

**NOTE:**

This SWPPP was prepared in accordance with SPDES General Permit #GP-0-20-001. This SWPPP must be kept on the job site and available for use of contractors & sub-contractors. Certifications by Applicant/Developer and by the Contractors /Subcontractors are included. A copy of the Notice of Intent (NOI), which must be filed electronically at least 5 days prior to the commencement of any work together with the MS<sub>4</sub> Acceptance Form, is included herein. Notice of Termination (NOT) must be filed when all storm water quality controls are in place and the site has been stabilized with specified vegetation. Sample Inspection Forms are included. Maintenance Plan is attached and includes both temporary and permanent facilities maintenance. This SWPPP, together with all required plans, completed inspection forms and a log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by regulatory authorities.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP)  
& STORM WATER MANAGEMENT REPORT (SWMR)**

**1415 Washington Avenue  
Student Housing**

City of Albany  
County of Albany  
State of New York

Applicant:  
1415 Washington Property, LLC



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- Appendix #3– Geotechnical Report by Dente Engineering
- Appendix #4 – HydroCAD10.0® Calculations
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## **Attachments**

- Attachment #1 – SPDES PERMIT #GP-0-20-001
- Attachment #2 – Deep Ripping & Decompaction
- Attachment #3 – Completed Notice of Intent
- Attachment #4 – Notice of Termination
- Attachment #5 – Certification of Contractor
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## **Map Pockets**

- Map Pocket #1 – C5 SWPP Plan and Details
- Map Pocket #2 – C6 Erosion and Sediment Control Plan
- Map Pocket #3 – C7 Erosion and Sediment Control Details
- Map Pocket #4 – Empty Map Pocket for Addendums

**INTRODUCTION:**

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by 1415 Washington Property, LLC (hereinafter the “Applicant”) whose address is Liberty Plaza #2800, New York, NY 10006 as site engineer for the construction of a student dormitory. This report is for the consideration of the Department of Water & Water Supply and the City of Albany Planning Board.

**DESCRIPTION OF EXISTING SITE**

**PARCEL AREA**

The site is developed and contains a 95 room hotel with surface parking (Cresthill Suites). The Tax Map Parcel is No.53.00-1-25 which has an area of 3.24 acres. The existing site statistics for project area are shown in Fig. No. 1 below. An aerial picture of site is shown in Fig. No. 2.

<b>EXISTING COVERAGE STATISTICS</b>			
<b>Description</b>	<b>Area (SF)</b>	<b>Area (acres)</b>	<b>%</b>
Green Area	61,385	1.41	43.5%
Building Area	22,079	0.50	15.5%
Paved Area	57,713	1.33	41.0%
Total Area	141,177	3.24	100.0%

**Fig. No. 1 –Existing Coverage Statistics**



**Fig. No. 2 –Aerial Photo of Site**

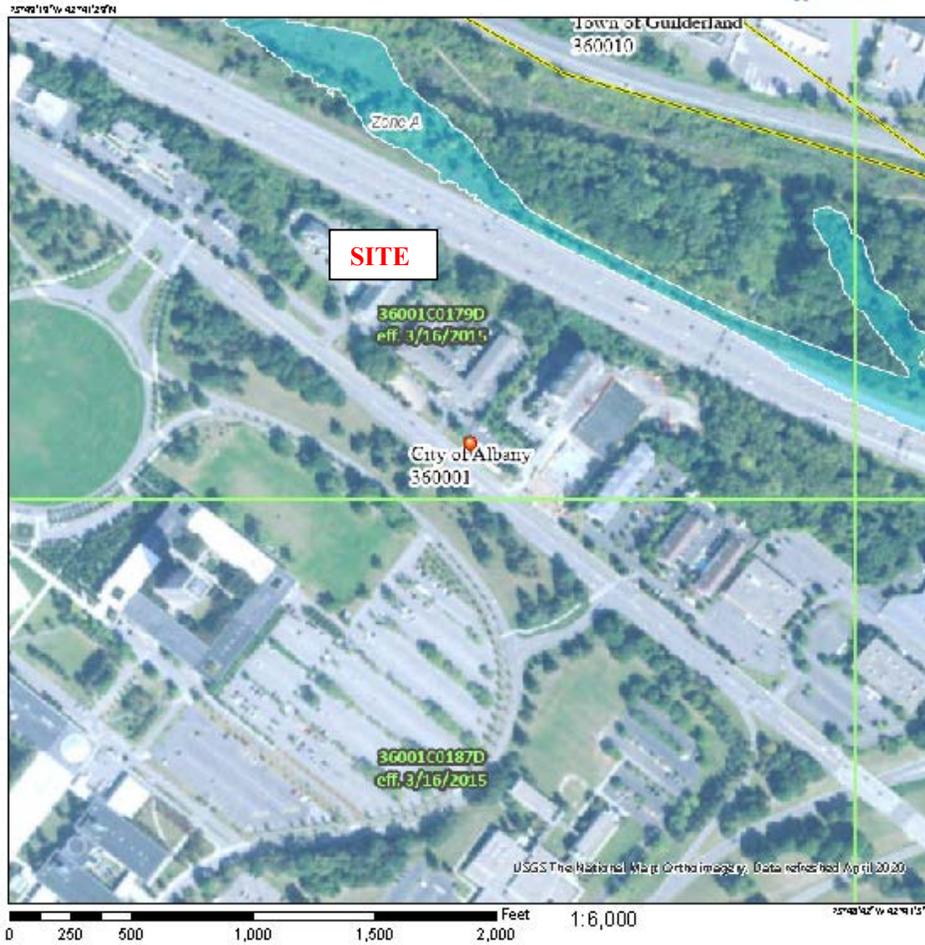
**WATERCOURSES**

There are a no watercourses which cross the project area.

**FLOOD PLAIN**

The entire project area lies within Zone X (Area of Minimal Flooding). See Mapping below.

# National Flood Hazard Layer FIRMette



**Legend**

SEE THIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- White: Minimum Base Flood Elevation (BFE) Zone A.V. 400
- Light Blue: White BFE or Depth Zone A.C. A.O. A.V.C. A.P.
- Red: Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- Orange: 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot, or with average areas of less than one square mile Zone X
- Dark Orange: Future Conditions 1% Annual Chance Flood Hazard Zone X
- Light Orange: Area with Reduced Flood Risk due to Levee, See Notes, Zone X
- Yellow: Area with Flood Risk due to Levee, Zone X

**OTHER AREAS**

- NO SCREEN: Area of Minimal Flood Hazard Zone X
- Blue: Effective IOWMs
- Light Blue: Area of Unincorporated Flood Hazard Zone X

**GENERAL STRUCTURES**

- Red: Channel, Culvert, or Storm Sewer Levee, Dike, or Roadwall

**OTHER FEATURES**

- Blue: Cross Sections with 1% Annual Chance Water Surface Elevation
- Blue: Channel Transition
- Blue: Base Flood Elevation Line (BFE)
- Red: Limits of Society
- Red: Jurisdiction Boundary
- Blue: Channel Transition, Baseline
- Blue: Profile Baseline
- Blue: Hydrographic Feature

**MAP PANELS**

- Green: Digital Data Available
- Yellow: No Digital Data Available
- Red: Unmapped

The pin displayed on the maps is an approximate point selected by the user and does not represent an exclusive property location.

This map complies with FEMA's standards for the use of digital flood maps if it is reviewed as described below. The basemap shown complies with FEMA's basemap accuracy standards.

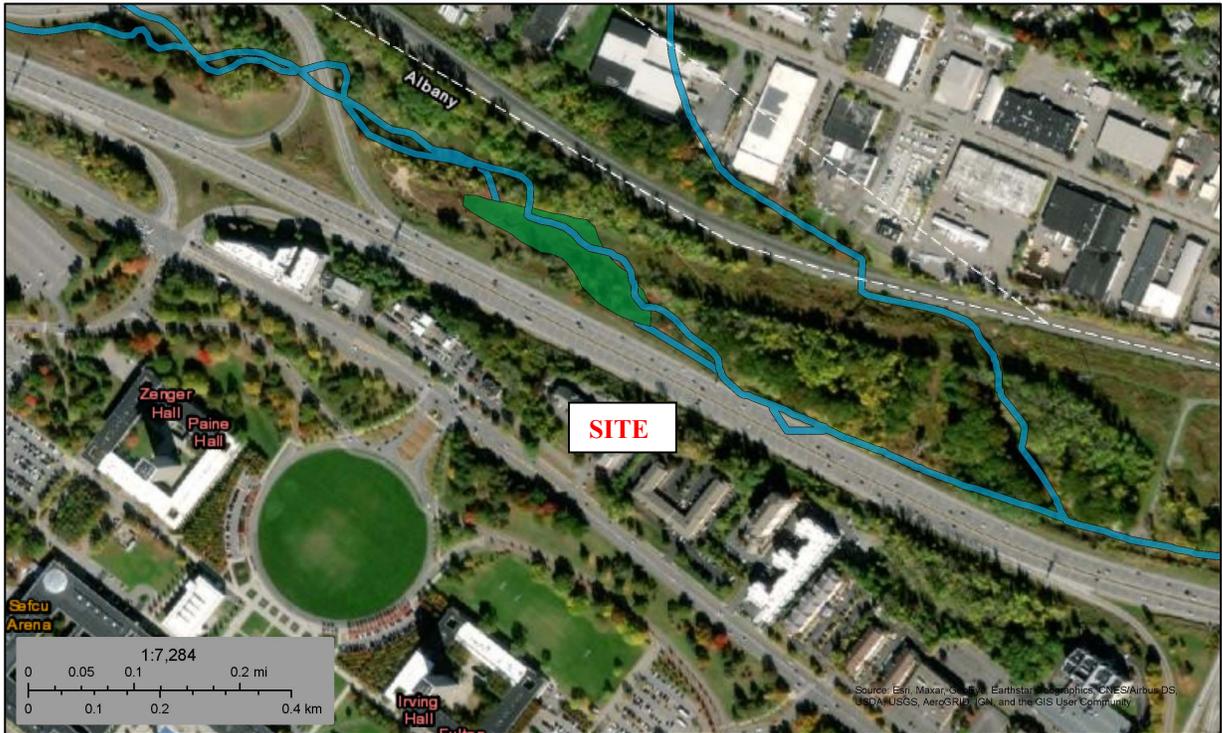
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was updated on 10/12/2020 at 2:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is valid if the user enters one of the following map elements on the page: basemap, legend, flood zone labels, legend, scale bar, map control icons, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unincorporated areas cannot be used for regulatory purposes.

Fig. No. 3 – FEMA Firmette

## EXISTING WETLANDS

There are no Federal Wetlands (Waters of the United States) or New York State Freshwater Wetlands mapped within the site. A copy of the National Wetland Inventory site data is reproduced below.



October 12, 2020

**Wetlands**

- |                                |                                   |          |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland       | Lake     |
| Estuarine and Marine Wetland   | Freshwater Forested/Shrub Wetland | Other    |
|                                | Freshwater Pond                   | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
 This page was produced by the NWI mapper

**Fig. No. 4 – National Wetlands Inventory**

**LISTED, ENDANGERED OR THREATENED SPECIES**

NYSDEC Environmental Resource Mapper does not list any rare plants or animals within the area of the project.

**EXISTING SOILS**

The Albany County Soil Survey indicates the existing soils within the project area consist of Udipsamments, smoothed which is an assumed Hydrologic Class C soil. A soil map is reproduced below.

Custom Soil Resource Report  
Soil Map



**Fig. No. 5 – Soil Map from Web Soil Survey**

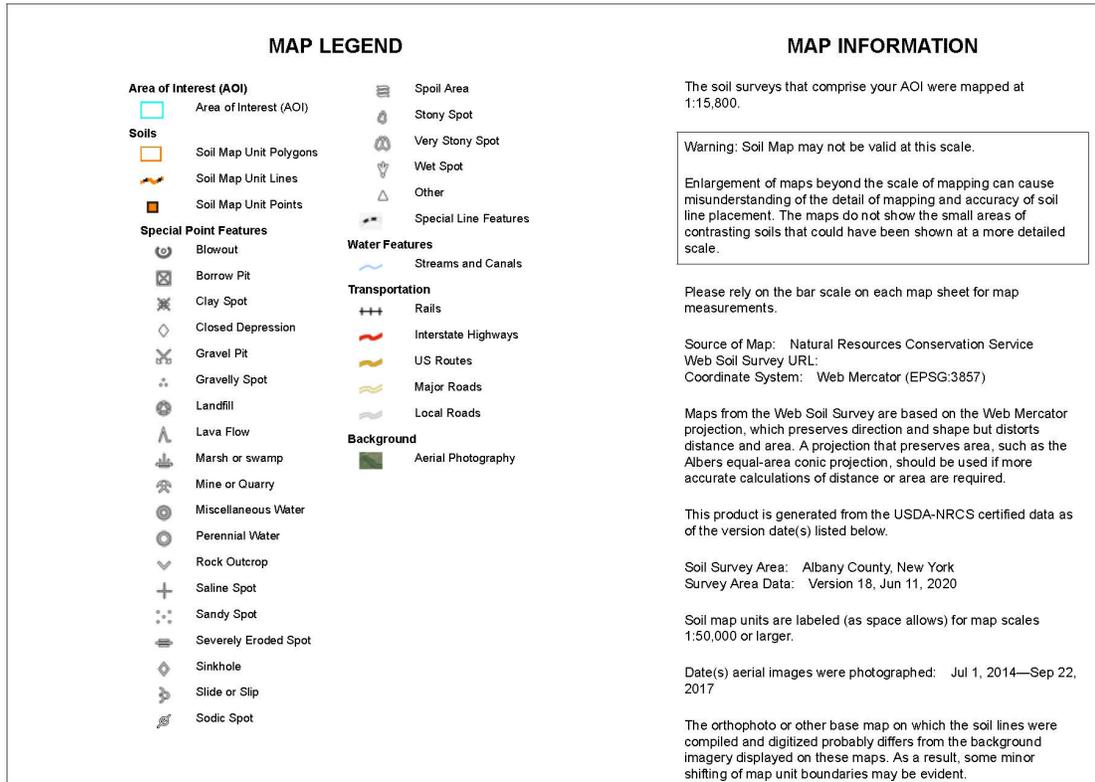


Fig. No. 6 – Map Legend and Map Information from Web Soil Survey

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ud	Udipsamments, smoothed	3.2	100.0%
<b>Totals for Area of Interest</b>		<b>3.2</b>	<b>100.0%</b>

Fig. No. 7 – Map Unit Legend from Web Soil Survey

A site-specific geotechnical analysis is included in Appendix # 3. The results of average infiltration rates at the six (6) Appendix D test locations shown below:

Infiltration Test No.	Infiltration Rate (iph)
I-1	>24.0
I-2	17.5
I-3	10.8
I-4	17.0
I-5	12.3
I-6	10.2

Fig. No. 8 – Infiltration Tests with Infiltration Rates

The average infiltration rate for the site is 15.3 inches per hour. Based upon the two sections cited below and to correct for the variable nature of the infiltration rates, allowing for the factor of safety of 2 the design value of 7.65 inches per hour was used. Also, in the eleven (11) borings on the site, the water table as encountered between 14 and 24 feet below the surface so that there will no limitation on the use of infiltration methods.

The *NYS Stormwater Management Design Manual* is silent on method of correction to be tied to field tests, there are other sources, two of which are quoted below:

*The design permeability rate must be determined by field or laboratory testing. Since the actual permeability rate may vary from test results and may also decrease over time due to soil bed consolidation or the accumulation of sediments removed from the treated stormwater, a **factor of safety of two** must be applied to the tested permeability rate to determine the design permeability rate. Therefore, if the tested permeability rate of the soils is 4 inches/hour, the design rate would be 2 inches/hour (i.e., 4 inches per hour/2). This design rate would then be used to compute the basin's maximum design storm drain time.<sup>1</sup> (Emphasis added)*

Design Infiltration Rate

<sup>1</sup> New Jersey Stormwater Best Management Practices Manual, Chapter 9.5:, Standard for Infiltration Basins, • February 2004, • Page 9.5-4

The design infiltration rate,  $f_d$ , should be set to equal **one-half the infiltration rate,  $f$** , determined from the soil analysis. <sup>2</sup>(Emphasis added)

The cited literature recommends that a rate of 50% of the measured infiltration rate could be employed.

### **EXISTING DRAINAGE:**

The Pre-Development Tributary Map (See Appendix #2) establishes four existing tributary areas.

Tributary Area A – This area represents a portion of the existing pavement and surrounding grassed areas near Washington Avenue that drains toward the Right-Of-Way. This area contains 0.02 acres of impervious area and 0.14 acres of pervious area. The CN is 47 and Tc is 4.7 minutes.

Tributary Area B – This area represents the grassed areas at the east side of the property that drain toward 1395 Washington Avenue. This area contains 0.07 acres of pervious area. The CN is 39 and Tc is 3.7 minutes.

Tributary Area C – This area represents the grassed areas at the west side of the property that drain toward I-90. This area contains 0.50 acres of pervious area. The CN is 39 and Tc is 3.6 minutes.

Tributary Area D – This area represents the existing building, parking area, and surrounding grassed areas that drain toward a low spot where it recharges to groundwater. This area contains 1.81 acres of impervious area and 0.69 acres of pervious area. The CN is 82 and Tc is 5.1 minutes.

### **DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE**

The Applicant proposes to demolish the existing 95 room hotel and construct a new student dormitory. The new building will have 240 ± dwelling units being a mixture of one, two, and four bedroom units. The total number of beds would be 560 ± beds. The building will be 5 stories and 4 stories over parking. There will be two partial levels of parking with a total parking for 207 ± cars. In addition to indoor amenity spaces, there will be an 8,000 SF ± community courtyard/ampitheater and an 8,300 SF plaza.

**PROPOSED COVERAGE STATISTICS:**

The proposed coverage statistics for the Project Site are shown below.

Description	Area (SF)	Area (acres)	%
Building Area	72,725	1.67	51.5%
Paved/Sidewalk Area	40,223	0.92	28.5%
Green Area	28,229	0.92	20.0%
Total Area	141,177	3.24	100.0%

Fig. No. 9 –Proposed Coverage Statistics

**PROPOSED DRAINAGE:**

A Storm Water Pollution Protection Plan (SWPPP) is required under SPDES Permit #GP0-20-001. The standards in *Erosion and Sediment Control Guidelines for New Development* promulgated by New York State Department of Environmental Conservation will be met. A full SWPPP is required since the site disturbance will be greater than 1 acre. This will be developed under Redevelopment Standards in Chapter 9 of the New York State Stormwater Management Design Manual.

An underground sedimentation and infiltration basin were selected for the site due to the amount of storm water generated, the amount of fill used, and infiltration rates of existing soils. The developed site is modeled with 4 tributary areas totaling 3.24 acres. The sedimentation

basins were sized to handle 75% of the Water Quality Volume (WQv). There will be a second sedimentation basin opposite of the infiltration basin collecting storm water from an 8" roof drain. These will both connect to an infiltration basin, which will include a surface sand filter and sufficient capacity for storm water up to a 100-year storm. This will discharge into the ground water.

The Post-Development Tributary Map (See Appendix #2) establishes these four tributary areas.

Tributary Area 1 – This area represents a portion of the existing pavement and surrounding grassed areas near Washington Avenue that drains toward the Right-Of-Way. This area contains 0.02 acres of impervious area and 0.14 acres of pervious area. The CN is 47 and Tc is 4.7 minutes.

Tributary Area 2 – This area represents the grassed areas at the east side of the property that drain toward 1395 Washington Avenue. This area contains 0.07 acres of pervious area. The CN is 39 and Tc is 3.7 minutes.

Tributary Area 3 – This area represents the grassed areas at the east side of the property that drain toward 1395 Washington Avenue. This area contains 0.27 acres of pervious area and 0.02 acres of impervious area. The CN is 44 and Tc is 7.6 minutes.

Tributary Area 4 – This area represents the proposed building, paved areas including sidewalk and asphalt, and surrounding grassed areas that drains via proposed basins and will be directed to our storm water management practice basins. This area contains 2.59 acres of impervious area and 0.43 acres of pervious area. The CN is 90 and Tc is 4.2 minutes.

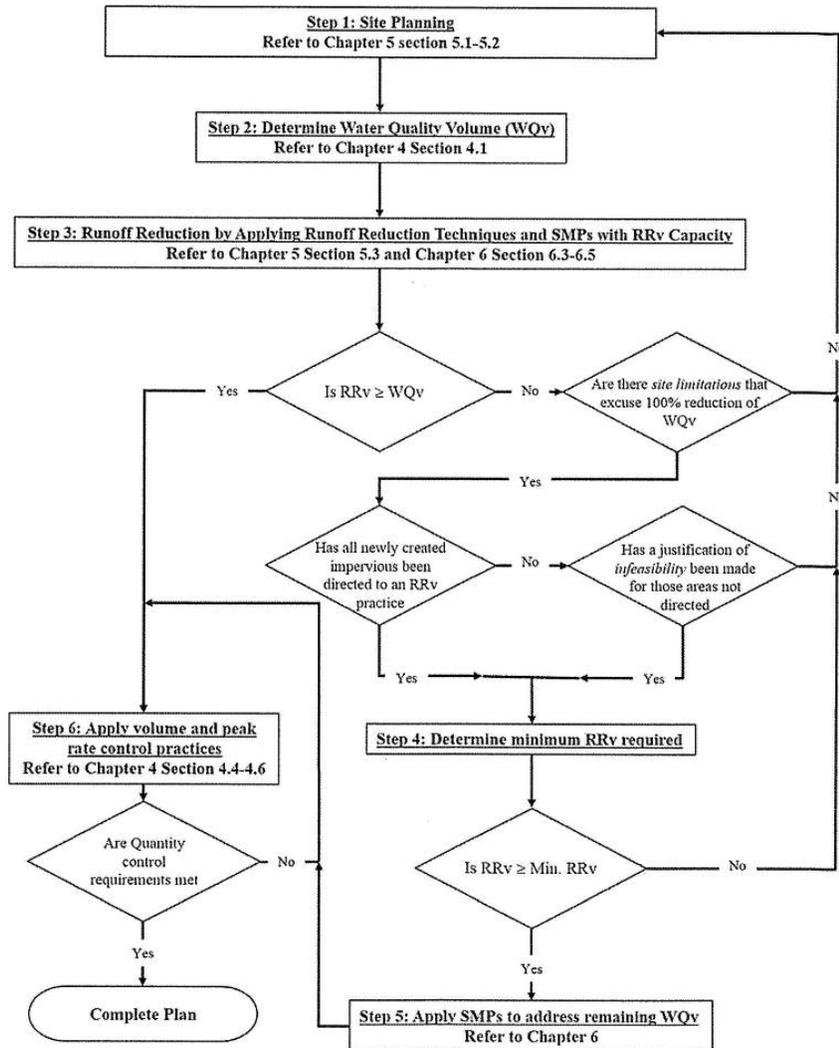
There will be no increase in drainage from this site from the 1-year storm to the 100-year storm.

# COMPLIANCE WITH GREEN INFRASTRUCTURE REQUIREMENTS UNDER SPDES GP#0-20-001

This includes consideration of the “The Six Step Process for Stormwater Site Planning and Practice Selection”<sup>3</sup> which is shown below:

New York State Stormwater Management Design Manual  
 Chapter 3: Stormwater Management Planning  
 Section 3.6 The Six Step Process for Stormwater Site Planning and Practice Selection

Figure 3.1: Stormwater Site Planning and Practice Selection Flow Chart



3-1

Fig. No. 7 – Six Step Process

<sup>3</sup> Page 3-1, New York State Stormwater Management Design Manual, January 2015, Updated By New York State Department of Environmental Conservation.

**COMPLIANCE WITH SIX STEP PROCESS**  
**STEP 1 – SITE PLANNING**

The following steps were considered:

A. CONSERVE NATURAL AREAS

1. Preservation of Undisturbed Areas  
A portion of the grassed area will remain undisturbed.
2. Preservation of Buffers  
A portion of the grassed and wooded areas around the property line will remain undisturbed.
3. Reduction of Clearing and Grading  
The site has been previously cleared.
4. Locating Development in Less Sensitive Area  
This site is not a sensitive area.
5. Open Space Design  
This development does not lend itself to open space design.
6. Soil Restoration  
Soil will be restored by using de-compaction techniques prior to final lawn establishment. See Deep Ripping & Decompaction (April 2008) in Attachment No. 2. The minimum requirements from the New York State Stormwater Management Design Manual to avoid the reduction in drainage capacity of soils are reproduced below:

### Using this Practice

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

- 1) Apply 3 inches of compost over subsoil
- 2) Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils
- 3) Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site
- 4) Apply topsoil to a depth of 6 inches
- 5) Vegetate as required by approved plan.

**Figure 5. 17 Soil aerator implement**



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. Figures 5.16 and 5.17 show two attachments used for soil decompaction. Tilling (step 2 above) should not be performed within the drip line of any existing trees or over utility installations that are within 24 inches of the surface.

Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

### **Maintenance**

A simple maintenance agreement should identify where Soil Restoration is applied, where newly restored areas are/cannot be cleared, who the responsible parties are to ensure that routine vegetation improvements are made (i.e., thinning, invasive plant removal, etc.). Soil compost amendments within a filter strip or grass channel should be located in public right of way, or within a dedicated stormwater or drainage easement.

First year maintenance operations includes:

- Initial inspections for the first six months (once after each storm greater than half- inch)
- Reseeding to repair bare or eroding areas to assure grass stabilization
- Water once every three days for first month, and then provide a half inch of water per week during first year. Irrigation plan may be adjusted according to the rain event.
- Fertilization may be needed in the fall after the first growing season to increase plant vigor

Ongoing Maintenance:

Two points help ensure lasting results of decompaction:

- 1) Planting the appropriate ground cover with deep roots to maintain the soil structure
- 2) Keeping the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths. (Sometimes it may be necessary to de-thatch the turf every few years)

B. REDUCE IMPERVIOUS COVER

1. Roadway Reduction

This development reduces impervious cover in the roadway by grass pavers in loading areas.

2. Sidewalk Reduction

This development includes limited sidewalks.

3. Driveways Reduction

The driveways to serve the building are limited by utilizing shared entrances.

4. Building Footprint Reduction

The building footprint is the minimum size required by the applicant.

5. Parking Reduction

This development provides the minimum parking spaces required by the applicant for vehicle storage.

**COMPLIANCE WITH SIX STEP PROCESS**  
**STEP 2 – DETERMINE WATER QUALITY VOLUME**

Water Quality Volume (WQ<sub>v</sub>) is computed based upon the following formula:<sup>4</sup>

$$WQ_v = \frac{(P)(R_v)(A)}{12}$$

Where WQ<sub>v</sub> = water quality volume (acre-feet)

P = 90% rainfall event<sup>5</sup>

R<sub>v</sub> = 0.05 + 0.009 I, where I is percent impervious cover

A = site area in acres

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<sup>4</sup> Ibid., Page 4-2

<sup>5</sup> Ibid., Page 4-2, Figure 4.1

<u>COMPUTATION OF WATER QUALITY VOLUME (WQ<sub>v</sub>)</u>	
Paved Area (Acres)	0.92
I (Impervious Cover)	80.0%
R <sub>v</sub> = 0.05+0.009I	0.77
	1.2
A (site area in acres)	3.24
WQ <sub>v</sub> = [(P)(R <sub>v</sub> )(A)]/12 (in acre-feet)	0.245
WQ <sub>v</sub> (in cubic-feet)	10,686

Fig. No. 10 – WQV Computation

The Water Quality Volume (WQ<sub>v</sub>) is computed above as 0.25 acre-feet or 10,686 cubic feet.

### **COMPLIANCE WITH SIX STEP PROCESS**

#### **STEP 3 – COMPLIANCE WITH RUNOFF REDUCTION VOLUME**

The applicant proposes to utilize a green infrastructure technique to provide the Runoff Reduction Volume through utilizing one Green Infrastructure infiltration basin with the capability to meet RR<sub>v</sub> requirement.

### **COMPLIANCE WITH SIX STEP PROCESS**

#### **STEP 4 – DETERMINE MINIMUM RUNOFF REDUCTION VOLUME**

The Minimum Runoff Reduction Volume (RR<sub>v</sub>) is computed based upon the following formula:<sup>6</sup>

$$RR_v = \frac{(P)(R_v)(A_i)}{12}$$

Where RR<sub>v</sub> = runoff reduction volume (acre-feet)

P = 90% rainfall event<sup>7</sup>

<sup>6</sup> Ibid., Page 4-6

<sup>7</sup> Ibid., Page 4-6

$R_v = 0.05 + 0.009 I$ , where I is percent impervious cover  
 $A_iC$  = site impervious area in acres  
S = Hydrologic Soil Group Specific Reduction Factor (0.55  
for Class A)  
 $A_i = (A_iC) (S)$

The Basic Runoff Reduction Volume ( $RR_v$ ) is computed in Appendix #4 for the tributary area as 0.07 acre-feet for subject site.

**COMPLIANCE WITH SIX STEP PROCESS**  
**STEP 5 – APPLY SMP’S TO ADDRESS REMAINING WQv**

There is no remaining WQv to be addressed.

**COMPLIANCE WITH SIX STEP PROCESS**  
**STEP 6 – VOLUME AND PEAK CONTROL STORM WATER DESIGN:**

As a storm event occurs, the storm water will move through the infiltration and sedimentation and be recharged to the groundwater. Roof drainage will be discharged to the catch basins which will travel to the basins so that it can infiltrate and recharge to groundwater.

**STORM WATER METHODOLOGY**

The TR55 Method (HydroCAD) was utilized to calculate the storm water runoff volumes (pre & post), peak rate of discharge (pre & post) and storage volumes required for controls (see Appendix #4). Tributary Areas from the existing and completed development are shown in Appendix #2. The Pre-Development Tributary is modeled with four tributary Areas (A,B,C, AND D). They have CN values of 47, 39, 39, and 82 and a times of concentration of 4.7, 3.7, 3.6, and 82 minutes, respectively.

**DISCHARGE COMPUTATIONS – EXISTING & DEVELOPED CONDITIONS:**

The table below indicates that the developed condition mitigated discharges are equal to or less than the existing condition for all storms between a 1-year and a 100-year storm.

<b>Storm Frequency</b>	<b>Existing Discharge (CFS)</b>	<b>Proposed Discharge (CFS)</b>
1	0.00	0.00
10	0.06	0.08
100	0.38	0.42

Fig. No. 11 –Proposed Coverage Statistics Tributary A/1

<b>Storm Frequency</b>	<b>Existing Discharge (CFS)</b>	<b>Proposed Discharge (CFS)</b>
1	0.00	0.00
10	0.00	0.00
100	0.08	0.08

Fig. No. 12 –Proposed Coverage Statistics Tributary B/2

<b>Storm Frequency</b>	<b>Existing Discharge (CFS)</b>	<b>Proposed Discharge (CFS)</b>
1	0.00	0.00
10	0.01	0.03
100	0.51	0.47

Fig. No. 13 –Proposed Coverage Statistics Tributary C/3

Storm Frequency	Existing Discharge (CFS)	Proposed Discharge (CFS)
1	4.47	1.65
10	11.67	1.65
100	21.16	1.65

Fig. No. 14 –Proposed Coverage Statistics Tributary D/4

### **EXTREME FLOOD CONTROL CRITERIA**

The extreme flood control criteria ( $Q_f$ ) is met through controlling discharge from the hundred year, 24 hour storm event to no greater than the predevelopment level. The pre development level is 22.13 CFS and the Post Development level is 2.62 CFS.

### **OVERBANK FLOOD CONTROL CRITERIA**

The overbank flood control criteria ( $Q_p$ ) is met through controlling discharge from the ten year, 24 hour storm event to no greater than the predevelopment level. From the developed site, the discharge to Reach 1,2, 3, and 4 is less than the predevelopment level.

### **STREAM CHANNEL PROTECTION VOLUME**

The stream channel protection volume (CPv) is provided for utilizing storage in the area beneath the infiltration basin one year, 24 hour storm event. The CPv calculation is contained in Appendix 8. The unit peak discharge ( $Q_u$ ) is computed in accordance with the New York State Stormwater Management Design Manual.<sup>8</sup> The required CPv is 7,992 Cubic Feet (0.183 acre-feet). The CPv provided is 13,464 Cubic Feet (0.309 acre-feet).

<sup>8</sup>Ibid. Appendix B

### **DESIGN CONSIDERATIONS:**

The design of a storm drainage system for the subject site considered the following critical factors:

- I. The rate of runoff during a design storm (taken as 1, 10, & 100 year frequencies) from the site in the developed condition will not exceed the rate of runoff from the site in the undeveloped state.
  
2. The storm system can accommodate the storm water for a 1, 10 & 100-year storm.
  
3. The storm drainage system should accommodate the drainage from the site during a 100 year storm without any damage to personal property.

### **CONSTRUCTION SEQUENCING & SEDIMENTATION AND EROSION CONTROL DURING CONSTRUCTION**

The construction sequence for this project is shown below. Approximate timing is indicated where applicable in red following steps.

#### **Prior to commencement of any work this SWPPP**

- ✓ Assure that copy of SWMR & SWPPP is on the site. **ON COMMENCEMENT**
- ✓ Establish Qualified Individual who will be performing site inspection. **ON COMMENCEMENT**
- ✓ Inspections must be performed by the qualified professional must be submitted to the MS4 Coordinator. **FROM COMMENCEMENT UNTIL PROJECT COMPLETE**

- ✓ Establish Trained Contractor who will be on site. At least one Trained Contractor must be on site whenever ground disturbing activities are being undertaken.

#### ON COMMENCEMENT

- ✓ Establish contact person for Contractor/Subcontractor. ON COMMENCEMENT
- ✓ **IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL RESPONSE PLAN CONTAINED IN APPENDIX #9**

#### Construction Sequence

- ✓ Install traffic controls as required. **PRIOR TO THE START OF ANY CONSTRUCTION**
- ✓ Install construction fencing as required. **PRIOR TO THE START OF ANY CONSTRUCTION**
- ✓ Install silt fence or other controls as indicated on the plan. **PRIOR TO COMMENCEMENT OF ANY GRADING – FENCE TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.**
- ✓ Commence work on site.
- ✓ Grade and prepare stabilized construction access. **PRIOR TO COMMENCEMENT OF ANY GRADING – STABILIZED CONSTRUCTION ACCESS TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.**
- ✓ Establish fueling area. Relocate when required. **MAINTAIN A FUELING AREA FOR EQUIPMENT UNTIL NO LONGER REQUIRED.**
- ✓ The existing pavement must be kept swept clean to avoid tracking materials onto any streets. **CONTINUOUSLY FROM INCEPTION TO COMPLETION OF STABILIZATION OR UNTIL PROJECT IS COMPLETE.**
- ✓ Maintain this area clean of debris and verify condition and safety of storage of materials listed below. Requires daily inspection. **CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.**
- ✓ Any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings. Any storage piles of materials meant for

installation (i.e., sand, etc.) must be surrounded by sedimentation fence. The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized: **CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.**

- ❑ Select Fill
  - ❑ Fencing Materials
  - ❑ Pipes
  - ❑ Pipe Solvents
  - ❑ Concrete Structures
  - ❑ Reinforcing Steel
  - ❑ Brick
  - ❑ Concrete Additives
  - ❑ Concrete Sealers
- ✓ MSDS sheets must be available on site for all materials used or imported to the site. **CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.**
  - ✓ Any chemical spills must be contained immediately on site and reported to NYSDEC. **CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE UNTIL PROJECT IS COMPLETE.**
  - ✓ Oil and grease spills from equipment shall be treated immediately. **CONTINUOUSLY FROM INCEPTION UNTIL PROJECT IS COMPLETE.**
  - ✓ Direct drainage to storage system. **PRIOR TO REMOVAL OF TEMPORARY PERIMETER SWALE AND CHECK DAMS.**
  - ✓ Complete construction of Project.
  - ✓ Obtain approval of Project completion from the Department of Water & Water Supply,

## **HOUSEKEEPING SECTION**

During construction any construction materials, chemicals or construction debris must be stored in sealed receptacles, trailers or buildings. Any storage piles of materials meant for installation (i.e., sand, etc.) must be surrounded by sedimentation fence. The list of anticipated materials stored on site during construction is provided below and must be updated if any additional materials are utilized:

- ❑ Select Fill
- ❑ Fencing Materials
- ❑ Pipes
- ❑ Pipe Solvents
- ❑ Concrete Structures
- ❑ Reinforcing Steel
- ❑ Brick
- ❑ Concrete Additives
- ❑ Concrete Sealers

MSDS sheets must be available on site for all materials used or imported to the site.

Any chemical spills must be contained immediately on site and reported to NYSDEC.

**IN CASE OF ANY SPILLS OF MATERIALS ON SITE, EXECUTE SPILL RESPONSE PLAN CONTAINED IN APPENDIX #9**

Oil and grease spills from equipment shall be treated immediately. Vehicle fueling must take place in designated area. Relocate designated fueling area when required.

## **DESCRIPTION OF NEED FOR WINTER CONDITION**

The construction sequence for this project may require work between November 15<sup>th</sup> and April 1<sup>st</sup> of any year when construction is ongoing. Some un-stabilized soil areas may exist on November 15<sup>th</sup>. This Section is issued for use in the event that such conditions exist. The **STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION** (reproduced below) will apply to this project area. Accommodations for wintertime conditions are addressed below.

# STANDARD AND SPECIFICATIONS FOR WINTER STABILIZATION



## **Definition & Scope**

A temporary site specific, enhanced erosion and sediment control plan to manage runoff and sediment at the site during construction activities in the winter months to protect off-site water resources.

## **Conditions Where Practice Applies**

This standard applies to all construction activities involved with ongoing land disturbance and exposure between November 15<sup>th</sup> to the following April 1<sup>st</sup>.

## **Design Criteria**

1. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner not affecting ongoing construction activities.
2. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.
3. A minimum 25 foot buffer shall be maintained from all perimeter controls such as silt fence. Mark silt fence with tall stakes that are visible above the snow pack.
4. Edges of disturbed areas that drain to a waterbody within 100 feet will have 2 rows of silt fence, 5 feet apart, installed on the contour.
5. Drainage structures must be kept open and free of snow and ice dams. All debris, ice dams, or debris from plowing operations, that restrict the flow of runoff and meltwater, shall be removed.
6. Sediment barriers must be installed at all appropriate

perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.

7. Soil stockpiles must be protected by the use of established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 feet from the toe of the stockpile to prevent soil migration and to capture loose soil.
8. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3 horizontal to 1 vertical or steeper.
9. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulches should be applied at double the manufacturer's recommended rate.
10. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each work day unless:
  - a. work will resume within 24 hours in the same area and no precipitation is forecast or;
  - b. the work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.
11. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 feet in width but wider as necessary to accommodate equipment.

## **Maintenance**

The site shall be inspected frequently to ensure that the erosion and sediment control plan is performing its winter stabilization function. If the site will not have earth disturbing activities ongoing during the "winter season", **all** bare exposed soil must be stabilized by established vegetation, straw or other acceptable mulch, matting, rock, or other approved material such as rolled erosion control products. Seeding of areas with mulch cover is preferred but seeding alone is not acceptable for proper stabilization.

Compliance inspections must be performed and reports filed properly in accordance with the SWPPP for all sites under a winter shutdown.

## **WINTER CONDITIONS ITEMS TO BE ADDRESSED**

1. Identify areas within the site to store snow which is tributary to the temporary perimeter swale. As work progresses this area may move but positive drainage tributary to the temporary perimeter swale must be maintained.
  
2. Widen stabilized construction access points to a minimum of 28 feet. Where pavement forms a portion of that route, maintain 50 feet of stone pavement meeting the detail as shown on the SWPPP plan. Stockpile a minimum of 25 cubic yard of stone for the purposes of establishing stone access point after snow storms.
  
- 3, Where any areas at the street grade or within two feet of the street grade remain disturbed overnight, stabilize those areas using 6" of broken stone.
  
4. Where equipment or vehicles are traversing the bottom of the excavation, establish paths using 6" of broken stone.
  
5. At any point on the perimeter where drainage from accumulated snow or ice will drain away from the site protect these areas with fiber rolls or polyethylene coated check dam materials (Filtrexx, Erosion eel or equal).
  
6. If work is to cease for more than 3 days, stabilize all disturbed soils.

## **WINTER CONDITIONS SUMMARY:**

The following is a summary of the required work if wintertime as presented by the preparer of this report:

1. The temporary system and control measures proposed herein and on the plans comply with the *New York State Standards and Specifications for Erosion and Sediment Control* dated July, 2016.
2. The winter stabilization complies with Standard and Specifications for Winter Stabilization as described *New York State Standards and Specifications for Erosion and Sediment Control* dated July, 2016.

### **MAINTENANCE PLAN**

The Applicant will own and maintain the pavement on site and the storm water collection system. A maintenance plan has been developed and is contained in Appendix #5.

### **SUMMARY:**

The following is a summary of the findings of this study as presented by the preparer of this report:

1. The 1, 10 & 100 year design storm meets the criteria of not exceeding the runoff rate from the existing site.
2. The storm drainage system will accommodate the drainage from the site for the 1, 10 & 100-year design storm.
3. Damage to personal property or adjacent will not occur when subjected by the 100 year storm as a result of this storm water management system.
4. This system is entirely compliant with SPDES #0-20-002 and with the Green Techniques as defined in the New York State Stormwater Management Design Manual.

5. The maintenance plan if followed will result in pavement and a storm water management system that can be readily maintained.

**CONCLUSION:**

It is the conclusion of the Engineer that the drainage system, as designed, will function adequately and will not adversely affect adjacent or downstream properties.

