

STORMWATER POLLUTION PREVENTION PLAN

***MODERN LIVING RENTALS
902 DRYDEN ROAD
TOWN OF DRYDEN
TOMPKINS COUNTY, NEW YORK***

Project Owner:



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Prepared for:



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PREPARERS CERTIFICATION STATEMENT

STORMWATER MANAGEMENT AND POLLUTION PREVENTION PLAN
MODERN LIVING RENTALS
902 DRYDEN ROAD
TOWN OF DRYDEN
TOMPKINS COUNTY, NEW YORK

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Signed: Charles F. Woitdt Jr.

Date: 03/03/2016

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Charles F. Woitdt Jr.

1.0 Project Overview/Background Information

A. Project Background

The proposed project consists of the construction of a parking lot, townhouses, and associated sidewalks at the property located at 902 Dryden Road in the Town of Dryden, NY (see Project Location Map – Appendix B). The project also involves the renovation and remodeling of the existing residential structure on site. The project consists of 0.5 acres of new impervious area. The total disturbance of the project is 1.1 acres.

B. Purpose of SWPPP

This Storm Water Pollution Prevention Plan (SWPPP) has been prepared to identify various stormwater control practices and techniques to prevent, minimize or mitigate water quality and quantity impacts associated with stormwater treatment and disposal for the proposed development of the project site.

In addition, the report identifies the submittal and signature process required to meet the regulatory requirements for a New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges for Construction Activities. The process includes completion of a Notice of Intent (NOI) form, Notice of Termination Form (NOT) and permit signatory and certification requirements.

C. Regulatory Requirements

The Federal Water Pollution Control Act of 1972 (with amendments) provides that stormwater discharges associated with industrial activities from a point source (including discharges through a municipal system) to waters of the United States are unlawful, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In New York State, this is accomplished through the administration of the SPDES program administered by NYSDEC.

A discharge that is subject to the NPDES regulations may be eligible to obtain coverage under a general permit by submitting an NOI to the administrator of the program, the NYSDEC at the Albany, NY office.

The general permit (Permit No GP-0-15-002, effective January 29th, 2015) may authorize all discharges of stormwater associated with construction activity (those sites or common plans of development or sale that will result in the disturbance of one or more acres of total land area) occurring on or after March 10, 2003 and where stormwater discharges from a point source to waters of the United States, including wetlands.

D. Project Site Description - Current Conditions

The existing project site conditions consist of a single residential structure situated on a large grassed area with a wooded perimeter. Several out buildings and trees are located within the interior of the property.

Adjacent Property

The project property is bounded by residential properties to the west and east. To the north, the property is bounded by Fall Creek, a tributary to Cayuga Lake. Dryden Road, New York State Route 366, completes the boundary of the project property to the south.

Soils

The primary soil series within the project area is mapped as Howard gravelly loams per the Tompkins County Soil Survey (see Soil Map – Appendix B). The Howard soils consist of very deep well drained and somewhat excessively drained soils formed in medium textured glacial outwash deposits. The soils are on valley terraces, outwash plains, kame moraines, and eskers. The HSG for Howard soils is A.

Infiltration testing was completed by SJB Services, Inc. Three (3) infiltration tests were completed within the vicinity of the proposed bioretention and infiltration basin systems. The specifics and results of these tests can be found in the attached report in Appendix B. An average infiltration rate of 2 inches per hour was chosen to model the stormwater systems within the HydroCAD program.

Floodplains

The project is partially located within the 1.0% annual chance flood (100-year), Zone A special flood hazard area as shown on the Flood Insurance Rate Map for the Town of Dryden (see Flood Map – Appendix B). The fill placed within the floodplain does not adversely impact the 100-year water surface elevations of Fall Creek (see Fall Creek H&H Study – Appendix B). The placement of the fill within the floodplain meets the requirements of the Town of Dryden Flood Damage Prevention Law as the encroachment of the floodplain (by placement of fill) does not raise the base flood (100-year) more than 1 foot.

Wetlands

State Freshwater Wetlands Maps were reviewed to determine the presence of any State-regulated wetlands. No State wetlands are present within or near the project area. National Wetlands Inventory Maps were also reviewed. There are no federally-regulated wetlands present within or near the project limits (see wetlands maps – Appendix B).

