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## STORMWATER SYSTEM OPERATIONS AND MAINTENANCE PLAN

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### "Bristol Self Storage"

Assessor's Map 41, Lot 4  
180 Mount Hope Avenue  
Bristol, RI

### Prepared For

DXD SS F1 Land LLC  
1718 Central Avenue SW, Suite B  
Albuquerque, NM 87104

Rev. August 2022



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## **1.0 INTRODUCTION**

### **1.1 SITE INFORMATION FOR AQUIDNECK COMMERCE CENTER**

City / Town:	Bristol, Rhode Island
Adjacent Roadways:	Mount Hope Avenue, Dewolf Avenue
Lot(s) identification:	A.P. 41 Lot 4
Zoning District:	GB (General Business)
Site Use:	Storage Facility, Day Care Center
Site Area:	6.92 Acres
FEMA Zone and Map:	Zone "X (Panel 44005C0014H)

## **2.0 ADMINISTRATION**

### **2.1 RESPONSIBLE PARTIES**

The Owner and party responsible for the operation and maintenance of the Stormwater Management System shall be:

**DXD SS F1 Land LLC  
1718 Central Avenue SW, Suite B  
Albuquerque, NM 87104**

The Owner intends that this Plan shall run with the land and be binding upon the Owner and the Owner's successors and assigns. A copy of this Plan shall be provided to any future property owners. This Section shall be amended as necessary.

Easements across the stormwater system to the Town of Bristol may be provided upon request; however, the Owner is solely responsible for all operation and maintenance. Refer to any stormwater maintenance agreements in Appendix C which may be applicable for this site.

### **2.2 O&M EXPENSES**

It is anticipated that the Operation and Maintenance budget will be incorporated into the operating budget of the property. The stormwater facilities will require continual maintenance to operate at peak efficiency. It is anticipated that small equipment and hand labor will typically be required to operate and maintain the system. A small excavator may be required for more intensive maintenance. All operation and maintenance activities and equipment will be funded by the Owner.

### **3.0 GENERAL INSPECTION AND MAINTENANCE**

This section contains a general overview of O&M guidelines and documentation procedures. Specific guidance is described in Section 5.0. Appendix A contains applicable Operation, Maintenance and Management Inspection Checklists. Appendix B contains a location map of stormwater features to be maintained and details of the devices which may be referenced during maintenance should any reconstructive measures be undertaken.

#### **3.1 MAINTENANCE INSPECTION SCHEDULE**

All stormwater management facilities shall be periodically inspected by a qualified individual. Inspections shall be conducted by a registered professional engineer where the structural or hydraulic integrity of the system is in question or as noted on the inspection checklists. Inspections shall follow the specific guidelines found in the checklists included in Appendix A. Regular inspections of the stormwater system shall be completed at the following intervals:

1. Biannual basis (twice per year)
2. After storm events greater to or equal to a 1-year, 24-hour Type III storm (2.8 inches of precipitation with 24-hours). The following website may be consulted to determine total rainfall for recent storm events in order to determine if an inspection is warranted:

<https://www.wunderground.com/weather/us/ri/bristol/02809>

Conditions may warrant additional inspections throughout the year in order to determine the cause of failure conditions exhibited by the stormwater system. It is the responsibility of the Owner and his qualified inspectors to determine if additional inspections are necessary. Timing of such inspections may be:

1. Pre-storm
2. During a storm event

#### **3.2 TYPES OF MAINTENANCE**

Maintenance activities are described in three basic categories based upon the magnitude and type of the maintenance activities performed. A description of each category follows.