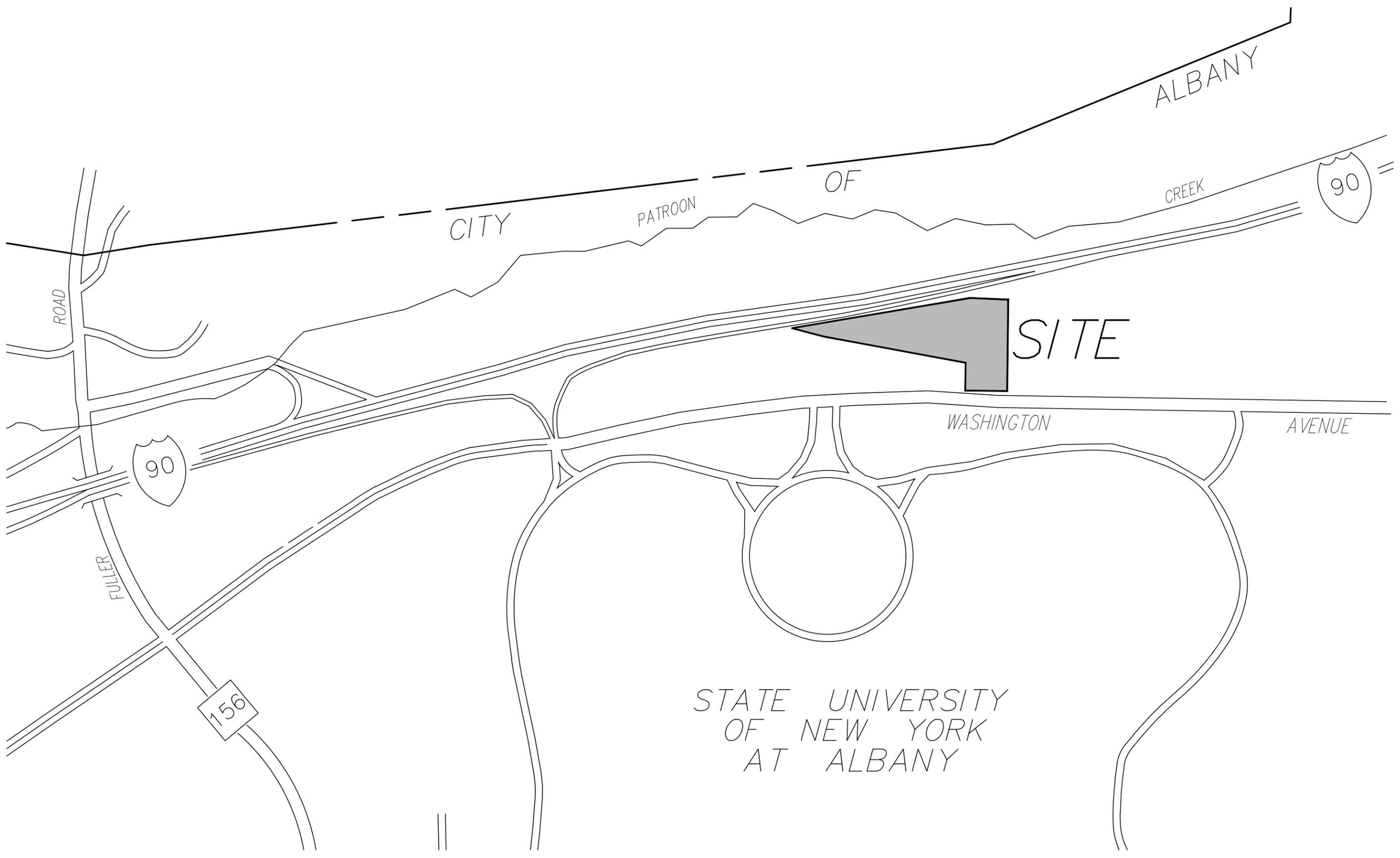


Prepared by: \_\_\_\_\_  
Daniel R. Hershberg, P.E. & L.S.  
Lic. No. 44226

File:DRH/SWPPP/SWPPPSWMR20200015.DOC

**APPENDIX #1**

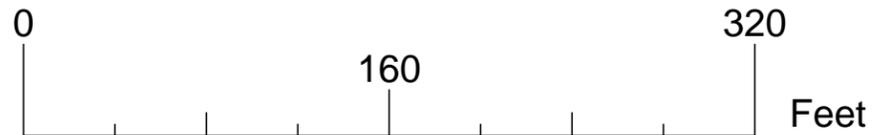
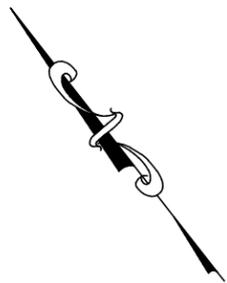
**SITE LOCATION MAP**



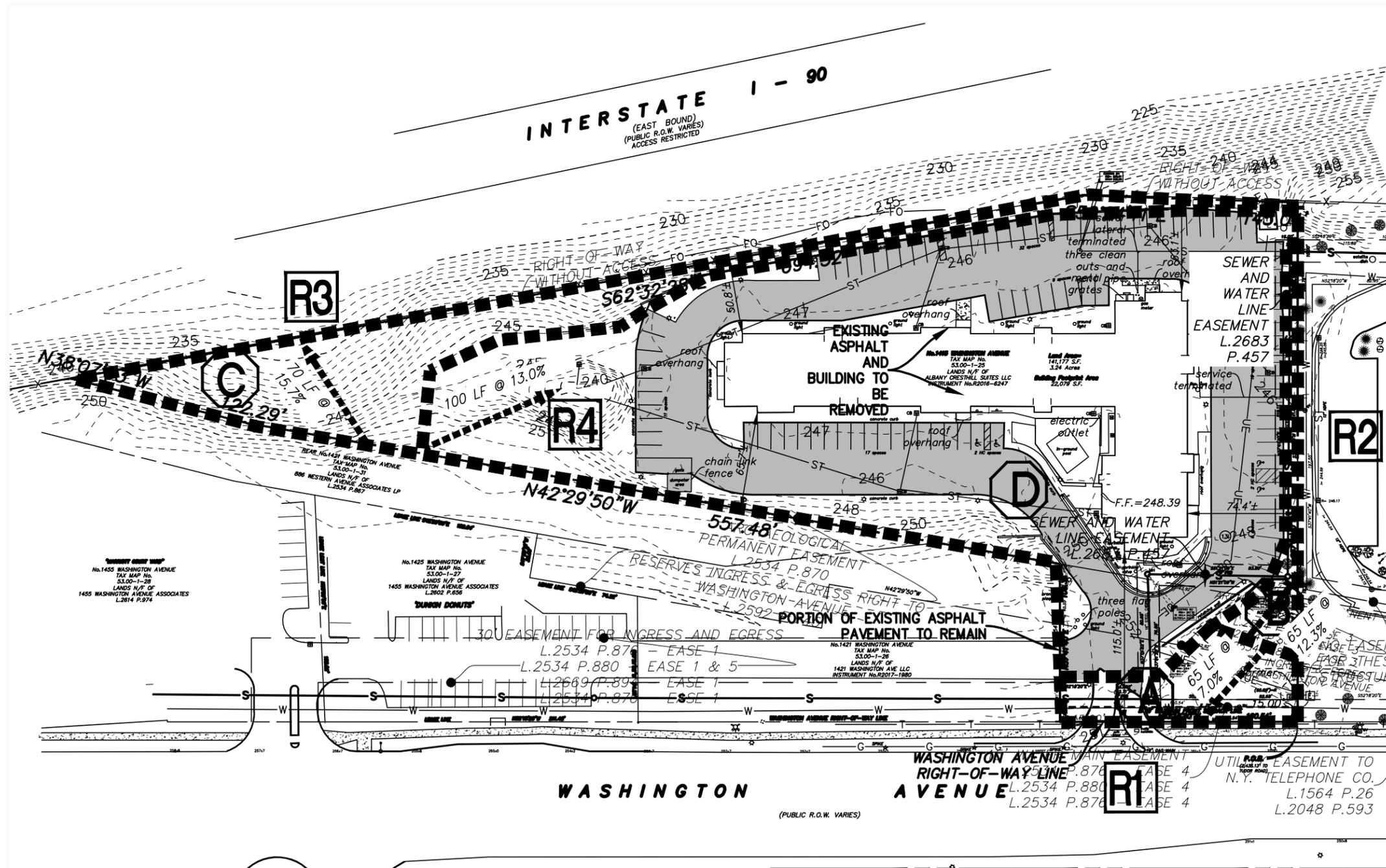
**SITE LOCATION MAP**

**APPENDIX #2**

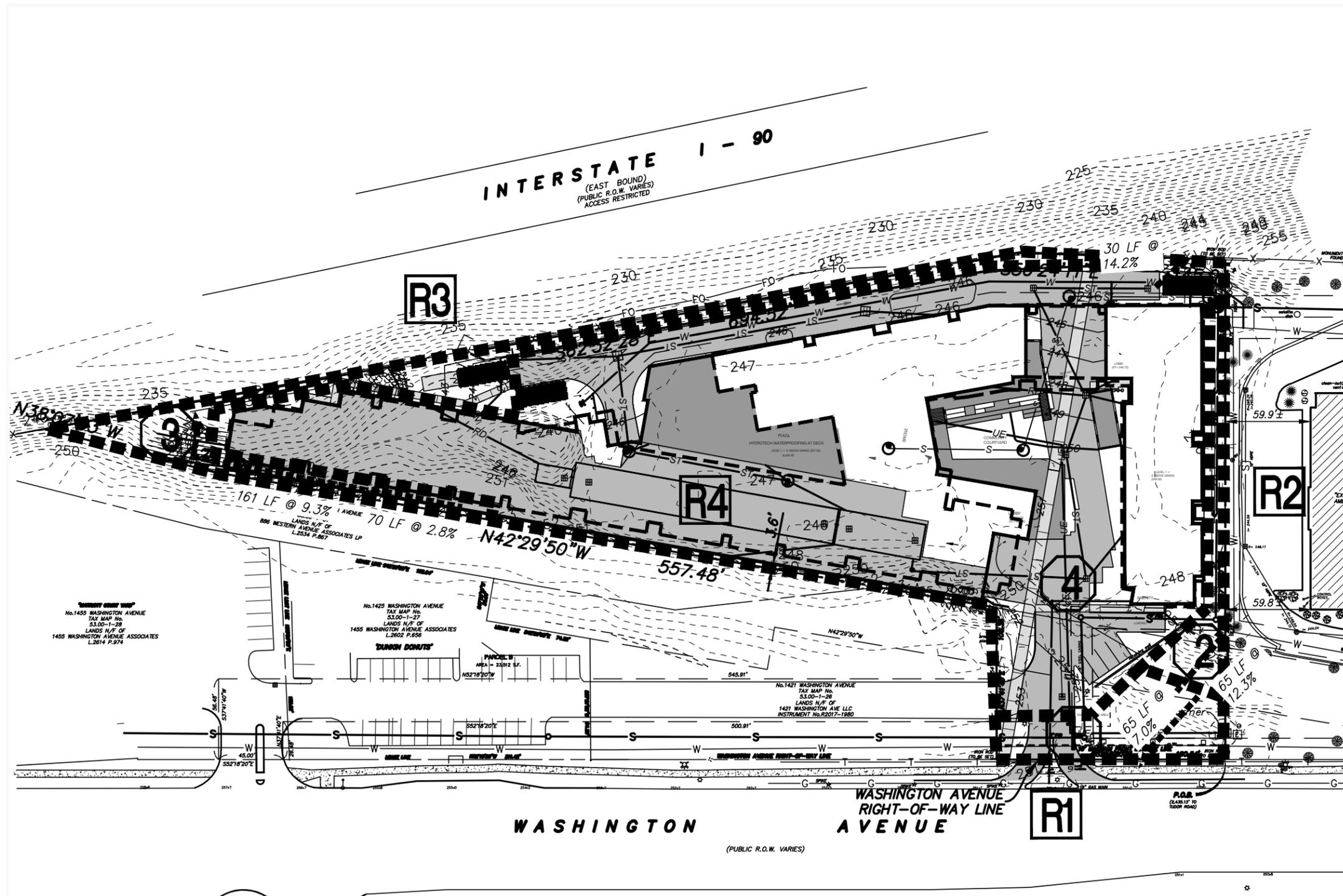
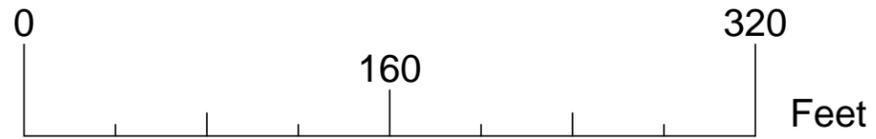
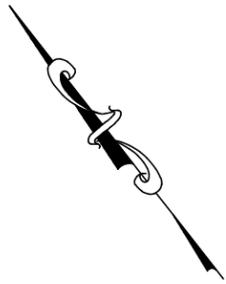
**TRIBUTARY AREA MAPS**



-  DENOTES TRIBUTARY AREA NODE
-  DENOTES REACH NODE
-  DENOTES STORAGE NODE
-  DENOTES LIMITS OF TRIBUTARY AREA
-  DENOTES Tc / Ti



PRE DEVELOPMENT TRIBUTARY AREA MAP 1"=80'



-  DENOTES TRIBUTARY AREA NODE
-  DENOTES REACH NODE
-  DENOTES STORAGE NODE
-  DENOTES LIMITS OF TRIBUTARY AREA
-  DENOTES Tc / Tt

POST DEVELOPMENT TRIBUTARY AREA MAP 1"=80'

**APPENDIX #3**

**GEOTECHNICAL REPORT  
BY  
DENTE ENGINEERING**



# Geotechnical Engineering Report

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**Proposed Student Housing  
1415 Washington Avenue  
Albany, New York**

September 9, 2020  
Terracon Project No. JB205071

**Prepared for:**

Scenic RE, LLC  
New York, NY

**Prepared by:**

Terracon Consultants-NY, Inc  
Dba Dente Group  
Albany, New York



September 9, 2020

Scenic RE, LLC  
157 Columbus Ave. Suite 515  
New York, NY 10023



Attn: Mr. Evan Podob  
p: (914) 879-2005  
e: evan@scenicinvestment.com

Re: Geotechnical Engineering Report  
Proposed Student Housing  
1415 Washington Avenue  
Albany, New York  
Terracon Project No. JB205071

Dear Mr. Podob:

We have completed the Geotechnical Engineering services for the referenced project. This study was performed in general accordance with Dente Group proposal no. PJB205071 Rev. 3 (last revised July 29, 2020) which was authorized on July 30, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs and pavements for the proposed project.

We appreciate the opportunity to be of service to you. If you have any questions concerning this report or if we may be of further service, please contact us at your convenience.

Sincerely,

**Terracon Consultants-NY, Inc.**

A handwritten signature in black ink, appearing to read "John Hutchison".

John S. Hutchison, P.E.  
Senior Engineer

A handwritten signature in black ink, appearing to read "Joseph Robichaud, Jr.".

Joseph Robichaud, Jr., P.E.  
Sr. Associate / Office Manager



## REPORT TOPICS

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PROJECT DESCRIPTION.....	2
SUBSURFACE CHARACTERIZATION .....	3
INFILTRATION TESTING.....	5
GEOTECHNICAL OVERVIEW .....	5
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FLOOR SLABS .....	11
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PAVEMENTS.....	13
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**Note:** This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the **GeoReport** logo will bring you back to this page. For more interactive features, please view your project online at [client.terracon.com](http://client.terracon.com).

## ATTACHMENTS

**EXPLORATION AND TESTING PROCEDURES**  
**SITE LOCATION AND EXPLORATION PLANS**  
**EXPLORATION RESULTS**  
**SUPPORTING INFORMATION**

**Note:** Refer to each individual Attachment for a listing of contents

# Geotechnical Engineering Report

## Proposed Student Housing

1415 Washington Avenue

Albany, New York

Terracon Project No. JB205071

September 9, 2020

## INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed student housing development at 1415 Washington Avenue in Albany, New York. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Pavement design and construction
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per NYSBC
- Frost considerations

The geotechnical engineering scope of services for this project included the advancement of 17 conventional test borings to depths ranging from 8.0 to 77.0 feet below existing site grades. Of these, 11 of the borings were performed within the proposed building footprint (B-series), while the remaining six were performed at infiltration test locations (I-series, these located both in proposed paved areas and the proposed building footprint). The scope of services also included a limited laboratory testing program, and preparation of this summary report.

Maps indicating the site and test boring locations are included as the attached **Site Location** and **Exploration Plans**, respectively.

## SITE CONDITIONS

Existing conditions at the site are summarized in the following table:

Item	Description
<b>Parcel Information</b>	The project is located at 1415 Washington Ave. in Albany, NY. Approximate geographic coordinates: 42.6896° N, 73.8184° W. The parcel is 3.24 acres in size.
<b>Existing Improvements</b>	Three-story hotel building with associated paved parking and stormwater management features. Also, an outdoor in-ground swimming pool.
<b>Current Ground Cover</b>	Asphalt pavement and landscaped grounds, wooded at west end.

Item	Description
<b>Existing Topography</b>	The site is situated between Washington Ave. and the Interstate 90 corridor. Grades about the existing building are relatively flat, at an elevation of approx. 248 feet. Elsewhere, grades are generally highest along the Washington Avenue frontage (upwards of roughly elevation 252 feet), and lowest at the west end of the site (as low as elevation 234 feet). A concrete retaining wall is located along the north property line, between the existing building and I-90, with grades behind the wall (building side) at approx. 248 feet and in front of the wall (I-90 side) as low as about 238 feet. A stormwater basin off the west edge of the existing parking area has an invert elevation of about 240 feet.
<b>Geology</b>	Review of geologic mapping indicates that units of lacustrine silt and clay, lacustrine sand, and dune sand are present in the site locale. The geologic mapping also indicates that bedrock underlying the project area consists of Normanskill shale.

Review of available historical aerial imaging and topographic mapping indicates the existing hotel building dates from circa 2001, and that pre-development ground surface elevations at the site were in the range of roughly 240 to 250 feet. No development pre-dating the exiting building is evident on maps dating back to 1893.

## PROJECT DESCRIPTION

Our understanding of the project is summarized as follows:

Item	Description
<b>Information Provided</b>	<ul style="list-style-type: none"> <li>■ Topographic survey and proposed site plan by Hershberg &amp; Hershberg, no. C1 dated 1/24/2020</li> <li>■ Schematic floor plans and sections by SA+R dated 7/8/2020</li> <li>■ Density Study w/ floor plans and renderings by SA+R dated 1/2020</li> </ul>
<b>General Description</b>	Project entails demolition of the existing building, and construction of a new student housing building.
<b>Proposed Structure(s)</b>	Plans call for a new building with a total of six levels, comprised of two main wings with a connecting structure. The long wing will be situated along the south property line, with parking on its lower two levels and residential space on its upper four levels. The north/east wing will feature parking on its lower level and residential space on its upper five levels. A maintenance area will be located between the two building wings on the lowest (partial basement) parking level, with an open plaza between the two wings above.
<b>Building Construction</b>	We understand the lowest one or two levels dedicated for parking will be of concrete podium style construction, and the upper residential levels will be of wood construction. We further understand there is a preference to support the building on conventional shallow spread foundations if feasible.

Item	Description
<b>Maximum Loads</b>	Anticipated foundation loads were not available at the time of this report. For the purposes of our evaluation, and on the basis of the proposed construction, we have assumed that individual column loads will not exceed 600 kips and wall loads will not exceed 18 kips/ft. We have also assumed that floor loads will not exceed 150 pounds per square foot.
<b>Finished Floor Elevation</b>	<ul style="list-style-type: none"> <li>- Lowest parking and maintenance level (Level B1) at elev. 246. Exterior grade on north side of building also at this level</li> <li>- Upper parking on long wing, outdoor plaza level, and lowest residential floor on north/east wing (Level 1) at elev. 256</li> </ul>
<b>Grading/Slopes</b>	Proposed grading plans were not provided. It appears that cuts upwards of about 5 feet and new fills upwards of about 10 feet will be required for construction based on the building floor levels.
<b>Below-Grade Structures</b>	Lowest parking level and maintenance area below grade in the south and central portions of the building. Proposed stormwater management details not provided, but subsurface infiltration galleries may be included.
<b>Free-Standing Retaining Walls</b>	We understand the existing retaining wall along the north property margin is anticipated to remain in place and be extended to the west to accommodate new filled grades in that direction.
<b>Pavements</b>	Plans call for new porous asphalt and/or concrete pavement with subsurface infiltration in the exterior parking areas. Conventional asphalt or concrete pavements are planned in the interior (within building footprint) parking areas. We assume the pavements will be subject to use primarily by automobiles with occasional light delivery trucks.

If any of the above information is incorrect, please let us know so we can review the conclusions and recommendations provided in this report for applicability to the actual design and update the report as appropriate.

As the design of the project progresses and site grading plans and building loads are fully developed, we should be retained to assess this site-specific information relative to the recommendations contained herein.

## **SUBSURFACE CHARACTERIZATION**

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration results, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical analysis and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual subsurface logs. The logs can be found in the **Exploration Results** and the GeoModel in the **Figures** sections of this report.

## Subsurface Profile

The following model layers were identified within the subsurface profile. For a more detailed view of the model layers with depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	Fill	Typically sandy soils with lesser amounts of foreign matter (e.g., wood, roots, gravel).
2	Sand	Native fine sand, generally with relatively little silt. Occasional silty layers which become more prevalent with depth.
3	Silt & Clay	Interlayered silt and clay deposits.

Topsoil between roughly 0.6 and 1.2 feet thick was present at the ground surface at four of the test boring locations, while asphalt pavement between approximately 0.2 and 0.4 feet thick was present at the ground surface at the remaining borehole locations. The pavement was underlain by an aggregate base course, typically between about 0.4 and 0.9 feet thick.

Beneath whatever surface materials were present, fill soils were identified at about half the locations investigated (9 of 17), extending to depths of about 3 to 11 feet below existing grade and typically deepest on the north end of the site between the existing building and retaining wall. The existing fills were found to consist generally of silty sands, along with relatively minor amounts of foreign matter such as wood, roots and gravel. The relative density of the fill as indicated by measured SPT N-values was typically loose to medium dense.

Native soils beneath the existing surface and/or fill materials were generally composed of fine sands with relatively minor amounts of silt. Silt layers were occasionally encountered within this deposit and the relative silt content in these granular soils tended to increase overall with depth. Silt and clay deposits were prevalent below the depth of about 65 feet. Where essentially granular, the native soils exhibited a loose to medium dense relative density, and where essentially cohesive, a medium stiff to very stiff consistency.

Consolidation testing conducted upon samples collected at nearby sites together with our local experience suggests the deeper cohesive soils are preconsolidated, i.e., they have experienced loads greater than the existing overburden loads in their geologic past and as a result have consolidated correspondingly. Deep exploration at nearby sites indicates these cohesive deposits extend to depths between about 100 and 115 feet where firm glacial tills composed of silt, clay, sand and gravel are encountered. The till is expected to extend to bedrock at depths in the 130 to 140-foot range.

Bedrock was not reached within the depths explored for this study.

## Groundwater Conditions

Groundwater measurements were made as the boreholes were advanced and are reported on the attached subsurface logs. Based on these measurements and the recovery of wet soil samples, it appears that groundwater was about 10 to 25 feet below existing grade at the time of investigation, this equating to a groundwater table elevation in the range of about 225 to 230 feet.

While not disclosed through this study, water may at times become locally perched or trapped at shallower depths, particularly where fill is present. Groundwater conditions, and the extent of any perched water, should be expected to vary with seasonal fluctuations in precipitation and runoff. Additionally, grade adjustments on and around the site may affect the water table, as may drainage improvements on the site and surrounding properties.

## INFILTRATION TESTING

Infiltration testing was performed adjacent to test borings I-1 through I-6. The testing was conducted in general accord with the guidelines in Appendix D of the NYS Stormwater Management Design Manual. Results of this testing are presented for your use in the **Exploration Results** attachment and summarized in tabular form below.

Location	Test Depth (ft)	Soil Description	Infiltration Rate (in/hr)
I-1	4.0	Dark brown silty sand (moist)	> 24
I-2	4.0	Dark brown silty sand (moist)	13.0
I-3	4.0	Brown poorly graded sand (moist)	9.0
I-4	4.0	Black silty sand w/ trace organics (moist)	14.0
I-5	4.0	Orangish brown poorly graded sand (moist)	11.0
I-6	4.0	Tannish brown poorly graded sand (moist)	8.5

Note: The infiltration rates indicated above represent the result of the last trial at each test location.

## GEOTECHNICAL OVERVIEW

Provided that actual foundation loads do not exceed the limits assumed herein, the project site is considered generally suitable for support of the proposed student housing building using conventional shallow spread foundation and slabs-on-grade, although the presence of existing fill soils will impact on planning for design and construction. Based on the conditions disclosed by our investigation, we offer the following general conclusions.

- New foundations and floor slabs may be supported on undisturbed native soils, or on imported structural fill which is placed over the native soils after all existing fills and remains of former structures are removed, along with any otherwise unsuitable materials

which may be found. Existing fill soils should not be relied upon for new foundation support.

- If existing fills throughout the site are similar in composition to those found in the test borings, consideration may be given to support of new pavements over the existing fills provided the subgrade surfaces are proof-rolled and stabilized as may be required. It should be understood the proof-rolling will lessen, but not eliminate, the possibility that settlement of pavements constructed over the existing fills may occur over time and require periodic maintenance.
- The soils excavated onsite should generally be suitable for reuse as new fill and backfill once cleansed of any oversize particles, unsuitable debris or organics, subject to the approval of the Geotechnical Engineer and based upon the conditions encountered at the time of construction.
- In general, groundwater is expected to be below foundation excavation depths and should not be a significant factor in planning for design and construction of the building. If perched water is encountered during construction, it is expected to be limited in volume and standard sump and pump methods should be sufficient for its removal. Dewatering is a means and methods consideration for the contractor.

**It should be understood that if actual foundation loads exceed those assumed herein, shallow spread foundations may not be suitable for support of the structure; in this case the conclusions outlined in this report should be reevaluated and an alternative foundation system may be necessary.**

The following sections of this report provide more detailed recommendations to assist in planning for the geotechnical aspects of the project. We should be provided with the opportunity to review plans and specifications prior to their release for bidding to confirm that our recommendations were properly understood and implemented, and to allow us to refine our recommendations, if warranted, based upon the final design. The **General Comments** section provides an understanding of the report limitations.

## **SEISMIC CONSIDERATIONS**

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC).

## **Seismic Site Classification**

In our estimation, the seismic Site Class is D. This classification is made based upon the results of standard penetration testing at the site and shear wave velocity testing completed in similar subsurface profiles in the general project area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth, if desired.

## **Liquefaction Potential**

We have evaluated the liquefaction potential of the granular soils encountered beneath the water table at this site. In our estimation, the soils at this site possess a Factor of Safety against liquefaction in excess of 1.1 and, as such, do not present an excessive risk of liquefaction. It should be understood, however, that the design seismic event would cause the site's sand soils to consolidate during the ground shaking and the ground surface at the site to settle. These volumetric strains could cause buildings supported upon the grades to settle about a half inch during the design seismic event.

## **EARTHWORK**

Earthwork is anticipated to include demolition of the existing building, clearing and grubbing, removal of existing pavements, stabilization of subgrade surfaces as necessary, foundation excavation and associated site fill and backfill. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered suitable in our geotechnical engineering evaluation for foundations, floor slabs and pavements.

If the owner elects to leave the existing fills in place beneath new pavements, proof-rolling and stabilization of the subgrades as described below will lessen but cannot eliminate the risk of settlement. If this risk cannot be accepted, the existing fills should be removed and replaced in their entirety as part of the site preparation.

Construction site safety is the sole responsibility of the contractor, who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety or the contractor's activities; such responsibility is neither implied nor shall it be inferred.

## **Site Preparation**

Site preparation should begin with demolition of the existing building, along with stripping of existing topsoil, surficial organic matter and pavements as applicable from the proposed building and pavement areas. Any existing fills, old building foundations, slabs or below grade structures

should be removed in their entirety from beneath the proposed building area, extending at least five feet beyond its perimeter. Outside the proposed building area, any foundation remains or old structures should be removed to a depth of at least three feet below new pavement surfaces.

Prior to placing fills to raise site grades and/or after cuts are made to the plan subgrade elevations, the subgrades should be proof-rolled/proof-compacted using a steel drum roller with a static weight of at least 10 tons. The roller should operate in its vibratory mode, unless requested otherwise by the Geotechnical Engineer observing the work, and travel at a speed not exceeding three feet per second (two miles per hour). The roller should complete at least 8 passes over all subgrade surfaces in opposing directions. The method of proof-rolling may be modified by the Geotechnical Engineer based upon the conditions revealed at the time of construction.

Soft areas identified by the proof-rolling should be investigated to determine the cause and stabilized accordingly. These investigations may include the excavation of test pits. If existing fills are found and determined by to be unsuitable by the Geotechnical Engineer, they should be removed and replaced as deemed necessary.

### **Fill Material Types**

Structural Fill should be used as fill/backfill within the proposed building and pavement areas. The fill should consist of imported sand and gravel which meets the limits of gradation given below. Any imported materials should be free of recycled concrete, asphalt, bricks, glass, and pyritic shale rock.

#### **IMPORTED STRUCTURAL FILL**

<b>Sieve Size</b>	<b>Percent Finer</b>
3"	100
"	30 to 75
No. 40	5 to 40
No. 200	0 to 10

As previously noted, the reuse of excavated native soils and/or existing fill materials may be considered if approved by the Geotechnical Engineer and pending the conditions encountered at the time of construction. Any reuse of the existing fill would require that all organics, oversize particles and unsuitable foreign matter found therein be separated and wasted off-site.

### **Fill Compaction Requirements**

Fills beneath the building pad and pavements should be placed in uniform loose layers no more than about one-foot thick where heavy vibratory compaction equipment is used. Smaller lifts should be used where hand operated equipment is required for compaction. Each lift should be compacted to no less than 95 percent of its maximum dry density as determined by the Modified

Proctor Compaction Test, ASTM D1557. In landscape areas, the compaction requirement may be relaxed to 90 percent of maximum dry density.

### **Grading and Drainage**

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to buildings can result in soil movements greater than those indicated in this report, which may in turn result in unsatisfactory differential floor slab and/or foundation displacements, cracked slabs and walls, or roof leaks.

### **Temporary Excavation Slopes**

Excavations must be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P and its appendices, along with any state and local codes, as applicable. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed OSHA regulations. Flatter slopes than those stipulated by the regulations or temporary shoring may be required depending upon the soil conditions encountered and other external factors. OSHA regulations are strictly enforced and if they are not followed, the owner, contractor, and/or earthwork and utility subcontractor could be liable and subject to substantial penalties.

### **Construction Observation and Testing**

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of topsoil and unsuitable fills, proof-rolling, and mitigation of any areas identified as needing improvement through proof-rolling. Each lift of new compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts.

Foundation bearing grades and subgrades for floor slabs, pavements and concrete pads should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

It should be understood that subsurface conditions will be more fully known when the site is excavated. The continuation of the Geotechnical Engineer into the construction phase of the project will allow for validation of the subsurface conditions assumed to exist for this study and in the development of the design recommendations in this report, along with assessing any variations, providing interim recommendations as necessary and reviewing associated design changes.

## SHALLOW FOUNDATIONS

### Design Parameters

Provided that actual design foundation loads do not exceed those estimated herein (maximum 600 kips for columns and 18 kips/ft for walls), the following parameters may be assumed for the design of shallow spread foundations. If actual foundation loads exceed this, the conclusions outlined in this report should be reevaluated and an alternative foundation system may be necessary.

The building should be constructed upon a subgrade which has been grubbed and cleared of any existing fills as described in the **Earthwork** section, with the building and pavement subgrades proof-rolled/proof-compacted as described therein. Any unstable areas should be investigated and the cause corrected. Structural fill should be used to level any depressions in the subgrade or for any grade increases that may be necessary.

Spread foundations which bear upon the proof-compacted native sand or structural fill soils used to increase grades may be proportioned using a maximum net allowable bearing pressure of 3,000 pounds per square foot (psf). Where local over-excavation is required beneath foundations to remove existing fill or otherwise improve bearing conditions, the excavation should extend horizontally beyond each side of the foundation a distance equal to at least one-half the depth of undercut below the final bearing grade elevation. Replacement material should meet the specification and compaction guidelines for structural fill as outlined in this report.

The foundations may alternatively be proportioned using an allowable bearing pressure of 4,000 psf when supported upon aggregate rock pads. The aggregate pads must extend at least two (2) feet beneath the foundations and two (2) feet beyond the foundation edges in each direction. The pads should be prepared by over-excavating the native site soils, followed by placement of a woven separation/stabilization geotextile (meeting NYSDOT standard specifications section 737-01 for separation or stabilization geotextile) over the exposed grades and a 2-foot-thick layer of clean crushed stone meeting ASTM C33 Blend 57 gradation. The aggregate should be thoroughly consolidated in lifts not exceeding 12 inches using a vibratory plate tamper or drum equipment suited to the actual conditions encountered and to the satisfaction of the Geotechnical Engineer. The geotextile must completely envelop the aggregate surfaces - bottom, sides and top.

Continuous foundations should have a minimum width of two feet, and isolated foundations should have a minimum width of three feet. All exterior foundations should be seated at least four feet below final adjacent grades for frost protection. Interior foundations (beneath heated spaces) should bear at a nominal depth of two feet or greater below finished floor to develop adequate bearing capacity.

A standard perimeter foundation drain (as described in the **Retaining Wall** section herein) should be included wherever exterior grades are greater in elevation than floor level or finished grade on the interior side.

Assuming that foundations are designed and constructed as recommended, total settlement is not expected to exceed about 1¼ inch, and differential settlement is not expected to exceed 1 inch. Any such settlement should occur as construction proceeds and within a few days of the application of each load increment.

## **Foundation Construction Considerations**

Where foundations will bear on native soils or structural fill, the foundation bearing grades should be proof-compacted using a mechanical or large reversible plate tamper to densify the soils loosened by the excavation process unless otherwise directed by the Geotechnical Engineer observing the grades. If groundwater seepage occurs, proof-compacting should be eliminated, and a minimum six-inch thick base of clean crushed stone placed over a geotextile should be provided to establish a more uniform and stable base for construction and to assist in dewatering. The stone should be an ASTM C33 Blend 57 aggregate and the geotextile a non-woven synthetic filter fabric meeting NYSDOT standard specifications section 737-01 for drainage geotextile.

All final bearing grades should be relatively firm, stable, and free of loose soil, mud, water and frost. The Geotechnical Engineer should approve the condition of the foundation bearing grades immediately prior to placement of reinforcing steel and concrete.

## **FLOOR SLABS**

### **Floor Slab Design Parameters**

As previously indicated, we recommend that all existing fills be removed from beneath new floor slabs in addition to their removal from beneath new foundations and be replaced with structural fill. The floor slabs should be constructed upon a minimum six-inch thick subbase course which conforms to the requirements for NYSDOT Type 2 Subbase or ASTM C33 Blend 57 aggregate. Consideration should be given to using a thicker subbase course in areas subject to heavier loads and/or use, or those exposed to freezing temperatures.

The use of a vapor retarder along with a base course of ASTM C33 Blend 57 aggregate should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding its use and placement.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual.

Floor slab subgrades should be prepared as outlined in the **Earthwork** section herein. Under these conditions, a modulus of subgrade reaction equal to 150 pounds per cubic inch (pci/in) may be assumed at the top of the stone base layer for slab design purposes.

### **Floor Slab Construction Considerations**

Even with the base course recommended above, we caution that the subgrades may not support repeated heavy construction traffic or telehandlers without suffering rutting and weaving that may be especially severe during wet seasons. If the grades are to be repeatedly traversed by these types of equipment, they should be reinforced as necessary to support them. Areas which become disturbed or weakened should be excavated and stabilized accordingly.

The Geotechnical Engineer should approve the condition of floor slab or pad subgrades immediately prior to placement of the subbase course. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

## **EARTH RETAINING WALL DESIGN**

All earth-retaining foundation walls or structures should be designed to resist the lateral pressures generated by earth backfill and any temporary or permanent surcharge loads. Active earth pressures may be assumed for walls that are free to deflect as the backfill is placed and surcharge loads applied. At-rest earth pressures should be assumed for walls that are braced prior to backfilling or applying surcharge loads. The following design parameters are provided to assist in determining the lateral wall loads, whichever apply:

- Soil angle of internal friction - 30 degrees
- Coefficient of At-Rest earth pressure ( $k_o$ ) - 0.50
- Coefficient of Active earth pressure ( $k_a$ ) - 0.33
- Coefficient of Passive earth pressure ( $k_p$ ) -3.00
- Total unit weight of compacted soil - 125 pcf
- Coefficient of sliding friction - 0.35 (concrete on native soils or structural fill)

The recommended design parameters assume relatively level grades on either side of the wall, that the wall is backfilled with imported granular fill (reuse of excavated onsite soils for this purpose should be avoided), and that the backfill remains permanently well-drained. Water must not be allowed to collect against the wall unless the wall is designed to accommodate the added hydrostatic pressure. Drainage system recommendations are provided below.

## **Subsurface Drainage for Earth-Retaining Walls**

Retaining structures should be provided with a foundation level drain which may consist of a nominal 4-inch diameter perforated PVC or corrugated HDPE pipe embedded at the base of a minimum 12-inch wide column of clean crushed stone (e.g., NYSDOT no. 1 and no. 2 size aggregate or ASTM C33 Blend 57 stone). The stone should be enveloped in an appropriate non-woven filter fabric (meeting NYSDOT standard specifications section 737-01 for drainage geotextile) to inhibit siltation. Backfill soils behind the crushed stone drainage layer should consist of imported granular fill. The drain line should be sloped to provide positive gravity drainage to daylight, stormwater system, or to a sump pit and pump.

Additionally, we note that subsurface infiltration of stormwater may result in localized groundwater mounding and recommend that this be considered in evaluation of the existing retaining wall and the design of any new sections of the wall. Modifications to either the drainage system or the wall itself may be necessary to accommodate elevated groundwater levels depending on the actual configuration and design parameters of the stormwater management system.

## **PAVEMENTS**

### **Flexible Pavement Design**

The pavement sections presented below were developed in general accord with AASHTO procedures using a reduced subgrade strength and local experience to account for frost, and to keep the anticipated pavement heave and cracking within generally tolerable limits. A subgrade resilient modulus ( $M_r$ ) equal to 5,000 psi has been assumed for design purposes. Our design parameters assume the existing fills will be left in place and stabilized as detailed in the **Earthwork** section of this report. As previously indicated, the Owner must accept some degree of risk for pavement settlement, which may require periodic maintenance, if the existing fills are left in place.

Two conventional pavement sections were developed, a Light Duty section for automobile parking areas and a Heavy Duty section for entrance drives and areas subject to repeated truck traffic. Modifications should be made as appropriate where permeable pavements will be used.

For design purposes, it has been assumed that the pavement design life is 20 years, and that daily equivalent single axle loads (ESALs) are equal to 1 for the Light Duty section and 25 for the Heavy Duty section. If the traffic loads vary from these, we should be provided with the opportunity to refine the pavement section accordingly.

All materials should meet the requirements specified in the latest edition of the New York State Department of Transportation (NYSDOT) Standard Specifications for Construction and Materials.

Flexible Pavement Design				
Layer	Material Description	NYSDOT Item Number	Thickness (inches)	
			Light Duty	Heavy Duty
Top	Asphaltic Concrete	402.127303	1.5	1.5
Binder	Asphaltic Concrete	402.257903	2.0	3.0
Base	Crusher-Run Stone	304.12	8	12
Fabric	Stabilization Fabric	207.24	Single Ply	Single Ply

Any rigid pavements should be provided with a minimum six-inch thick base of crusher-run stone (NYSDOT Section 304-2.02, Type 2 material) placed over a stabilization fabric. The pavements may be designed assuming a modulus of subgrade reaction equal to 150 pounds per cubic inch at the top of the base layer.

### Temporary Construction Access Roadways

The recommended pavement sections are not designed to support heavy construction traffic which may require thicker sections. The contractor should construct temporary haul routes and construction roadways onsite as appropriate for the weather conditions and the equipment in use, with consideration to the soil conditions encountered in specific areas.

### Pavement Drainage

Accumulation of water on pavement subgrades should be avoided by grading the subgrade to a slope of at least two percent, and/or by providing underdrains. Swales should be provided at the pavement edges for drainage relief. Failure to provide adequate drainage will shorten pavement life.

### Pavement Maintenance

All pavements require periodic care, and preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Settlement of pavements due to consolidation of the existing fills may also occur and require periodic maintenance.

### Frost Considerations

Frost may penetrate beneath sidewalks and pavements and cause them to heave, and resulting displacements may be differential, particularly where sidewalks and pavements meet building doorways and along curbs. To limit the magnitude of heave and creation of such uneven joints to

generally tolerable magnitudes for most winters, a 16-inch thick base of ASTM C33 Blend 57 crushed stone should be placed beneath sensitive sidewalk or pavement areas, along with an underdrain to relieve any collected waters. The crushed stone should be separated from the surrounding granular soils with a non-woven synthetic filter fabric meeting NYSDOT standard specifications section 737-01 for drainage geotextile.

## **GENERAL COMMENTS**

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements and design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

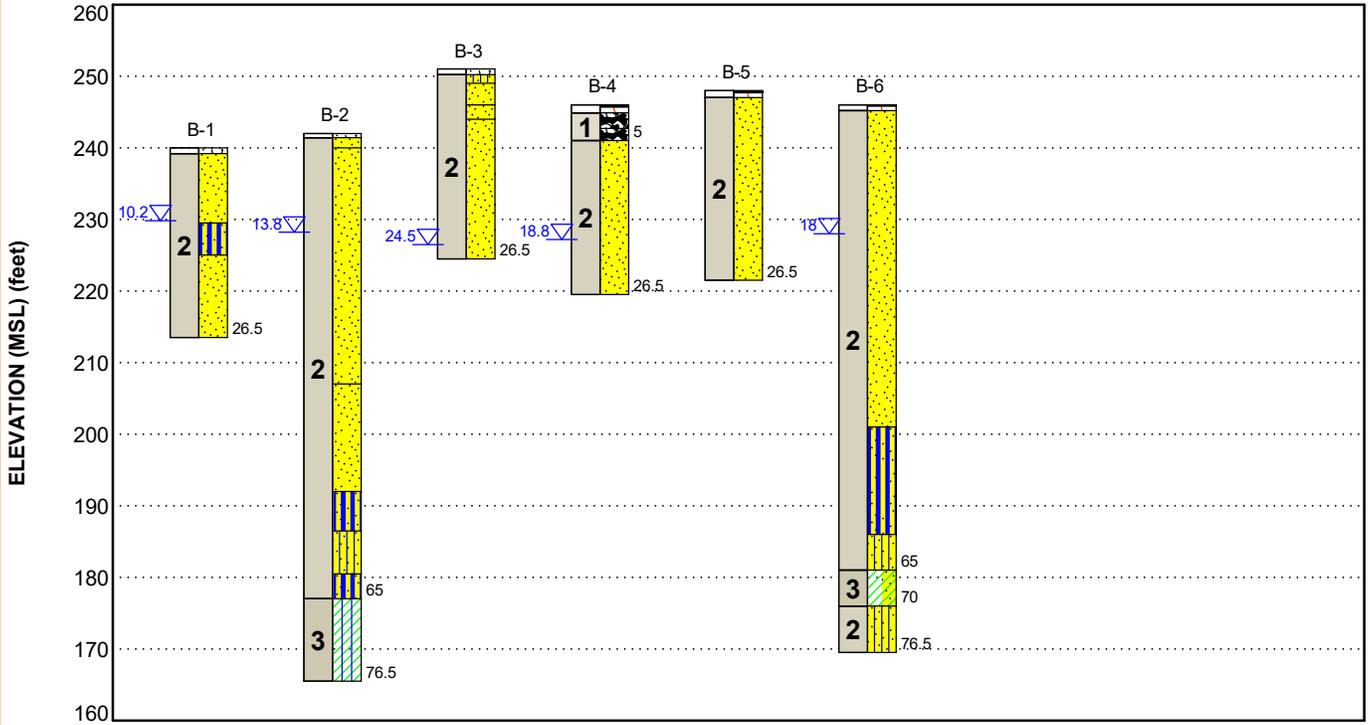
## FIGURES

### Contents:

GeoModel (3 pages)

**GEOMODEL**

Proposed Student Housing ■ Albany, NY  
Terracon Project No. JB205071



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fill	Typically sandy soils with lesser amounts of foreign matter (e.g., wood, roots, gravel).
2	Sand	Native fine sand, generally with relatively little silt. Occasional silty layers which become more prevalent with depth.
3	Silt & Clay	Interlayered silt and clay deposits.