Historic and Archeological

A review of the New York State Parks, Recreation and Historic Preservation National Register Listing interactive website showed the project is not within an archeologically sensitive area (see Historical Map – Appendix B). The property at address 904 Dryden Road shows the main building with a status of “undetermined” on the Cultural Resource Information System (CRIS). The garage structure on the same property is not identified as any significant structure. Per the SHPO Letter of Resolution, the setback from a building identified on the CRIS website is to be 20 feet for a project of 1 to 5 acres. The proposed buildings and stormwater systems are laid out with an approximately 22 foot setback from the shared property line of 902 and 904 Dryden Road. The main structure of 904 Dryden Road, being an additional distance to the east of that shared property line. Therefore, the project at 902 Dryden Road meets the setback requirements from the main building at 904 Dryden Road.

E. Existing (Pre-development) Drainage Conditions

Stormwater runoff currently sheet flows to the northern edge of the property to Fall Creek. The roadside ditch along Dryden Road is collected into a 30-inch corrugated metal pipe at the western corner of the property and conveyed north to a ditch along the west edge that discharges directly to Fall Creek, a fifth order stream.

F. Proposed (Post-development) Drainage Conditions

As depicted on the plans in Appendix D, the post development drainage conditions will be comprised of stormwater planters, and a bioretention system designed and sized for water quality treatment. An additional infiltration basin has been designed and sized to provide additional peak quantity control. The stormwater runoff generated from the disturbed area containing the proposed impervious areas site will be collected via catch basins and conveyed to the proposed bioretention system which flows then into the infiltration basin, before discharging to the drainage ditch on the western edge of the property. The stormwater planters will collect rooftop runoff only, and convey the runoff to the proposed closed stormwater sewer system. As is the case for existing conditions the remaining undisturbed area to the north of the bioretention system will continue to sheet flow to Fall Creek. Additional details of the proposed permanent stormwater controls are provided in Section 3.0 of this SWPPP.

2.0 Planned Erosion and Sedimentation Control Practices

Erosion control measures will be installed prior to any earthmoving and individual measures will be installed at all collection points. Erosion control facilities will be installed to meet the requirements of New York State and the Town of Dryden local requirements. Any area, which will remain in a disturbed condition where there is no construction activity for more than fourteen (14) days, will be mulched and seeded. As soon as practical upon completion of grading, all non-paved disturbed surfaces will be seeded and mulched. It is currently proposed that the project will be completed in the summer/fall of 2016. A proposed sequence of Construction and related Erosion and Sedimentation Control measures is as follows:

A. CONSTRUCTION SEQUENCING NOTES

1. MOBILIZE AND CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON PLANS.
2. BEGIN EROSION AND SEDIMENTATION CONTROL SEQUENCE PRIOR TO ANY EARTH DISTURBANCE FOR ALL STAGES.
3. ROUGH GRADE SITE TO PROPOSED CONTOURS.
4. INSTALL ALL PROPOSED UTILITIES AS SHOWN ON PLANS.
5. CONSTRUCT BUILDING FOUNDATIONS AS SHOWN ON PLANS.
6. CONSTRUCT STORMWATER PLANTER STRUCTURES AND PIPING AS SHOWN ON PLANS.
7. CONSTRUCT ROADS, PARKING LOTS, AND SIDEWALKS AS SHOWN ON PLANS.
8. CONSTRUCT STONE-LINED OUTLET WEIRS OF STORMWATER SYSTEMS.
9. CONSTRUCT BIORETENTION FILTER SYSTEM AS SHOWN ON PLANS AFTER STABILIZATION OF SITE HAS BEEN ACHIEVED.
10. CONSTRUCT BASE LAYERS OF INFILTRATION BASIN AS SHOWN ON PLANS AFTER STABILIZATION OF SITE HAS BEEN ACHIEVED.
11. INSTALL ROCK OUTLET PROTECTIONS AS SHOWN ON PLANS
12. PROVIDE SOIL STABILIZATION MEASURES AS SHOWN ON PLANS.
13. FINAL GRADE, SEED, AND MULCH ALL UNPAVED AREAS AS SHOWN ON PLANS.
14. PLANT TREES AND OTHER VEGETATION AS SHOWN ON PLANS.
15. FINAL CLEANUP, DEMOBILIZE.