### 3.2.1 PREVENTATIVE MAINTENANCE

The most effective way to maintain the stormwater system is to prevent the pollutants from entering them in the first place. Common pollutants include sediment, trash and debris, chemicals, runoff from stored materials, and illicit discharges. The Owner shall implement the following measures to address these potential contaminants. **These activities do not correspond to any maintenance checklists provided in the following sections and should be considered "Good Housekeeping" measures intended to reduce the potential for costly maintenance in the future.**

- Educate employees of how their actions impact water quality, and how they can help reduce maintenance costs;
- Keep the property free of trash and debris;
- Ensure the proper disposal of hazardous wastes and chemicals;
- Plan landscaping care to minimize the use of fertilizers, herbicides, and pesticides. It is recommended that these materials not be kept on site when not in use;
- Sweep paved surfaces and dispose of sweepings properly. Regular sweeping can prevent or delay more costly maintenance that requires the use of more specialized equipment, such as a vacuum truck. The Owner should be aware that lax sweeping will affect stormwater components that they are ultimately responsible for. It is recommended that the paved parking areas be swept at least twice per year;
- Be aware of automobiles leaking fluids. Use absorbents to soak up drippings – dispose of properly (refer to section 2.2.5 of this manual);
- Re-vegetate disturbed and bare areas to maintain vegetative stabilization under the direction of a qualified landscaper.

### 3.2.2 ROUTINE AND MINOR MAINTENANCE

Routine maintenance work to be undertaken by the Owner shall include activities normally performed throughout the year as described in the following sections. Such maintenance consists of isolated or small-scale maintenance and correcting minor operational problems. Most of this work can be completed by a small crew with hand tools, and small equipment. **These maintenance activities are included in the inspection and maintenance checklists and are required according to the intervals specified in Section 3.1 above.**

### 3.2.3 MAJOR MAINTENANCE

This work consists of more complex maintenance/operational problems and system failures. Some of this work may require consultation with a licensed engineer, RIDEM, and/or the Town of Bristol. This work may also require more specialized maintenance equipment, design/details, surveying, or assistance through qualified contractors and consultants. **These maintenance activities may be required as a result of the required inspections and will not need to be performed at regular intervals.**

#### **3.2.4 ILLICIT DISCHARGES**

The following discharges are prohibited at the site, either into the stormwater system or otherwise:

- Contaminated groundwater, unless specifically authorized by the RIDEM and the Town.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures (applicable during any construction activities).
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials (applicable during any construction activities).
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all times.
- Soaps or solvents used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

Should any illicit discharges be detected at any time, the Owner will notify the Bristol Department of Public Works immediately. In the case of extreme discharges, or at the direction of the Town, the Owner shall also notify RIDEM. Any and all cleanup activities shall be completed in coordination with these agencies. All recovered material following a spill of illicit materials shall be disposed of in accordance with the mandates of RIDEM.

### 3.2.5 SPILL PREVENTION AND CONTROL

Any chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for any such material delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be identified in order for prevention to be possible. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The site manager must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site. The following table lists specific potential sources of spills, the associated risks, and the applicable preventative measures.

Potential Source of Pollution	Risk	Preventative Measures
Oil, gasoline, or hydraulic fluid leaks from vehicles	Oil or fluid leaks entering the drainage system or polluting downstream properties	<p>The potential for fuel or fluid leaks from vehicles on site will be minimized by regular inspection of the site for spills or evidence of contamination in paved areas.</p> <p>All vehicles on site will be monitored for leaks.</p> <p>Any petroleum products used on site will be stored in tightly sealed containers, all of which will be clearly labeled.</p> <p>Following any spill absorbent material will be placed over the area to collect excess fluid. The absorbent material will be replaced and disposed of properly when saturated.</p>
Temporary site toilet facilities (during construction)	Leaks and or overflows from temporary site toilets.	The General Contractor will ensure that temporary site toilets are maintained in good working order.
Stored construction materials	Leakage of stored materials entering the drainage system and hence downstream receiving waters.	<p>The owner will ensure that all materials stored on site are placed in suitable leak-proof containers.</p> <p>Materials such as cement and asphalt will be stored in covered, weatherproof facilities only. Diesel, or other fuel stored on site will be stored in approved containers, with containment areas where required.</p> <p>All site materials storage facilities will be clearly labeled and adequate measures will be taken to ensure that spills can be isolated within the storage area.</p>



### **3.2.6 MAINTENANCE REPORTING**

At the request of the Town, submittal of the required inspection forms and inspector qualifications **may** be provided on an annual basis. Requirements of annual reporting will be determined during the town permitting process. Any resulting agreements with the Town will be included in this report in Appendix C.