**LEGEND**

- Topsoil
- Silty Sand
- Aggregate Base Course
- Poorly-graded Sand
- Silty Clay
- Fill
- Sandy Silt
- Asphalt
- Lean Clay with Sand

First Water Observation

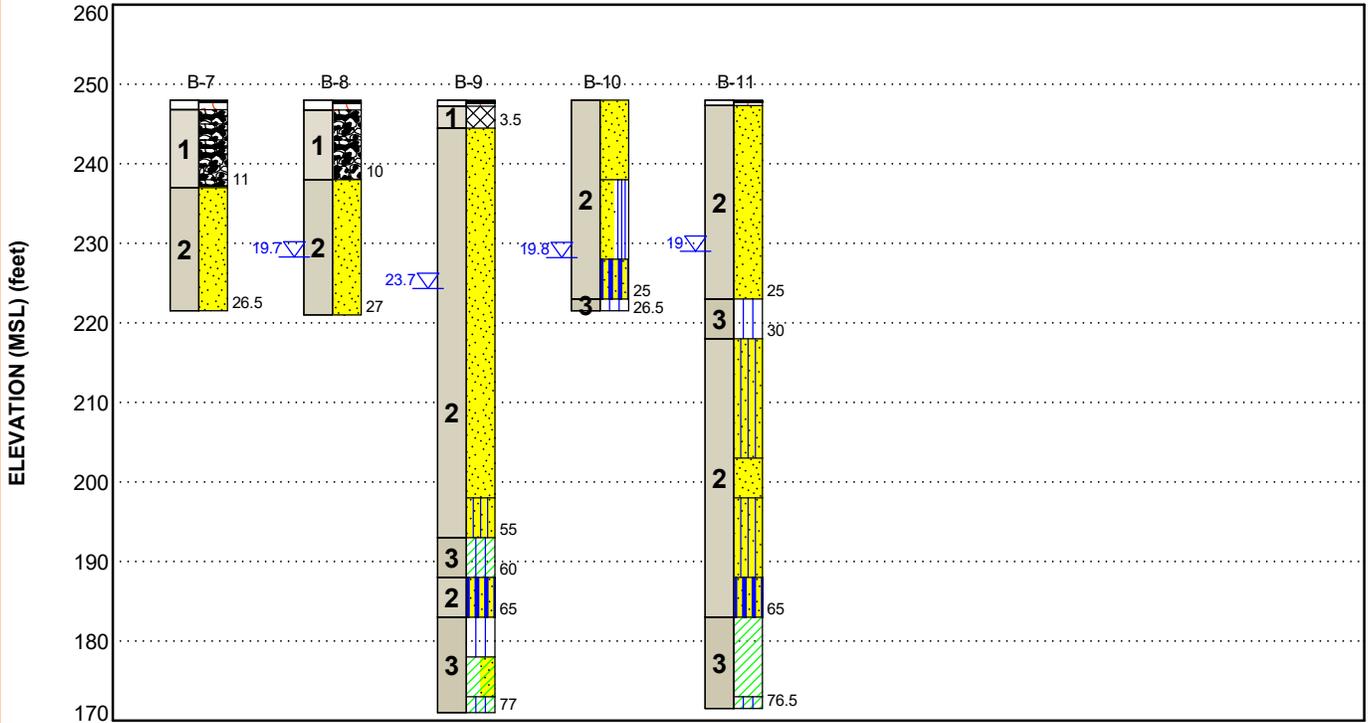
**NOTES:**

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

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Proposed Student Housing ■ Albany, NY  
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**LEGEND**

- Asphalt
- Poorly-graded Sand
- Silty Clay
- Lean Clay with Sand
- Aggregate Base Course
- Fill
- Sandy Silt
- Silt
- Poorly-graded Sand with Silt
- Fill
- Silty Sand
- Silt
- Lean Clay

First Water Observation

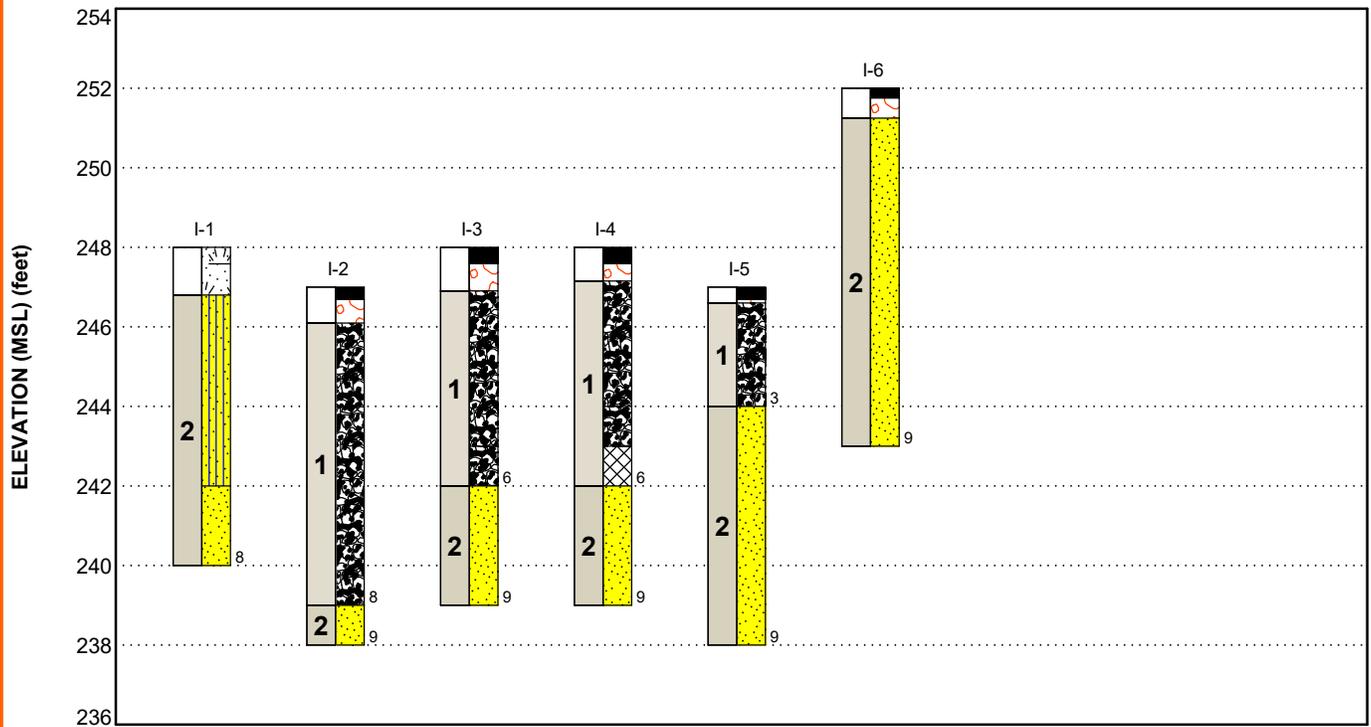
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### LEGEND

Topsoil	Asphalt	Fill
Silty Sand	Aggregate Base Course	
Poorly-graded Sand	Fill	

First Water Observation

### NOTES:

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## ATTACHMENTS

## EXPLORATION AND TESTING PROCEDURES

### Field Exploration

Boring No.	Boring Depth (feet)	Location
B-1 thru B-11	26.5 to 77.0	Proposed building footprint
I-1 thru I-6	8.0 to 9.0	Infiltration test locations

**Test Boring Layout and Elevations:** The test boring locations were established in the field by Terracon using a hand-held GPS unit, taped measurements and/or visual reference from existing site features. The boreholes were located on the basis of the proposed building and parking layout provided to us, within the limitations of access, existing structures and utilities.

Ground surface elevation at each borehole location was estimated based upon our interpolation between topographic contours shown on the site plans provided to us. If more precise locations and/or elevations are desired, the as-drilled boring locations should be surveyed.

**Test Boring Subsurface Exploration Procedures:** The test borings were made using a standard rotary drill rig equipped with hollow stem augers. As the augers were advanced, the soils were sampled at intervals of five feet or less in accordance with the Standard Method for Penetration Test and Split-Barrel Sampling of Soils, ASTM D1586. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling 30-inches. The number of blows required to advance the sampling spoon the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the corresponding test depths. Upon completion of drilling the boreholes were backfilled with auger cuttings and/or sand, with the surface restored in kind in pavement areas.

Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. The sampling depths, penetration distances, and other sampling information were recorded on the field boring logs.

The soil samples were placed in appropriate containers and taken to our soils laboratory for classification by a Geotechnical Engineer. Final individual boring logs were prepared, and they represent the Geotechnical Engineer's interpretation of the field logs and include modifications as appropriate based on observations and/or testing of the samples in our laboratory.

## **Laboratory Testing**

Selected recovered samples from the test borings were submitted for laboratory testing as part of the subsurface investigation, to confirm the visual classifications and to provide quantitative index properties for use in the geotechnical evaluation. This testing was performed in general accordance with the following standard methods:

- ASTM D2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil - and Rock by Mass (9 samples tested)
- ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils (w/o hydrometer) (7 samples tested)
- ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils (w/ hydrometer) (1 sample tested)
- ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils (1 sample tested)

## **SITE LOCATION AND EXPLORATION PLANS**

### **Contents:**

Site Location Plan

Exploration Plan

Note: All attachments are one page unless noted above

**SITE LOCATION**

Proposed Student Housing ■ Albany, NY  
September 2020 ■ Terracon Project No. JB205071

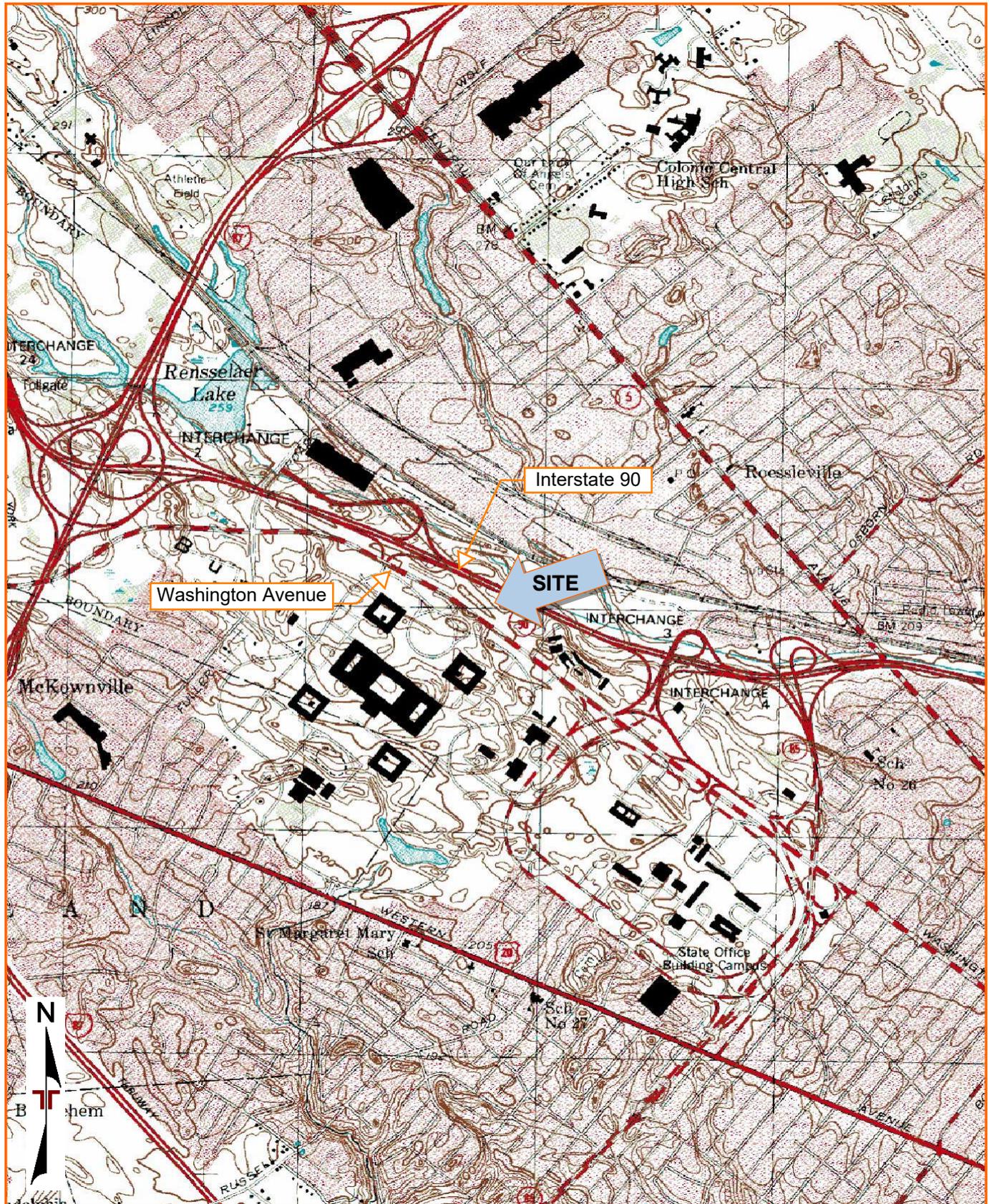


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY  
QUADRANGLES INCLUDE: ALBANY, NY (11/1994).

# EXPLORATION PLAN

Washington Avenue Student Housing - Albany, NY  
Terracon Project No. JB205071

**ZONING INFORMATION**

USE	COMMUNITY URBAN
HEIGHT	20 FEET
SETBACK	10 FEET
AREA	NONE
COVERAGE	0 FEET
PERCENTAGE	90%
ADOPTED FROM:	CITY OF ALBANY USDO ZONING REPORT

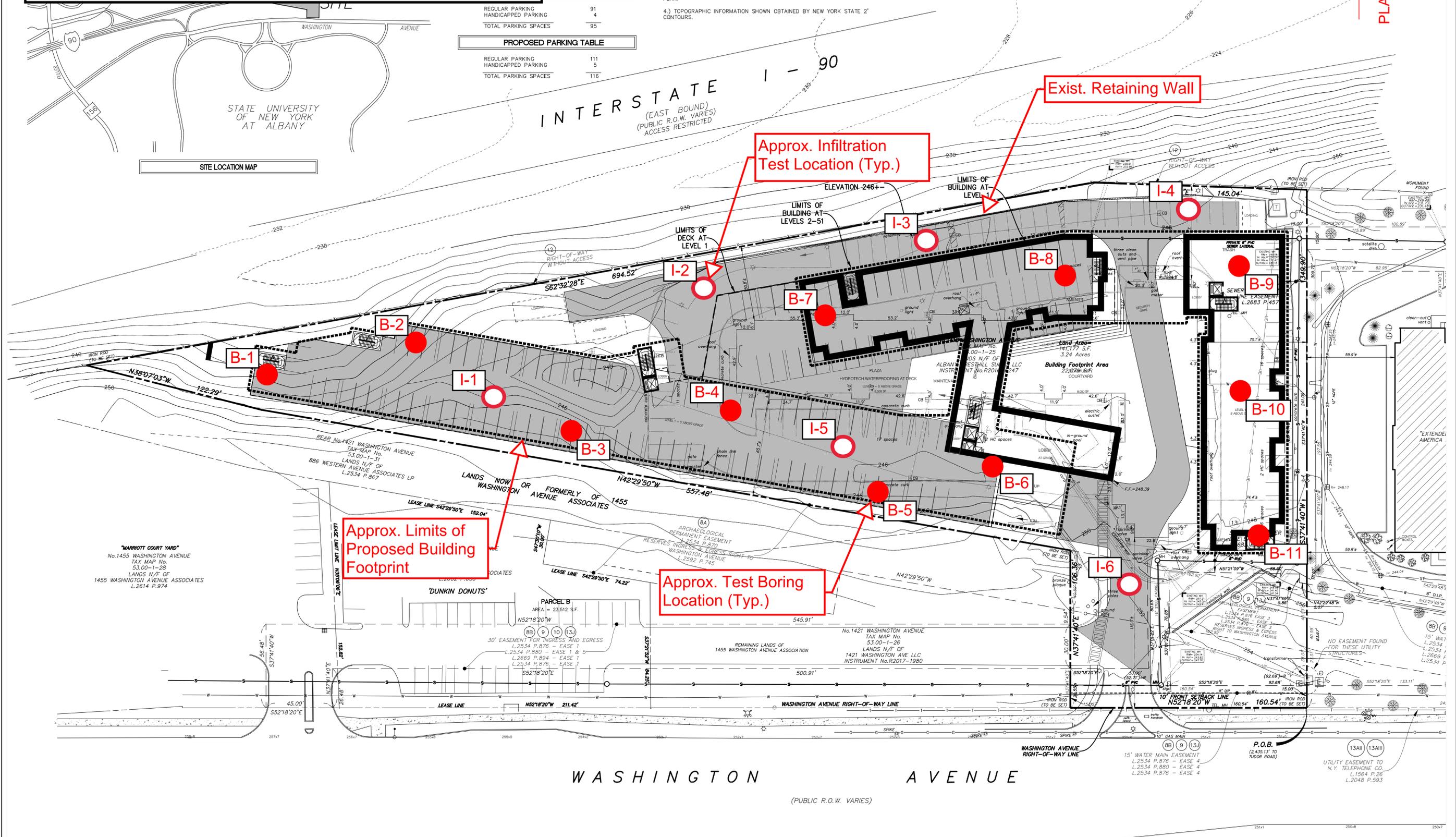
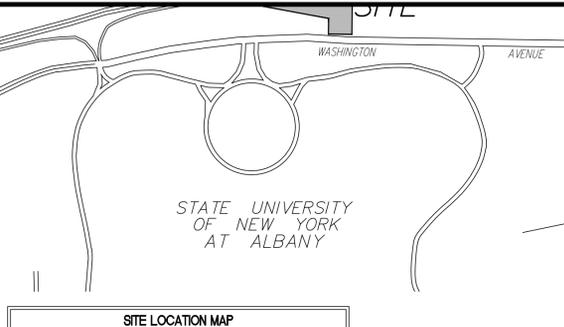
**PARKING TABLE**

REGULAR PARKING	91
HANDICAPPED PARKING	4
TOTAL PARKING SPACES	95

**PROPOSED PARKING TABLE**

REGULAR PARKING	111
HANDICAPPED PARKING	5
TOTAL PARKING SPACES	116

- MAP REFERENCES**
- 1.) "AS BUILT WATER & SEWER Nos. 1395-1475 WASHINGTON AVENUE, ALBANY, NY" PREPARED BY HERSHBERG & HERSHBERG CONSULTING ENGINEERS & LAND SURVEYORS, DATED 11/05/96, LAST REVISED 1/31/97.
  - 2.) "MAP SHOWING PROPERTY LINE AND EASEMENTS OF No. 1395 WASHINGTON AVENUE, EXTENDED STAY AMERICA, INC.", PREPARED BY HERSHBERG & HERSHBERG ON 4/13/96, LAST REVISED 5/7/96.
  - 3.) ALTA SURVEY PREPARED BY HERSHBERG & HERSHBERG AS FILE No. 190321. SEE SURVEY FOR ALL SCHEDULE BE ITEMS REFERENCED ON THIS PLAN.
  - 4.) TOPOGRAPHIC INFORMATION SHOWN OBTAINED BY NEW YORK STATE 2' CONTOURS.



PLAN NORTH ↑

Exist. Retaining Wall

Approx. Infiltration Test Location (Typ.)

Approx. Limits of Proposed Building Footprint

Approx. Test Boring Location (Typ.)

**HERSHBERG & HERSHBERG**  
Consulting Engineers and Land Surveyors  
18 Locust Street  
Albany, New York 12203



DATE	
REVISIONS	
REMARKS	

PROPOSED SITE PLAN FOR  
1415 WASHINGTON AVENUE  
CITY OF ALBANY, STATE OF NEW YORK  
COUNTY OF ALBANY, STATE OF NEW YORK

SCALE: AS NOTED  
DATE: 1/24/2020  
CHK: DRH  
BY: MW  
FILE: 200015

FOR MUNICIPAL APPROVAL NOT INTENDED FOR CONSTRUCTION

C1

## **EXPLORATION RESULTS**

### **Contents:**

Test Boring Logs (25 pages)

Infiltration Test Results (3 pages)

Laboratory Test Results (10 pages)

Note: All attachments are one page unless noted above

# BORING LOG NO. B-1

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6903° Longitude: -73.8197°  Approximate Surface Elev.: 240 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.8	<b>TOPSOIL</b>	239+/-			12	WH-WH-1-1 N=1	
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, very loose to loose				22	2-3-3-4 N=6	
						14	3-4-5 N=9	
	10.5	<b>SANDY SILT (ML)</b> , brownish tan with gray mottling, wet, soft	229.5+/-	▽		12	1-1-2 N=3	
	15.0	<b>POORLY GRADED SAND (SP)</b> , fine grained, brown, wet, very loose to loose	225+/-			12	1-1-2 N=3	
						14	1-2-2 N=4	
	26.5	<b>Boring Terminated at 26.5 Feet</b>	213.5+/-			18	2-3-4 N=7	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic  
Boring moved 10'

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ After S-4



Boring Started: 08-12-2020

Boring Completed: 08-12-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-2

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6902° Longitude: -73.8194°  Approximate Surface Elev.: 242 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.6	<b>TOPSOIL</b> 241.5+/-						
	2.0	<b>POORLY GRADED SAND (SP)</b> , trace rootlets, fine grained, brownish tan, moist, very loose 240+/-				18	1-1-1-1 N=2	
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, very loose to loose				19	1-2-2-2 N=4	
			5			17	2-3-3 N=6	
			10			17	2-3-3 N=6	
			15	▽		18	1-1-2 N=3	
			20			18	WH-1-1 N=2	
			25			12	3-3-4 N=7	
			30					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic  
Boring moved 12' west. About 1.5' elevation drop

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ After S-5



Boring Started: 08-13-2020

Boring Completed: 08-13-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-2

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6902° Longitude: -73.8194°  Approximate Surface Elev.: 242 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	2	<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, very loose to loose ( <i>continued</i> )	35.0		X	10	2-4-4 N=8	
		<b>POORLY GRADED SAND (SP)</b> , with occasional silt lenses, fine grained, brownish tan, wet, medium dense	207+/-		X	12	4-5-9 N=14	
			35					
			40		X	17	4-5-7 N=12	
			45		X	18	4-5-7 N=12	
		<b>SANDY SILT (ML)</b> , with clay bands, brown, wet, stiff	50.0		X	18	3-4-7 N=11	
			192+/-					
		<b>SILTY SAND (SM)</b> , fine grained, gray, wet, medium dense	55.5		X	18	5-11-15 N=26	
			186.5+/-					
			60					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic  
Boring moved 12' west. About 1.5' elevation drop

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

After S-5



Boring Started: 08-13-2020

Boring Completed: 08-13-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-2

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6902° Longitude: -73.8194°  Approximate Surface Elev.: 242 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
		DEPTH						
2		<b>SILTY SAND (SM)</b> , fine grained, gray, wet, medium dense ( <i>continued</i> )	61.0		X	18	2-2-5 N=7	
		<b>SANDY SILT (ML)</b> , with clay bands, gray, wet, medium stiff						
			181+/-					
			65.0		X	17	3-5-13 N=18	
		<b>VARVED SILT AND CLAY (CL-ML)</b> , with fine sand lenses, gray, moist, very stiff						
			177+/-					
3		Same. 3"-4" bands of fine sand			X	18	5-8-10 N=18	
			75					
		<b>Boring Terminated at 76.5 Feet</b>	76.5		X	18	4-8-11 N=19	
			165.5+/-					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic  
Boring moved 12' west. About 1.5' elevation drop

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

After S-5



Boring Started: 08-13-2020

Boring Completed: 08-13-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-3

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6899° Longitude: -73.8192°  Approximate Surface Elev.: 251 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.8	<b>TOPSOIL</b>	250+/-					
	2.0	<b>POSSIBLE FILL: SILTY SAND (SM)</b> , trace rootlets, trace brownish tan fine sand, fine grained, dark brown, moist, very loose	249+/-			18	1-1-1-1 N=2	
	5.0	<b>POSSIBLE FILL: POORLY GRADED SAND (SP)</b> , trace rootlets, fine grained, brown, moist, very loose	246+/-			14	1-1-WH-WH N=1	
	7.0	<b>POORLY GRADED SAND (SP)</b> , trace organics (black piece of wood), fine grained, brownish tan, moist, loose	244+/-			12	1-1-3 N=4	
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, loose						
		<b>Grades with silt (SP-SM)</b>						
		<b>Grades to brown</b>						
		<b>Same. Wet</b>						
	26.5	<b>Boring Terminated at 26.5 Feet</b>	224.5+/-			18	1-1-1 N=2	

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ At completion of drilling



Boring Started: 08-12-2020

Boring Completed: 08-12-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-4

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6897° Longitude: -73.8189°  Approximate Surface Elev.: 246 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
		DEPTH						
	0.3	<b>ASPHALT</b>	245.5+/-					
	1.1	<b>AGGREGATE BASE COURSE</b>	245+/-					
1		<b>FILL - SILTY SAND (SM)</b> , trace rootlets and black pieces of wood (organics), fine grained, dark brown to black, moist, medium dense	242.5+/-		X	17	9-10-6 N=16	
	3.3	<b>FILL - POORLY GRADED SAND (SP)</b> , trace roots and organics, fine grained, brownish tan with dark brown sand, moist, medium dense	242.5+/-		X	22	6-6-4-4 N=10	
	5.0	<b>POORLY GRADED SAND (SP)</b> , trace rootlets, fine grained, brownish tan, moist, loose	241+/-		X	17	1-2-2-2 N=4	6.8
		Grades to brown						
			10		X	17	3-3-4 N=7	
			15		X	17	2-2-3 N=5	
2		Grades to wet. Grades to very loose						
			20	▽	X	12	WH-1-2 N=3	
			25		X	14	WH-1-WH N=1	
		26.5	219.5+/-					
		<b>Boring Terminated at 26.5 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to running sands after S-6

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

▽ After S-6

Notes:

Boring Started: 08-14-2020      Boring Completed: 08-14-2020

Drill Rig: CME 55      Driller: J. Lamm

Project No.: JB205071



# BORING LOG NO. B-5

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6895° Longitude: -73.8186°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.3	<b>ASPHALT</b>	247.5+/-					
	1.0	<b>AGGREGATE BASE COURSE</b>	247+/-					
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brown, moist, loose						
		Grades to very loose						
		Grades to wet						
			26.5					
		<b>Boring Terminated at 26.5 Feet</b>	221.5+/-					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands @ S-6

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

*No measurable groundwater upon completion of drilling*



Boring Started: 08-14-2020

Drill Rig: CME 55

Project No.: JB205071

Boring Completed: 08-14-2020

Driller: J. Lamm

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-6

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6893° Longitude: -73.8184°  Approximate Surface Elev.: 246 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.2 0.8	<b>ASPHALT</b>	246+/-					
		<b>AGGREGATE BASE COURSE</b>	245+/-					
	2	<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, very loose to medium dense			X	17	4-5-7-7 N=12	
			5		X	22	6-6-4-4 N=10	
					X	13	2-2-2-2 N=4	
			10		X	12	1-2-2 N=4	
			15		X	14	1-1-1 N=2	
		Grades wet	20	▽	X	13	WR-WR-WH N=WH	
			25		X	17	WR-WR-1 N=1	
			30					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

▽ At completion of drilling

Notes:

Boring Started: 08-20-2020      Boring Completed: 08-20-2020

Drill Rig: CME 55      Driller: J. Lamm

Project No.: JB205071



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-6

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6893° Longitude: -73.8184°  Approximate Surface Elev.: 246 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	POORLY GRADED SAND (SP), fine grained, brownish tan, moist, very loose to medium dense <i>(continued)</i>		35		X	6	3-4-7 N=11	
	Grades to grayish brown		40		X	3	2-2-2 N=4	
			45		X	19	5-7-12 N=19	
	SANDY SILT (ML), gray, wet, soft to stiff		50		X	14	4-6-7 N=13	27.8
			55		X	13	1-2-2 N=4	
			60		X	16	2-1-2 N=3	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

At completion of drilling



Boring Started: 08-20-2020

Boring Completed: 08-20-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-6

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6893° Longitude: -73.8184°  Approximate Surface Elev.: 246 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
2		<b>SILTY SAND (SM)</b> , gray, wet, medium dense	65.0		X	14	2-4-6 N=10	
3		<b>LEAN CLAY (CL)</b> , with silty sand bands, gray, moist, medium stiff	70.0		X	19	WH-3-2 N=5	
2		<b>SILTY SAND (SM)</b> , with clay seams, gray, moist to wet, medium dense	76.5		X	18	3-10-13 N=23	
		<b>Boring Terminated at 76.5 Feet</b>	181+/-		X	14	3-3-7 N=10	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**  
▽ At completion of drilling

Notes:

Boring Started: 08-20-2020

Boring Completed: 08-20-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-7

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6898° Longitude: -73.8185°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.3	<b>ASPHALT</b>	247.5+/-					
	1.2	<b>AGGREGATE BASE COURSE</b>	247+/-					
1		<b>FILL - SILTY SAND (SM)</b> , fine grained, brown, moist, medium dense	3.0 245+/-		X	17	9-8-8 N=16	
		<b>FILL - POORLY GRADED SAND (SP)</b> , trace gravel, trace organic smell, fine grained, brown, moist, medium dense	5.0 243+/-		X	22	7-6-6-5 N=12	
		<b>FILL - SILTY SAND (SM)</b> , trace black rootlets (organics), fine grained, dark brown, moist, very loose	6.0 242+/-		X	19	1-1-1-1 N=2	
		<b>FILL - POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, very loose	10.0 238+/-					
		<b>FILL - SILTY SAND (SM)</b> , trace black rootlets (organics), fine grained, dark brown, moist, very loose	11.0 237+/-		X	17	WH-1-1 N=2	
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, loose						
2		<b>Grades to wet</b>						
			26.5 221.5+/-		X	17	1-2-2 N=4	
							29.9	
							1-2-3 N=5	
		<b>Boring Terminated at 26.5 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

*No measurable groundwater upon completion of drilling*



Boring Started: 08-14-2020

Drill Rig: CME 55

Project No.: JB205071

Boring Completed: 08-14-2020

Driller: J. Lamm

# BORING LOG NO. B-8

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6896° Longitude: -73.818°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.4	<b>ASPHALT</b>	247.5+/-					
	1.3	<b>AGGREGATE BASE COURSE</b>	247+/-					
1		<b>FILL - POORLY GRADED SAND WITH SILT (SP-SM)</b> , trace gravel, brown, moist, medium dense				13	8-10-12 N=22	
	5.0	<b>FILL - SILTY SAND (SM)</b> , with black organics (wood and rootlets), dark brown, moist, loose	243+/-			3	12-10-9-8 N=19	
	10.0	<b>Large piece of gravel encountered</b>	238+/-			19	2-2-2-2 N=4	
	10.0	<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan to brown, moist to wet, very loose to loose				17	2-2-2-2 N=4	
	15.0	Grades to brown				14	2-3-2-2 N=5	
	15.0					19	2-2-2-2 N=4	
2		Grades wet		20	▽	16	2-3-4-4 N=7	7.0
	27.0	<b>Boring Terminated at 27 Feet</b>	221+/-			13	1-1-2-3 N=3	
	27.0					7	WH-1-2-2 N=3	

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ At completion of drilling



Boring Started: 08-21-2020

Boring Completed: 08-21-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

# BORING LOG NO. B-9

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6894° Longitude: -73.8176°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
		DEPTH						
	ASPHALT		0.4					
	AGGREGATE BASE COURSE		0.8					
1	POSSIBLE FILL: SILTY SAND (SM), trace gravel, brown with orange mottling, moist, medium dense		3.5			22	6-5-7-10 N=12	
	POORLY GRADED SAND (SP), fine grained, brownish tan, moist, very loose to loose		5			22	12-8-6-6 N=14	
			10			20	3-2-1-3 N=3	
			15			20	3-4-4-6 N=8	
2			20			22	3-3-3-4 N=6	
	Grades to brown		25	▽				
	Grades wet		30			19	WH-WH-1-1 N=1	

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ After S-8

Boring Started: 08-24-2020

Boring Completed: 08-24-2020

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB205071



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-9

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6894° Longitude: -73.8176°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
2	POORLY GRADED SAND (SP), fine grained, brownish tan, moist, very loose to loose (continued)	Grades to gray	35	X	19	WH-2-3-3 N=5		
			40	X	17	1-3-3-5 N=6		
			45	X	7	WH-WH-2-1 N=2		
			50	X	22	WH-WH-WH-2 N=WH		
	SILTY SAND (SM), gray, wet, loose		55	X	19	WH-3-4-6 N=7		29.1
			60	X	19	WH-3-3-4 N=6		
3	CLAYEY SILT (ML), gray, wet, medium stiff		60					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

After S-8



Boring Started: 08-24-2020

Boring Completed: 08-24-2020

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-9

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6894° Longitude: -73.8176°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
2		<b>SANDY SILT (ML)</b> , gray, wet, medium stiff 65.0 183+/-	65	X	20	20	3-3-4-4 N=7	
2		<b>SILT (ML)</b> , gray, wet, medium stiff 70.0 178+/-	70	X	24	24	WH-3-2-3 N=5	
3		<b>LEAN CLAY (CL)</b> , with silty sand seams, gray, wet, very stiff 75.0 173+/-	75	X	19	19	3-7-10-16 N=17	
		<b>VARVED SILT AND CLAY (CL-ML)</b> , gray, moist, very stiff 77.0 171+/-	77	X	24	24	4-10-6-6 N=16	
		<b>Boring Terminated at 77 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

After S-8



Boring Started: 08-24-2020

Boring Completed: 08-24-2020

Drill Rig: Diedrich D-50

Driller: S. Morey

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-10

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6891° Longitude: -73.8177°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	1	<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, loose to medium dense	5				14 5-7-7-8 N=14	
			5				23 8-6-5-5 N=11	
			5				18 1-3-3-3 N=6	
	2	<b>POORLY GRADED SAND WITH SILT (SP-SM)</b> , fine grained, brownish tan, moist, very loose to loose	10				16 2-3-3 N=6	8.6
			15				12 1-1-1 N=2	
	3	<b>SANDY SILT (ML)</b> , brown, wet, medium stiff	20	▽			17 2-2-2 N=4	
			25				12 2-4-7 N=11	
	3	<b>SILT (ML)</b> , brown, wet, stiff	25.0					
			26.5					
		<b>Boring Terminated at 26.5 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

▽ At completion of drilling



Boring Started: 08-21-2020

Boring Completed: 08-21-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20



# BORING LOG NO. B-11

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.689° Longitude: -73.818°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	2	<b>SILTY SAND (SM)</b> , fine grained, brown, wet, loose	35		X	8	2-3-6 N=9	
			40		X	8	2-4-5 N=9	
			45		X	12	1-2-4 N=6	
		<b>POORLY GRADED SAND (SP)</b> , fine grained, brown, wet, loose	50		X	18	2-3-6 N=9	
			55		X	12	2-3-6 N=9	
		<b>SILTY SAND (SM)</b> , fine grained, gray, wet, medium dense	60		X	12	2-3-7 N=10	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**

After S-6

Notes:

Boring Started: 08-24-2020      Boring Completed: 08-24-2020

Drill Rig: CME 55      Driller: J. Lamm

Project No.: JB205071



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. B-11

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.689° Longitude: -73.818°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
2		<b>SANDY SILT (ML)</b> , with banded clay, gray, wet, stiff 65.0 183+/-	65	X		18	2-3-6 N=9	
		<b>BANDED CLAY (CL)</b> , gray, moist, medium stiff to stiff 75.0 173+/-	70	X		18	4-7-6 N=13	
3		<b>VARVED SILT AND CLAY (CL-ML)</b> , gray, moist, medium stiff 76.5 171.5+/-	75	X		18	2-3-4 N=7	30.4
		<b>Boring Terminated at 76.5 Feet</b>					2-3-3 N=6	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Water added to hold running sands

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

After S-6

Boring Started: 08-24-2020

Boring Completed: 08-24-2020

Drill Rig: CME 55

Driller: J. Lamm

Project No.: JB205071



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. I-1

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.69° Longitude: -73.8193°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	1.2	<b>TOPSOIL</b>	247+/-		X	17	WH-WH-WH-1 N=WH	
2		<b>SILTY SAND (SM)</b> , trace rootlets, fine grained, dark brown, moist, very loose <b>Some thicker tree roots</b>  <b>Same. Large tree root encountered. Medium dense</b>		5	X	20	1-1-2-2 N=3	
	6.0	<b>POORLY GRADED SAND (SP)</b> , fine grained, brown, moist, loose	242+/-		X	2	2-4-6-5 N=10	
	8.0	<b>Boring Terminated at 8 Feet</b>	240+/-		X	18	3-3-4-4 N=7	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC 4' west of boring at 4' depth below grade

Hammer Type: Automatic

Advancement Method: 4 1/4" ID HSA	Notes:	
Abandonment Method: Boring backfilled with soil cuttings upon completion.	See <a href="#">Supporting Information</a> for explanation of symbols and abbreviations.  Elevations were interpolated from a topographic site plan.	
<b>WATER LEVEL OBSERVATIONS</b>		
<i>No measurable groundwater upon completion of drilling</i>		Boring Started: 08-13-2020 Drill Rig: CME 55 Project No.: JB205071
		Boring Completed: 08-13-2020 Driller: J. Lamm

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# BORING LOG NO. I-2

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6899° Longitude: -73.8187°  Approximate Surface Elev.: 247 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.3 0.9	<b>ASPHALT</b> 246.5+/- 246+/-						
	8.0 9.0	<b>AGGREGATE BASE COURSE</b> <b>FILL - SILTY SAND (SM)</b> , with pieces of wood, rootlets, and brownish tan fine sand, dark brown, moist, loose 239+/- 238+/-	5		X	19	4-5-3-3 N=8	
1	8.0 9.0				X	20	2-3-2-3 N=5	
					X	18	2-3-3-6 N=6	
2		<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, medium dense <b>Boring Terminated at 9 Feet</b>			X	24	6-7-5-7 N=12	

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC at 4' below grade

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

Notes:  
  
See [Supporting Information](#) for explanation of symbols and abbreviations.  
Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**  
  
*No measurable groundwater upon completion of drilling*



**Terracon**  
30 Corporate Cir Ste 201  
Albany, NY

Boring Started:  
Drill Rig: CME 55  
Project No.: JB205071

Boring Completed:  
Driller: J. Lamm

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. I-3

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6897° Longitude: -73.8182°  Approximate Surface Elev.: 248 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.4	<b>ASPHALT</b>	247.5+/-					
	1.1	<b>AGGREGATE BASE COURSE</b>	247+/-					
1		<b>FILL - POORLY GRADED SAND WITH SILT (SP-SM)</b> , fine grained, brown, moist, medium dense			X	22	3-7-10 N=17	
	5.0		243+/-		X	16	12-8-11-15 N=19	
	6.0	<b>FILL - GRAVEL (GP)</b> , with pieces of wood, gray, moist, medium dense	242+/-		X	24	14-8-8-8 N=16	
2		<b>POORLY GRADED SAND (SP)</b> , trace rootlets, fine grained, brownish tan, moist, loose to medium dense			X	19	6-5-4-6 N=9	
	9.0	<b>Boring Terminated at 9 Feet</b>	239+/-					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC at 4' below grade

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.  
Elevations were interpolated from a topographic site plan.

**WATER LEVEL OBSERVATIONS**  
  
*No measurable groundwater upon completion of drilling*

30 Corporate Cir Ste 201  
Albany, NY

Notes:

Boring Started: 08-21-2020	Boring Completed: 08-21-2020
Drill Rig: CME 55	Driller: J. Lamm
Project No.: JB205071	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. I-4

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6895° Longitude: -73.8176°  Approximate Surface Elev.: 248 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	
		DEPTH	ELEVATION (Ft.)						
	0.4	<b>ASPHALT</b>	247.5+/-						
	0.9	<b>AGGREGATE BASE COURSE</b>	247+/-						
1		<b>FILL - POORLY GRADED SAND (SP)</b> , brown, moist, medium dense			X	20	7-7-4-5 N=11		
	4.0		244+/-		X	23	8-5-4-4 N=9		
	5.0	<b>FILL - SILTY SAND (SM)</b> , trace organics, black, moist, loose	243+/-		X				
	6.0	<b>POSSIBLE FILL: POORLY GRADED SAND WITH SILT (SP-SM)</b> , trace rootlets, brown, moist, medium dense	242+/-		X	18	8-4-4-4 N=8		
2		<b>POORLY GRADED SAND (SP)</b> , fine grained, orangish brown, moist, loose Grades to brownish tan			X	16	4-4-4-5 N=8		
	9.0		239+/-						
		<b>Boring Terminated at 9 Feet</b>							

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC at 4' below grade

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

*No measurable groundwater upon completion of drilling*



Boring Started: 08-21-2020

Drill Rig: CME 55

Project No.: JB205071

Boring Completed: 08-21-2020

Driller: J. Lamm

# BORING LOG NO. I-5

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.6896° Longitude: -73.8187°  Approximate Surface Elev.: 247 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	WATER CONTENT (%)
		<b>DEPTH</b>						
		0.3 <b>ASPHALT</b>	246.5+/-					
		0.4 <b>AGGREGATE BASE COURSE</b>	246.5+/-					
1	[Pattern]	<b>FILL - SILTY SAND (SM)</b> , trace organics (rootlets and wood), dark brown, moist, medium dense	244+/-		X	22	1-5-6-4 N=11	
		<b>POORLY GRADED SAND (SP)</b> , trace rootlets, fine grained, orangish brown, moist, loose			X	22	2-2-2-4 N=4	
	[Pattern]	<b>Grades to brownish tan</b>			X	24	3-2-3-3 N=5	
2					X	24	3-4-5-5 N=9	
		9.0 <b>Boring Terminated at 9 Feet</b>	238+/-					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC at 4' below grade

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

*No measurable groundwater upon completion of drilling*



Boring Started:

Drill Rig:

Project No.: JB205071

Boring Completed:

Driller: J. Lamm

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20

# BORING LOG NO. I-6

**PROJECT:** Proposed Student Housing

**CLIENT:** Scenic RE LLC  
New York, NY

**SITE:** 1415 Washington Avenue  
Albany, NY

MODEL LAYER	GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Latitude: 42.689° Longitude: -73.8183°  Approximate Surface Elev.: 252 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	0.3	<b>ASPHALT</b>	0.3					
	0.8	<b>AGGREGATE BASE COURSE</b>	0.8					
2	2	<b>POORLY GRADED SAND (SP)</b> , fine grained, brownish tan, moist, loose to medium dense	5		X	22	7-10-8-7 N=18	
			5		X	24	4-4-4-4 N=8	
			5		X	20	2-3-3-2 N=6	
			5		X	22	2-2-2-2 N=4	
	9.0	<b>Boring Terminated at 9 Feet</b>	9.0					

Stratification lines are approximate. In-situ, the transition may be gradual.  
Set 4" PVC at 4' below grade

Hammer Type: Automatic

Advancement Method:  
4 1/4" ID HSA

Abandonment Method:  
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

**WATER LEVEL OBSERVATIONS**

*No measurable groundwater upon completion of drilling*



Boring Started:

Drill Rig:

Project No.: JB205071

Boring Completed:

Driller: J. Lamm

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/9/20



INFILTRATION TEST RESULTS					
<b>PROJECT:</b> Proposed Student Housing				<b>PROJECT NO.</b> JB205071	
<b>PROJECT LOCATION:</b> Albany, New York				<b>TEST DATE:</b> 8/25/20	
<b>WEATHER:</b> Sunny, 75				<b>TESTER:</b> J.Lamm	
Test Location	Test Depth (feet)	Trial No.	Water Drop (in)	Elapsed Time (min)	Infiltration Rate (inches/hour)
I-1	4.0	1	24	12	> 24
		2	24	14	> 24
		3	24	17	> 24
		4	24	21	> 24
		Infiltration rate for trial no. 4 = > 24 inches per hour Average infiltration rate for trials no. 1-4 = > 24 inches per hour			
I-2	4.0	1	23	60	23
		2	18	60	18
		3	16	60	16
		4	13	60	13
		Infiltration rate for trial no. 4 = 13 inches per hour Average infiltration rate for trials no. 1-4 = 17.5 inches per hour			

**Notes:**

- (1) Testing was conducted in general accord with the "Infiltration Testing Requirements" outlined in Appendix D of the New York State Stormwater Management Design Manual.
- (2) Infiltration tests were located alongside companion test borings designated correspondingly.

**SOIL CLASSIFICATION AT TEST DEPTH**

Test Location I-1: Silty sand (SM) dark brown, moist

Test Location I-2: Silty sand (SM), dark brown, moist

<b>INFILTRATION TEST RESULTS</b>					
<b>PROJECT:</b> Proposed Student Housing			<b>PROJECT NO.</b> JB205071		
<b>PROJECT LOCATION:</b> Albany, New York			<b>TEST DATE:</b> 8/25/2020		
<b>WEATHER:</b> Sunny, 75			<b>TESTER:</b> J.Lamm		
<b>Test Location</b>	<b>Test Depth (feet)</b>	<b>Trial No.</b>	<b>Water Drop (in)</b>	<b>Elapsed Time (min)</b>	<b>Infiltration Rate (inches/hour)</b>
I-3	4.0	1	14	60	14
		2	11	60	11
		3	9	60	9
		4	9	60	9
		Infiltration rate for trial no. 4 = 9.0 inches per hour Average infiltration rate for trials no. 1-4 = 10.8 inches per hour			
I-4	4.0	1	21	60	21
		2	17	60	17
		3	16	60	16
		4	14	60	14
		Infiltration rate for trial no. 4 = 14.0 inches per hour Average infiltration rate for trials no. 1-4 = 17.0 inches per hour			

Notes:

- (3) Testing was conducted in general accord with the "Infiltration Testing Requirements" outlined in Appendix D of the New York State Stormwater Management Design Manual.
- (4) Infiltration tests were located alongside companion test borings designated correspondingly.