B. EROSION & SEDIMENTATION CONTROL SEQUENCING NOTES

1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES AS SHOWN ON PLANS.
2. PROVIDE MAINTENANCE, SWEEPING AND CLEANING OF OFFSITE ROADWAYS AS NECESSARY DURING CONSTRUCTION.
3. INSTALL AND MAINTAIN SILT FENCE AS SHOWN ON PLANS PRIOR TO ANY EARTH DISTURBANCE.
4. INSTALL AND MAINTAIN INLET PROTECTION AROUND EVERY STORMWATER STRUCTURE AS NECESSARY DURING CONSTRUCTION.
5. PROVIDE STABILIZATION OF ALL CONSTRUCTED CONVEYANCE SWALES IMMEDIATELY UPON COMPLETION OF SWALE GRADING.
6. INSTALL AND MAINTAIN STONE CHECK DAMS IN PROPOSED SWALE AS NECESSARY DURING CONSTRUCTION.
7. PROVIDE TRUCK WASHING STATION AND SEDIMENT TRAPPING DEVICE NEAR THE STAGING AREA AND/OR CONSTRUCTION ENTRANCE AS NECESSARY DURING CONSTRUCTION.
8. PROVIDE CONCRETE WASHOUT AREA AND DRYING BED NEAR THE STAGING AREA AND/OR CONSTRUCTION ENTRANCE AS NECESSARY DURING CONSTRUCTION.
9. INSTALL AND MAINTAIN RIPRAP OUTLET PROTECTION AT ALL OUTLET SECTIONS OF PIPES AND CULVERTS AS NECESSARY DURING CONSTRUCTION.
10. UTILIZE PROPOSED SURFACE PONDING VOLUMES OF STORMWATER SYSTEMS AS SEDIMENT TRAPPING AREAS DURING CONSTRUCTION; DO NOT EXCAVATE TO PROPOSED SYSTEM DEPTH.
11. PROVIDE SILT FENCE PROTECTION AT TOE OF SLOPE FOR ALL SOIL STOCKPILES, OR TEMPORARILY SEED AND MULCH SOIL STOCKPILES.
12. PROVIDE TEMPORARY STABILIZATION OF ALL IDLE DISTURBED AREAS WITH STRAW MULCH AND SEED AS REQUIRED DURING CONSTRUCTION TO REDUCE AREA OF DISTURBANCE.
13. PROVIDE DUST CONTROL MEASURES AS NECESSARY DURING CONSTRUCTION.
14. PROVIDE VEGETATION PROTECTION OF ALL TREES AND SHRUBBERY AS NECESSARY.
15. REMOVE ALL TEMPORARY E&S CONTROLS WHEN PERMANENT VEGETATION IS ESTABLISHED.

2.1 Soil Restoration Requirements

Restore the original properties and porosity of the soil by deep till to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices (per "Deep-Ripping and De-compaction" DEC 2008).

During periods of relatively low to moderate subsoil moisture, the disturbed subsoil is returned to rough grade and the following soil restoration steps applied:

1. Till subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller; mixing, and circulating air into the subsoil.
2. Rock-pick until uplifted stone/rock materials of four inches and larger are cleaned off the site.

3. Apply topsoil to a depth of 6 inches.
4. Vegetate as required by approved plan.

At the end of the project an inspector should be able to push a 3/8" metal bar 12 inches into the soil just with body weight.

2.2 Control of Construction Litter, Chemicals, Debris and Dust

The construction of the project will primarily involve earthmoving operations and construction of the townhouses and parking lot. The proposed construction is not anticipated to use chemicals or hazardous products. The use of fuel and oil for construction equipment will be the primary petroleum products used.

Construction materials that are used on site should follow good housekeeping practices as follows:

- An effort will be made to store only enough products required to complete the job.
- All materials stored on site will be stored in a neat, orderly manner.
- Products will be kept in their original containers with the original manufacturer's label.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The contractor shall prohibit washing of tools, equipment and machinery in or within 100' of any watercourse.

Fuel and oil shall be stored in appropriate and tightly capped containers. Containers shall not be disposed of on the project site. Fuels, oils and equipment shall be stored away from trees and at least 100 feet from streams or wells. Refueling and cleaning of construction equipment shall take place in designated staging areas or construction areas and away from stormwater inlets.