## **4.0 LAWN, GARDEN, AND LANDSCAPE MANAGEMENT (PREVENTATIVE MAINTENANCE)**

Grasses require more water and attention than alternative groundcovers, flowers, shrubs, or trees. Alternatives to turf are especially recommended for problem areas such as lawn edges, frost pockets, shady spots, steep slopes, and soggy areas.

### **4.1 GRASS**

Grass seed is available in a wide range of cultivated varieties. The Owner should consult a landscape expert to choose the grass type that matches the site conditions, and is consistent with the Owners desired level of maintenance.

### **4.2 MOWING AND MANAGEMENT**

To prevent insects and weed problems, the Owner should mow high, mow frequently, and keep mower blades sharp. Lawns should not be cut shorter than 2 to 3 inches, because weeds can grow more easily in short grasses. Grass can be cut lower in the spring and fall to stimulate root growth, but not shorter than 1 ½ inches.

### **4.3 FERTILIZATION**

If fertilizing is desired, consider the following points:

- Most lawns require little or no fertilizer to remain healthy. Fertilize no more than twice a year - once in May-June, and once in September-October;
- Fertilizers are rated on their labeling by three numbers (e.g., 10-10-10 or 12-4-8), which refer to their Nitrogen (N) – Phosphorus (P) – Potassium (K) concentrations. Fertilize at a rate of no more than ½ pound of nitrogen per 1000 square feet, which can be determined by dividing 50 by the percentage of nitrogen in the fertilizer;
- Apply fertilizer carefully to avoid spreading on impervious surfaces such as paved walkways, patios, driveways, etc., where the nutrient can be easily washed into storm drains or directly into surface waters;
- To encourage more complete uptake, use slow-release fertilizers that is those that contain 50 percent or more water-insoluble nitrogen (WIN);
- Grass blades retain 30-40 percent of nutrients applied in fertilizers. Reduce fertilizer applications by 30 percent, or eliminate the spring application of fertilizer and leave clippings on the lawn where they will degrade and release stored nutrients back to the soil; and
- Fertilizer should not be applied when rain is expected. Not only does the rain decrease fertilizer effectiveness, it also increases the risk of surface and ground water contamination.

#### 4.4 WEED MANAGEMENT

The Owner must decide how many weeds can be tolerated before action is taken to eradicate them. To the extent practicable, weeds should be dug or pulled out. If patches of weeds are present, they can be covered for a few days with a black plastic sheet. This process kills the weeds while leaving the grass intact. If weeds blanket a large enough area, the patch can be covered with clear plastic for several weeks, effectively "cooking" the weeds and their seeds. The bare area left behind after weeding should be reseeded to prevent weeds from growing back. As a last resort, the property manager may use chemical herbicides to spot treat weeds.

#### 4.5 PEST MANAGEMENT

Effective pest management begins with maintenance of a healthy, vigorous lawn that is naturally disease resistant. The Owner should monitor plants for obvious damage and check for the presence of pest organisms. Learn to distinguish beneficial insects and arachnids, such as green lacewings, ladybugs, and most spiders, from ones that will damage plants.

When damage is detected or when harmful organisms are present, the Owner should determine the level of damage the plant is able to tolerate. No action should be taken if the plant can maintain growth and fertility. If controls are needed, there are a variety of low-impact pest management controls and practices to choose from, including the following:

- Visible insects can be removed by hand (with gloves or tweezers) and placed in soapy water or vegetable oil. Alternatively, insects can be sprayed off a plant with water, or in some cases vacuumed off of larger plants;
- Store-bought traps, such as species- specific, pheromone-based traps or colored sticky cards, can be used;
- Sprinkling the ground surface with abrasive diatomaceous earth can prevent infestations by soft-bodied insects and slugs. Slugs can also be trapped by falling or crawling into small cups set in the ground flush with the surface and filled with beer;
- In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of. (Pruning equipment should be disinfected with bleach to prevent spreading the disease organism);
- Small mammals and birds can be excluded using fences, netting, tree trunk guards, and, as a last resort, trapping. (In some areas trapping is illegal. Property owners should check local codes if this type of action is desired); and
- The Owner can encourage/attract beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seedhead weevils, and spiders that prey on detrimental pest species. These desirable organisms can be introduced directly or can be attracted to the area by providing food and/or habitat.

If chemical pesticides are used, the Owner should try to select the least toxic, water soluble and volatile pesticides possible. All selected pesticides should be screened for their potential to harm water resources. When possible, pesticides that pose the least risk to human health and the environment should be chosen. A list of popular pesticides, along with their uses, their toxicity to humans and wildlife, EPA's toxicity rating, and alternatives to the listed chemicals, is available from *The Audubon Guide to Home Pesticides*, (<http://www.audubon.org/bird/pesticides/>).



#### **4.6 SENSIBLE IRRIGATION**

Established lawns need no more than one inch of water per week (including precipitation) to prevent dormancy in dry periods. Watering at this rate should wet soil to approximately 4-6 inches and will encourage analogous root growth. If possible, use timers to water before 9:00 a.m., preferably in the early morning to avoid evaporative loss. Use drought-resistant grasses (see "grass selection" above) and cut grass at 2-3 inches to encourage deeper rooting and heartier lawns.

## 5.0 ROUTINE MAINTENANCE OF STORMWATER DEVICES

### 5.1 SAND FILTER

A Sand Filter is designed to capture and temporarily store the water quality storm runoff volume and pass it through a sand media layer. In areas of shallow water tables or poorly draining soils, the media is lined with an impermeable membrane and the filtered runoff is collected by an underdrain. This treated runoff is then discharged downgradient. High flow runoff from the sand filter passes over overflow weirs to the perimeter wetlands. The sand filter is not intended to have a permanent pool and should drain within 24 hours. The filter bed is planted with water tolerant grasses selected from the Rhode Island Coastal Plant Guide or Appendix B of the RIDISM.

The stormwater design for this development includes the following sand filters.

- |                   |   |
|-------------------|---|
| 1. Device ID:     | SF-1  |
| Location:         | south of self storage facility                          |
| Lined or Unlined: | Lined   |
| Outlet Structure: | 4' diameter concrete outlet structure in berm of filter |

#### 5.1.1 REQUIRED SAND FILTER MAINTENANCE

The sand filter shall be inspected following at least the first two precipitation events of at least 1.0 inch to ensure that the system is functioning properly. Thereafter, the filter should be inspected at least annually and after storm events of greater than or equal to the 1-year, 24-hour Type III precipitation event (2.8 inches). These maintenance objectives are focused on preserving the hydraulic and removal efficiency and maintaining structural integrity and include the following:

1. The slopes of the sand filter shall be inspected for erosion and gulying. Inlet areas shall be reinforced if they are found to be deficient or erosion is present at the overflow outlet. All material, including any trash and/or debris from all areas within the extents of the filter shall be disposed of in accordance with all applicable regulations. The overflow weir shall be inspected for structural faults.
2. Any areas within the extents of the sand filter that are subject to erosion or gulying shall be replenished with the original design material and re-vegetated according to the design drawings. Slope protection material shall be placed in areas prone to erosion. Embankment stability shall be verified by inspecting for seepage and burrowing animals.

The following maintenance tasks shall be completed on an annual basis.

1. Silt/sediment shall be removed from the sand filter bed annually, when accumulation exceeds one inch, or when the filtering capacity of the device diminishes substantially. This material shall be disposed of in accordance with all applicable regulations.