**SOIL CLASSIFICATION AT TEST DEPTH**

Test Location I-3: Poorly graded sand (SP), brown, moist

Test Location I-4: Silty sand (SM), black, organics, moist

INFILTRATION TEST RESULTS					
PROJECT: Proposed Student Housing			PROJECT NO. JB205071		
PROJECT LOCATION: Albany, New York			TEST DATE: 8/25/2020		
WEATHER: Sunny, 75			TESTER: J.Lamm		
Test Location	Test Depth (feet)	Trial No.	Water Drop (in)	Elapsed Time (min)	Infiltration Rate (inches/hour)
I-5	4.0	1	16	60	16
		2	10	60	10
		3	11	60	11
		Infiltration rate for trial no. 3 = 11.0 inches per hour Average infiltration rate for trials no. 1-3 = 12.3 inches per hour			
I-6	4.0	1	11	60	11
		2	11	60	11
		3	8.5	60	8.5
		Infiltration rate for trial no. 3 = 8.5 inches per hour Average infiltration rate for trials no. 1-3 = 10.2 inches per hour			

Notes:

- (5) Testing was conducted in general accord with the "Infiltration Testing Requirements" outlined in Appendix D of the New York State Stormwater Management Design Manual.
- (6) Infiltration tests were located alongside companion test borings designated correspondingly.

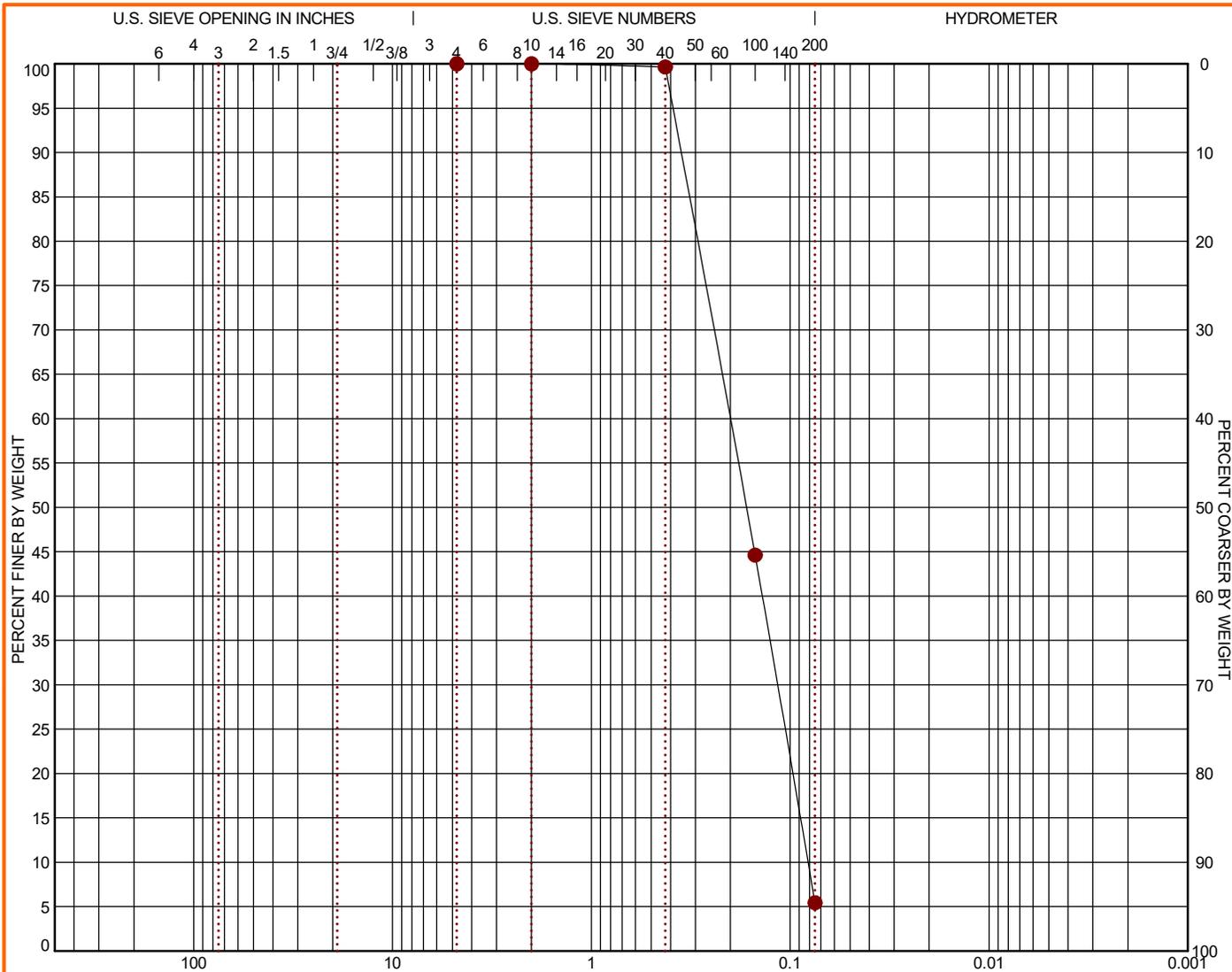
**SOIL CLASSIFICATION AT TEST DEPTH**

Test Location I-5: Poorly graded sand (SP), orangish brown, moist

Test Location I-6: Poorly graded sand (SP), tannish brown, moist

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-3	10 - 11.5	0.0	0.0	94.6		5.4		SP-SM

GRAIN SIZE	
D <sub>60</sub>	0.201
D <sub>30</sub>	0.116
D <sub>10</sub>	0.081

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#4	100.0				
#10	100.0				
#40	99.64				
#100	44.62				
#200	5.44				

SOIL DESCRIPTION
● POORLY GRADED SAND with SILT (SP-SM)

COEFFICIENTS	
C <sub>c</sub>	0.82
C <sub>u</sub>	2.47

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

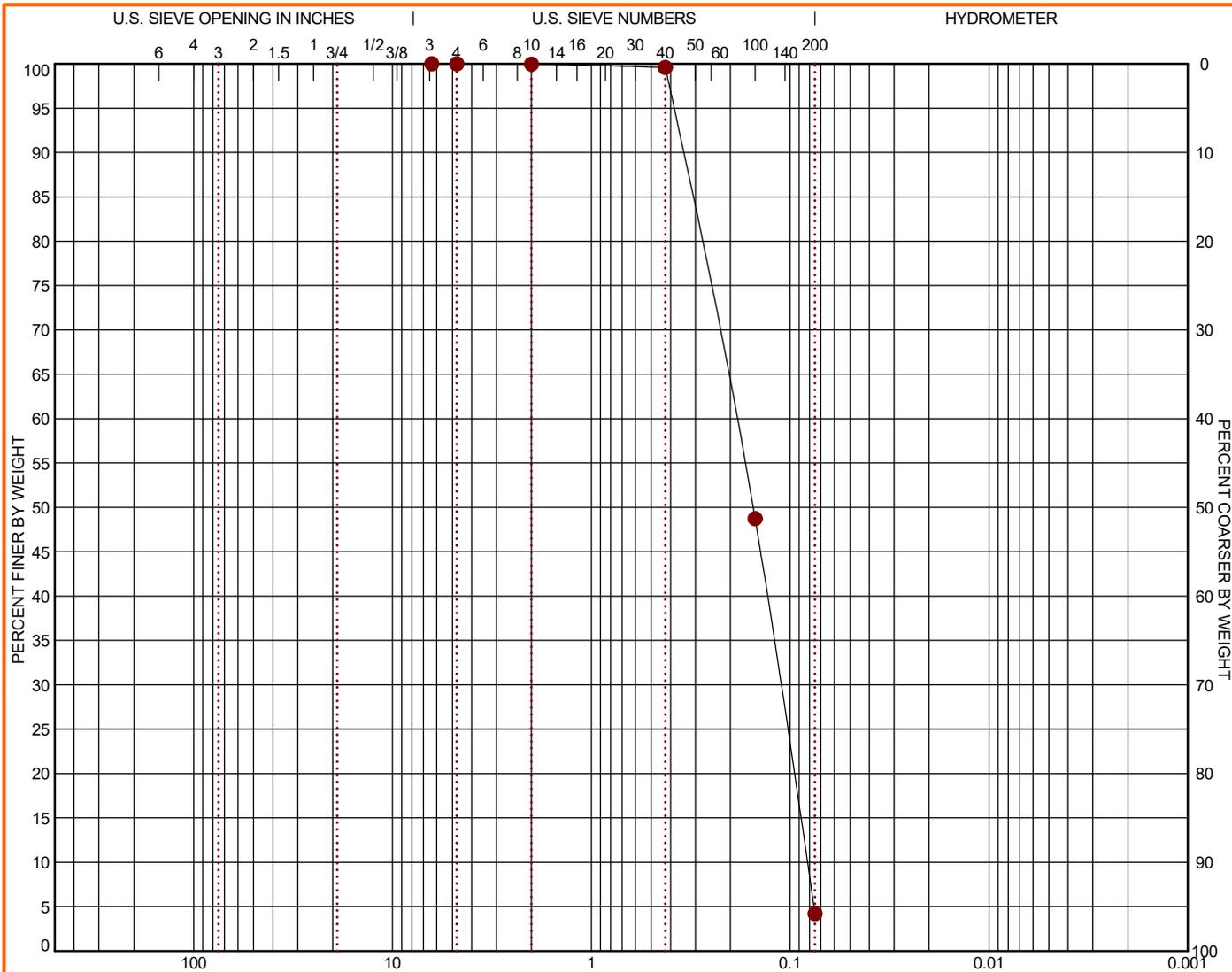
PROJECT: Proposed Student Housing  
SITE: 1415 Washington Avenue  
Albany, NY



PROJECT NUMBER: JB205071  
CLIENT: Scenic RE LLC  
New York, NY

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-4	5 - 7	0.0	0.0	95.8		4.2		SP

GRAIN SIZE	
D <sub>60</sub>	0.189
D <sub>30</sub>	0.112
D <sub>10</sub>	0.082

COEFFICIENTS	
C <sub>c</sub>	0.81
C <sub>u</sub>	2.30

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
1/4"	100.0				
#4	100.0				
#10	99.96				
#40	99.58				
#100	48.73				
#200	4.21				

SOIL DESCRIPTION
● POORLY GRADED SAND (SP)

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing

---

SITE: 1415 Washington Avenue  
Albany, NY



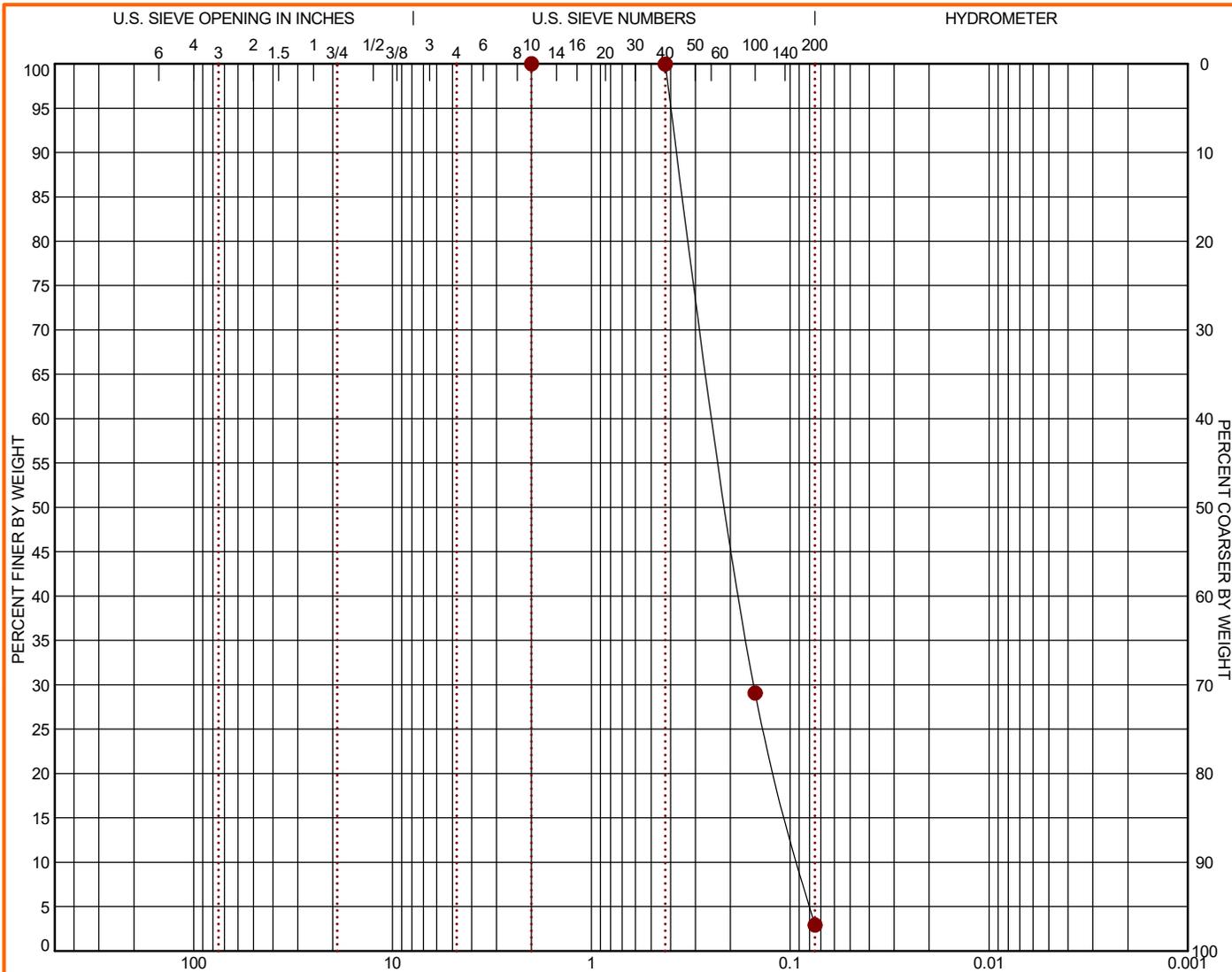
PROJECT NUMBER: JB205071

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CLIENT: Scenic RE LLC  
New York, NY

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-5	5 - 6.5	0.0	0.0	97.1		2.9		SP

GRAIN SIZE	
D <sub>60</sub>	0.236
D <sub>30</sub>	0.152
D <sub>10</sub>	0.09

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#10	100.0				
#40	99.96				
#100	29.08				
#200	2.9				

SOIL DESCRIPTION
● POORLY GRADED SAND (SP)

COEFFICIENTS	
C <sub>c</sub>	1.08
C <sub>u</sub>	2.61

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing

SITE: 1415 Washington Avenue  
Albany, NY



PROJECT NUMBER: JB205071

CLIENT: Scenic RE LLC  
New York, NY

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.4	0.0	3.1	89.2	5.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	100.0		
1.5"	100.0		
1"	100.0		
0.75"	100.0		
0.5"	100.0		
0.375"	100.0		
0.25"	100.0		
#4	100.0		
#10	97.6		
#40	97.6		
#100	96.8		
#200	94.5		

**Material Description**

SILT, trace f-c sand and clay

**Atterberg Limits**  
 PL= NP      LL= NP      PI= NP

**Coefficients**  
 D<sub>90</sub>= 0.0658      D<sub>85</sub>= 0.0591      D<sub>60</sub>= 0.0403  
 D<sub>50</sub>= 0.0354      D<sub>30</sub>= 0.0274      D<sub>15</sub>= 0.0198  
 D<sub>10</sub>= 0.0119      C<sub>u</sub>= 3.38      C<sub>c</sub>= 1.57

**Classification**  
 USCS= ML      AASHTO= A-4(0)

**Remarks**  
 Per ASTM D422

\* (no specification provided)

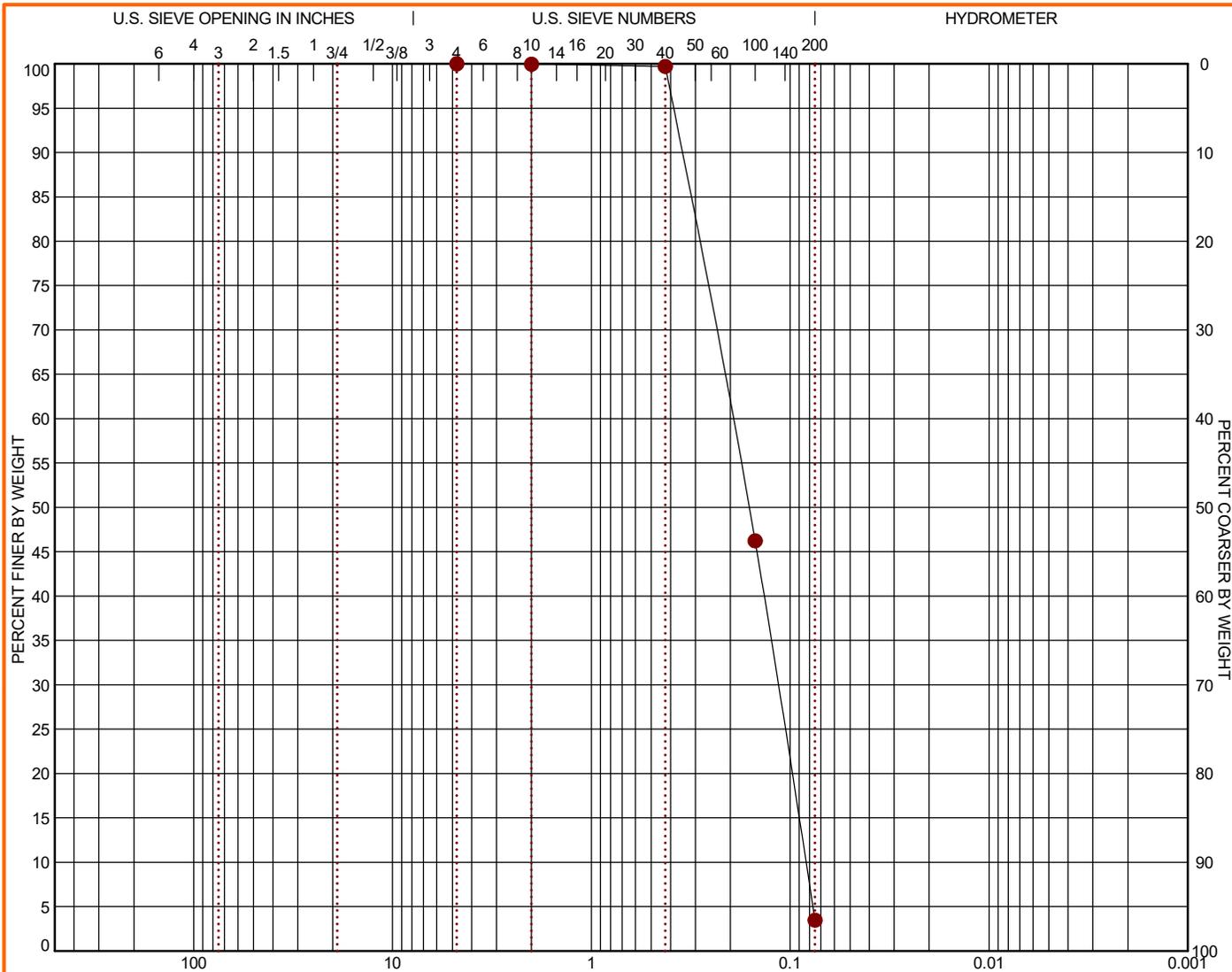
Source of Sample: Soil Borings      Depth: 45'-46.5'      Date: 9-2-20  
 Sample Number: B-6/S-11

<b>EVERGREEN TESTING, INC.</b> A Terracon Company Watervliet, NY	Client: Scenic RE LLC Project: Proposed Student Housing Albany, NY Project No: JB205071
Figure B-6/S-11	

Tested By: AB      Checked By: JH

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY			
	coarse	fine	coarse	medium	fine				

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-7	20 - 21.5	0.0	0.0	96.5		3.5		SP

GRAIN SIZE	
<b>D<sub>60</sub></b>	0.196
<b>D<sub>30</sub></b>	0.115
<b>D<sub>10</sub></b>	0.083

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#4	100.0				
#10	99.95				
#40	99.7				
#100	46.23				
#200	3.47				

SOIL DESCRIPTION
● POORLY GRADED SAND (SP)

COEFFICIENTS	
<b>C<sub>c</sub></b>	0.81
<b>C<sub>u</sub></b>	2.35

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing

SITE: 1415 Washington Avenue  
Albany, NY

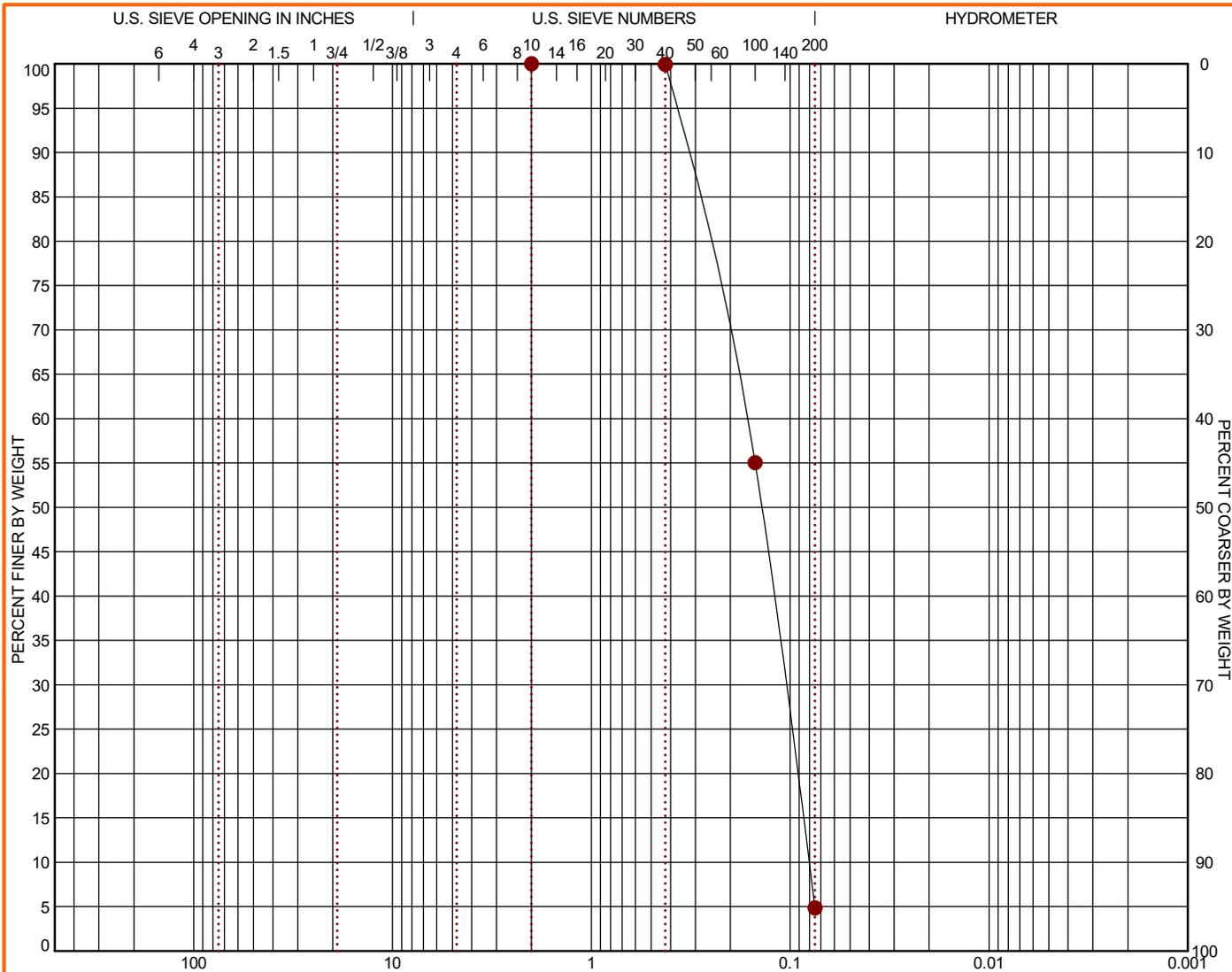


PROJECT NUMBER: JB205071

CLIENT: Scenic RE LLC  
New York, NY

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-8	15 - 17	0.0	0.0	95.1		4.9		SP

GRAIN SIZE	
● $D_{60}$	0.168
$D_{30}$	0.106
$D_{10}$	0.081

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
● #10	100.0				
#40	99.92				
#100	55.05				
#200	4.86				

SOIL DESCRIPTION
● POORLY GRADED SAND (SP)

COEFFICIENTS	
● $C_c$	0.83
$C_u$	2.09

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

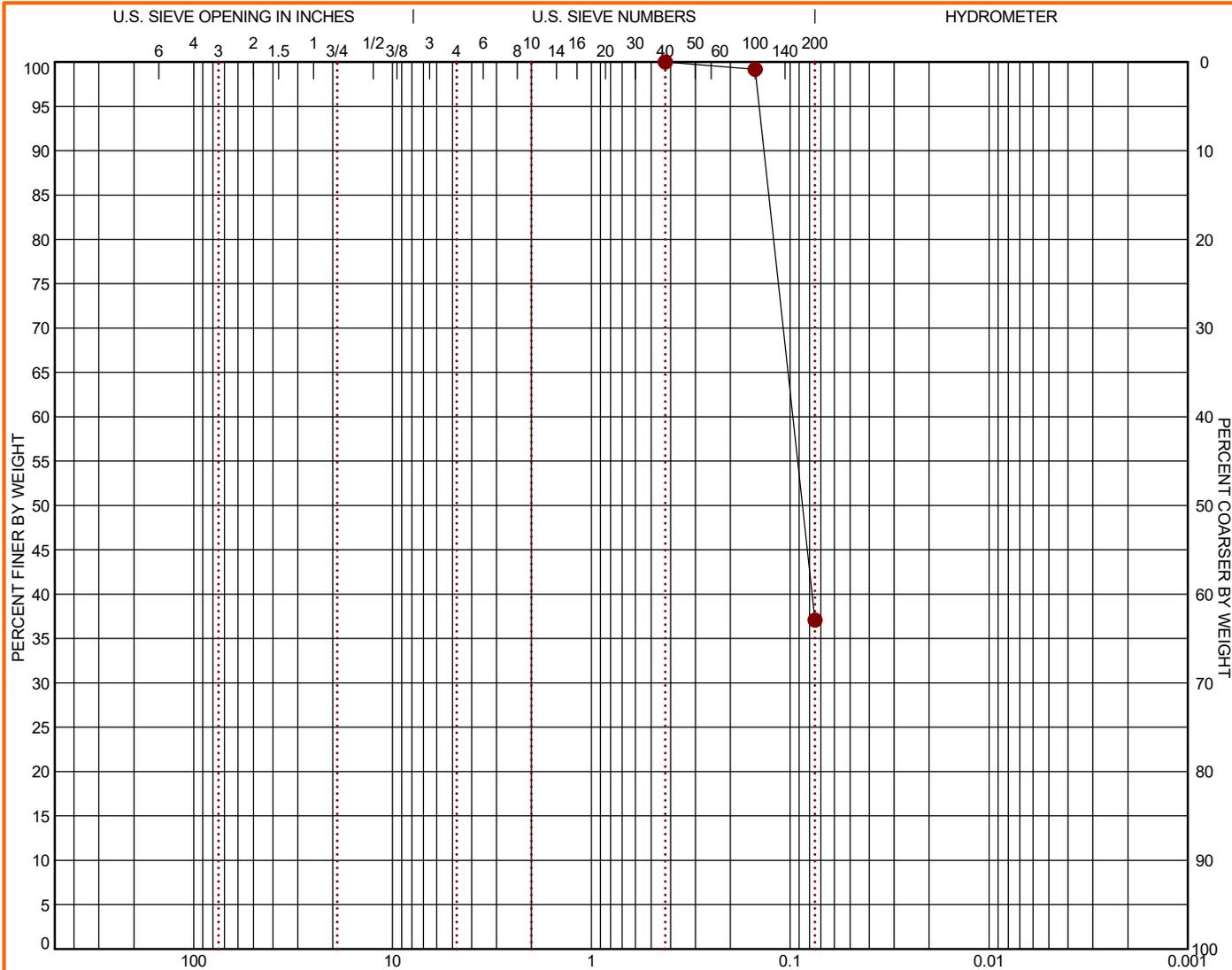
PROJECT: Proposed Student Housing  
SITE: 1415 Washington Avenue  
Albany, NY



PROJECT NUMBER: JB205071  
CLIENT: Scenic RE LLC  
New York, NY

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY			
	coarse	fine	coarse	medium	fine				

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-9	50 - 52	0.0	0.0	62.9		37.1		SM

GRAIN SIZE	
●	
D <sub>60</sub>	0.097
D <sub>30</sub>	
D <sub>10</sub>	

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
● #40	100.0				
#100	99.17				
#200	37.08				

SOIL DESCRIPTION
● SILTY SAND (SM)

COEFFICIENTS	
●	
C <sub>c</sub>	
C <sub>u</sub>	

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing

SITE: 1415 Washington Avenue  
Albany, NY

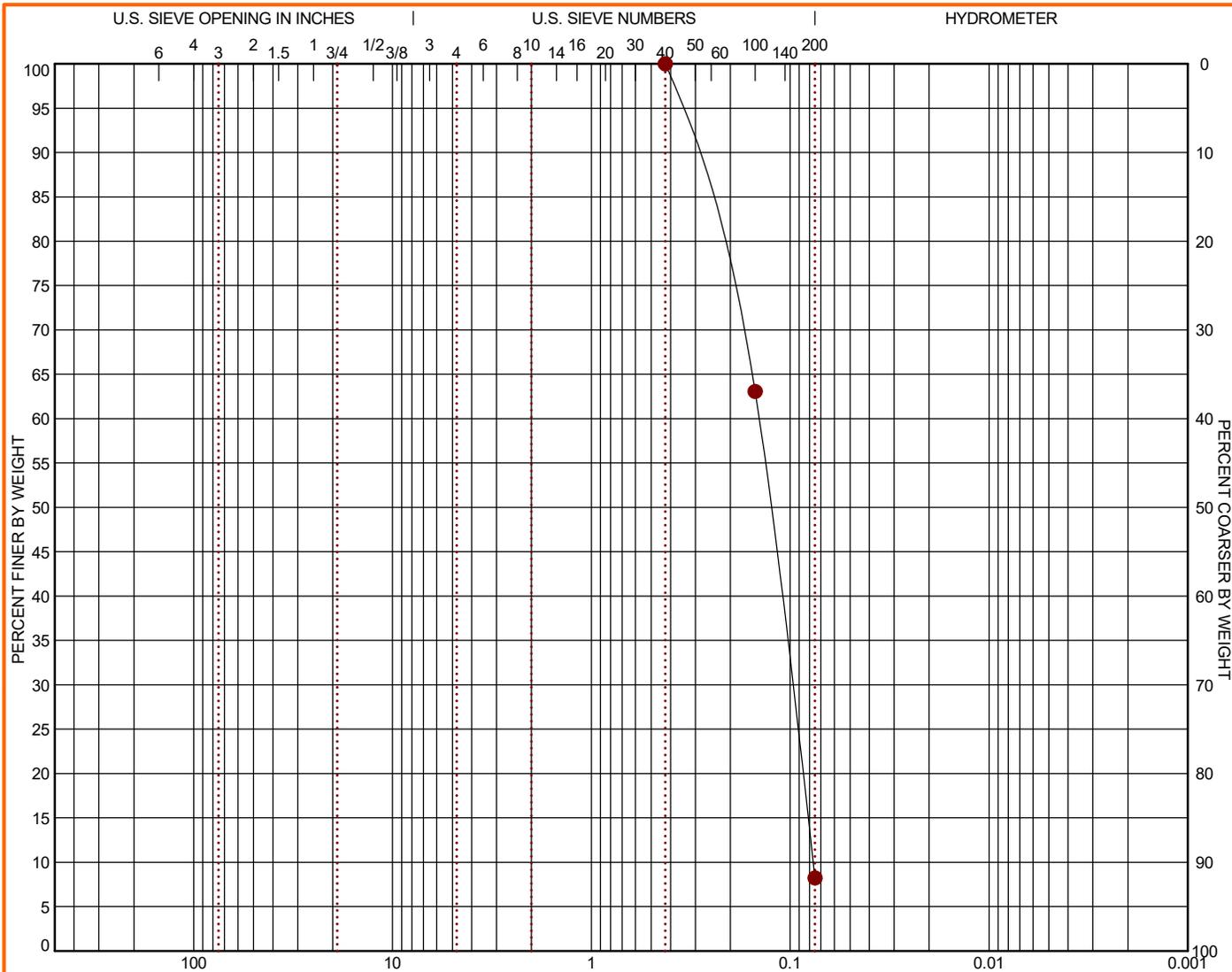


PROJECT NUMBER: JB205071

CLIENT: Scenic RE LLC  
New York, NY

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-10	10 - 11.5	0.0	0.0	91.8		8.2		SP-SM

GRAIN SIZE	
D <sub>60</sub>	0.144
D <sub>30</sub>	0.099
D <sub>10</sub>	0.077

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
● #40	100.0				
#100	63.07				
#200	8.23				

SOIL DESCRIPTION
● POORLY GRADED SAND with SILT (SP-SM)

COEFFICIENTS	
● C <sub>c</sub>	0.88
C <sub>u</sub>	1.88

REMARKS
●

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing  
SITE: 1415 Washington Avenue  
Albany, NY



PROJECT NUMBER: JB205071  
CLIENT: Scenic RE LLC  
New York, NY



# Summary of Laboratory Results

BORING ID	Depth (Ft.)	Water Content (%)
B-3	10 - 11.5	5
B-4	5 - 7	6.8
B-5	5 - 6.5	5.4
B-6	45 - 46.5	27.8
B-7	20 - 21.5	29.9
B-8	15 - 17	7
B-9	50 - 52	29.1
B-10	10 - 11.5	8.6
B-11	70 - 71.5	30.4

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART LAB SUMMARY-PORTRAIT\_JB205071 STUDENT HOUSING.GPJ TERRACON\_DATATEMPLATE.GDT 9/4/20

PROJECT: Proposed Student Housing	 <small>30 Corporate Cir Ste 201 Albany, NY</small>	PROJECT NUMBER: JB205071
SITE: 1415 Washington Avenue Albany, NY		CLIENT: Scenic RE LLC New York, NY

## **SUPPORTING INFORMATION**

### **Contents:**

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above

SAMPLING	WATER LEVEL	FIELD TESTS
 Split Spoon	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered  Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	<b>N</b> Standard Penetration Test Resistance (Blows/Ft.)  <b>(HP)</b> Hand Penetrometer  <b>(T)</b> Torvane  <b>(DCP)</b> Dynamic Cone Penetrometer  <b>UC</b> Unconfined Compressive Strength  <b>(PID)</b> Photo-Ionization Detector  <b>(OVA)</b> Organic Vapor Analyzer

**DESCRIPTIVE SOIL CLASSIFICATION**

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

**LOCATION AND ELEVATION NOTES**

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See [Exploration and Testing Procedures](#) in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

**STRENGTH TERMS**

RELATIVE DENSITY OF COARSE-GRAINED SOILS <small>(More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance</small>		CONSISTENCY OF FINE-GRAINED SOILS <small>(50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance</small>		
Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (tsf)	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

**RELEVANCE OF SOIL BORING LOG**

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>A</sup>				Soil Classification		
				Group Symbol	Group Name <sup>B</sup>	
<b>Coarse-Grained Soils:</b> More than 50% retained on No. 200 sieve	<b>Gravels:</b> More than 50% of coarse fraction retained on No. 4 sieve	<b>Clean Gravels:</b> Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3$ <sup>E</sup>	GW	Well-graded gravel <sup>F</sup>	
			$Cu < 4$ and/or $[Cc < 1$ or $Cc > 3.0]$ <sup>E</sup>	GP	Poorly graded gravel <sup>F</sup>	
		<b>Gravels with Fines:</b> More than 12% fines <sup>C</sup>	Fines classify as ML or MH	GM	Silty gravel <sup>F, G, H</sup>	
			Fines classify as CL or CH	GC	Clayey gravel <sup>F, G, H</sup>	
	<b>Sands:</b> 50% or more of coarse fraction passes No. 4 sieve	<b>Clean Sands:</b> Less than 5% fines <sup>D</sup>	$Cu \geq 6$ and $1 \leq Cc \leq 3$ <sup>E</sup>	SW	Well-graded sand <sup>I</sup>	
			$Cu < 6$ and/or $[Cc < 1$ or $Cc > 3.0]$ <sup>E</sup>	SP	Poorly graded sand <sup>I</sup>	
		<b>Sands with Fines:</b> More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SM	Silty sand <sup>G, H, I</sup>	
			Fines classify as CL or CH	SC	Clayey sand <sup>G, H, I</sup>	
<b>Fine-Grained Soils:</b> 50% or more passes the No. 200 sieve	<b>Silts and Clays:</b> Liquid limit less than 50	<b>Inorganic:</b>	$PI > 7$ and plots on or above "A"	CL	Lean clay <sup>K, L, M</sup>	
			$PI < 4$ or plots below "A" line <sup>J</sup>	ML	Silt <sup>K, L, M</sup>	
		<b>Organic:</b>	Liquid limit - oven dried	< 0.75	OL	Organic clay <sup>K, L, M, N</sup>
			Liquid limit - not dried			Organic silt <sup>K, L, M, O</sup>
	<b>Silts and Clays:</b> Liquid limit 50 or more	<b>Inorganic:</b>	$PI$ plots on or above "A" line	CH	Fat clay <sup>K, L, M</sup>	
			$PI$ plots below "A" line	MH	Elastic Silt <sup>K, L, M</sup>	
		<b>Organic:</b>	Liquid limit - oven dried	< 0.75	OH	Organic clay <sup>K, L, M, P</sup>
			Liquid limit - not dried			Organic silt <sup>K, L, M, Q</sup>
	<b>Highly organic soils:</b>	Primarily organic matter, dark in color, and organic odor			PT	Peat

<sup>A</sup> Based on the material passing the 3-inch (75-mm) sieve.

<sup>B</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup> Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

<sup>D</sup> Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

<sup>F</sup> If soil contains  $\geq 15$  sand, add "with sand" to group name.

<sup>G</sup> If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup> If fines are organic, add "with organic fines" to group name.

<sup>I</sup> If soil contains  $\geq 15$  gravel, add "with gravel" to group name.

<sup>J</sup> If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup> If soil contains 15 to 29 plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup> If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

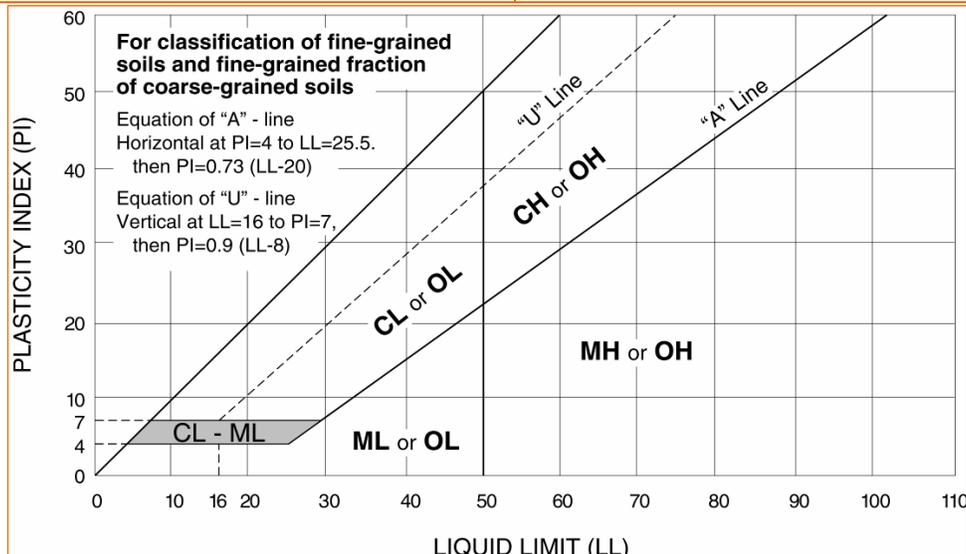
<sup>M</sup> If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup>  $PI \geq 4$  and plots on or above "A" line.

<sup>O</sup>  $PI < 4$  or plots below "A" line.

<sup>P</sup>  $PI$  plots on or above "A" line.

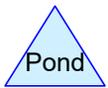
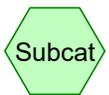
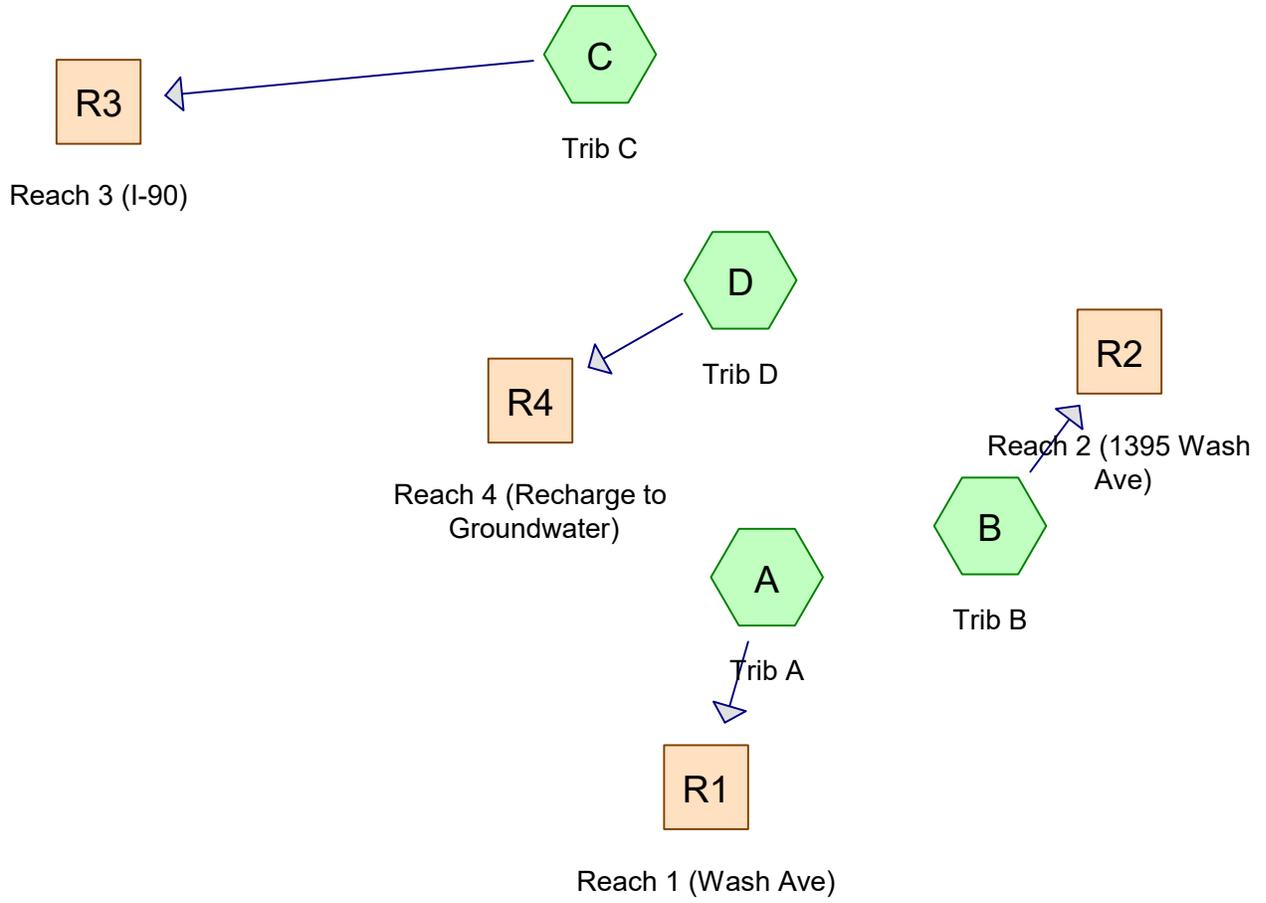
<sup>Q</sup>  $PI$  plots below "A" line.