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash out water on the site except in a designated washout area as noted on plans. Concrete washout water will not be allowed to discharge into the proposed bypass swale, ponding areas or stormwater sewer system.

Dust control measures will be put in place to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems. Construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur, will be controlled and maintained during dry weather periods by the appropriate good housekeeping practices such as:

- Temporary vegetative cover will provide the most practical method of dust control.
- Mulching, including placement of crushed stone, of disturbed areas.
- Sprinkling of water by a water truck or other means onto the disturbed area until the surface is wet, but does not generate runoff.
- Construction of a windbreak, such as a silt fence or similar barrier; or preservation of existing vegetation to serve as a windbreak as much as possible.

3.0 Post-Construction Stormwater Control Practices

A. General

Post Construction Stormwater Control measures were designed in accordance with the New York State Stormwater Design Manual guidelines and procedures. The stormwater management plan for the proposed development provides water quality treatment, and peak flow attenuation for the stormwater runoff. As depicted on the plans in Appendix D, the stormwater management plan consists of eleven (11) stormwater planters, a bioretention system, and an infiltration basin. The outlet controls of the stormwater planters and the bioretention systems provide retention of the water quality volume. The bioretention allows this water quality volume to infiltrate naturally into the subgrade. The stormwater planters filter the water quality volume before conveying it out of the system and into the closed stormwater sewer system. The larger frequency storms (10-year and 100-year) will overflow the bioretention system and be conveyed directly to the infiltration basin which will provide additional peak flow quantity control of the stormwater runoff. The infiltration basin will allow a certain volume of the runoff to infiltrate naturally into the subgrade, with the excess flow discharged directly to the drainage ditch along the western edge of the property (See details in Stormwater Plans - Appendix D). The HydroCAD Version 10.0 hydrologic computer program was used to model existing and proposed conditions utilizing the SCS Dimensionless Unit Hydrograph method for the onsite drainage area (See details in Stormwater Plans - Appendix D).

B. Stormwater Controls

Using the HydroCAD program, the 1, 10 and 100-year storms were computed for the proposed conditions and then routed through the proposed permanent stormwater systems such that the combined outflow hydrographs could be compared to existing conditions. The parameters and results for existing and proposed conditions are as follows:

<u>Existing Conditions</u>		<u>Proposed Conditions</u>	
Drainage Area	1.1 acres	Drainage Area	1.1 acres
Time of Concentration	22.1 minutes	Time of Concentration	5.7 minutes
Average CN value	55	Average CN value	68
Q1 year storm	0.00 cfs	Q1 year storm	0.00 cfs*
Q10 year storm	0.15 cfs	Q10 year storm	0.00 cfs*
Q100 year storm	1.21 cfs	Q100 year storm	0.65 cfs*

*Routed through stormwater control practices and structures

The timing of the peak flows from the site, and that from Fall Creek are such that the peak flows from the site will have passed through the system before the peak flows from Fall Creek reach the property. As such, the peak flows from Fall Creek are not taken into account in the HydroCAD modeling of the systems. The berm placed around the bioretention system protects the system up to and including the 100-year flood stage from Fall Creek. The infiltration basin will experience inundation during the 50-year and 100-year flood events from Fall Creek.

Water Quality Volume (WQ_v)

Through the use of the planning techniques listed below and the proposed stormwater management system on site, the runoff from the following proposed drainage areas with impervious cover will be treated and controlled before discharging offsite.

Planning techniques used to preserve, avoid, and minimize site impact

- Avoid developing in environmentally sensitive areas: habitat, ecosystems, bedrock, wetlands, shallow groundwater, impervious soils, and unstable soils
- Minimize impervious surfaces: parking, sidewalks, and driveways.
- Minimize clearing and grading: clearing and grading is limited to the amount needed for the construction of the impervious areas and construction of the stormwater systems.

The required water quality volume was determined per the NYS Stormwater Design Manual in accordance with stormwater sizing criteria outlined in Chapter 4. In addition, runoff reduction techniques outlined in Chapter 3 of the NYS Stormwater Design Manual were utilized. The remaining water quality volume after reduction is treated in accordance with the Green Infrastructure Practices procedures in Chapter 5 of the NYS Stormwater Design Manual. Planning practices utilized on this project in accordance with Chapter 5 criteria include, infiltration and source control of the stormwater runoff.