2. Mow the grass around the perimeter of and within the sand filter, seed bare areas, and remove litter and debris at least three times per growing season to maintain maximum grass heights less than twelve inches.
3. Remove any invasive vegetation within the extents of the sand filter. Any invasive vegetation encroaching upon the perimeter of the filter shall be pruned or removed if it is prohibiting access to the device, compromising sight visibility, and/or compromising the original design intent.
4. If dead or dying grass on the bottom is observed, check to ensure that water drains down within two days following storms. If standing water is observed more than 48 hours after a storm event, then the top six (6) inches of sand shall be removed and replaced in kind. If discolored or contaminated material is found below this removed material, then that material shall also be removed and replaced in kind until all contaminated sand has been removed from the filter media. The sand shall be disposed of in accordance with all applicable regulations.

## **5.2 QUALIFYING PERVIOUS AREA (QPA)**

A QPA is a natural or landscaped vegetated area that can remove the water quality requirement for a disconnected area of impervious surfaces. A QPA must have a minimum of 4 inches of topsoil or organic material what is located outside of regulated wetland areas and regulated buffers to wetlands.

The stormwater design for this development includes the following QPAs:

- |                     |  |
|---------------------|--|
| 1. Location:        | Downstream of paved access road leading to Dewolf Ave.               |
| Surface:            | Natural vegetation that may be supplemented by appropriate plantings |
| Discharge location: | Perimeter wetlands   |

### **5.2.1 REQUIRED QPA MAINTENANCE**

General inspections shall be conducted on a biannual basis and after storm events greater than or equal to the 1-year, 24-hour Type III precipitation event (2.8 inches). The maintenance objectives for this device include sediment removal, preventing erosion, and ensuring 100% coverage of appropriate plantings. These inspections include the following:

1. Sediments in the QPA and in the stone level spreader shall be removed and disposed of at a licensed off-site facility.
2. Any areas of ponding shall be re-graded, tilled to a depth of eighteen (18) inches, and revegetated.
3. Areas of observed erosion shall be restabilized with appropriate grasses of vegetation. Upstream areas of the stone level spreader shall be reconstructed according to the original design detail as necessary to ensure that flow does not concentrate into these areas. This work shall be carried out by a qualified contractor under the direction of the project engineer.



4. If dead or dying vegetation is observed within the QPA, the affected area shall be tilled to a depth of eighteen (18) inches and reseeded / replanted. All work shall be carried out by a qualified contractor under the direction of a landscape architect.
5. The stone level spreader shall be inspected for missing stones or invasive plants. Any invasive plantings shall be removed and the stone shall be supplemented with similar stone material.

### **5.3 GRASS FILTER STRIP**

The grassed filter strip is intended to pre-treat sheet flow from adjacent impervious areas by slowing runoff velocities and filtering out sediments and other pollutants and providing some measure of infiltration into the underlying soils.

The stormwater design for this development includes the following grass filter strips;

1. Location: Directly downstream of paved areas to the rear of the self-storage facility

#### **5.3.1 REQUIRED GRASS FILTER STRIP MAINTENANCE**

Maintenance inspections shall include the following tasks. In addition to the scheduling provided in Section 3.0, filter strips should be inspected at least quarterly during the first year of operation and biannually thereafter. All inspections shall be carried out using the checklists provided in Appendix A of this document:

1. Ensure that grass remains established. If not, the grass should be replaced with an alternative species. Consult with a qualified landscape architect or landscape service provider.
2. Evidence of erosions and concentrated flows within the filter strip must be corrected immediately. Eroded spots must be reseeded and mulched to enhance a vigorous growth and prevent future erosion problems.
3. The bulk of accumulated sediments will be trapped at the initial entry point of the filter strip. These deposited sediments shall be removed manually at least once per year or when the accumulated sediments cause a change in the grade elevation. These changes in grade can cause channeling in adjacent areas of the strip thereby requiring more intensive maintenance. Reseeding may be necessary to repair areas damaged during the sediment removal process.
4. Should areas of concentrated surface runoff be observed entering the filter strip, the Owner should consult a registered professional engineer to determine a strategy to eliminate these conditions.