## **APPENDIX #4**

### **HydroCAD10.0® CALCULATIONS**

1415 Washington Avenue - Pre HydroCAD



**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
1.409	39	>75% Grass cover, Good, HSG A (A, B, C, D)
1.832	98	Paved parking, HSG A (A, D)
<b>3.241</b>	<b>72</b>	<b>TOTAL AREA</b>

**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
3.241	HSG A	A, B, C, D
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>3.241</b>		<b>TOTAL AREA</b>

**200015-PRE**

Prepared by Microsoft

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Page 4

**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.409	0.000	0.000	0.000	0.000	1.409	>75% Grass cover, Good	A, B, C, D
1.832	0.000	0.000	0.000	0.000	1.832	Paved parking	A, D
<b>3.241</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>3.241</b>	<b>TOTAL AREA</b>	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment A: Trib A** Runoff Area=7,090 sf 12.93% Impervious Runoff Depth>0.00"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=47 Runoff=0.00 cfs 0.000 af

**Subcatchment B: Trib B** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment C: Trib C** Runoff Area=21,814 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=70' Slope=0.1570 '/' Tc=3.6 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment D: Trib D** Runoff Area=108,989 sf 72.37% Impervious Runoff Depth>0.91"  
Flow Length=100' Slope=0.1300 '/' Tc=5.1 min CN=82 Runoff=4.47 cfs 0.190 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R3: Reach 3 (I-90)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

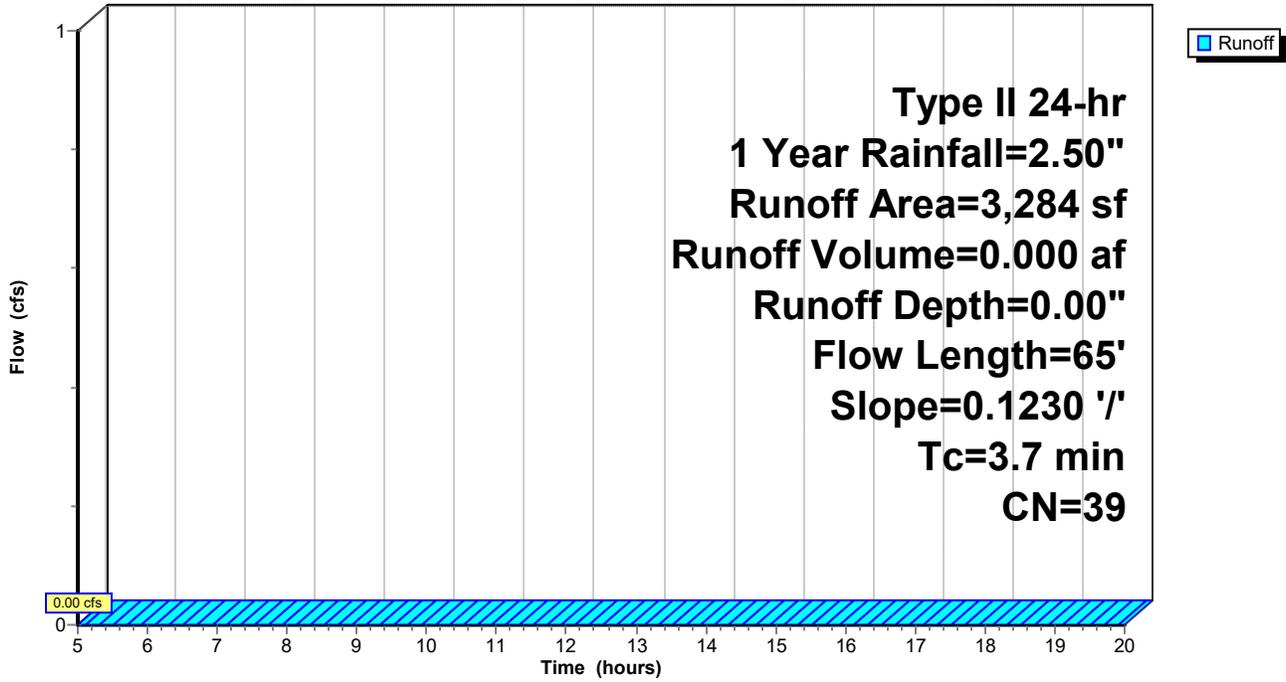
**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=4.47 cfs 0.190 af  
Outflow=4.47 cfs 0.190 af

**Total Runoff Area = 3.241 ac Runoff Volume = 0.190 af Average Runoff Depth = 0.70"**  
**43.48% Pervious = 1.409 ac 56.52% Impervious = 1.832 ac**



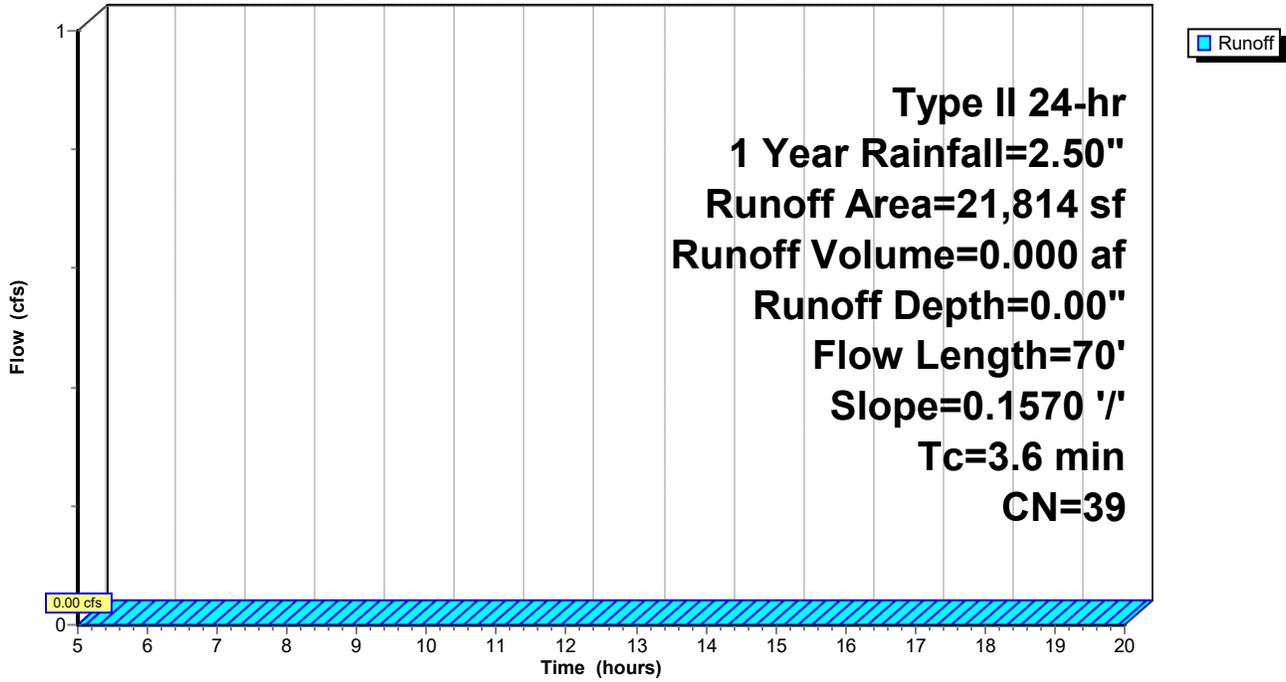
### Subcatchment B: Trib B

Hydrograph



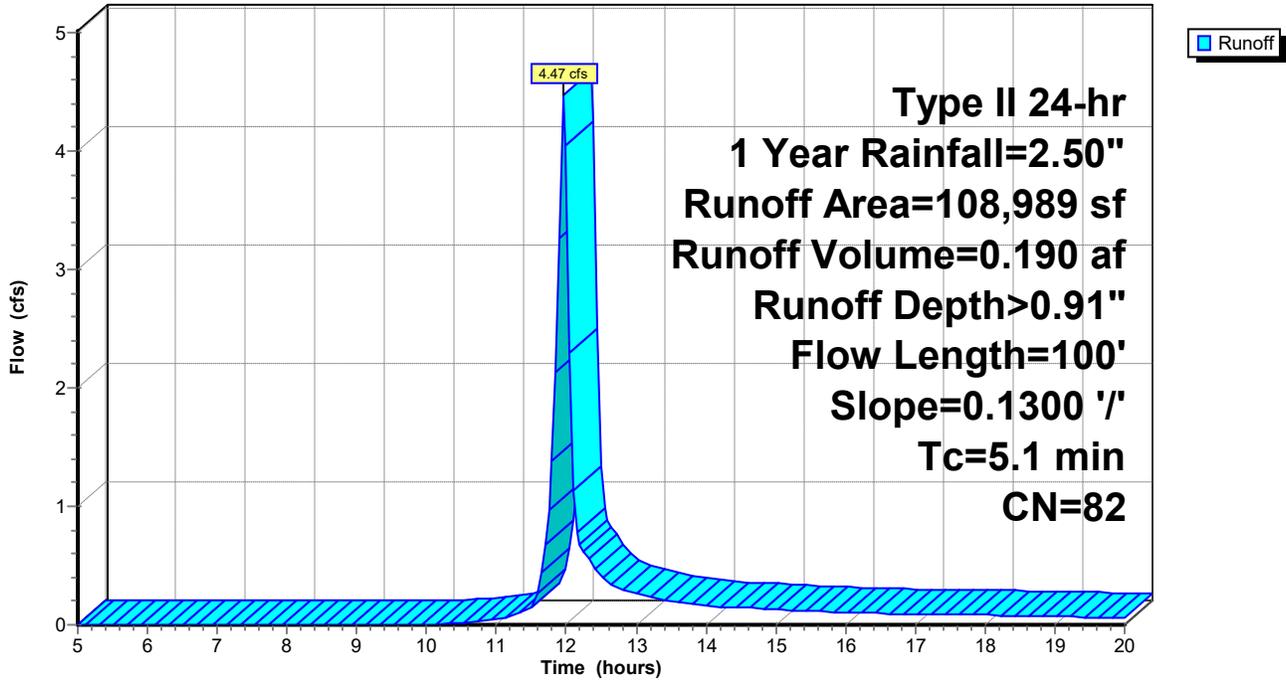
### Subcatchment C: Trib C

Hydrograph



### Subcatchment D: Trib D

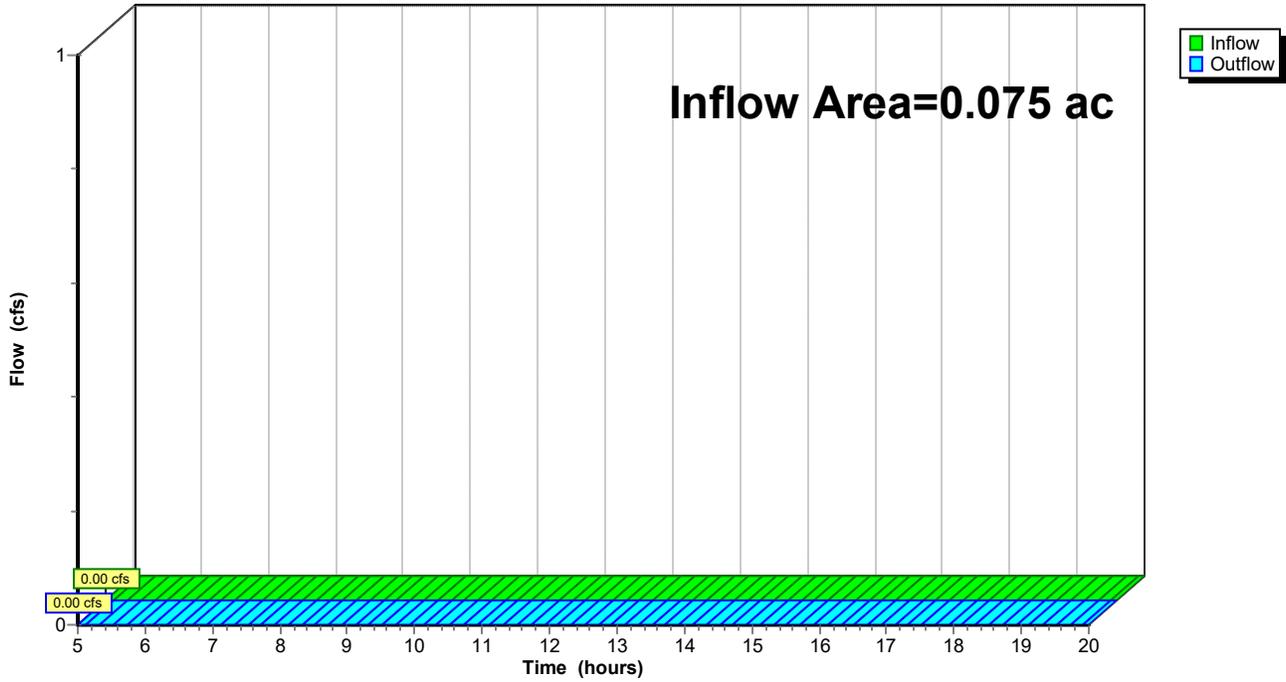
Hydrograph





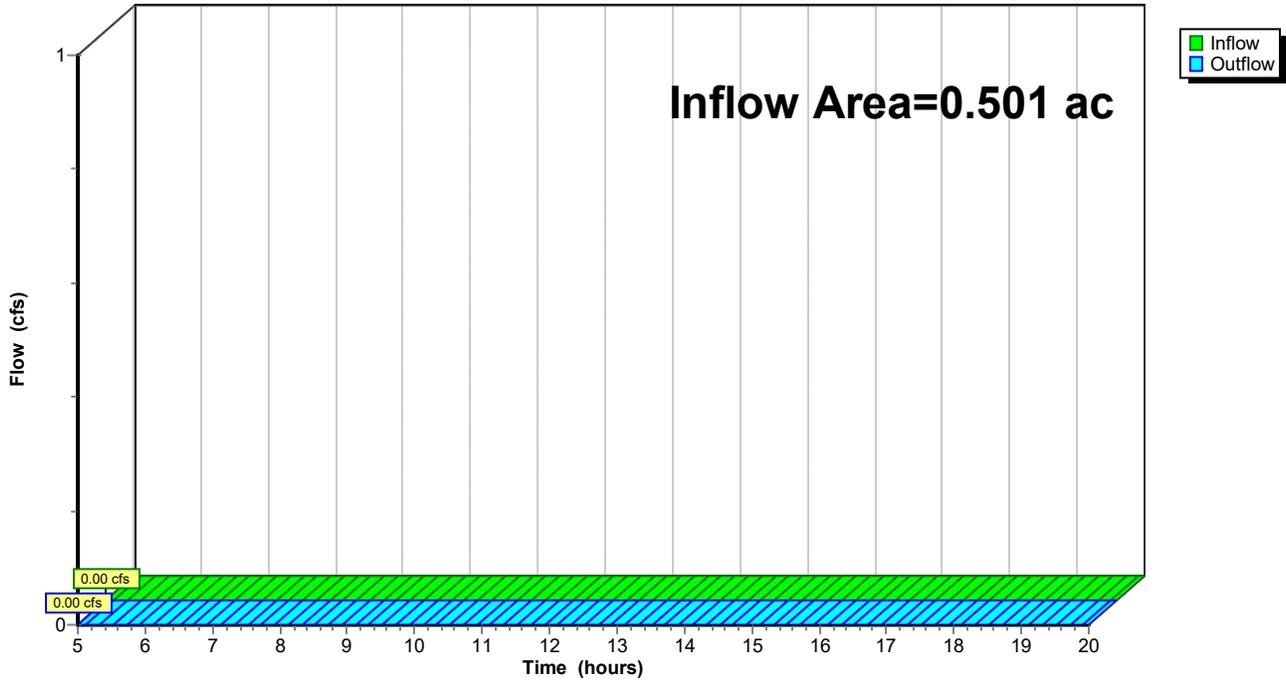
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph

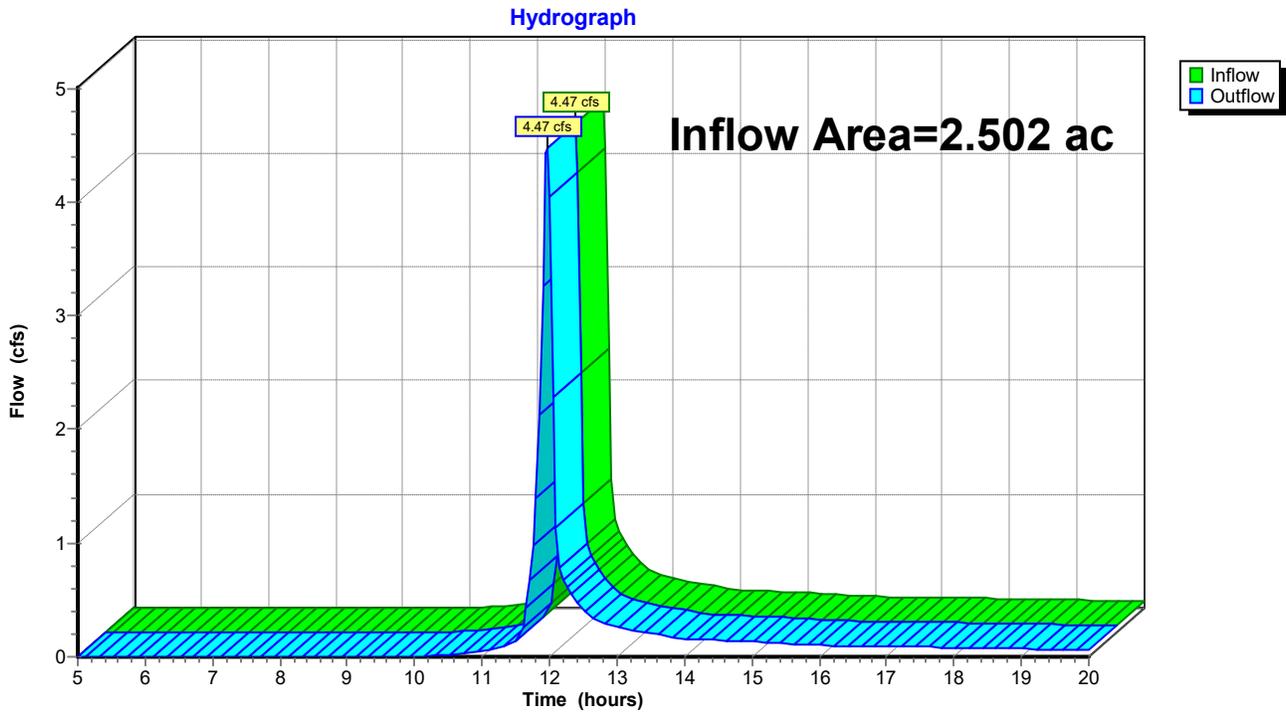


### Reach R3: Reach 3 (I-90)

Hydrograph



### Reach R4: Reach 4 (Recharge to Groundwater)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment A: Trib A** Runoff Area=7,090 sf 12.93% Impervious Runoff Depth>0.31"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=47 Runoff=0.06 cfs 0.004 af

**Subcatchment B: Trib B** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth>0.08"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment C: Trib C** Runoff Area=21,814 sf 0.00% Impervious Runoff Depth>0.08"  
Flow Length=70' Slope=0.1570 '/' Tc=3.6 min CN=39 Runoff=0.01 cfs 0.003 af

**Subcatchment D: Trib D** Runoff Area=108,989 sf 72.37% Impervious Runoff Depth>2.44"  
Flow Length=100' Slope=0.1300 '/' Tc=5.1 min CN=82 Runoff=11.67 cfs 0.510 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.06 cfs 0.004 af  
Outflow=0.06 cfs 0.004 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

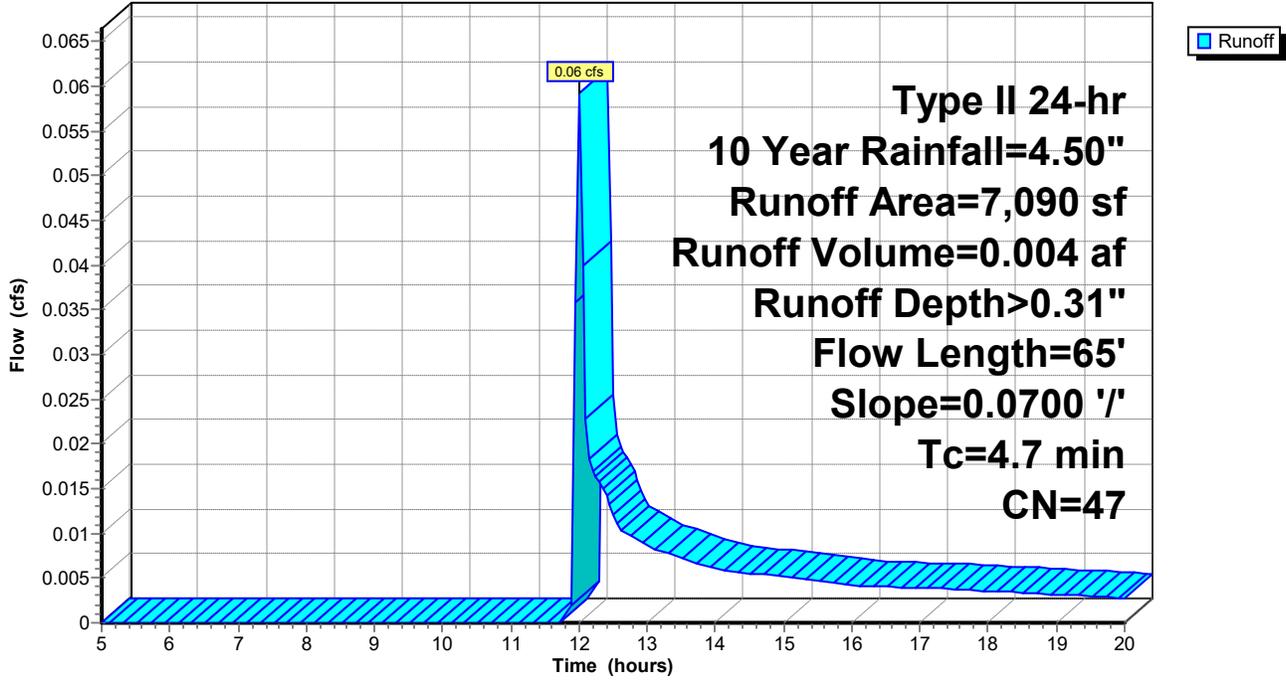
**Reach R3: Reach 3 (I-90)** Inflow=0.01 cfs 0.003 af  
Outflow=0.01 cfs 0.003 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=11.67 cfs 0.510 af  
Outflow=11.67 cfs 0.510 af

**Total Runoff Area = 3.241 ac Runoff Volume = 0.518 af Average Runoff Depth = 1.92"**  
**43.48% Pervious = 1.409 ac 56.52% Impervious = 1.832 ac**

### Subcatchment A: Trib A

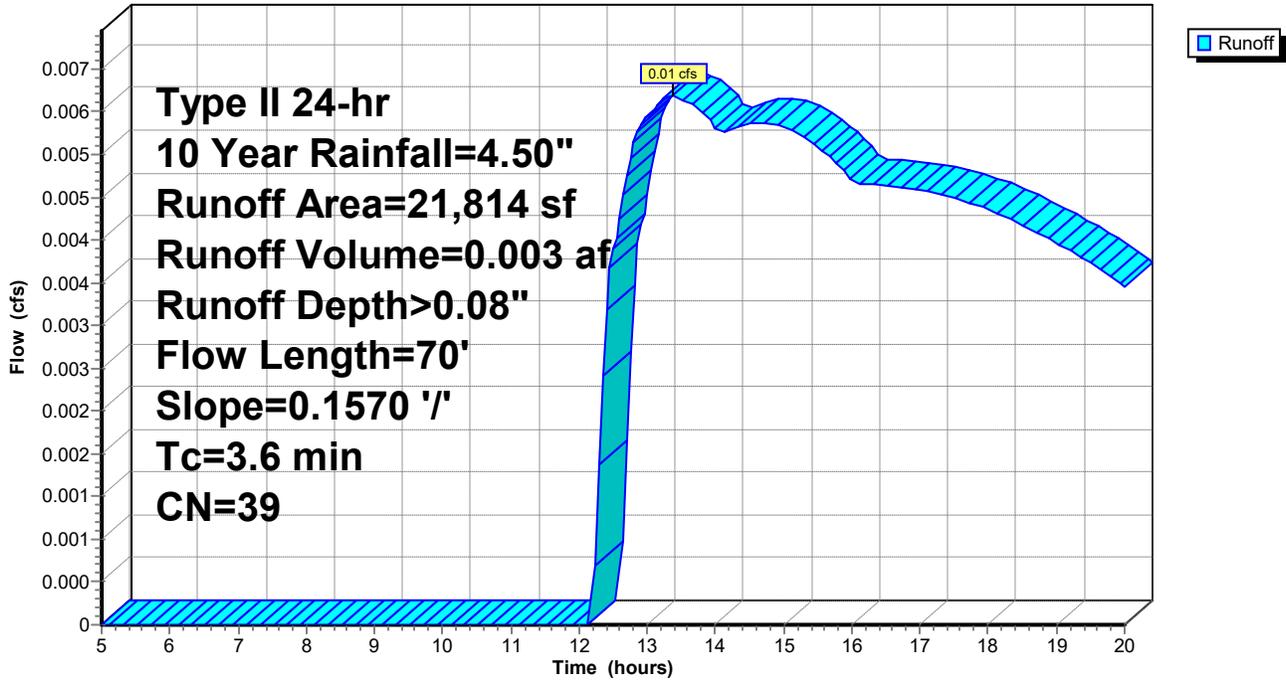
Hydrograph





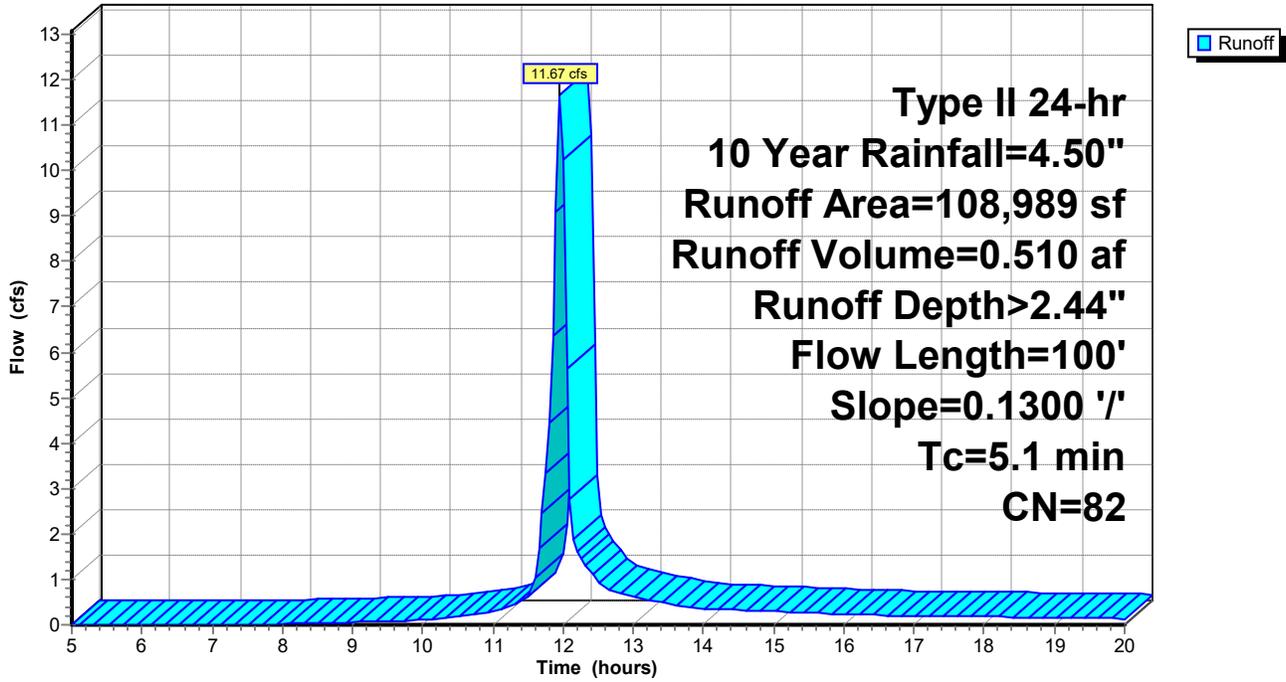
### Subcatchment C: Trib C

Hydrograph

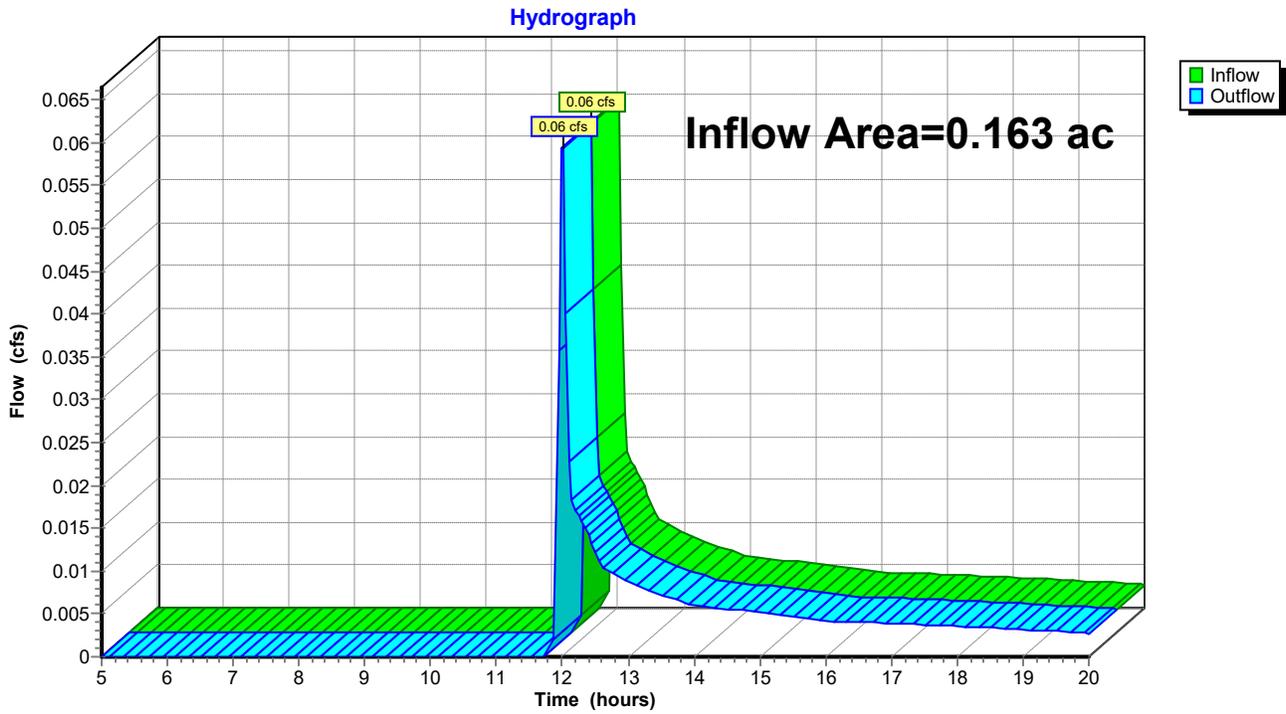


### Subcatchment D: Trib D

Hydrograph

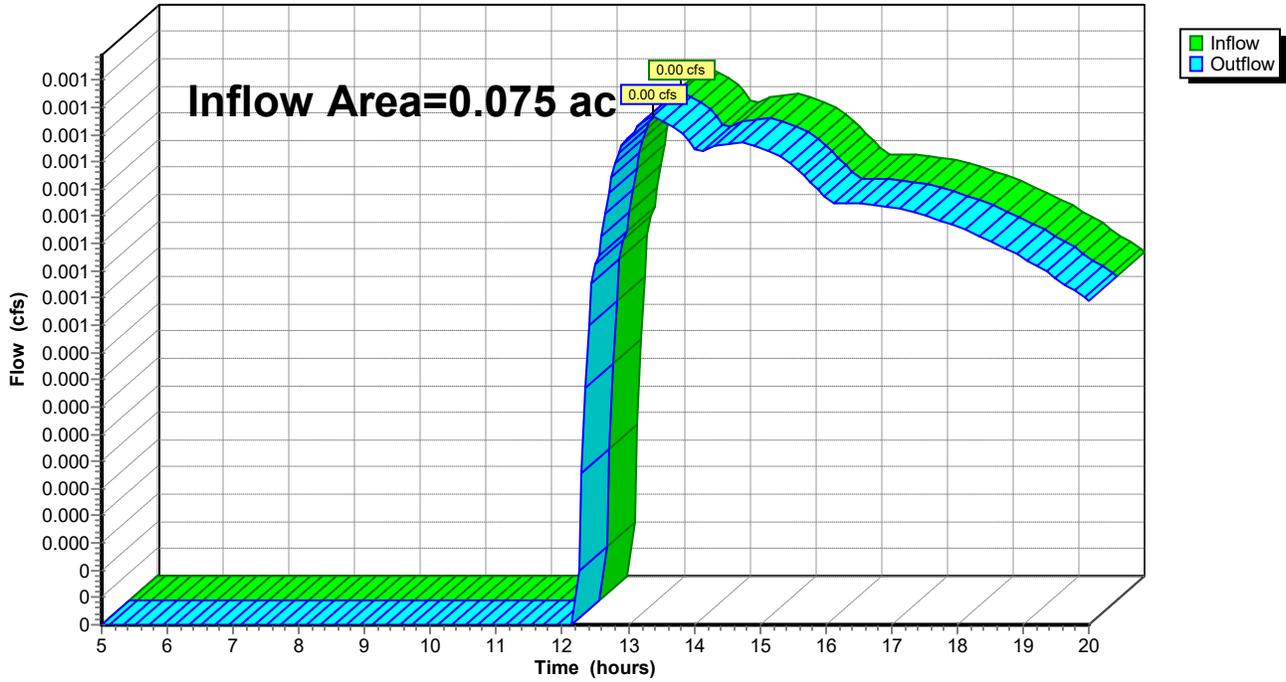


### Reach R1: Reach 1 (Wash Ave)



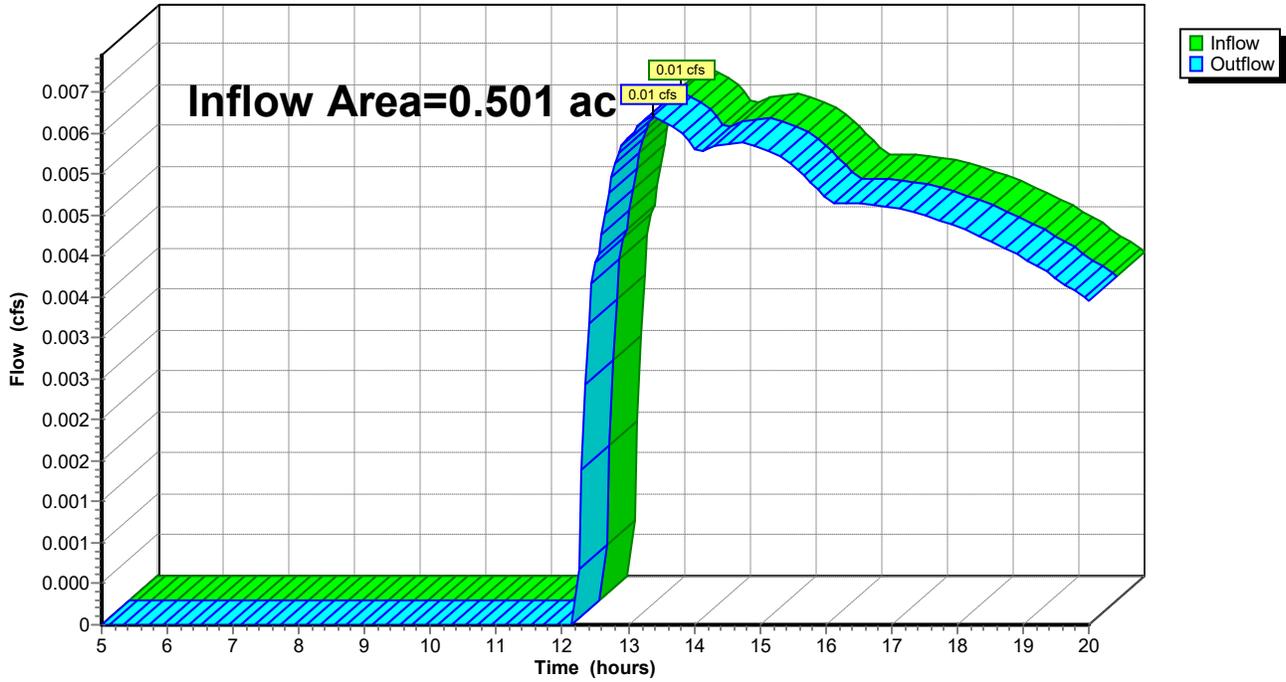
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph

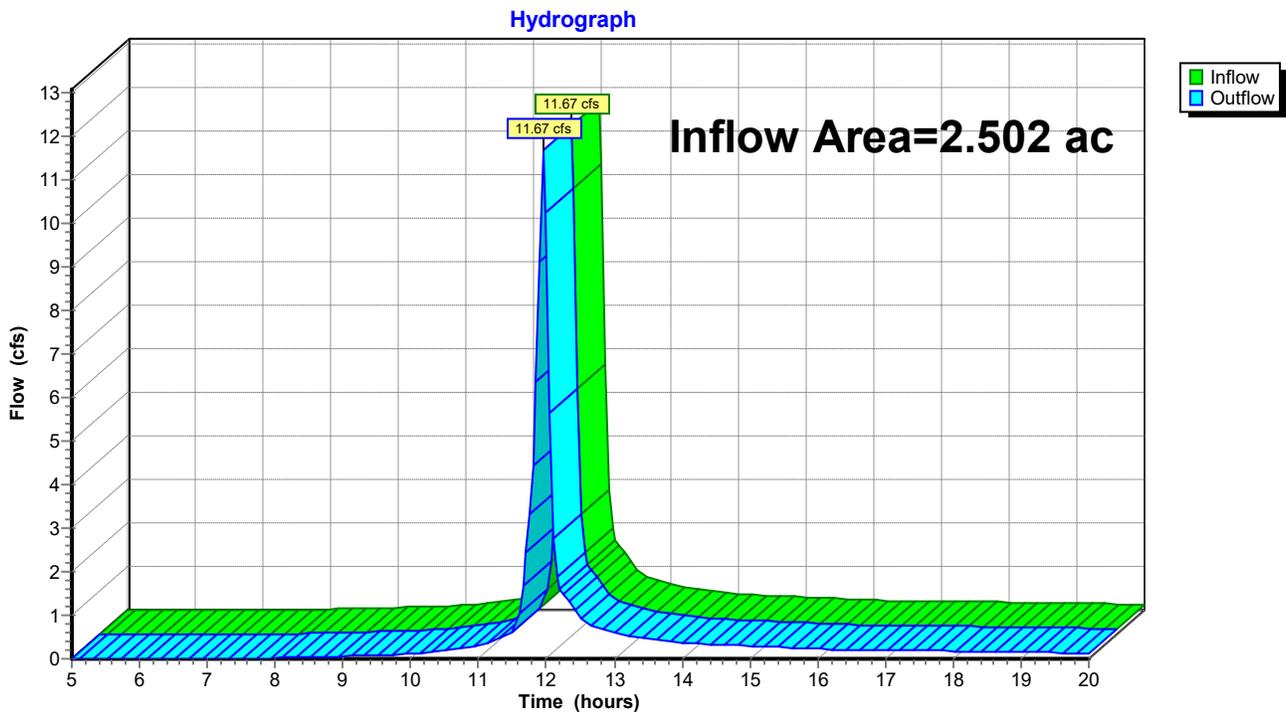


### Reach R3: Reach 3 (I-90)

Hydrograph



### Reach R4: Reach 4 (Recharge to Groundwater)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment A: Trib A** Runoff Area=7,090 sf 12.93% Impervious Runoff Depth>1.24"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=47 Runoff=0.38 cfs 0.017 af

**Subcatchment B: Trib B** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth>0.65"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.08 cfs 0.004 af

**Subcatchment C: Trib C** Runoff Area=21,814 sf 0.00% Impervious Runoff Depth>0.65"  
Flow Length=70' Slope=0.1570 '/' Tc=3.6 min CN=39 Runoff=0.51 cfs 0.027 af

**Subcatchment D: Trib D** Runoff Area=108,989 sf 72.37% Impervious Runoff Depth>4.60"  
Flow Length=100' Slope=0.1300 '/' Tc=5.1 min CN=82 Runoff=21.16 cfs 0.959 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.38 cfs 0.017 af  
Outflow=0.38 cfs 0.017 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.08 cfs 0.004 af  
Outflow=0.08 cfs 0.004 af

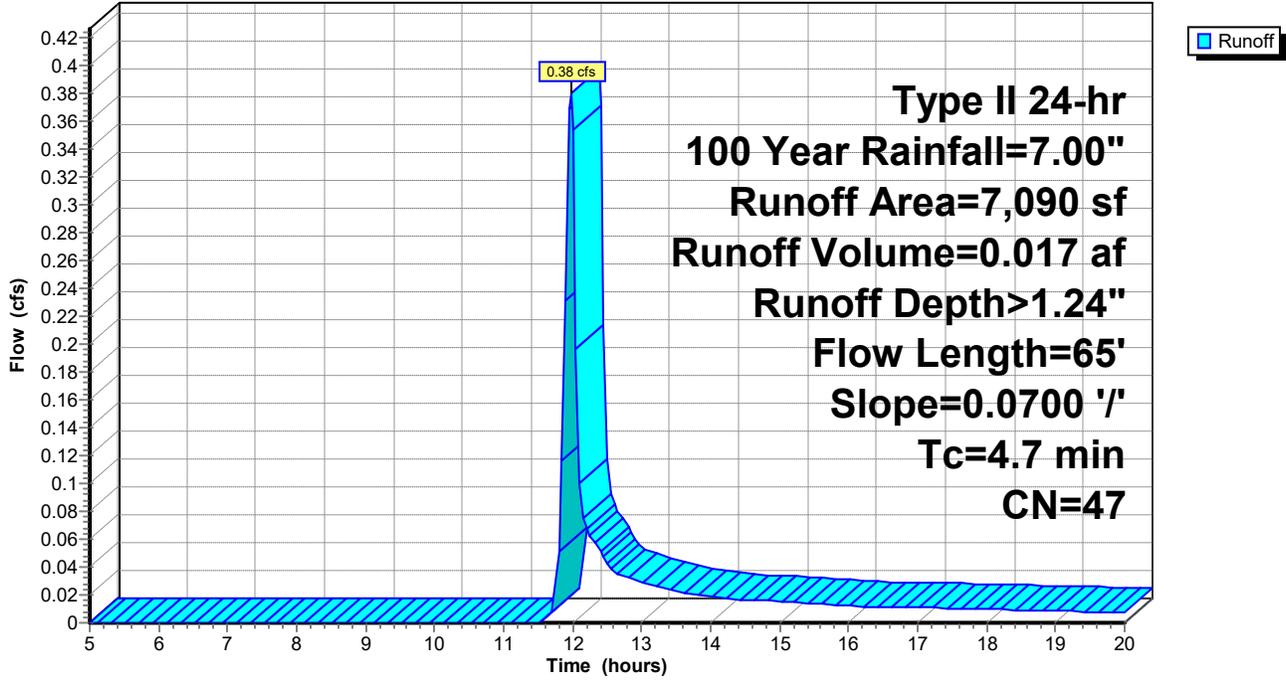
**Reach R3: Reach 3 (I-90)** Inflow=0.51 cfs 0.027 af  
Outflow=0.51 cfs 0.027 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=21.16 cfs 0.959 af  
Outflow=21.16 cfs 0.959 af

**Total Runoff Area = 3.241 ac Runoff Volume = 1.007 af Average Runoff Depth = 3.73"**  
**43.48% Pervious = 1.409 ac 56.52% Impervious = 1.832 ac**