The total proposed disturbed area for the project, which contains the proposed impervious areas, is 1.132 acres, with 0.492 acres of new impervious surfaces.

Total Impervious Area	= 0.549 acres
New Impervious Area	= 0.492 acres
Existing Impervious Area	= 0.057 acres
Treated Impervious Area	= 0.492 acres

$$\begin{aligned}WQ_v &= (P)(R_v)(A)/12 \quad \text{From the NYS Stormwater Design Manual} \\R_v &= 0.05 + 0.009*(0.492/1.132 * 100\%) = 0.44 > 0.20 \text{ min } R_v \\P &= 1.00 \text{ inches per Figure 4.1 Page 4-2 NYS Stormwater Design Manual} \\WQ_v &= (1.00\text{in})*(0.44)*(1.1\text{ac})/12\text{in/ft} = 0.042 \text{ ac-ft or } 1,813 \text{ cubic-feet}\end{aligned}$$

Channel Protection Volumes (CPv)

The required channel protection volume was determined per the NYS Stormwater Management Design Manual (NYS SMDM) in accordance with the guidelines in Appendix B.1.

$$\begin{aligned}V_s/V_r &= 0.682 - 1.43 (q_o/q_i) + 1.64 (q_o/q_i)^2 - 0.804 (q_o/q_i)^3 \quad \text{From the NYS SMDM} \\I_a/P &= [(200 / 68) - 2] / 2.01\text{in} = 0.47 \\t_c &= 0.1 \text{ hrs} \\q_u &= f(I_a/P, t_c) = 610 \text{ csm/in} \quad \text{per Exhibit 4-II from TR-55} \\T &= 24 \text{ hr} \\(q_o/q_i) &= f(q_u, T) = 0.03 \quad \text{From the NYS SMDM} \\V_s/V_r &= 0.682 - 1.43 (0.03) + 1.64 (0.03)^2 - 0.804 (0.03)^3 = 0.641 \\Q_d &= 0.28 \text{ inches} \quad \text{From HydroCAD output} \\A &= 1.132 \text{ acres} \\CP_v &= (V_s/V_r * Q_d * A) / 12\text{in/ft} \quad \text{From the NYS SMDM} \\CP_v &= (0.641)*(0.28\text{in})*(1.132\text{acres})/12\text{in/ft} = 0.017 \text{ ac-ft or } 737 \text{ cubic-feet}\end{aligned}$$

*CPv estimate from HydroCAD output = 0.026 ac-ft or 1,133 cubic-feet

Stormwater Treatment System Sizing

Green Infrastructure Technique – Stormwater Planters (Flow-Through)

df = depth of soil medium (feet)

k = hydraulic conductivity of soil medium (typically 4 ft/day when soil is loosely placed in planter)

hf = average height of water above planter (feet)

tf = the design time (typically 3 to 4 hours)

Af = required filter surface area (square feet)

WQv = water quality volume (cubic feet)

$$WQv = 723sf * 0.95 * 1.0in / 12in/ft = 57 \text{ cf/planter}$$

$$Af = (WQv * df) / [k * (hf + df) * tf]$$

$$Af = (57cf * 1ft) / [4ft/day * (0.5ft + 1ft) * (3.5hrs * 1day/24hrs)] = 65sf/planter$$

Required Af = 65 sf/planter (x 11 planters = 715 sf)

Required WQv = 57 cf/planter (x 11 planters = 627 cf)

Provided Af = 68 sf/planter (x 11 planters = 748 cf)

Provided WQv = 59 cf/planter (x 11 planters = 649 cf)

Stormwater Filtering Systems – Bioretention

df = filter bed depth (feet)

k = coefficient of permeability of filter media (0.5 ft/day per NYS SMDM)

hf = average height of water above filter bed (feet)

tf = the design time (typically 2 days for bioretention)

Af = required filter surface area (square feet)