## 6.0 APPENDICES



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**APPENDIX A      OPERATION AND MAINTENANCE CHECKLISTS**

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**Bristol Self Storage**  
**180 Mount Hope Ave. Bristol RI**

**Inspection Checklist for Lined Sand Filter**

Minimum inspection schedule shall be bi-annual and after major storm events

<b>Device Description:</b>	24 inch deep grassed depression above 24 inches of sand media
<b>Device Location:</b>	South of self storage facility
<b>Relevant O&amp;M Section:</b>	Section 5.1
<b>Inspector's Name:</b>	
<b>Date of Inspection:</b>	
<b>Date of Last Inspection:</b>	
<b>Start Time:</b>	
<b>End time:</b>	
<b>Type of Inspection:</b>	<input type="checkbox"/> Biannual <input type="checkbox"/> Major Storm <input type="checkbox"/> Pre-Storm <input type="checkbox"/> Post Storm <input type="checkbox"/> Other

Specific Inspection Requirements		
Maintenance Activity	Is Status Satisfactory?	Corrective Action Needed
Grassed depression should be inspected for the presence of transported sediments. Should the average depth of sediments exceed one (1) inch, all sediments shall be removed using hand tools. All material removed shall be removed by the operator and disposed of in accordance with all applicable RIDEM regulations. The presence of excessive sediments may indicate a failure or improper maintenance of the hydrodynamic separator. A RI licensed Professional Engineer shall be consulted to determine a corrective course of action.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sand filter basin should be inspected for the presence of standing water. Consult section 5.1 of the O&M if condition is found.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The slopes of the sand filter shall be inspected for erosion and gulying. Any eroded areas shall be repaired and reinforced with a seeding of grass. Slope protection material should be placed in areas prone to erosion.	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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Specific Inspection Requirements		
Maintenance Activity	Is Status Satisfactory?	Corrective Action Needed
Reinforce inlet areas with erosion control blankets or stone over a bed of filter fabric if erosion is found.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The outlet structure shall be inspected for structural faults. The cover shall be replaced if missing or damaged. The PVC outlet and inlet pipes shall be inspected for obstruction. The inlet pipe is intended to have a cap drilled into its face in order to meter outflow from the basin. This cap is to be replaced if missing or damaged	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The sump of the concrete outlet structure shall be inspected for the presence of sediments. Should sediment depth exceed 50% of the sump, the sediments shall be removed with a vacuum truck or by hand. Excessive sediments within this sump may indicate that the media liner has failed and it is being transported out of the outlet pipe. A licensed engineer should be consulted should the condition persist.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The concrete overflow weirs shall be inspected for structural faults. In particular, it should be determined that settling of the structures has not occurred. In addition, it should be determined if any stormwater is escaping the filter around the sides of the concrete weirs. Any faults shall be corrected immediately. All work shall be carried out by a qualified contractor.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Embankments of the filter shall be inspected for seepage and burrowing animals. Pest control will be required should evidence of burrowing animals be required. Any evidence of groundwater seepage shall be brought to the attention of a licensed engineer immediately.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The inspector shall ensure that the grass around the perimeter of the filter has been mowed at least three times per growing season. Following each mowing, bare areas should be seeded. The intention is to maintain a maximum grass height of less than twelve inches within the filter.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
During inspection, remove any invasive vegetation within the extents of the filter. Any invasive vegetation encroaching upon the perimeter of the filter shall be pruned or removed.	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Bristol Self Storage**  
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**Inspection Checklist for Qualifying Pervious Area (QPA)**

Minimum inspection schedule shall be annual and after major storm events

<b>Device Description:</b>	Qualifying pervious area (unbroken area of natural vegetation)
<b>Device Location:</b>	Directly along the edge of the paved access to the rear of the self storage facility
<b>Relevant O&amp;M Section:</b>	Section 5.2
<b>Inspector's Name:</b>	
<b>Date of Inspection:</b>	
<b>Date of Last Inspection:</b>	
<b>Start Time:</b>	
<b>End time:</b>	
<b>Type of Inspection:</b>	<input type="checkbox"/> Biannual <input type="checkbox"/> Major Storm <input type="checkbox"/> Pre-Storm <input type="checkbox"/> Post Storm <input type="checkbox"/> Other