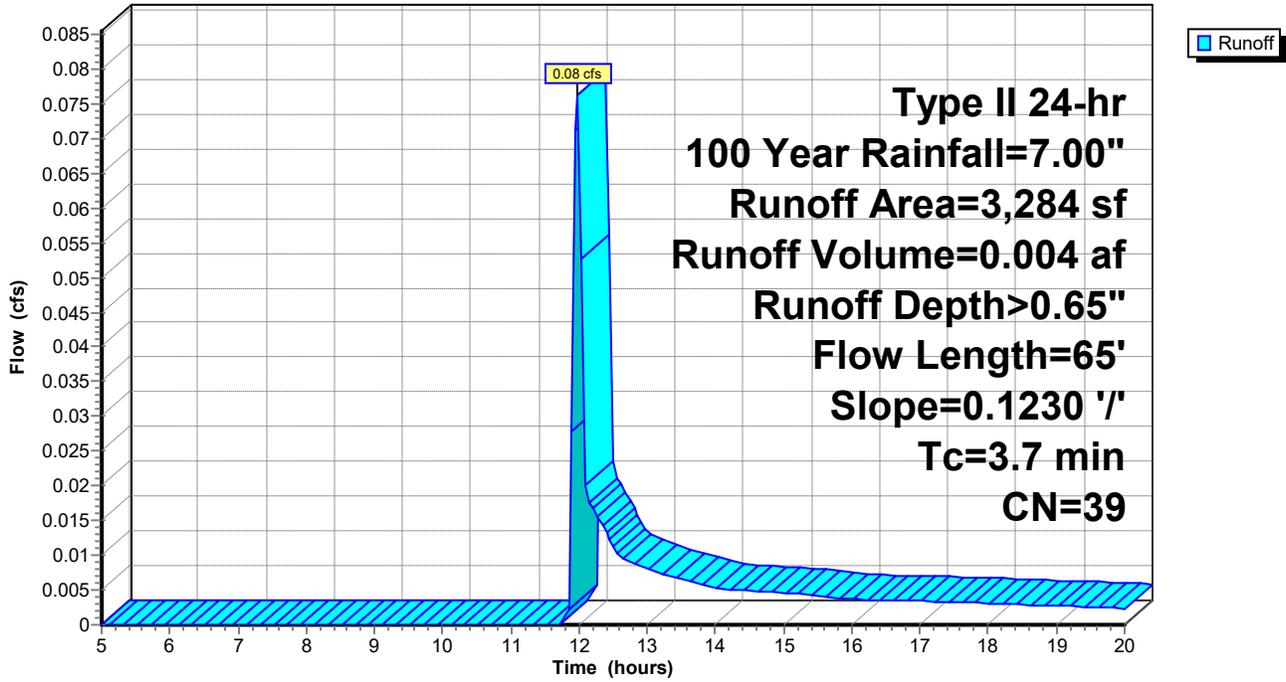
### Subcatchment A: Trib A

Hydrograph



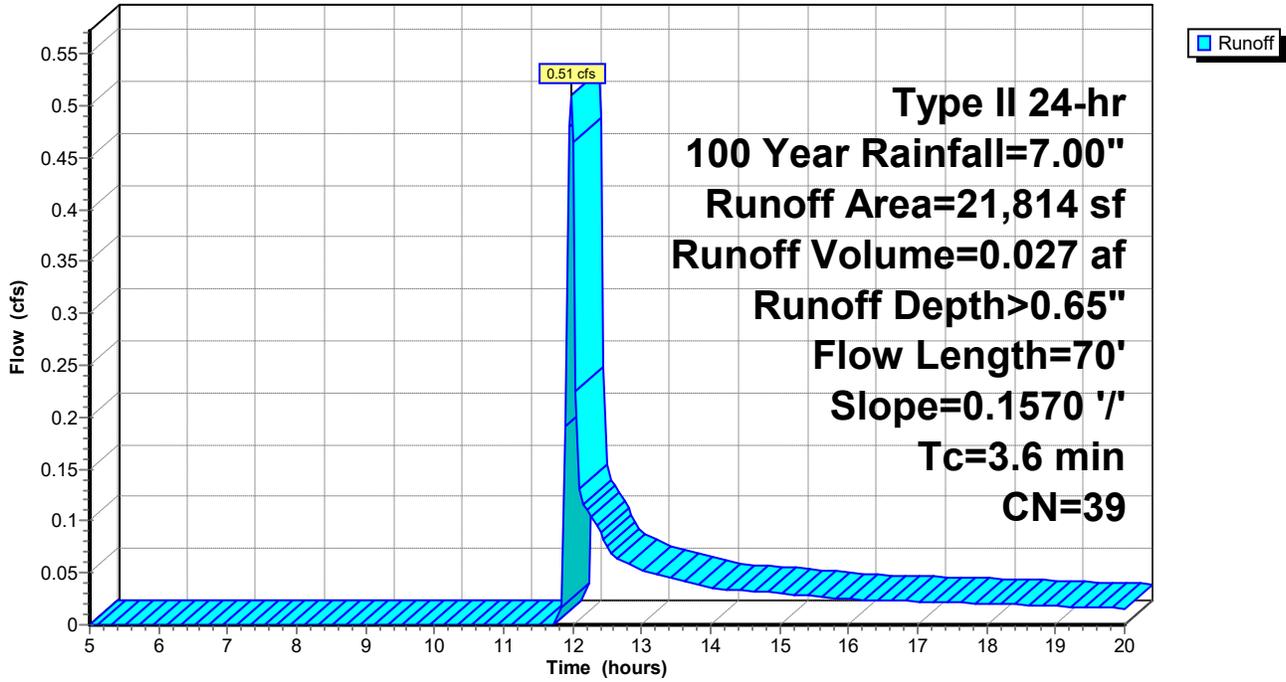
### Subcatchment B: Trib B

Hydrograph



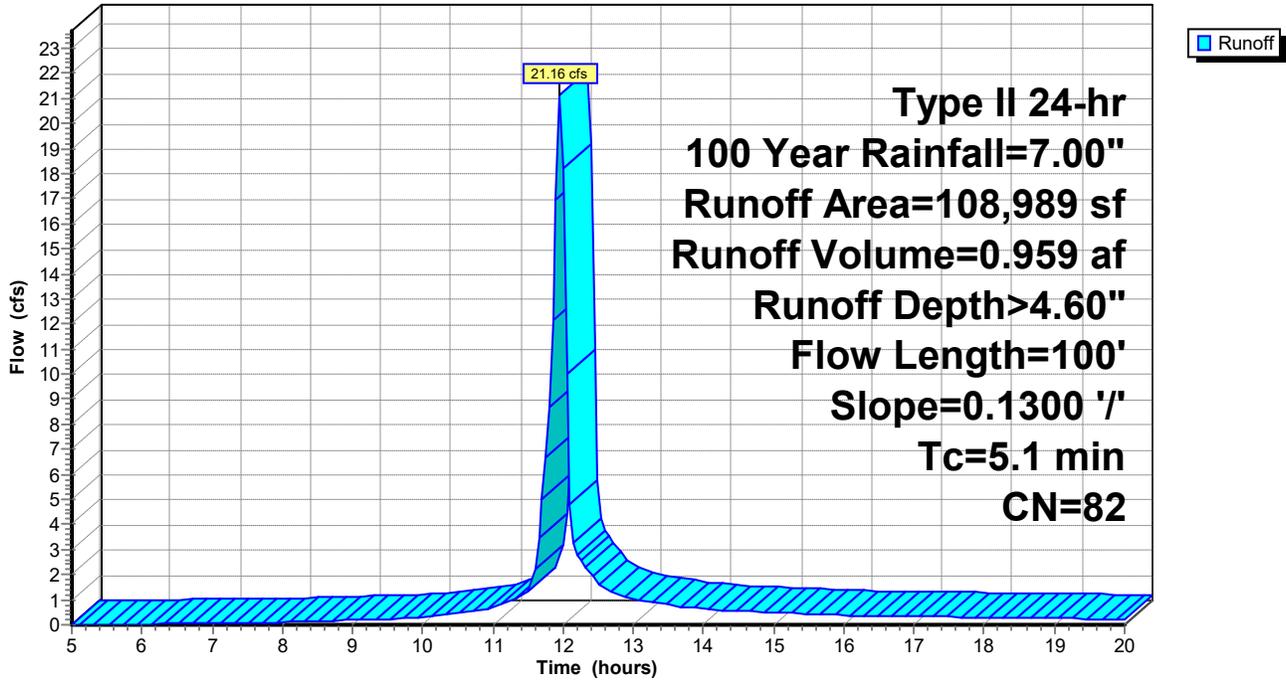
### Subcatchment C: Trib C

Hydrograph



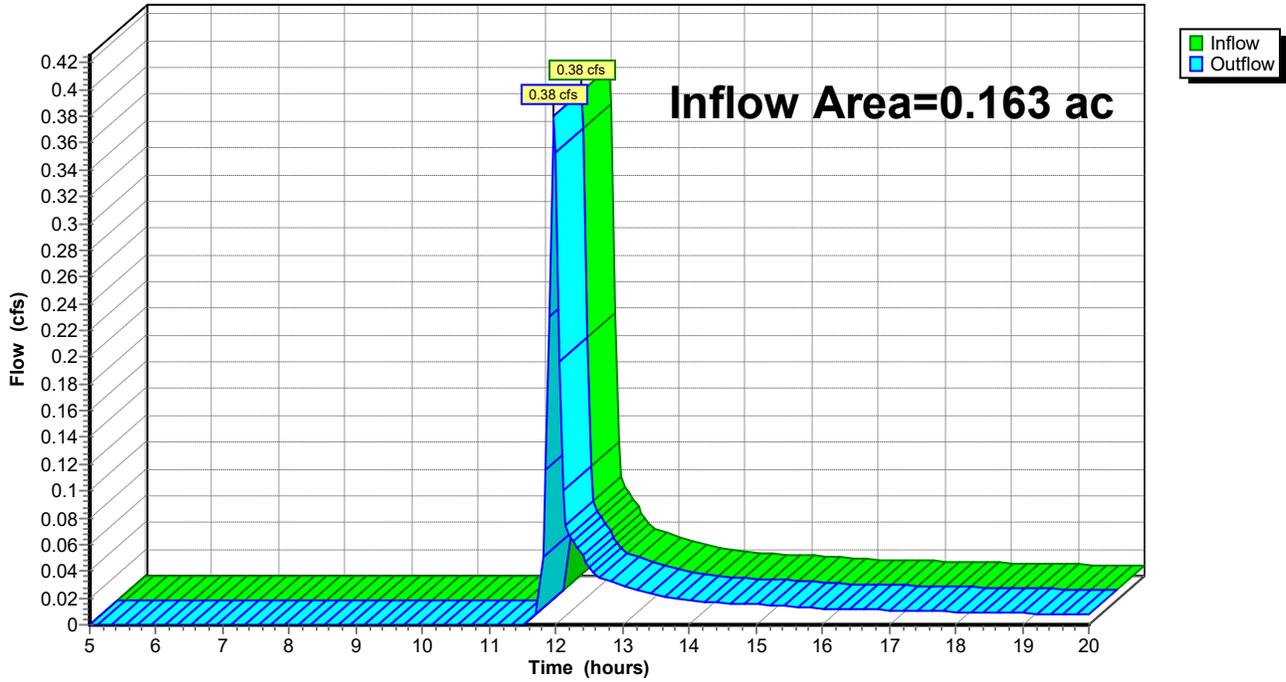
### Subcatchment D: Trib D

Hydrograph



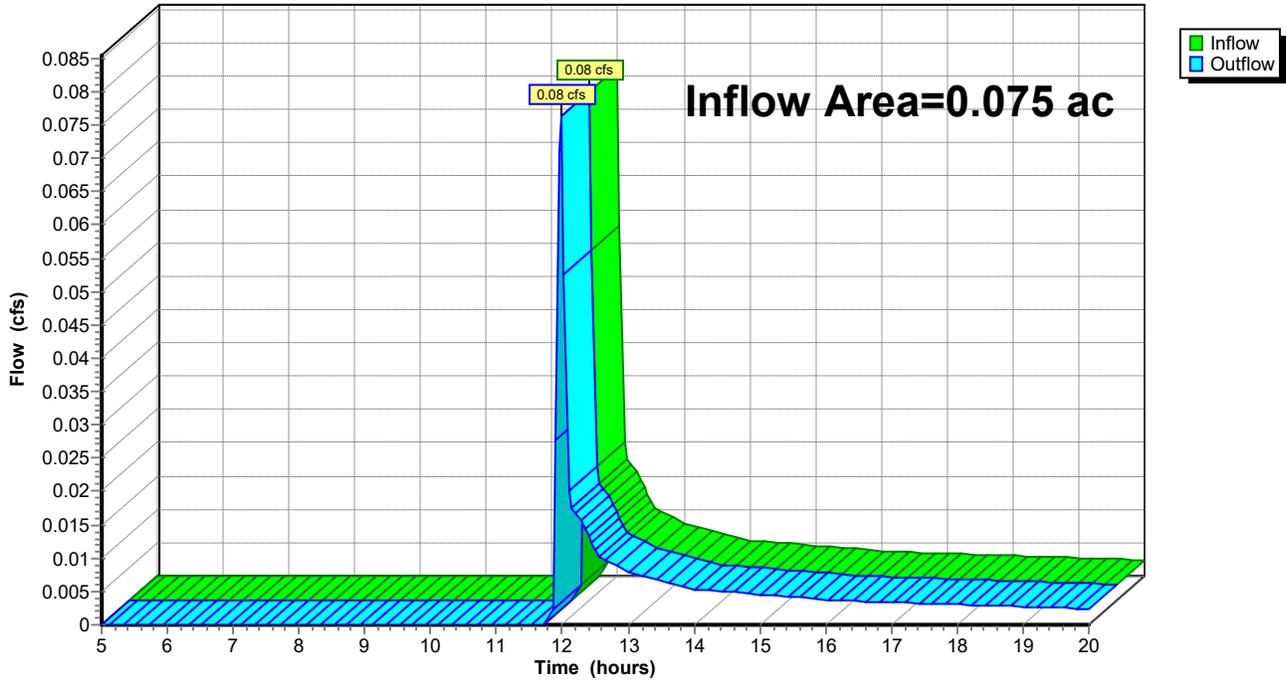
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



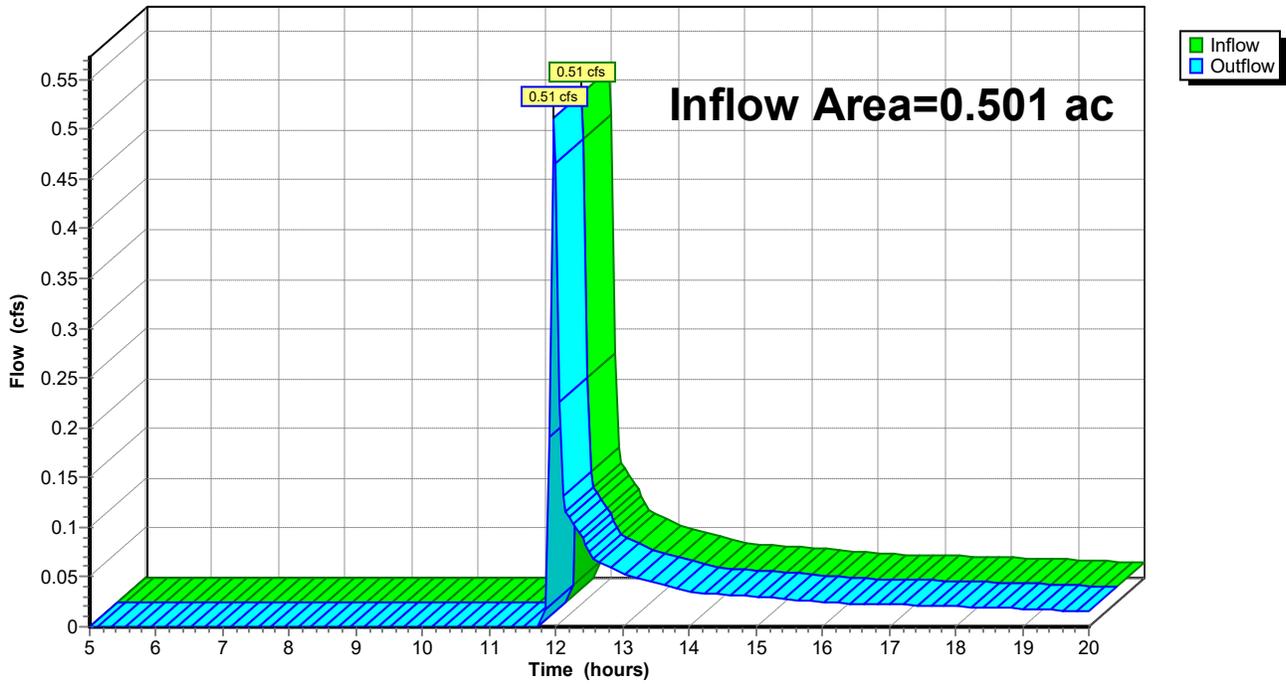
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph

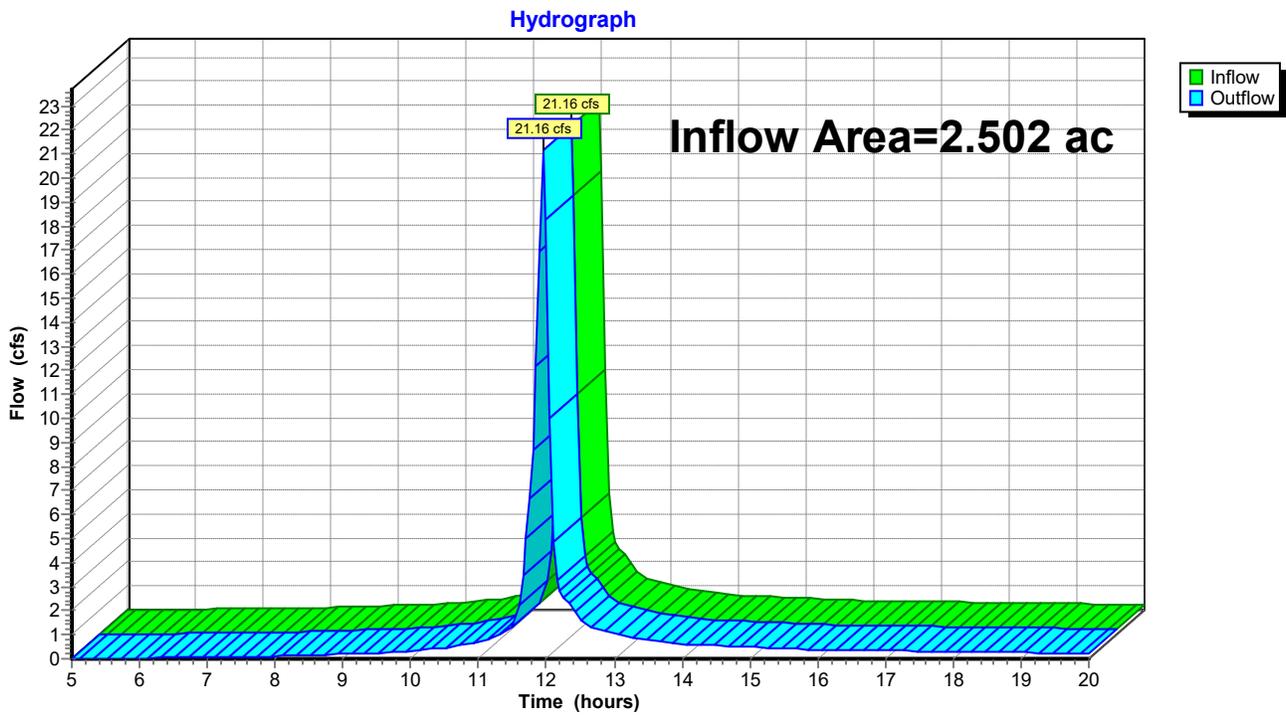


### Reach R3: Reach 3 (I-90)

Hydrograph



### Reach R4: Reach 4 (Recharge to Groundwater)



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment A: Trib A** Runoff Area=7,090 sf 12.93% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=47 Runoff=0.00 cfs 0.000 af

**Subcatchment B: Trib B** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment C: Trib C** Runoff Area=21,814 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=70' Slope=0.1570 '/' Tc=3.6 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment D: Trib D** Runoff Area=108,989 sf 72.37% Impervious Runoff Depth>0.17"  
Flow Length=100' Slope=0.1300 '/' Tc=5.1 min CN=82 Runoff=0.75 cfs 0.036 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

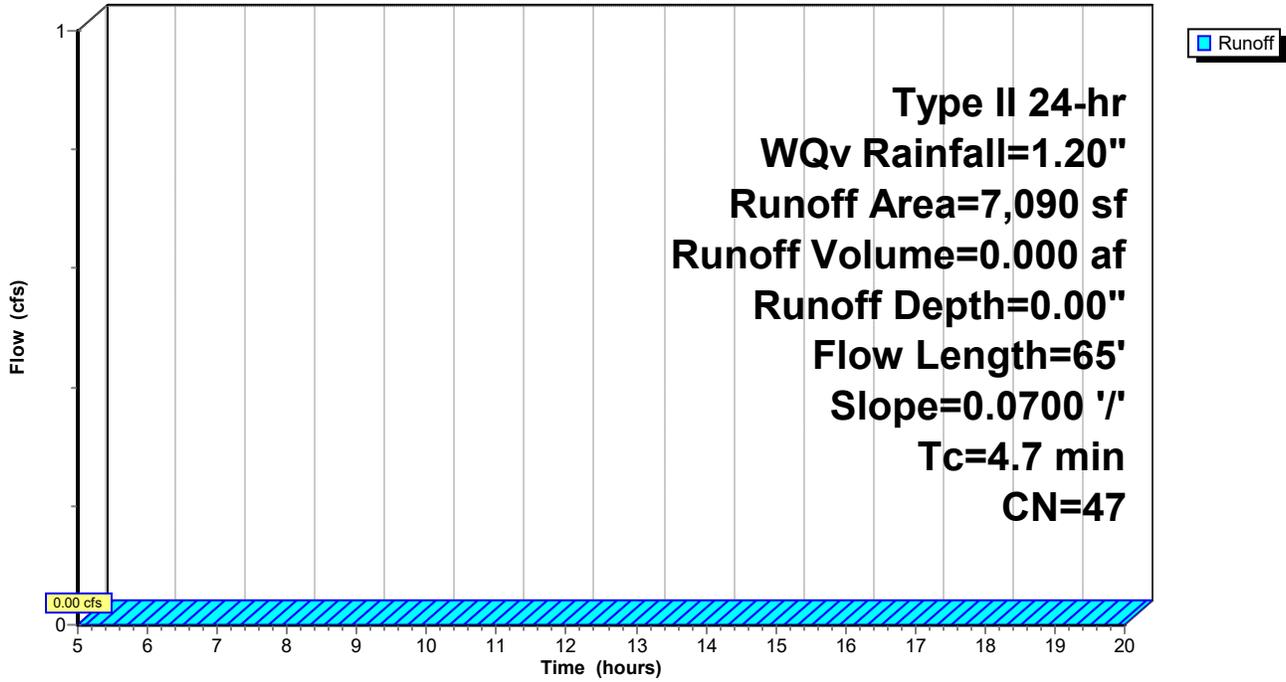
**Reach R3: Reach 3 (I-90)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=0.75 cfs 0.036 af  
Outflow=0.75 cfs 0.036 af

**Total Runoff Area = 3.241 ac Runoff Volume = 0.036 af Average Runoff Depth = 0.13"**  
**43.48% Pervious = 1.409 ac 56.52% Impervious = 1.832 ac**

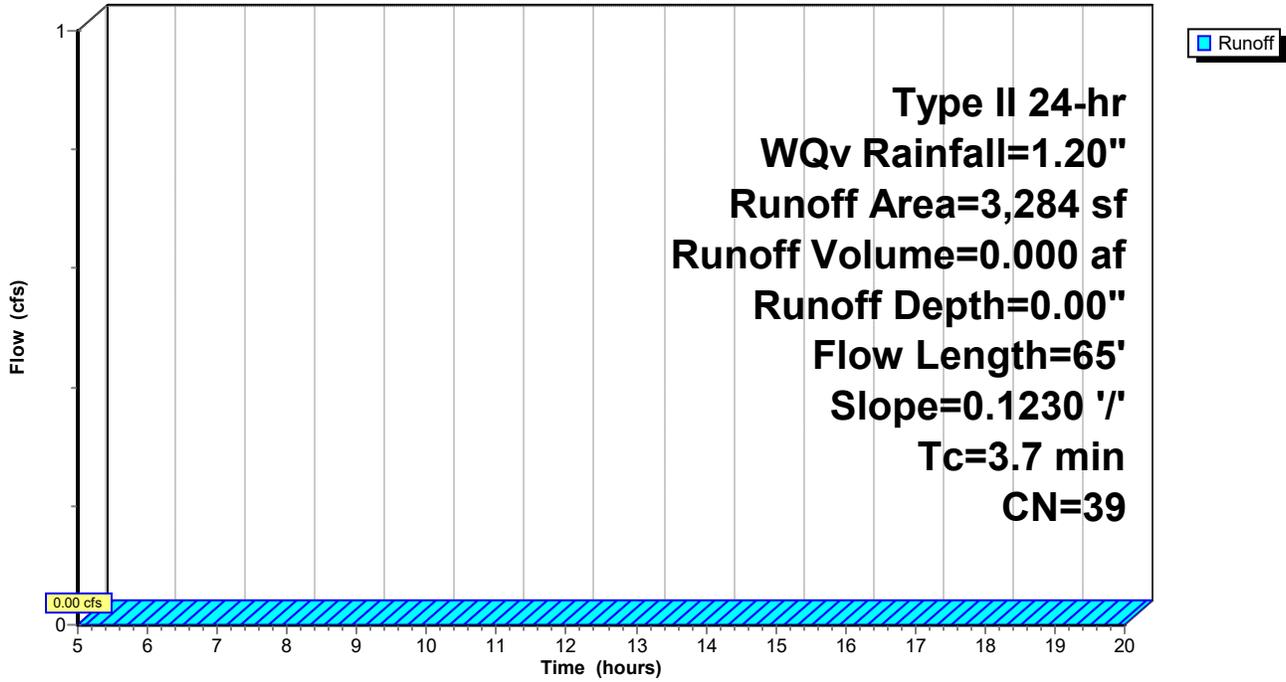
### Subcatchment A: Trib A

Hydrograph



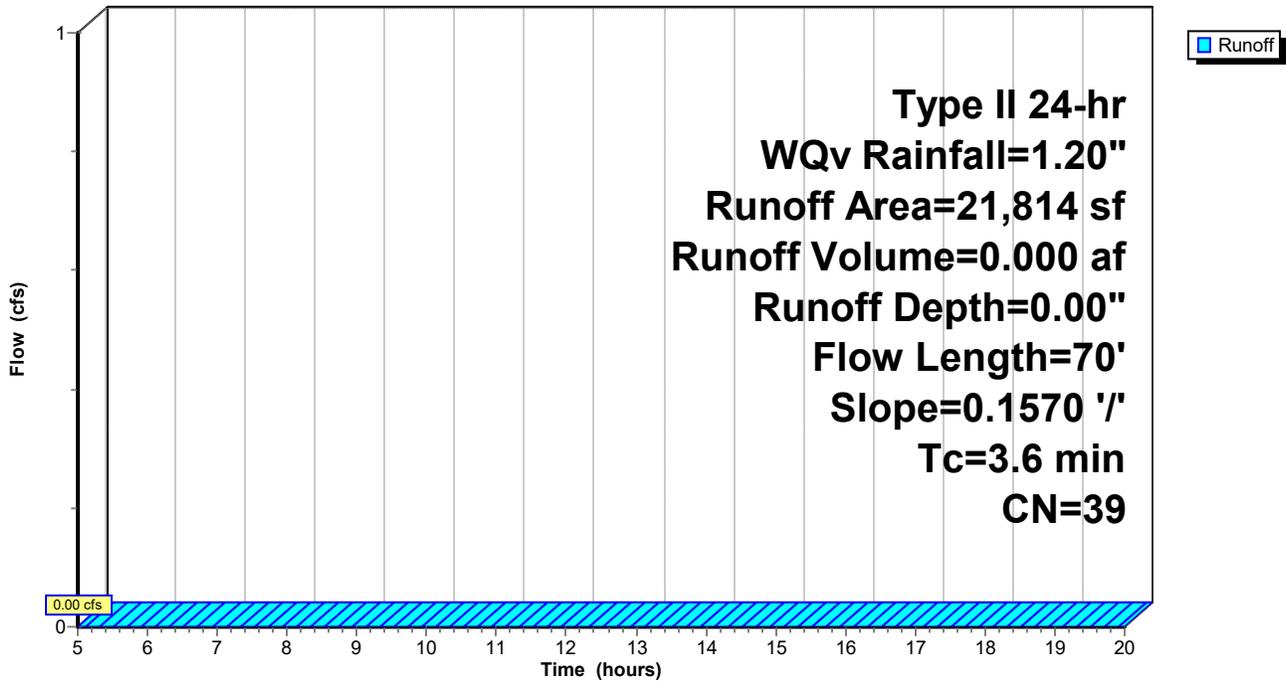
### Subcatchment B: Trib B

Hydrograph



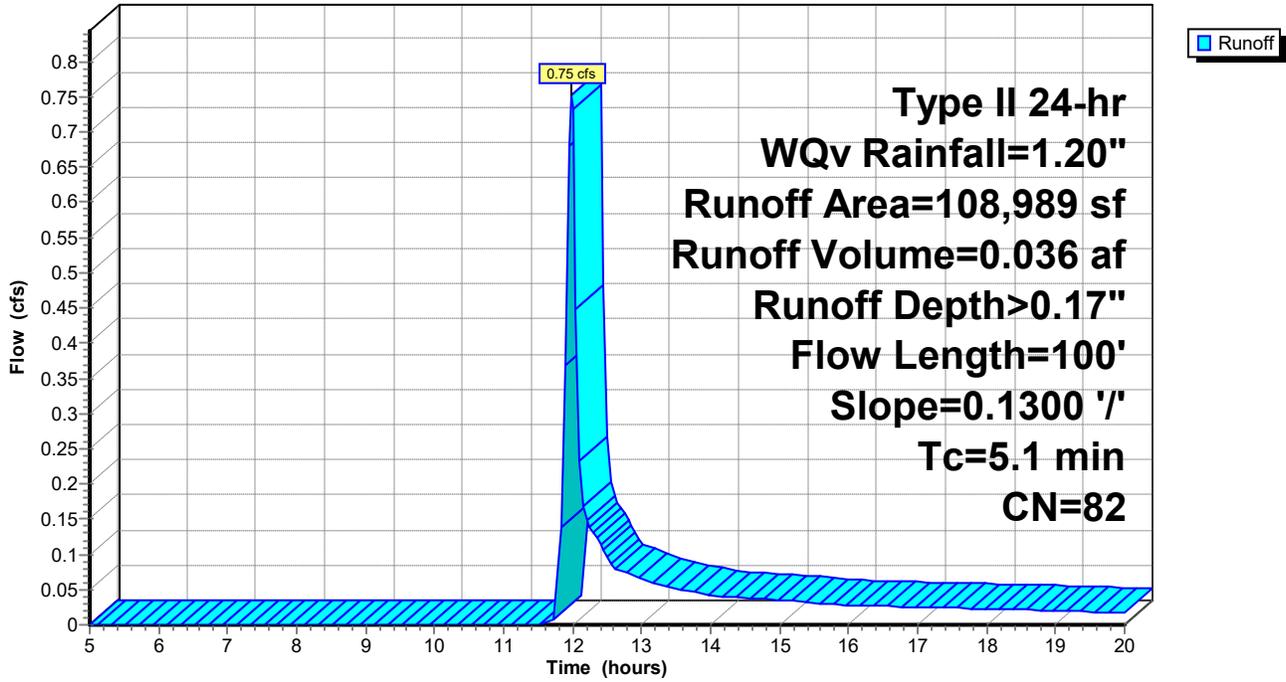
### Subcatchment C: Trib C

Hydrograph



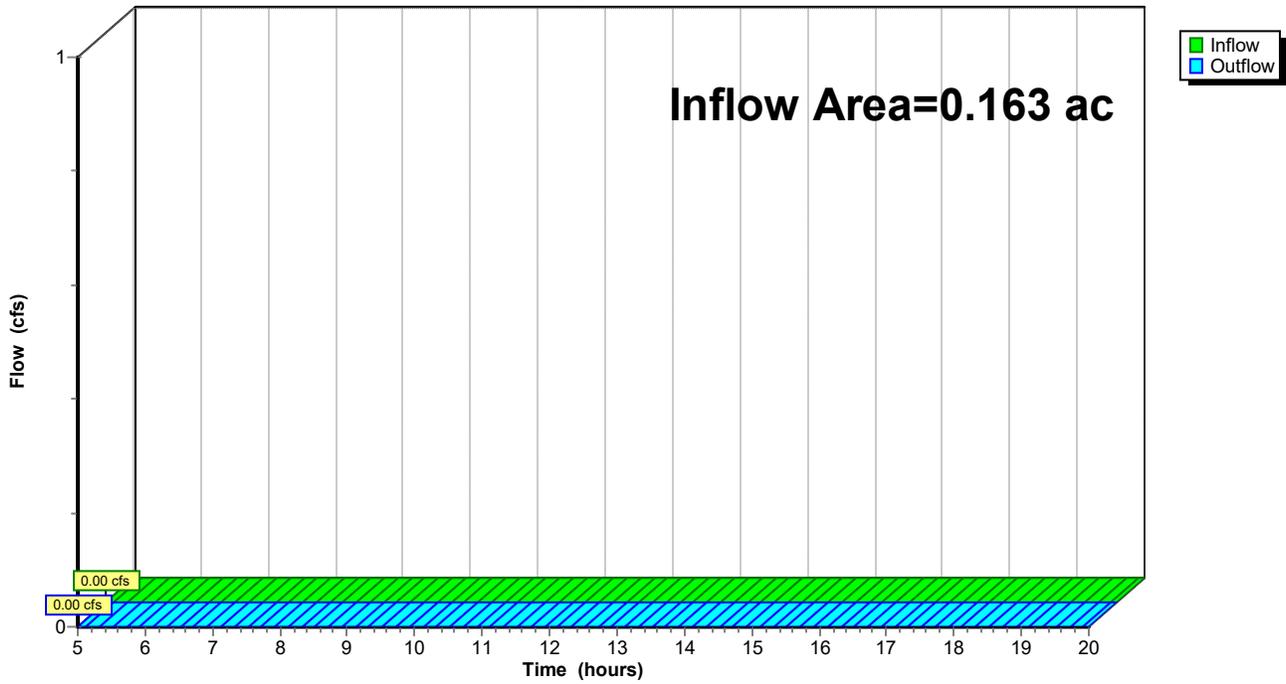
### Subcatchment D: Trib D

Hydrograph



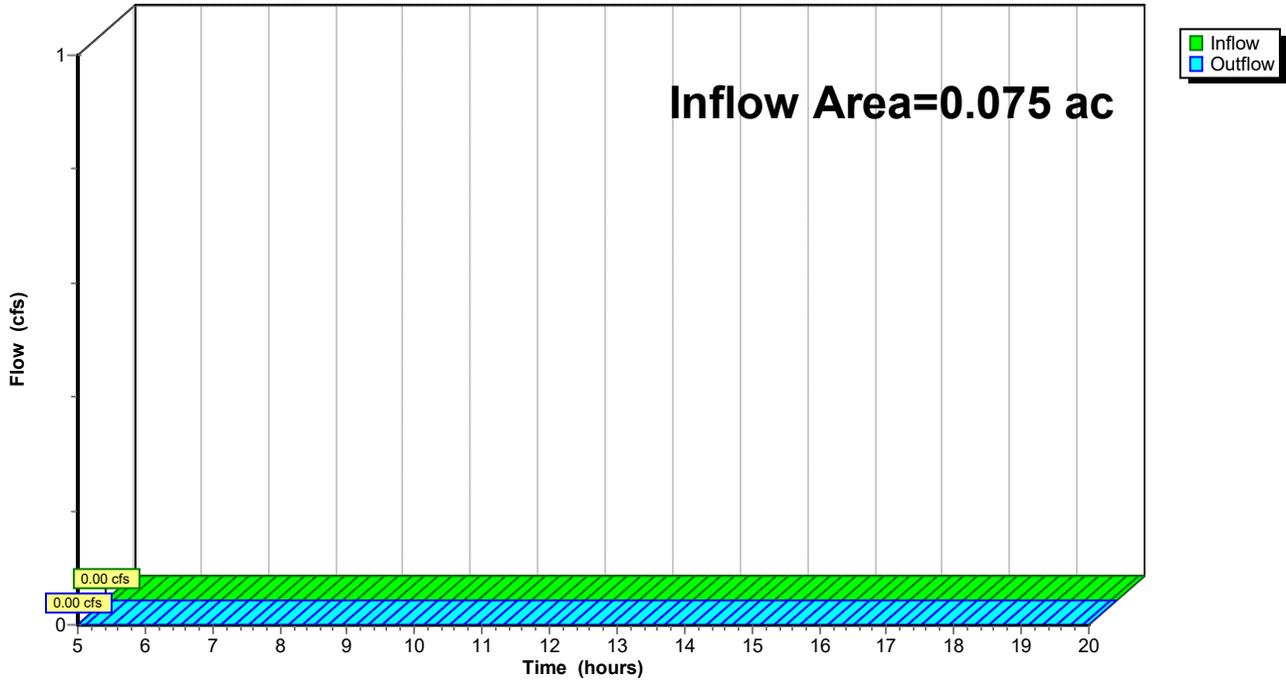
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



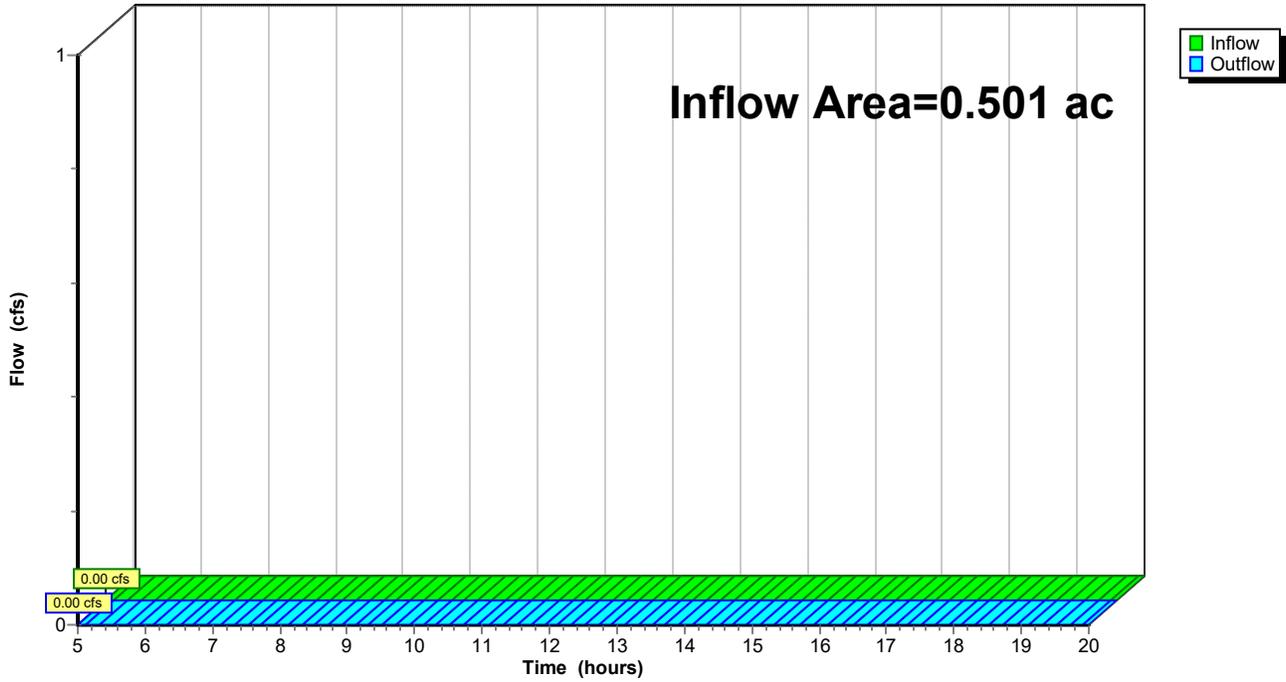
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph



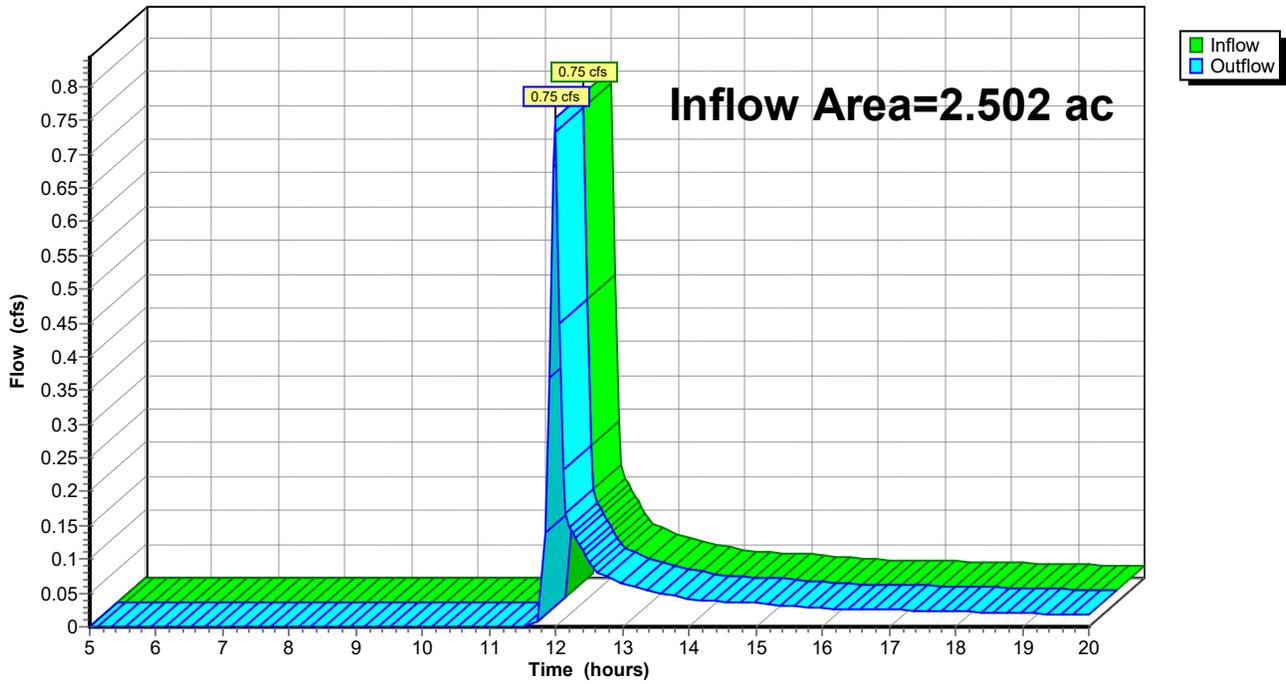
### Reach R3: Reach 3 (I-90)