WQv = water quality volume (cubic feet)

$$WQv = \text{Total WQv} - \text{Stormwater Planter WQv} = 1,813 \text{ cf} - 627 \text{ cf} = 1,186 \text{ cf}$$

$$Af = (WQv * df) / [k * (hf + df) * tf]$$

$$Af = (1186cf * 2.5ft) / [0.5 \text{ ft/day} * (0.5ft + 2.5ft) * 2day] = 988 \text{ sf}$$

Required Af = 988 sf Required WQv = 1,186 cf

Provided Af = 1,404sf Provided WQv = 1,685 cf

Runoff Reduction Volumes (RRv)

The required runoff reduction volumes were determined per the NYS Stormwater Management Design Manual in accordance with the criteria in Chapter's 3, 4, and 5. Chapter 3 outlines the planning techniques used to reduce stormwater runoff; Chapter 4 outlines the sizing and minimum reductions to be met; and Chapter 5 outlines the green infrastructure practices and designs for the use of runoff reduction.

Minimum Runoff Reduction Volumes (RRv_{min})

$RRv = (P)(Rv)(S)(Ai)/12in/ft$ From the NYS Stormwater Design Manual

Ai = 0.492 acres of new impervious area

Rv = 0.95 for 100% impervious areas

P = 1.00 inches per Figure 4.1 Page 4-2 NYS Stormwater Design Manual

S = 0.55 for A type soils per Page 4-5 NYS Stormwater Design Manual

Minimum RRv = $(1.00in) * (0.95) * (0.55) * (0.492ac) / (12in/ft) = 0.021 \text{ ac-ft}$ or 933 cubic-feet

Source Control WQv Treatment Practices

The runoff reduction achieved through the use of the standard and green infrastructure practices outlined in the New York State Stormwater Management Design Manual is calculated below. This site proposes the use of the standard practices of infiltration.

Runoff Reduction - Green Infrastructure Practices

Stormwater Planters (Flow-Through)

Available Water Quality Volume Storage = 0.015 ac-ft or 649 cubic-feet

RRv = 100% of provided volume

RRv = (1.00)*(0.015 ac-ft) = 0.015 ac-ft or 649 cubic-feet

Runoff Reduction – Standard Practices (used as source control)

Bioretention

Available Water Quality Volume Storage = 0.039 ac-ft or 1,685 cubic-feet

RRv = 100% of available volume for Bioretention in A or B soils

RRv = (1.00)*(0.039 ac-ft) = 0.039 ac-ft or 1,685 cubic-feet

Infiltration Basin

Available Water Quality Volume Storage = 0.038 ac-ft or 1,663 cubic-feet

RRv = 1000% of available volume for soils with $k > 0.5$ in/hr

RRv = (1.00)*(0.038 ac-ft) = 0.038 ac-ft or 1,663 cubic-feet

As shown in the above calculations, through the use of the bioretention practice, the entire project area achieves a net reduction of 100% of the water quality volume. Additionally, the entire channel protection volume is reduced through the use of green infrastructure and standard treatment practices. Therefore, the use of additional practices such as area reductions, green infrastructure practices, standard treatment practices not used as source control, etc., is not needed for this project as the runoff reduction criteria has been met per the standards set forth in the NYS Stormwater Manual.

4.0 Inspections and Maintenance Plan

A. Inspections

The operator will have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction. Following the commencement of construction, site inspections shall be conducted by the qualified professional at least every 7 calendar days.

All contractors and subcontractors involved in installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the Stormwater Pollution Prevention Plan (SWPPP), and the contractor(s) responsible for constructing the post-construction stormwater management practices included in the SWPPP must have on site, on a daily basis, an individual employed by the company who has attended a DEC-endorsed 4-hour Erosion and Sediment Control Training.

Trained contractors must be able to show proof of attendance (valid wallet card or certificate) upon request by the Department of Environmental Conservation or the regulated municipality conducting an inspection of the construction site. At least one individual from each company must be on site on a daily basis when the company is performing soil disturbing or SWPPP implementation activities (Part III.A.6. on page 19 and 20 of the SPDES General Permit for Soil Disturbances from Construction Activity [GP-0-15-002] and definition of "trained contractor" on page 42 of the General Permit).

Any company performing implementation of Stormwater Pollution Prevention Plan (SWPPP) components on a permitted construction site that does not have a trained contractor on site daily is in violation of Part III.A.6 of the General Permit and may be asked by the DEC or municipality to Stop Work until the contractor has attended the DEC-endorsed 4-hour Erosion and Sediment Control Training.