Specific Inspection Requirements		
Maintenance Activity	Is Status Satisfactory?	Corrective Action Needed
Sediments in the QPA and in the stone level spreader shall be removed and disposed of at a licensed off-site facility	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Any areas of ponding shall be re-graded, tilled to a depth of eighteen (18) inches, and revegetated	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Areas of observed erosion shall be restabilized with appropriate grasses or vegetation. Upstream areas of the stone level spreader shall be reconstructed according to the original design detail as necessary to ensure that flow does not concentrate into these areas. This work shall be carried out by a qualified contractor under the direction of the project engineer.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If dead or dying vegetation is observed within the QPA, the affected area shall be tilled to a depth of eighteen (18) inches and reseeded / replanted. All work shall be carried out by a qualified contractor under the direction of a landscape architect.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The stone level spreader shall be inspected for missing stones or invasive plants. Any invasive plantings shall be removed and the stone shall be supplemented with similar stone material.	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Bristol Self Storage**  
**180 Mount Hope Ave. Bristol RI**

**Inspection Checklist for Grassed Filter Strip**

Minimum inspection schedule shall be quarterly in the first year of operation, then bi-annually thereafter, and after major storm events

<b>Device Description:</b>	10 to 20 foot wide vegetated strip
<b>Device Location:</b>	Directly adjacent to the downstream edge of the pavement to the rear of the self storage facility
<b>Relevant O&amp;M Section:</b>	Section 5.3
<b>Inspector's Name:</b>	
<b>Date of Inspection:</b>	
<b>Date of Last Inspection:</b>	
<b>Start Time:</b>	
<b>End time:</b>	
<b>Type of Inspection:</b>	<input type="checkbox"/> Biannual <input type="checkbox"/> Major Storm <input type="checkbox"/> Pre-Storm <input type="checkbox"/> Post Storm <input type="checkbox"/> Other