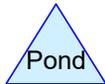
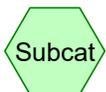
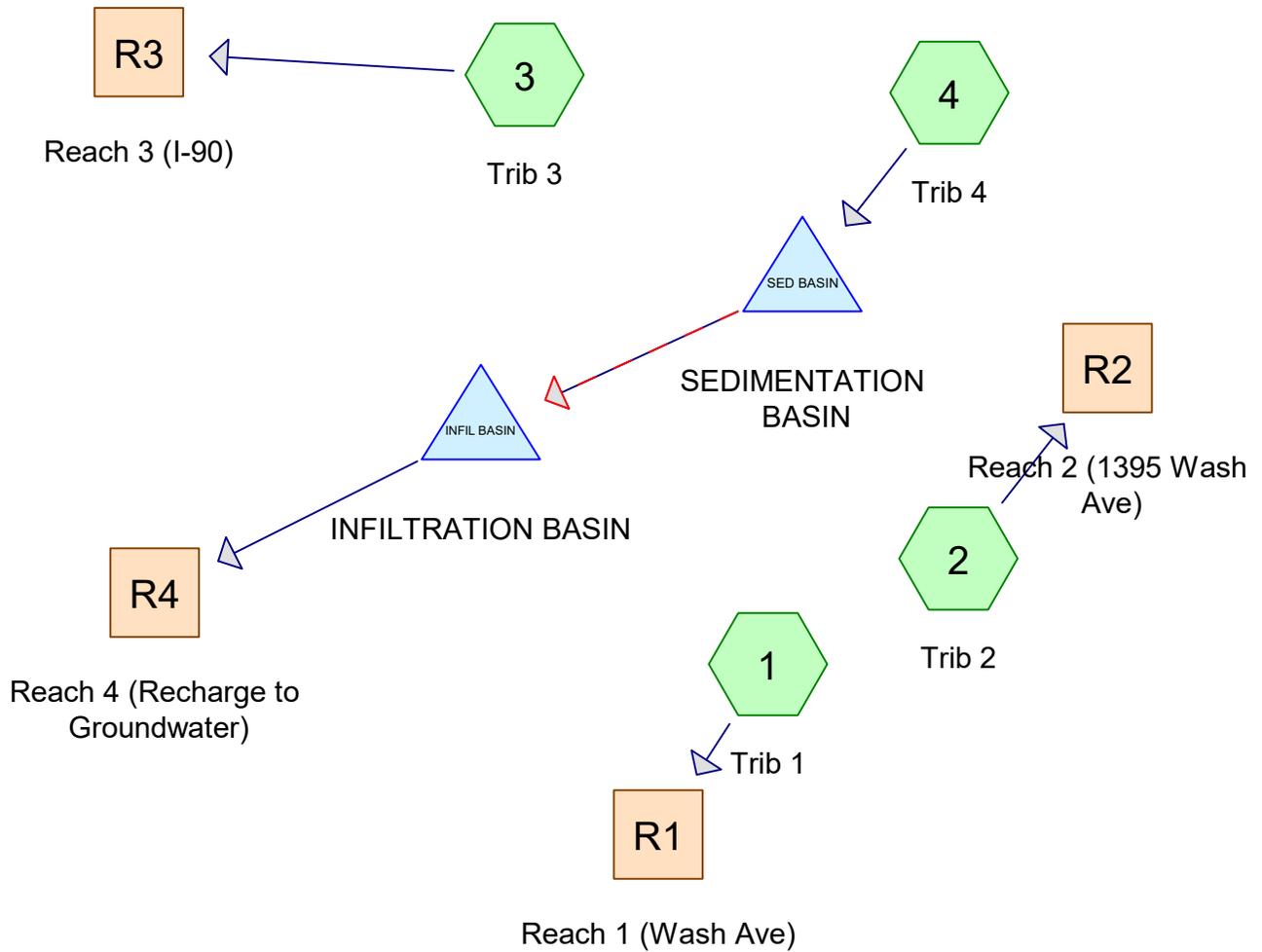
Hydrograph



### Reach R4: Reach 4 (Recharge to Groundwater)

Hydrograph





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Page 2

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.922	39	>75% Grass cover, Good, HSG A (1, 2, 3, 4)
2.644	98	Paved parking, HSG A (1, 3, 4)
<b>3.565</b>	<b>83</b>	<b>TOTAL AREA</b>

**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
3.565	HSG A	1, 2, 3, 4
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>3.565</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.922	0.000	0.000	0.000	0.000	0.922	>75% Grass cover, Good	1, 2, 3, 4
2.644	0.000	0.000	0.000	0.000	2.644	Paved parking	1, 3, 4
<b>3.565</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>3.565</b>	<b>TOTAL AREA</b>	

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Page 5

**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	4	0.00	0.00	434.0	0.0050	0.013	12.0	0.0	0.0

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Type II 24-hr 1 Year Rainfall=2.50"

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Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1: Trib 1** Runoff Area=7,321 sf 15.68% Impervious Runoff Depth=0.01"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=48 Runoff=0.00 cfs 0.000 af

**Subcatchment 2: Trib 2** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment 3: Trib 3** Runoff Area=12,868 sf 8.21% Impervious Runoff Depth=0.00"  
Flow Length=231' Tc=7.6 min CN=44 Runoff=0.00 cfs 0.000 af

**Subcatchment 4: Trib 4** Runoff Area=131,839 sf 85.67% Impervious Runoff Depth=1.53"  
Flow Length=464' Tc=4.2 min CN=90 Runoff=8.47 cfs 0.386 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R3: Reach 3 (I-90)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=1.65 cfs 0.365 af  
Outflow=1.65 cfs 0.365 af

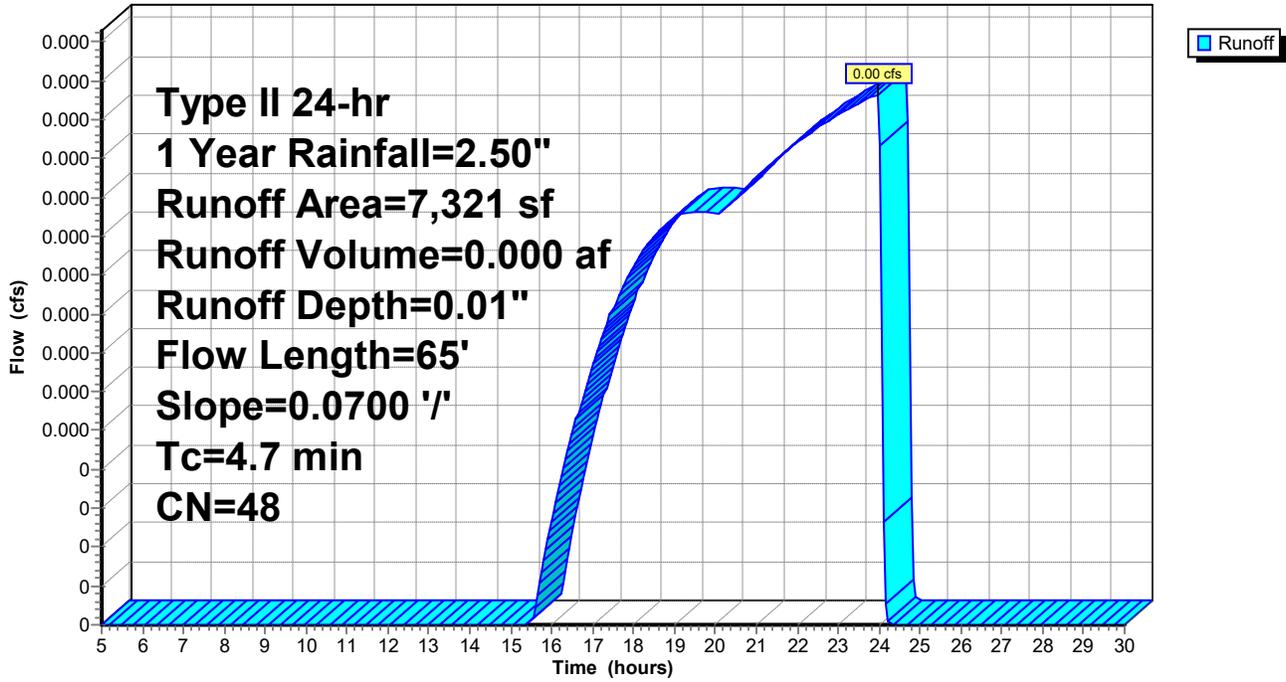
**Pond INFIL BASIN: INFILTRATION BASIN** Peak Elev=238.86' Storage=4,485 cf Inflow=4.65 cfs 0.365 af  
Outflow=1.65 cfs 0.365 af

**Pond SED BASIN: SEDIMENTATION BASIN** Peak Elev=241.51' Storage=4,493 cf Inflow=8.47 cfs 0.386 af  
Primary=4.65 cfs 0.365 af Secondary=0.00 cfs 0.000 af Outflow=4.65 cfs 0.365 af

**Total Runoff Area = 3.565 ac Runoff Volume = 0.386 af Average Runoff Depth = 1.30"**  
**25.86% Pervious = 0.922 ac 74.14% Impervious = 2.644 ac**

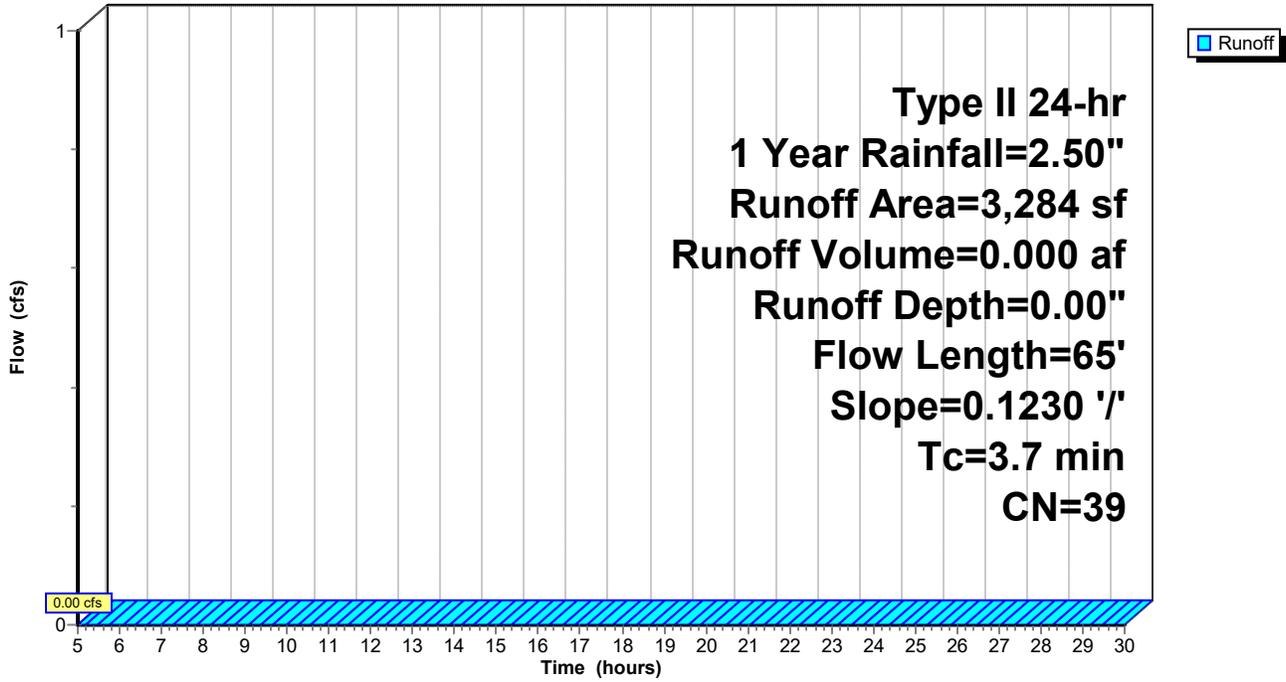
Subcatchment 1: Trib 1

Hydrograph



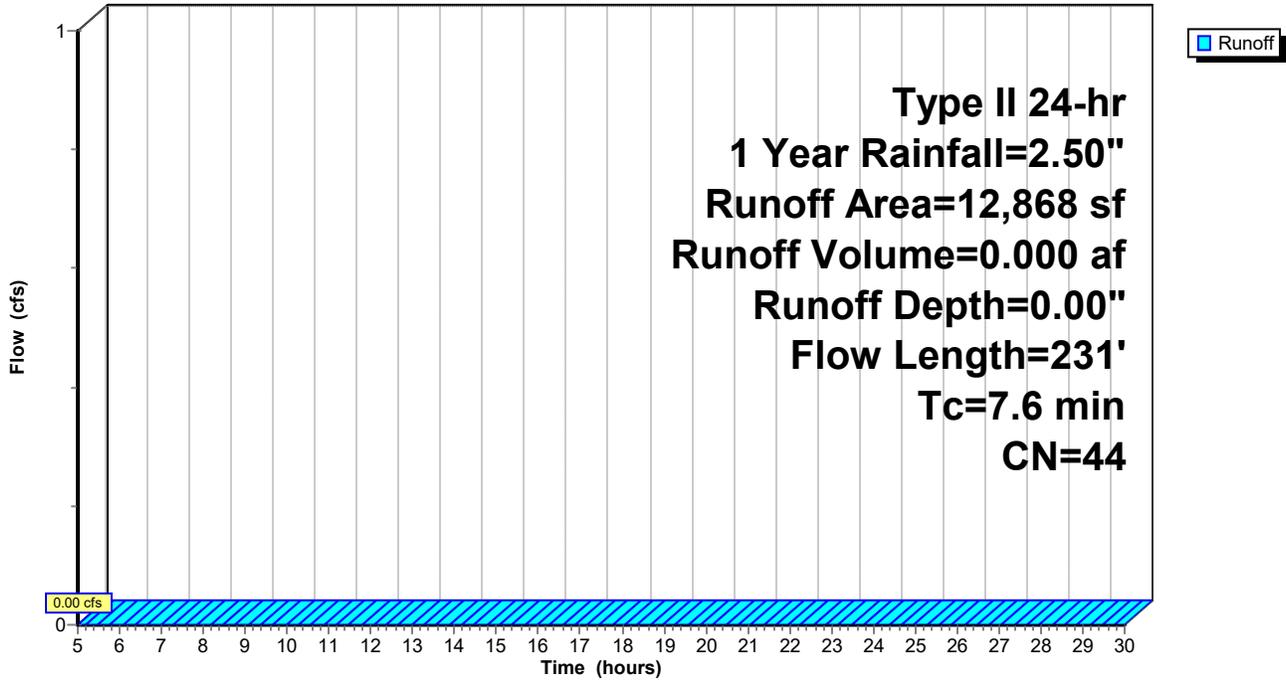
### Subcatchment 2: Trib 2

Hydrograph



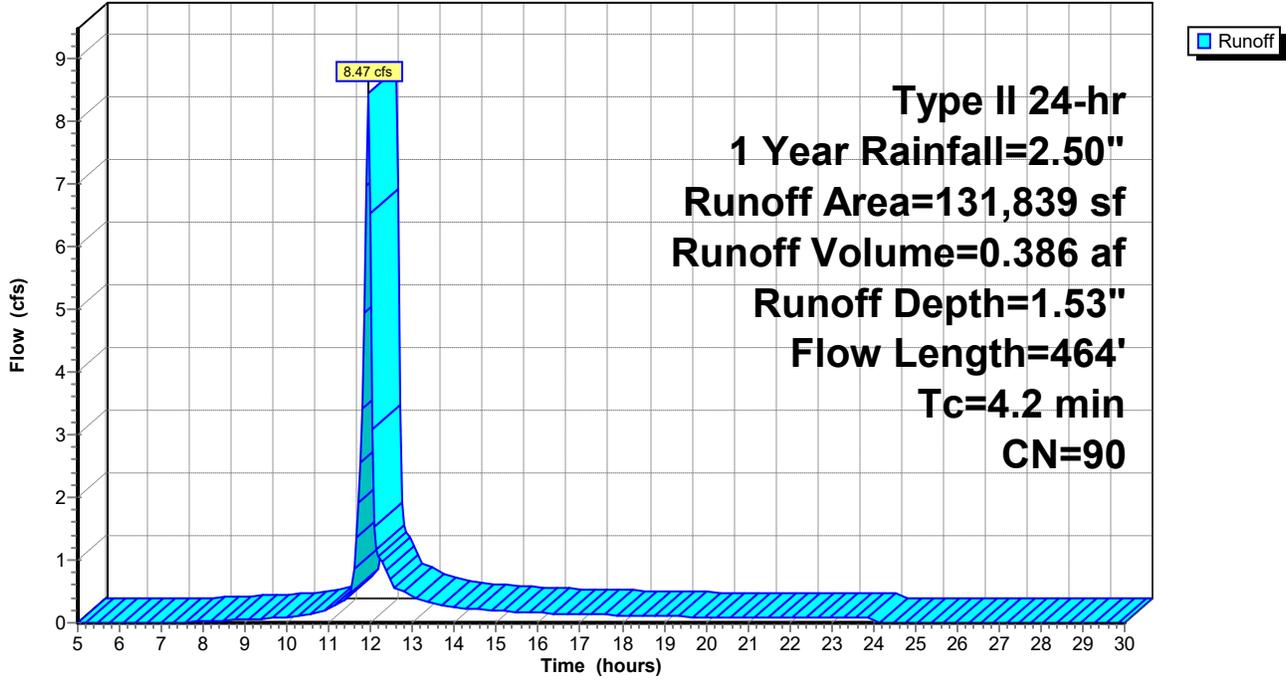
### Subcatchment 3: Trib 3

Hydrograph



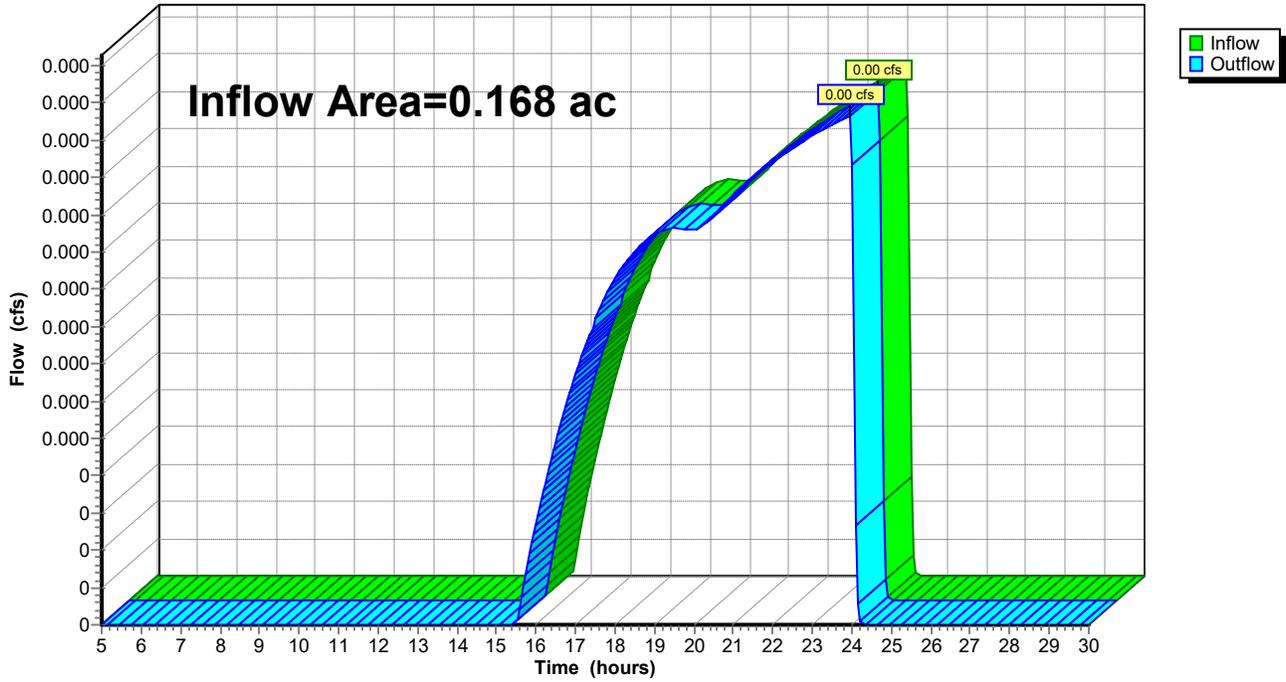
Subcatchment 4: Trib 4

Hydrograph



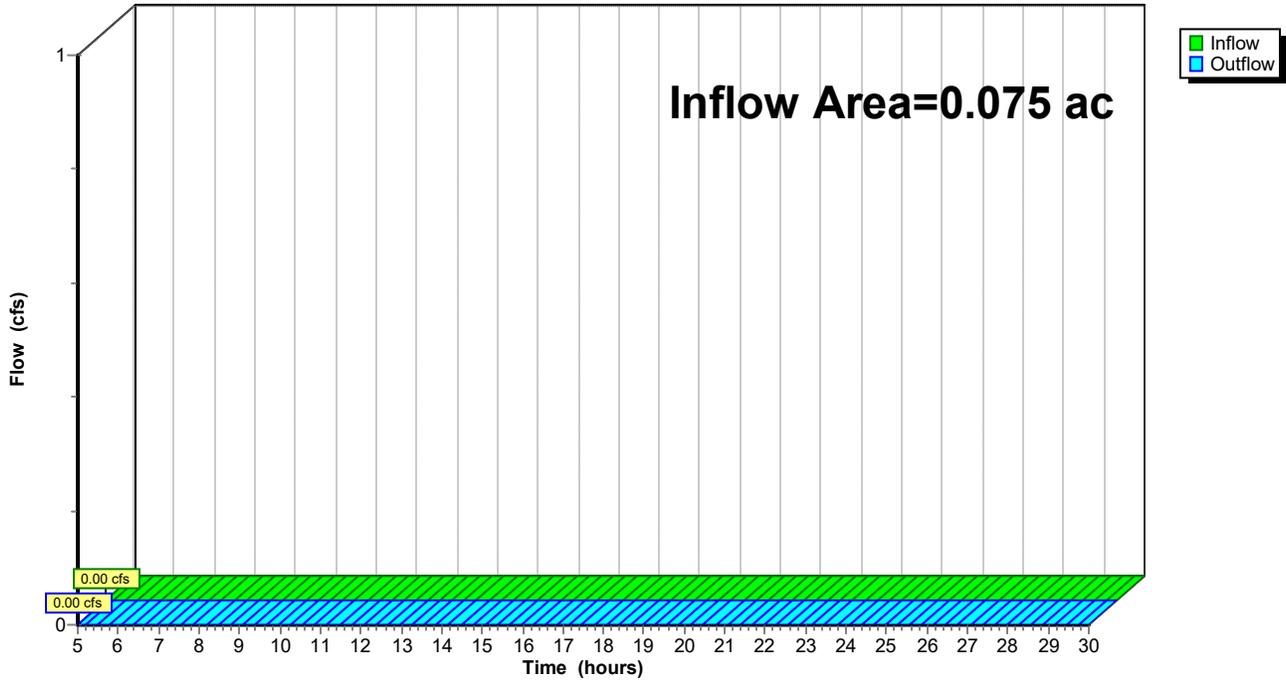
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



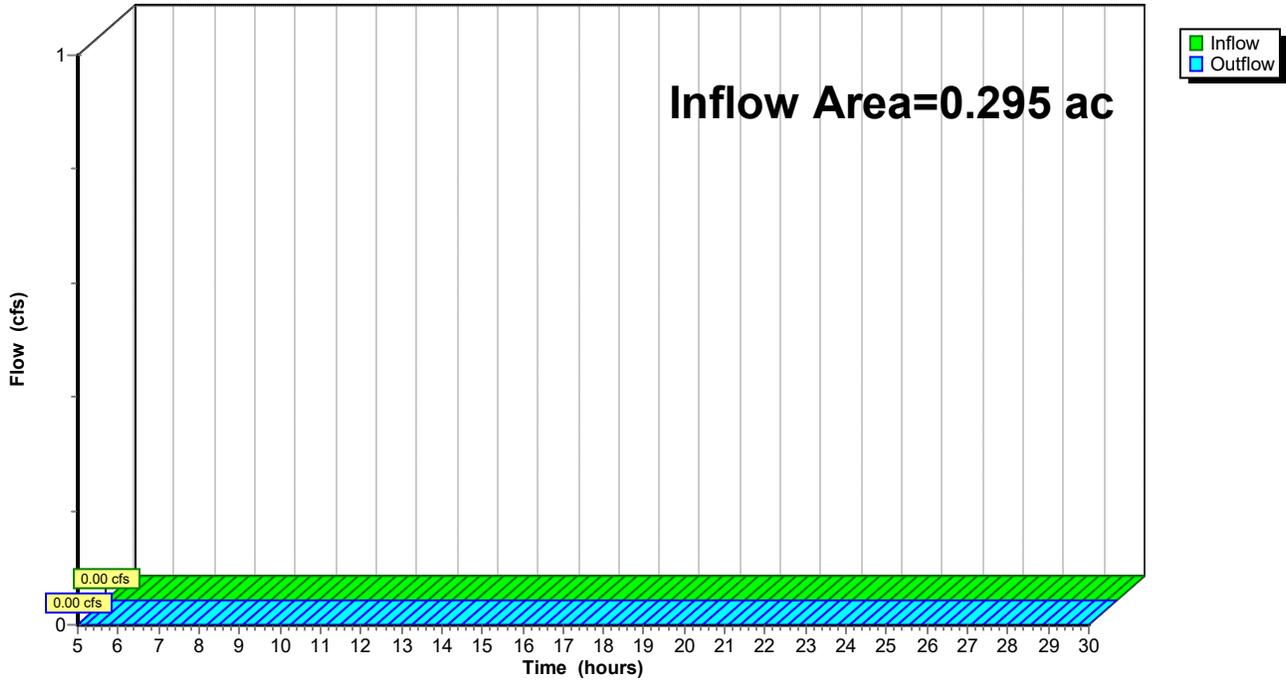
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph



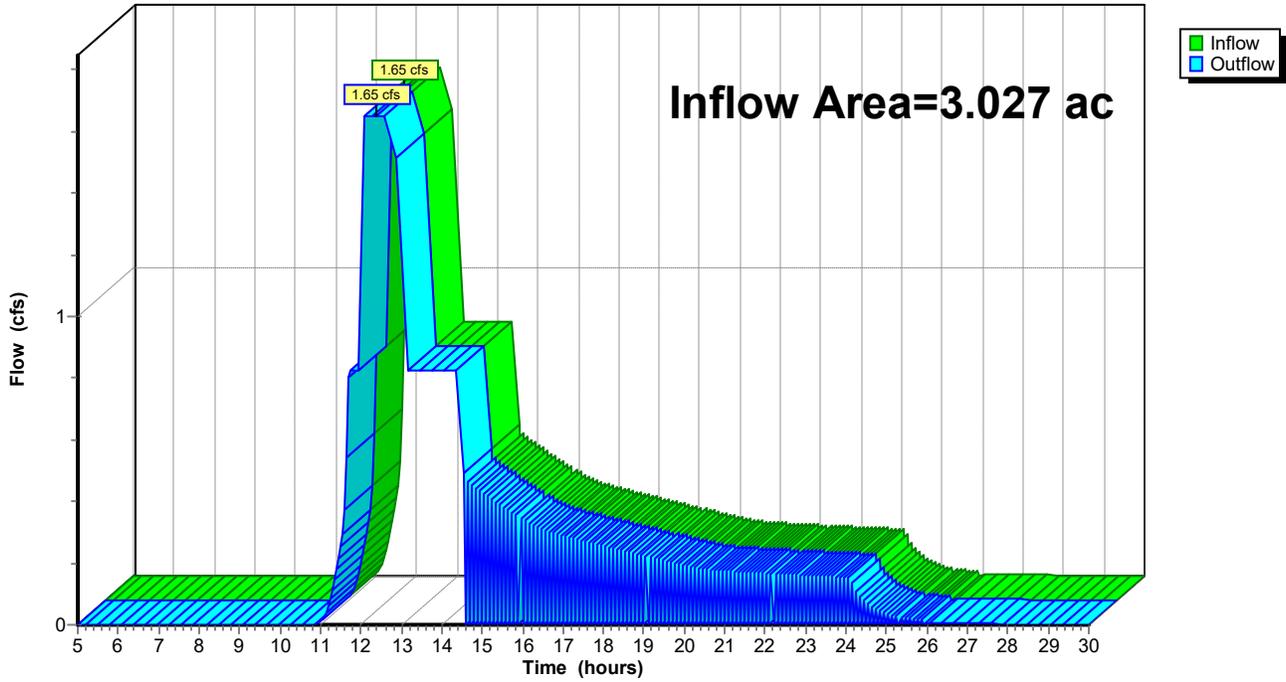
### Reach R3: Reach 3 (I-90)

Hydrograph



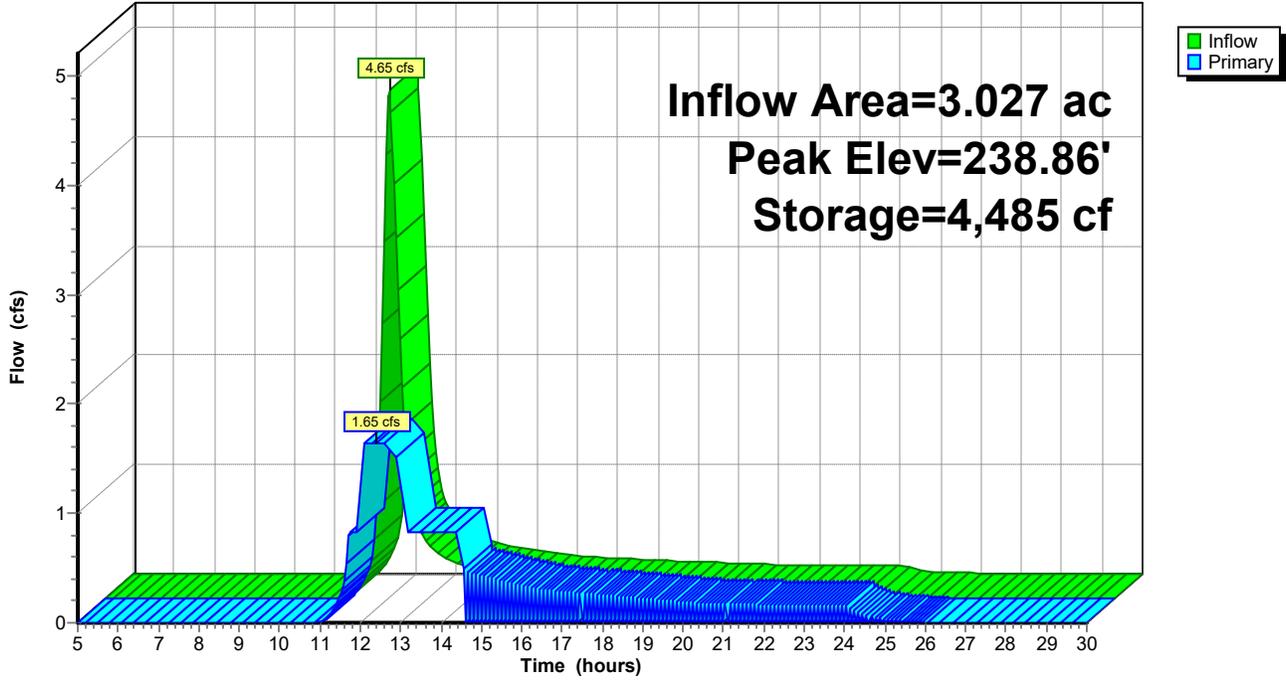
### Reach R4: Reach 4 (Recharge to Groundwater)

Hydrograph



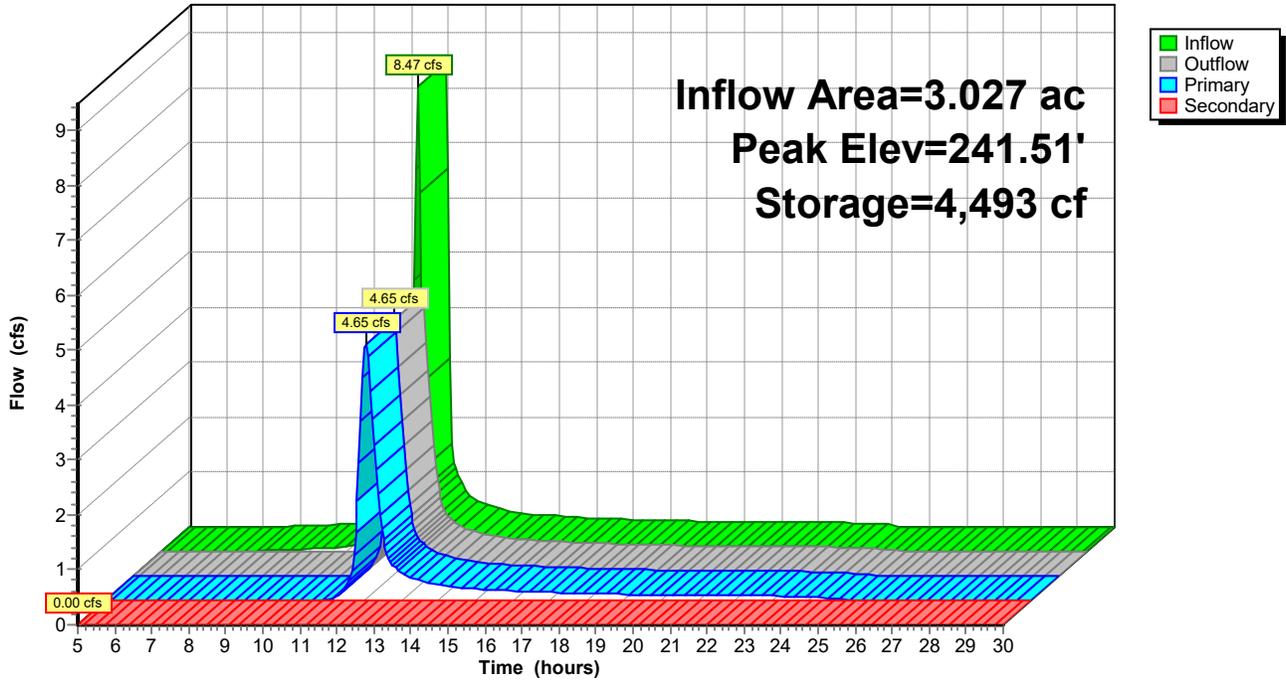
### Pond INFIL BASIN: INFILTRATION BASIN

Hydrograph



### Pond SED BASIN: SEDIMENTATION BASIN

Hydrograph



**200015-POST2**

Prepared by Microsoft

HydroCAD® 10.00 s/n 03289 © 2012 HydroCAD Software Solutions LLC

Type II 24-hr 10 Year Rainfall=4.50"

Printed 2/11/2021

Page 17

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1: Trib 1** Runoff Area=7,321 sf 15.68% Impervious Runoff Depth=0.41"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=48 Runoff=0.08 cfs 0.006 af

**Subcatchment 2: Trib 2** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.11"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.001 af

**Subcatchment 3: Trib 3** Runoff Area=12,868 sf 8.21% Impervious Runoff Depth=0.26"  
Flow Length=231' Tc=7.6 min CN=44 Runoff=0.03 cfs 0.006 af

**Subcatchment 4: Trib 4** Runoff Area=131,839 sf 85.67% Impervious Runoff Depth>3.39"  
Flow Length=464' Tc=4.2 min CN=90 Runoff=17.95 cfs 0.856 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.08 cfs 0.006 af  
Outflow=0.08 cfs 0.006 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.001 af  
Outflow=0.00 cfs 0.001 af

**Reach R3: Reach 3 (I-90)** Inflow=0.03 cfs 0.006 af  
Outflow=0.03 cfs 0.006 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=1.65 cfs 0.835 af  
Outflow=1.65 cfs 0.835 af

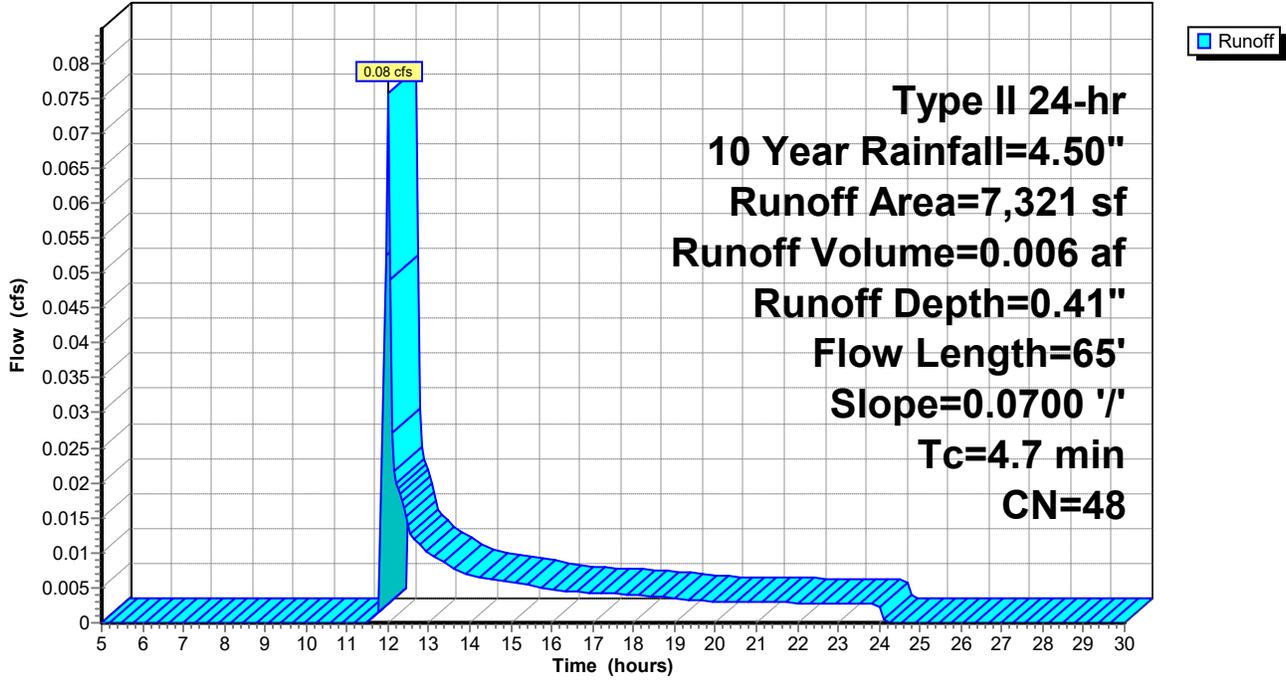
**Pond INFIL BASIN: INFILTRATION BASIN** Peak Elev=240.69' Storage=12,993 cf Inflow=17.24 cfs 0.835 af  
Outflow=1.65 cfs 0.835 af

**Pond SED BASIN: SEDIMENTATION BASIN** Peak Elev=243.40' Storage=7,872 cf Inflow=17.95 cfs 0.856 af  
Primary=6.97 cfs 0.771 af Secondary=10.27 cfs 0.064 af Outflow=17.24 cfs 0.835 af

**Total Runoff Area = 3.565 ac Runoff Volume = 0.869 af Average Runoff Depth = 2.92"**  
**25.86% Pervious = 0.922 ac 74.14% Impervious = 2.644 ac**

### Subcatchment 1: Trib 1

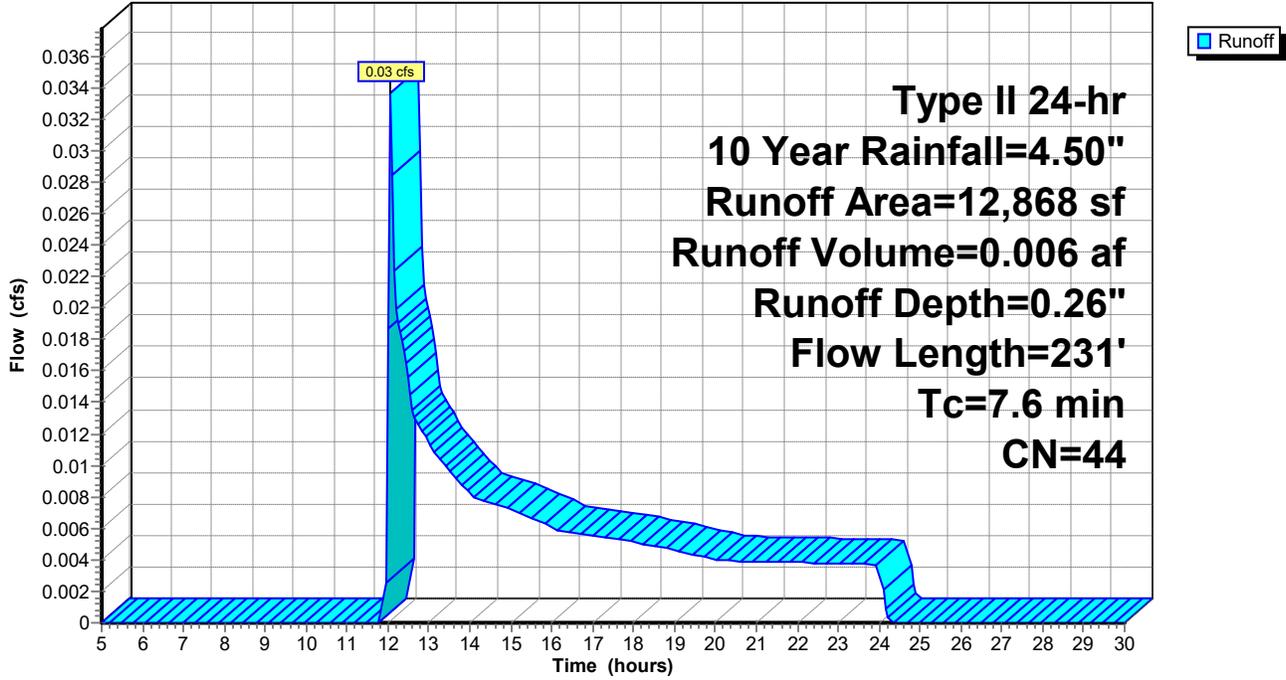
Hydrograph





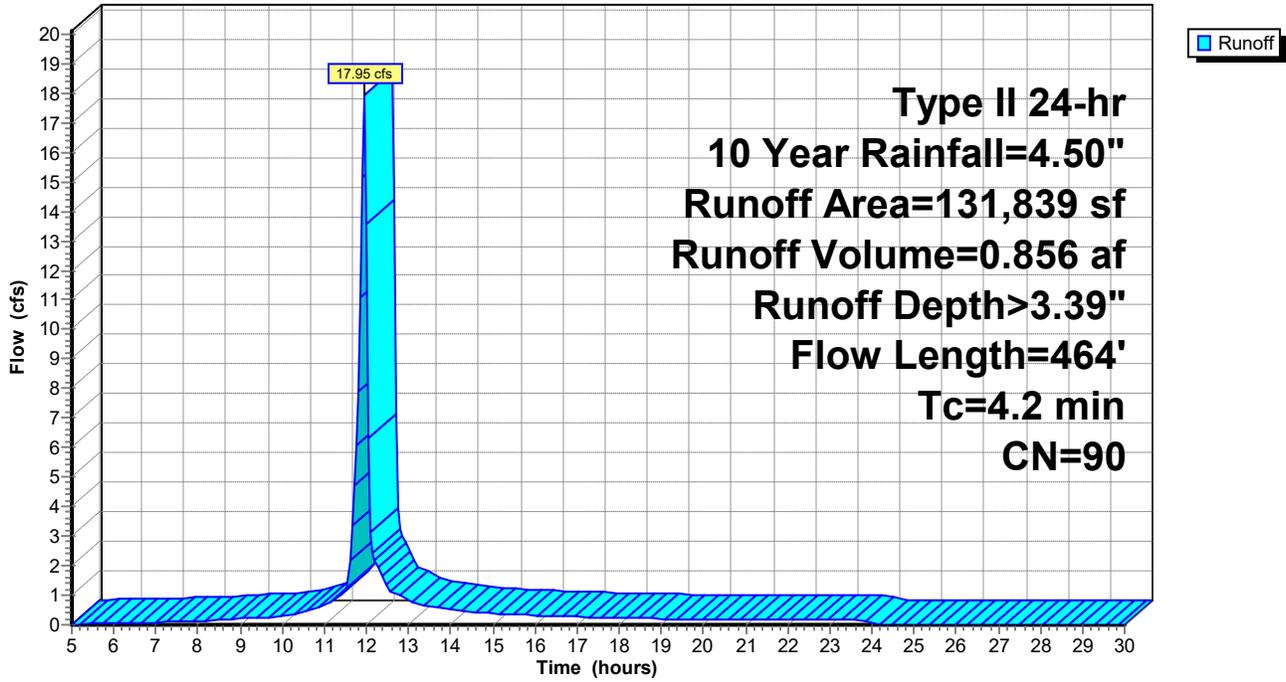
### Subcatchment 3: Trib 3

Hydrograph



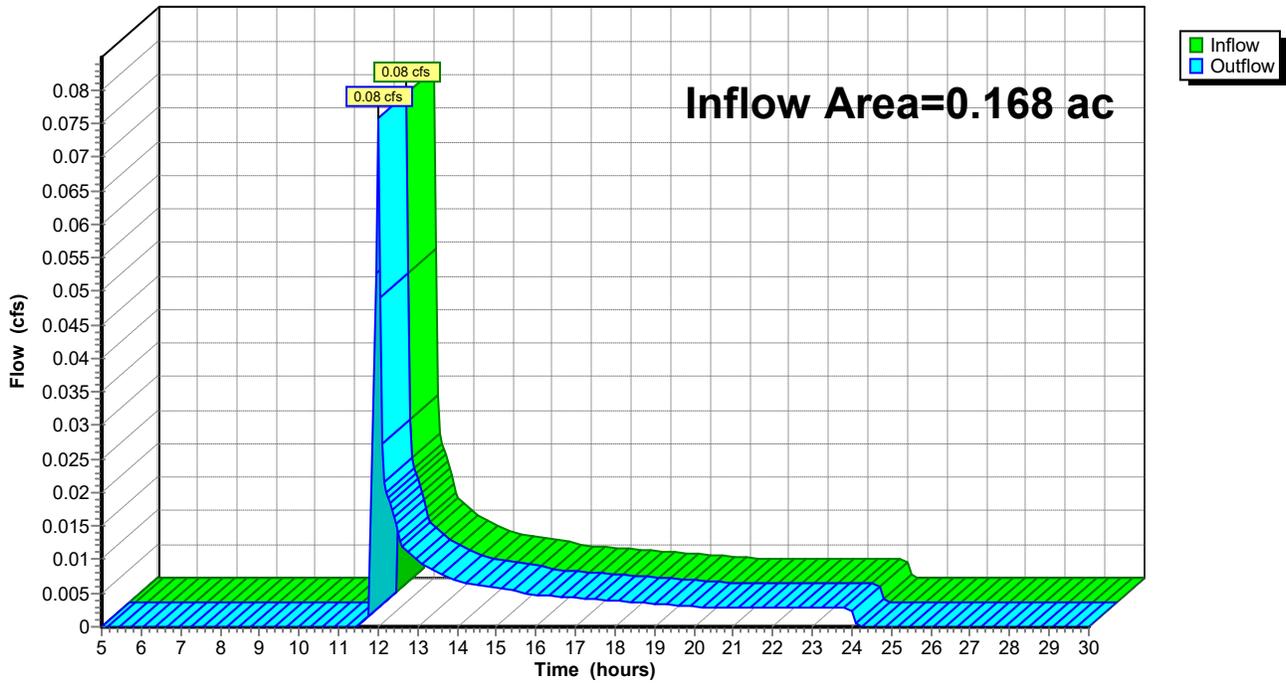
Subcatchment 4: Trib 4

Hydrograph



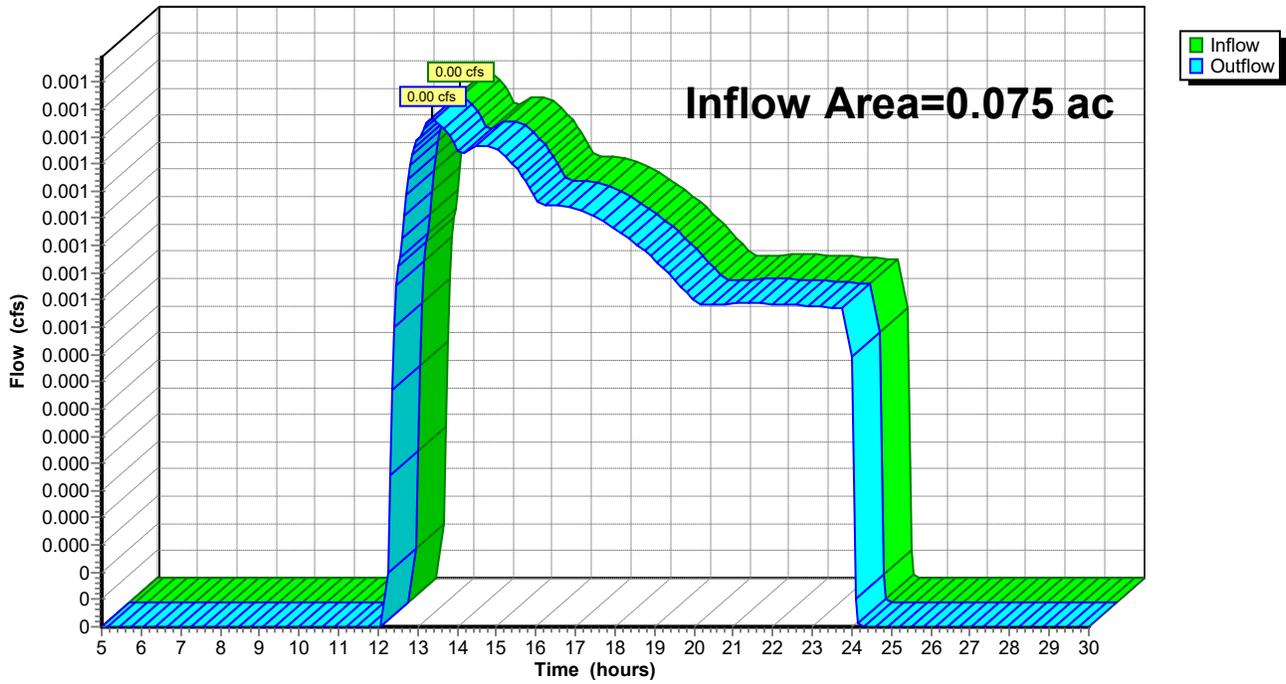
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



