice. The immediacy 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 damage and the design performance of geotechnical repairs should only be undertaken by qualified personnel.

7.4 Extermination of Mosquitoes

If neglected, a stormwater management facility can readily become an ideal mosquito breeding area. Extermination of mosquitoes will usually require the services of an expert, such as the local Mosquito Extermination Commission. Proper procedures carried out by trained personnel can control the mosquitoes with a minimum of damage or disturbance to the environment. If mosquito control in a facility becomes necessary, the preventative maintenance program should also be re-evaluated, and more emphasis placed on control of mosquito breeding habitats.

7.5 Erosion Repair

Vegetative cover or other protective measures are necessary to prevent the loss of soil from the erosive 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 will be initiated to prevent further loss of soil and any subsequent danger to the stability of the facility. Soil loss can be controlled by a variety of materials and methods, including gabion lining, sod, seeding, and re-grading. The local Soil Conservation District can provide valuable assistance in recommending materials and methodologies to control erosion.

7.6 Elimination of Animal Burrows

The landscape stability can be impaired by animal burrows and can also present a safety hazard for maintenance personnel.
Burrows will be plugged by filling with materials like the existing material and capped just below the grade with stone, concrete or other material. If plugging of the burrows does not discourage the animals from returning, further measures shall be taken to either remove the animal population or to make critical area of the facilities unattractive to them.

7.7 Snow and Ice Removal

Accumulations of snow and ice can threaten the functionality of a stormwater management facility, particularly at roof drains and discharge pipes. Structures shall be inspected after major storm events or extended periods of cold weather. Providing the equipment, materials and personnel necessary to monitor and remove snow and ice from these areas is critical to the continued functioning of the facility during the winter months. Standing water should not be tolerated due to damage caused during the freeze/ thaw cycles.

8.0 Aesthetic Maintenance Procedures

Aesthetic Maintenance, although not required to keep a stormwater management facility operational, will maintain the visual appeal of a facility and will benefit everyone within the local community. Aesthetic Maintenance can also reduce the amount of required Preventative and Corrective Maintenance. A comparison of Aesthetic and Preventative Maintenance procedures reveals how both can readily be combined into an overall stormwater management facility maintenance program.

8.1 Graffiti Removal

The timely removal of graffiti will restore the aesthetic quality of a stormwater management facility. Removal can be accomplished by painting or otherwise covering the graffiti, or removing it with scrapers, solvents or cleansers. Timely removal is important to discourage further graffiti and other acts of vandalism.

8.2 Control of Weeds

Although a regular green roof maintenance program will keep weed intrusion to a minimum, some weeds will invariably appear. Periodic removal of unsightly or nuisance plants, either chemically or mechanically, will help maintain a healthy turf and keep green roof areas looking attractive.

8.3 Grass Trimming

Although time consuming, trimming of grass edges around structures shall provide for a neat and attractive appearance of the facility.

8.4 Details

Careful, meticulous and frequent attention to the performance of maintenance items such as painting, tree pruning, leaf collection, debris removal, and grass cutting will result in a stormwater management facility that remains both functional and attractive.