The operator will maintain a record of all inspection reports in a site log book. The site log book must be maintained on site and be made available to the permitting authority upon request. Prior to starting construction, the operator must certify in the site log book that the SWPPP was prepared in accordance with the requirements in the permit and that it meets all federal, state and local erosion and sediment control requirements.

B. Maintenance During Construction

1. Stabilized Construction Entrances are to be maintained as follows:
 - Periodic top dressing with additional aggregate.
 - Immediate removal of spilled, dropped, or washed sediment onto public right-of-way.
2. Silt Fence Protection to be maintained as follows:
 - Clean any buildup of sediment as necessary for their proper operation.
 - Repair or reset any portion of Silt Fence Protection as necessary to eliminate openings or breakthroughs.
3. Riprap Outlet Protection to be maintained as follows:
 - Inspect after high flows for evidence of scour
 - Replace dislodged stones or eroded earth immediately
4. Vegetated areas are to be maintained as follows:
 - Maintain proposed slopes.
 - Repair eroded areas as required.
5. Stone Check Dams to be maintained as follows:
 - Inspect after each rainfall event.
 - Remove sediment behind dam when depth exceeds 6".
 - Replace stones, repair dams as needed to maintain design section.
6. Inlet Protection (all types) are to be maintained as follows:
 - Inspect after every storm event.
 - Remove sediment and replace missing stone as necessary.
7. Sediment Traps are to be maintained as follows:
 - Inspect after every storm event.
 - Remove sediment after it has filled one-half (1/2) the design depth.

C. Long Term Maintenance for Permanent Stormwater Controls

The site owner shall be responsible for maintaining the stormwater management system including but not limited to: culverts; inlets; control structures; and standpipes located within the property boundaries.

Post Construction Maintenance Tasks

1. Inspect the bioretention system and clean as required to maintain performance.
 - Vegetation height limited to 18"
 - Silt/sediment shall be removed from filter bed when accumulation exceeds one inch.
 - When the filtering capacity of the filter diminishes substantially (i.e., when water ponds on the surface of the filter bed for more than 48 hours), the top few inches of discolored material shall be removed and shall be replaced with fresh material.
 - The removed sediments shall be disposed in an acceptable manner (i.e., landfill).
 - Areas devoid of mulch shall be re-mulched on an annual basis.
 - Dead or diseased plant material shall be replaced.
2. Inspect the stormwater planters and clean as required to maintain performance.
 - Vegetation height limited to 18"
 - Silt/sediment shall be removed from filter bed when accumulation exceeds one inch.
 - Following construction, inspections after each storm event greater than 0.5inches, and at least twice in the first six months.
 - Subsequently, inspections should be conducted seasonally and after storm events equal to or greater than the 1-year storm event.
 - Routine maintenance activities include pruning and replacing dead or dying vegetation, plant thinning, and erosion repair.
 - The soil surface should be inspected for evidence of sediment build-up from the connected impervious surface and for surface ponding.
 - Attention should be paid to additional seasonal maintenance needs as well as the first growing season.
3. Inspect the infiltration basin and clean as required to maintain performance.
 - Debris and trash removal should be conducted on a weekly or monthly basis.
 - Following construction, basin should be inspected after each storm event greater than 0.5inches, and at least twice in the first six months.
 - Subsequently, inspections should be conducted seasonally and after storm events equal to or greater than the 1-year storm event.
 - The soil surface should be inspected for evidence of sediment build-up from the connected impervious surface and for surface ponding.
 - Attention should be paid to additional seasonal maintenance needs as well as the first growing season.
4. Inspect the bioretention and infiltration basin for sand build-up following the spring melt event.
5. Inspect the berms of the bioretention and infiltration basin systems after major flood events in Fall Creek.

6. Inspect all catch basins and stormwater sewer pipes and clean as necessary to maintain performance.
7. Provide evidence of acquisition of all applicable local and non-local permits.
8. Provide evidence of acquisition of all necessary legal agreements (e.g. easements, land trusts, covenants, etc.). Refer to Appendix A, Stormwater Control Agreement.
9. Post Construction maintenance tasks will be the responsibility of the 902 Dryden Road, LLC.