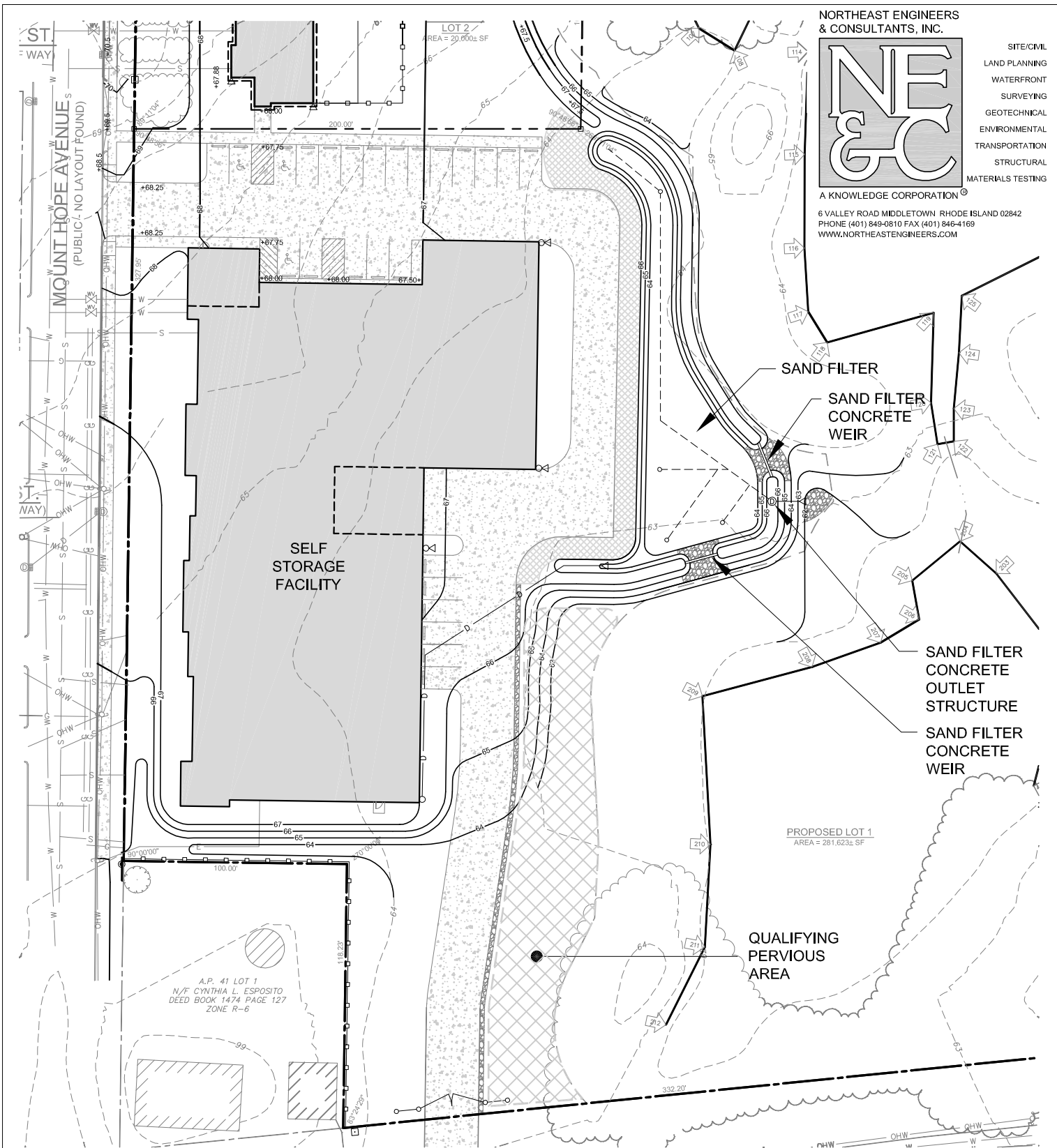
Specific Inspection Requirements		
Maintenance Activity	Is Status Satisfactory?	Corrective Action Needed
Ensure that grass remains established. If not, the grass should be replaced with an alternative species. Consult with a qualified landscape architect or landscape service provider.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Evidence of erosions and concentrated flows within the filter strip must be corrected immediately. Eroded spots must be reseeded and mulched to enhance a vigorous growth and prevent future erosion problems.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
The bulk of accumulated sediments will be trapped at the initial entry point of the filter strip. These deposited sediments shall be removed manually at least once per year or when the accumulated sediments cause a change in the grade elevation. These changes in grade can cause channeling in adjacent areas of the strip thereby requiring more intensive maintenance. Reseeding may be necessary to repair areas damaged during the sediment removal process.	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Should areas of concentrated surface runoff be observed entering the filter strip, the Owner should consult a registered professional engineer to determine a strategy to eliminate these conditions.		



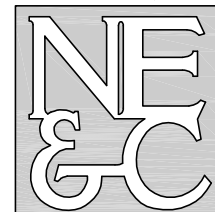
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**APPENDIX B      STORMWATER DEVICE MAP AND DRAWINGS**

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ENVIRONMENTAL  
TRANSPORTATION  
STRUCTURAL  
MATERIALS TESTING

Scale:	1"=60'	Date:	12AUG22	Designed By:	JJR	Drawn By:	JJR	Checked By:	GES
Project Title:				Drawing Title:					
BRISTOL SELF STORAGE 180 MOUNT HOPE AVENUE, BRISTOL				STORMWATER DEVICE LOCATION MAP					
Issued for:				Drawing Number:			Project Number:		
O&M DOCUMENT				M-1			21132.1		



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**APPENDIX C      STORMWATER MAINTENANCE AGREEMENT**

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(If required by the municipality, the agreement will be attached here.)