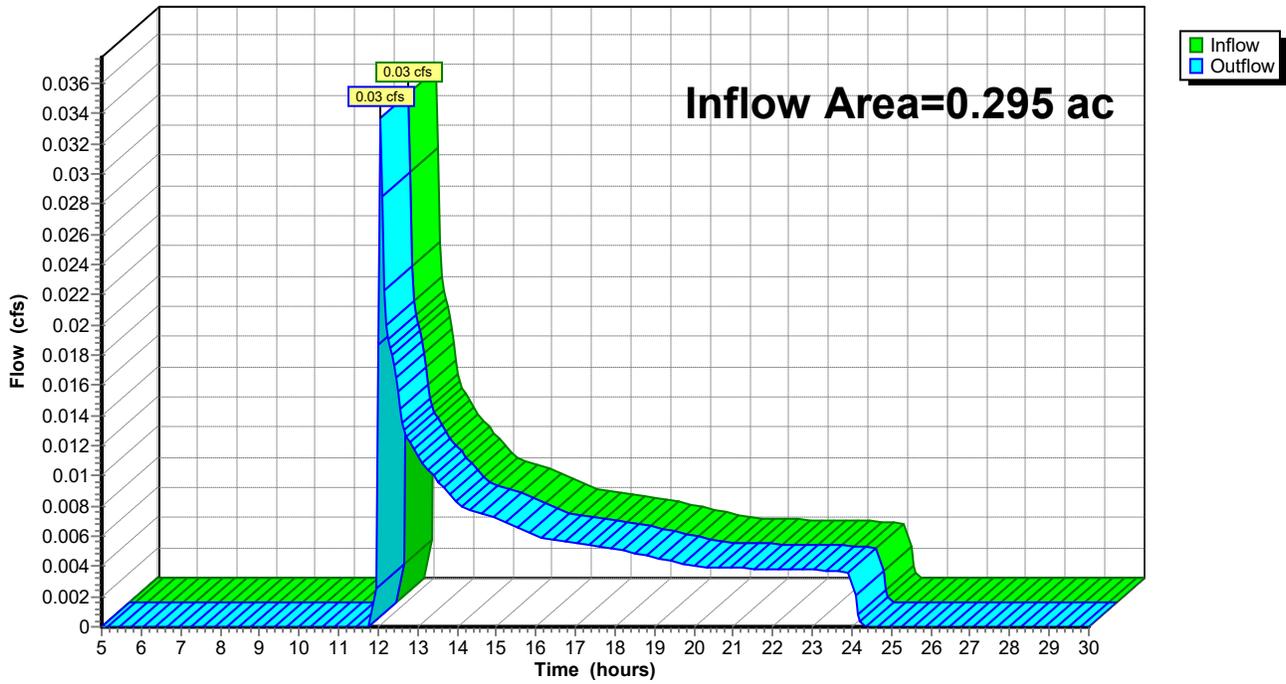
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph



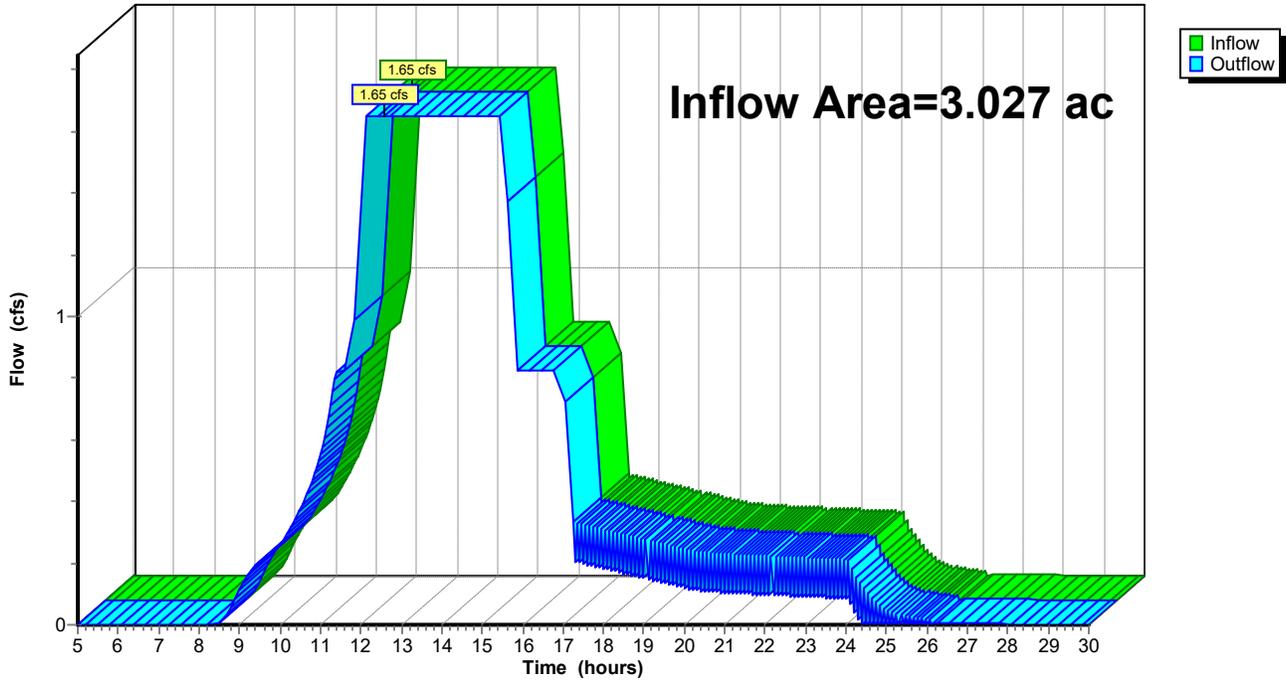
### Reach R3: Reach 3 (I-90)

Hydrograph



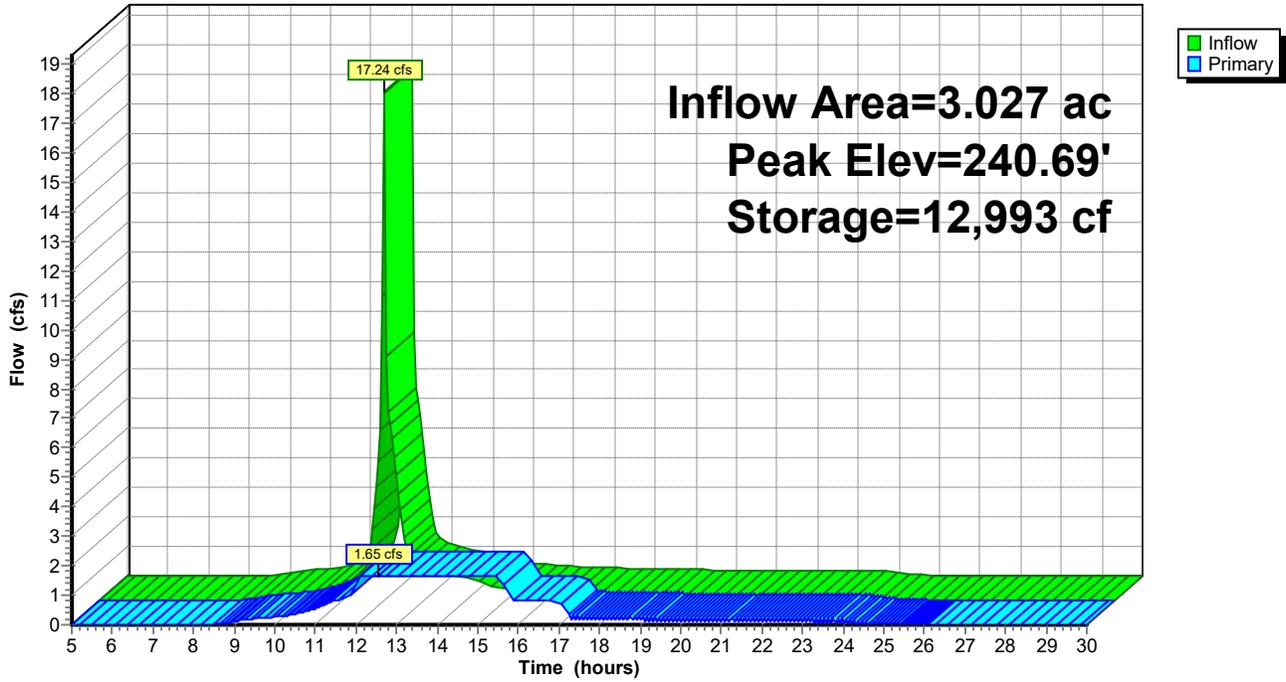
### Reach R4: Reach 4 (Recharge to Groundwater)

Hydrograph



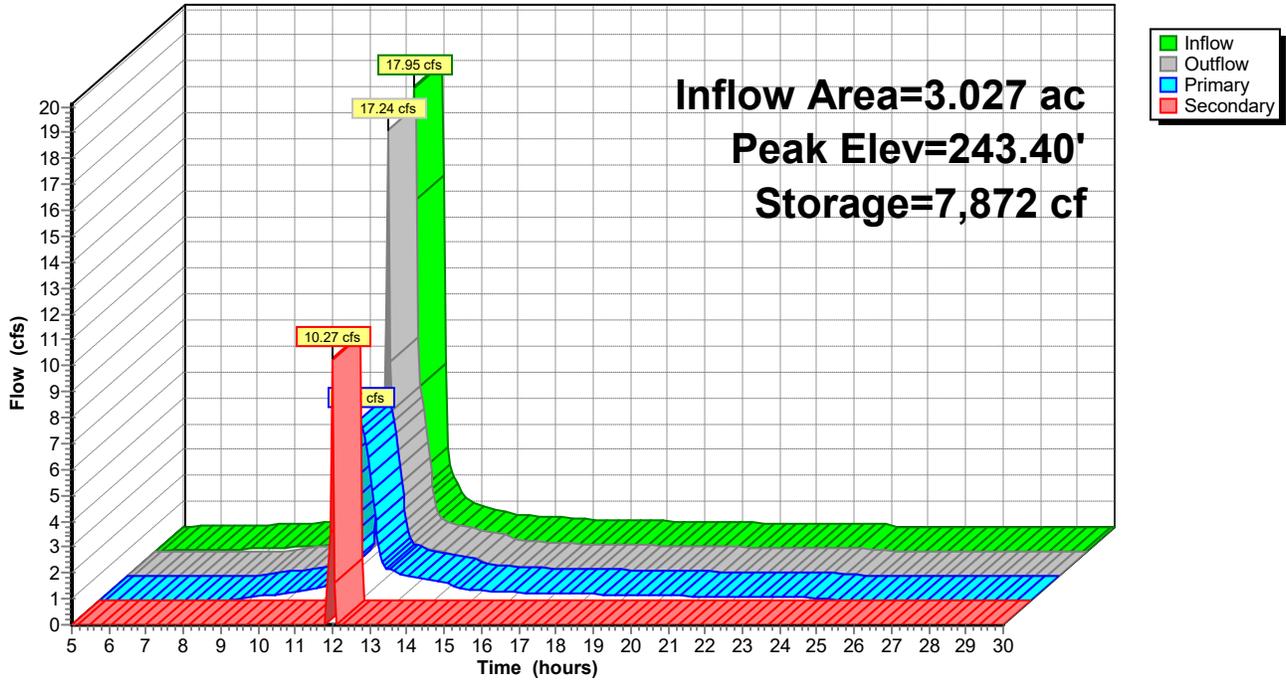
### Pond INFIL BASIN: INFILTRATION BASIN

Hydrograph



### Pond SED BASIN: SEDIMENTATION BASIN

Hydrograph



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1: Trib 1** Runoff Area=7,321 sf 15.68% Impervious Runoff Depth=1.49"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=48 Runoff=0.42 cfs 0.021 af

**Subcatchment 2: Trib 2** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.77"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.08 cfs 0.005 af

**Subcatchment 3: Trib 3** Runoff Area=12,868 sf 8.21% Impervious Runoff Depth=1.15"  
Flow Length=231' Tc=7.6 min CN=44 Runoff=0.47 cfs 0.028 af

**Subcatchment 4: Trib 4** Runoff Area=131,839 sf 85.67% Impervious Runoff Depth>5.79"  
Flow Length=464' Tc=4.2 min CN=90 Runoff=29.69 cfs 1.460 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.42 cfs 0.021 af  
Outflow=0.42 cfs 0.021 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.08 cfs 0.005 af  
Outflow=0.08 cfs 0.005 af

**Reach R3: Reach 3 (I-90)** Inflow=0.47 cfs 0.028 af  
Outflow=0.47 cfs 0.028 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=1.65 cfs 1.440 af  
Outflow=1.65 cfs 1.440 af

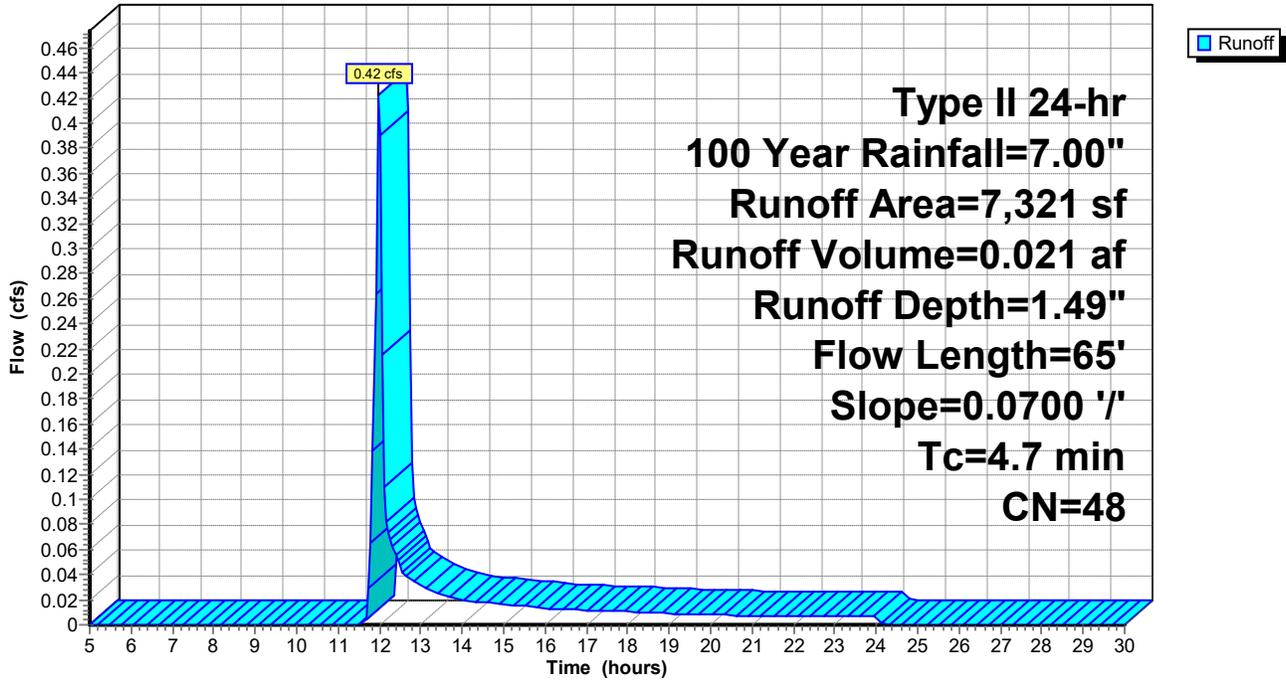
**Pond INFIL BASIN: INFILTRATION BASIN** Peak Elev=242.92' Storage=23,327 cf Inflow=28.03 cfs 1.439 af  
Outflow=1.65 cfs 1.440 af

**Pond SED BASIN: SEDIMENTATION BASIN** Peak Elev=243.63' Storage=8,281 cf Inflow=29.69 cfs 1.460 af  
Primary=7.26 cfs 1.117 af Secondary=20.80 cfs 0.322 af Outflow=28.03 cfs 1.439 af

**Total Runoff Area = 3.565 ac Runoff Volume = 1.515 af Average Runoff Depth = 5.10"**  
**25.86% Pervious = 0.922 ac 74.14% Impervious = 2.644 ac**

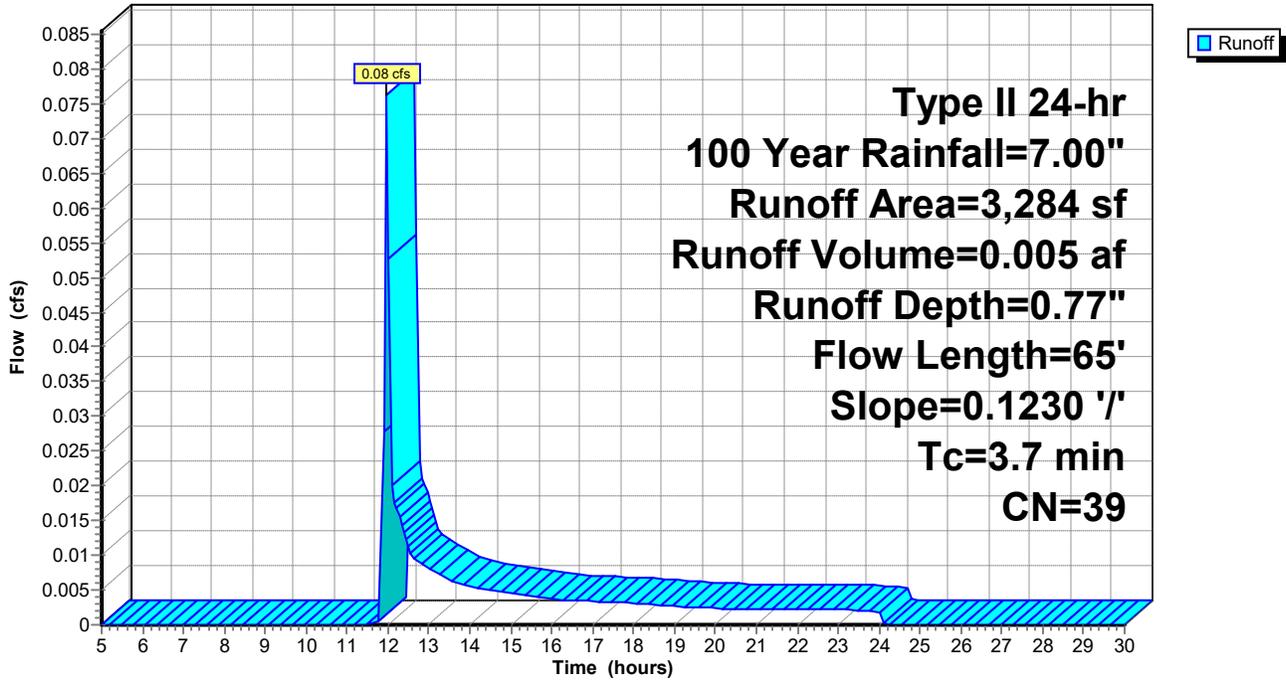
### Subcatchment 1: Trib 1

Hydrograph



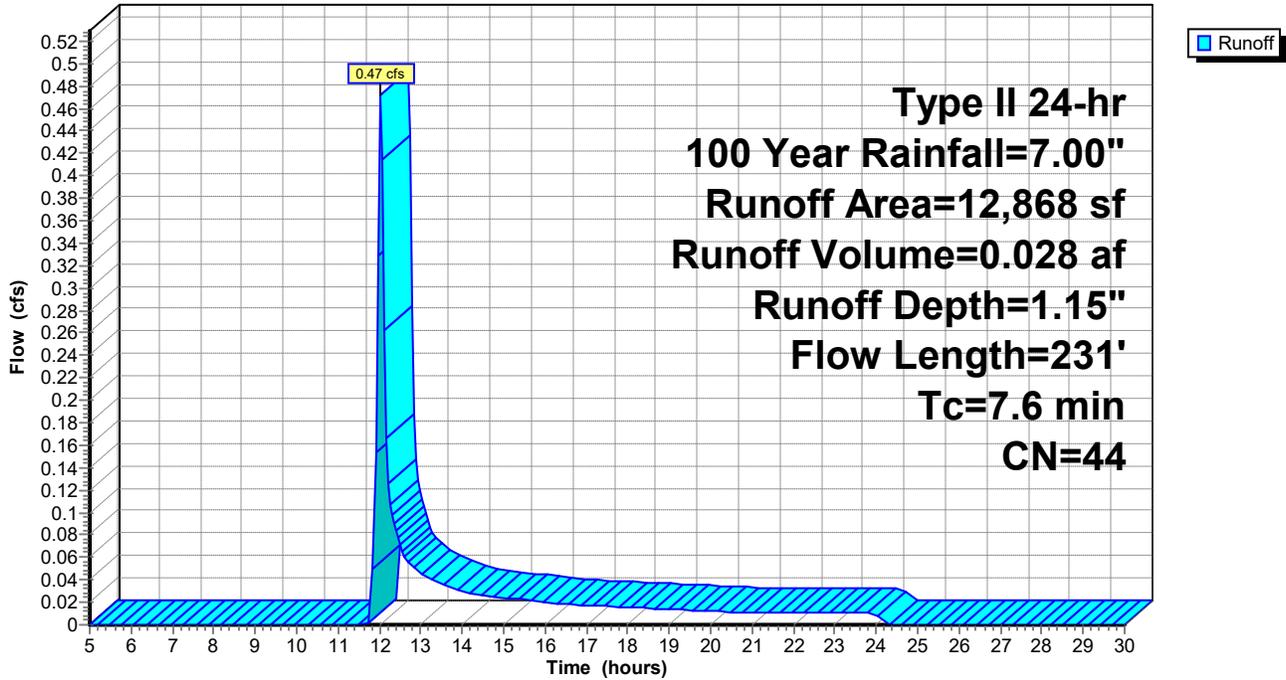
### Subcatchment 2: Trib 2

Hydrograph



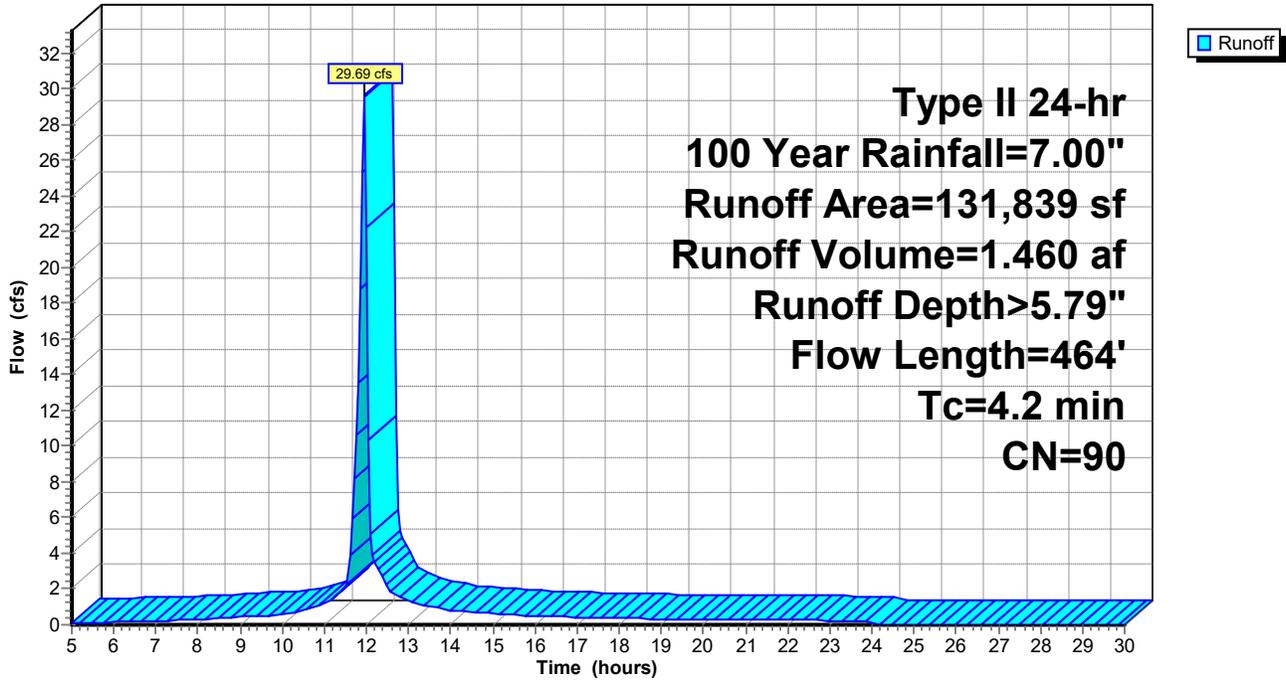
### Subcatchment 3: Trib 3

Hydrograph



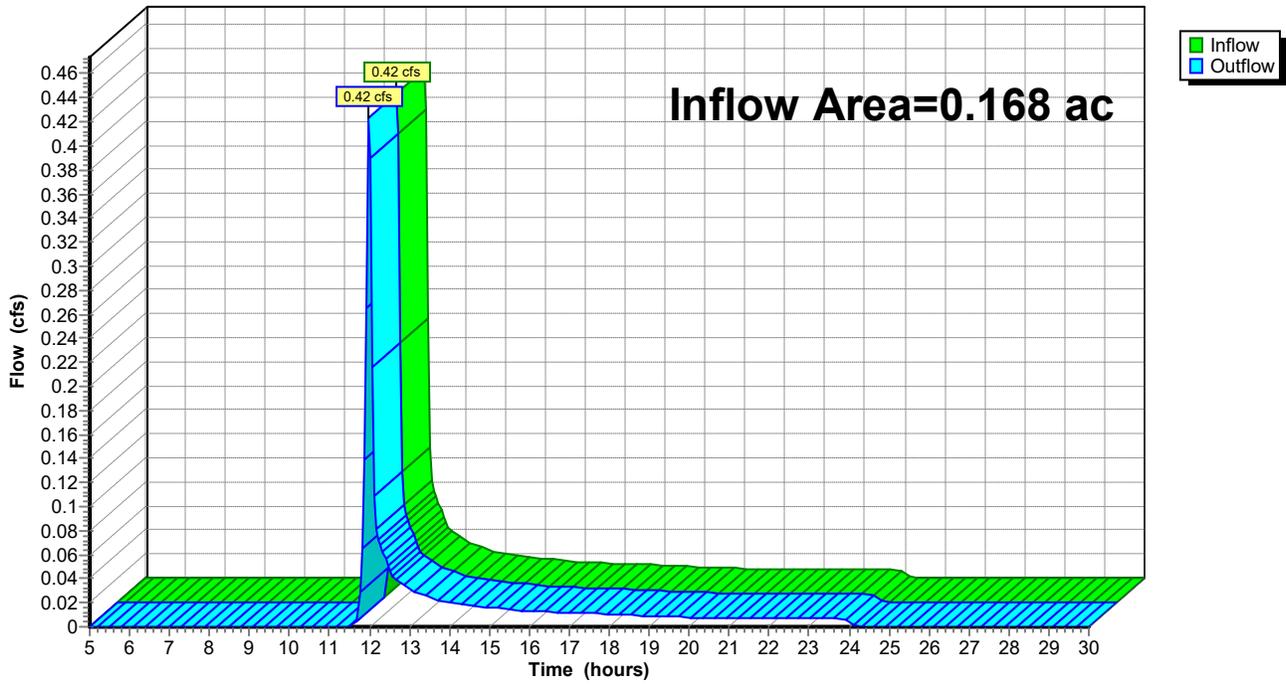
### Subcatchment 4: Trib 4

Hydrograph



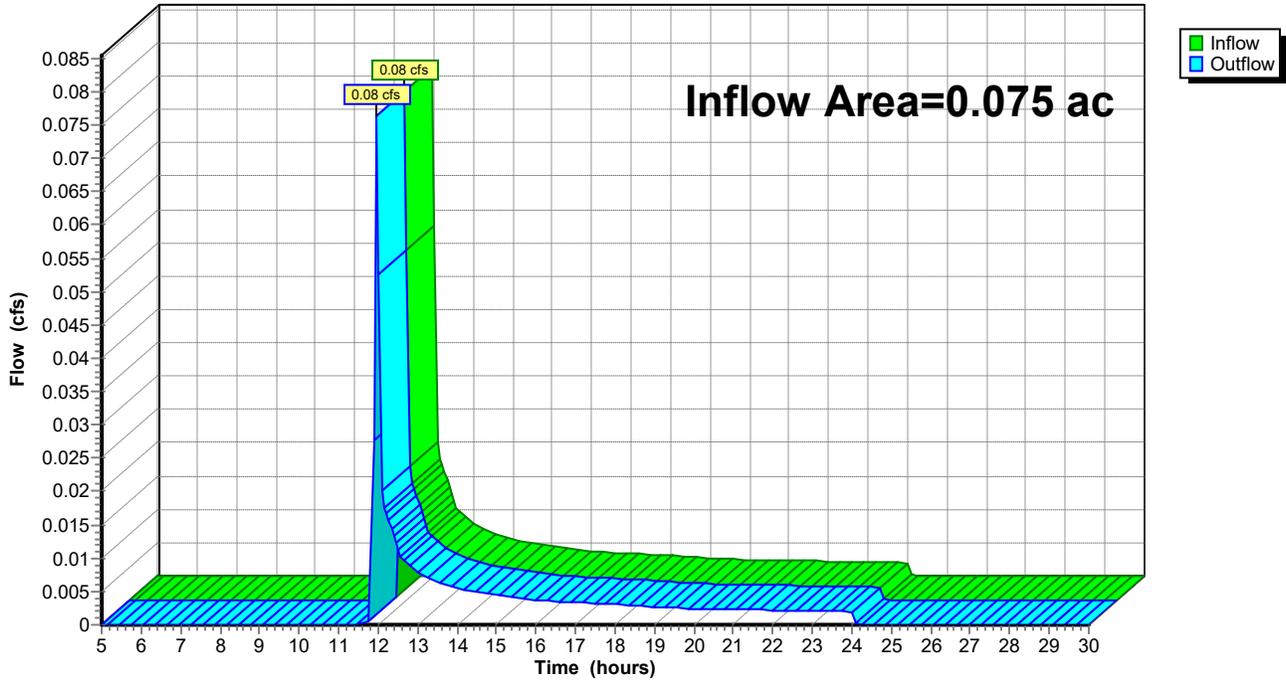
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



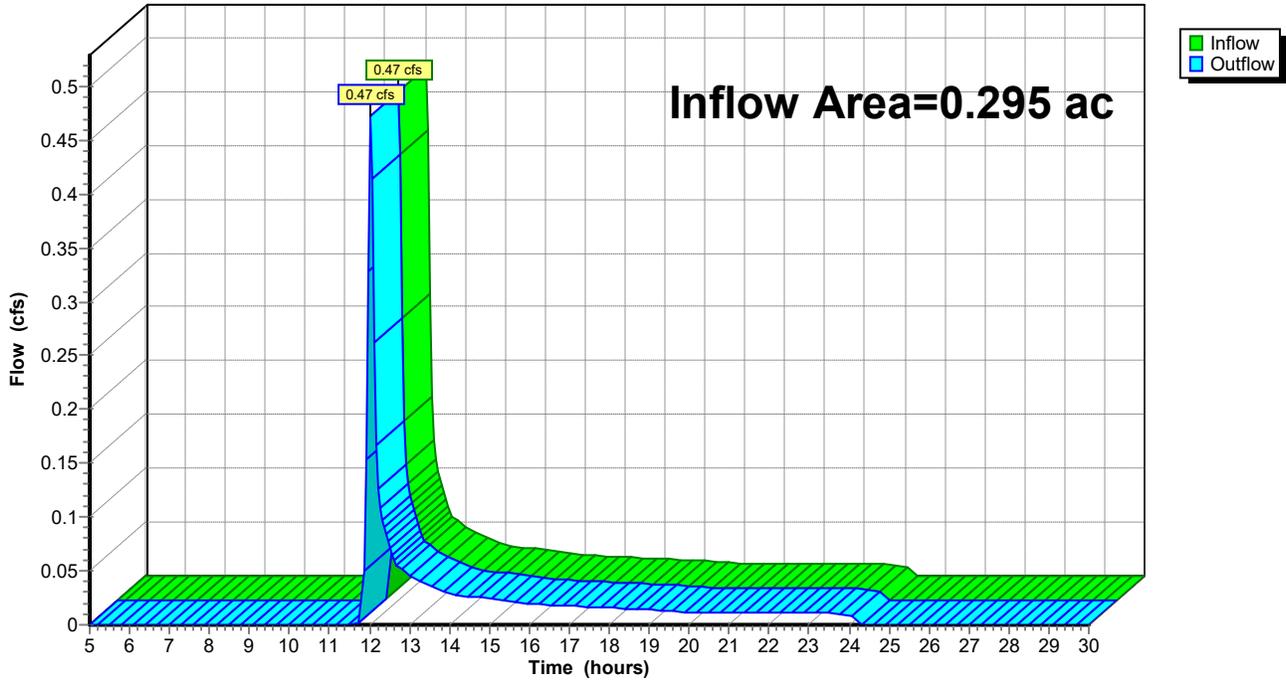
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph

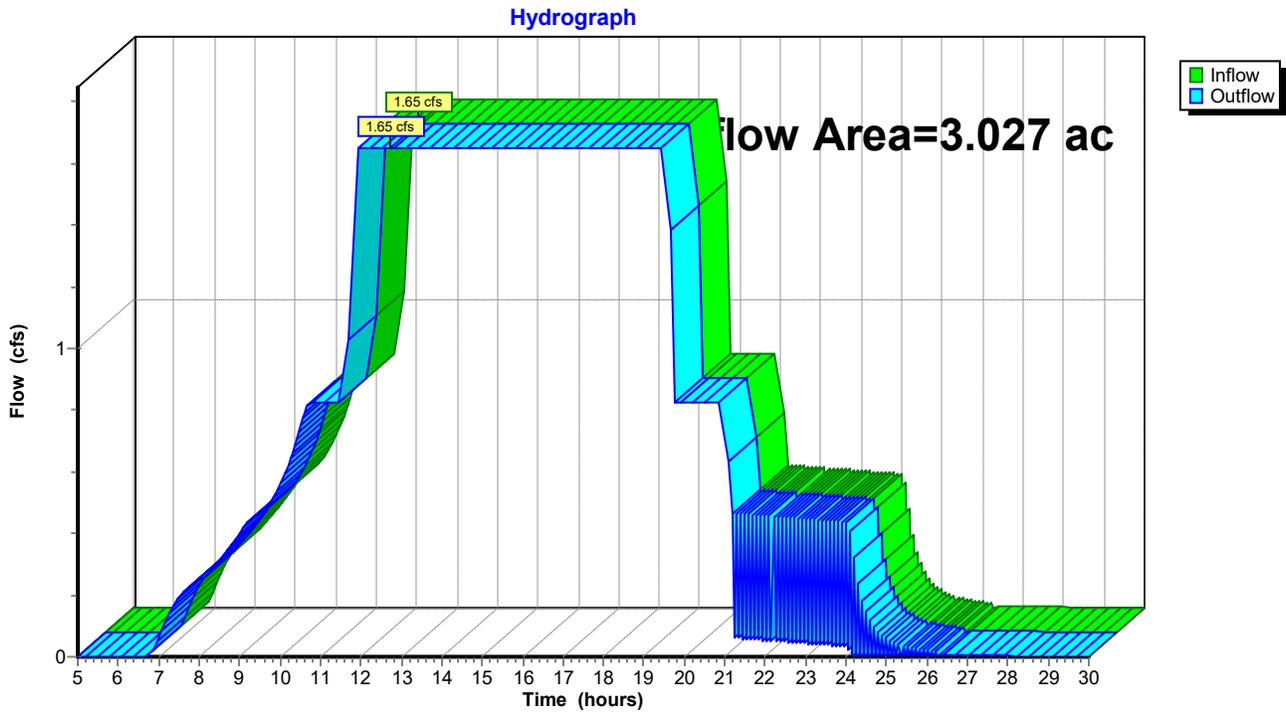


### Reach R3: Reach 3 (I-90)

Hydrograph

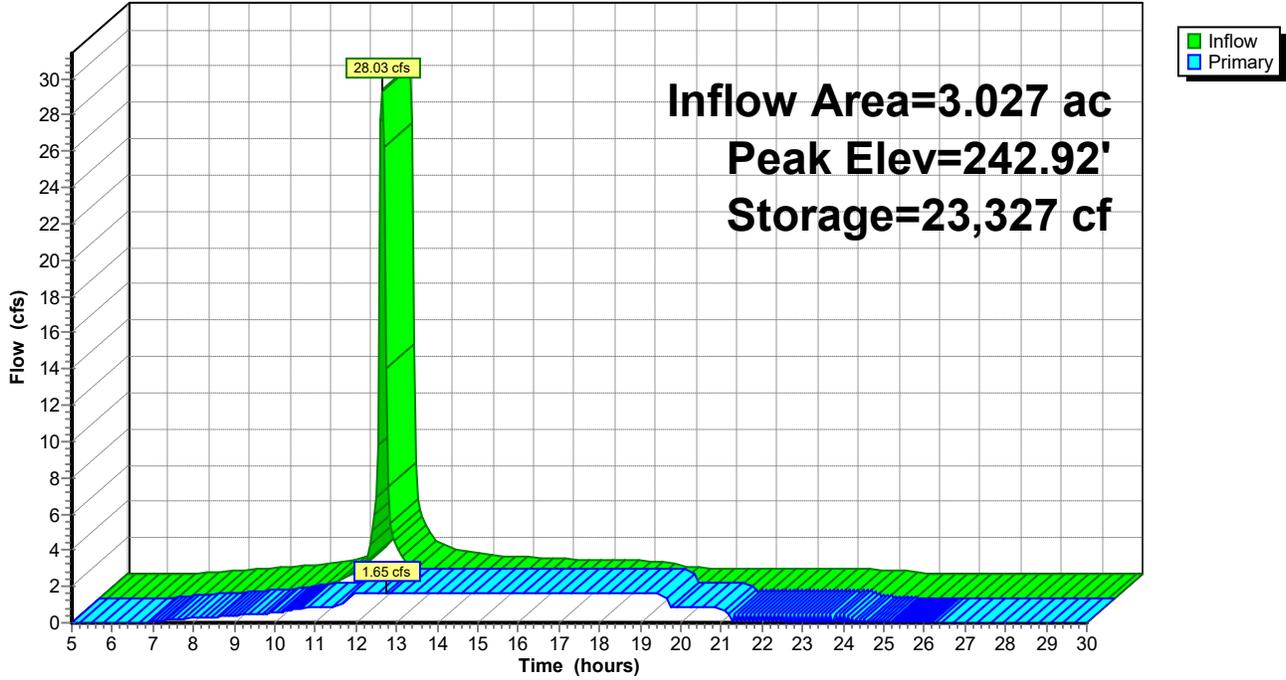


### Reach R4: Reach 4 (Recharge to Groundwater)



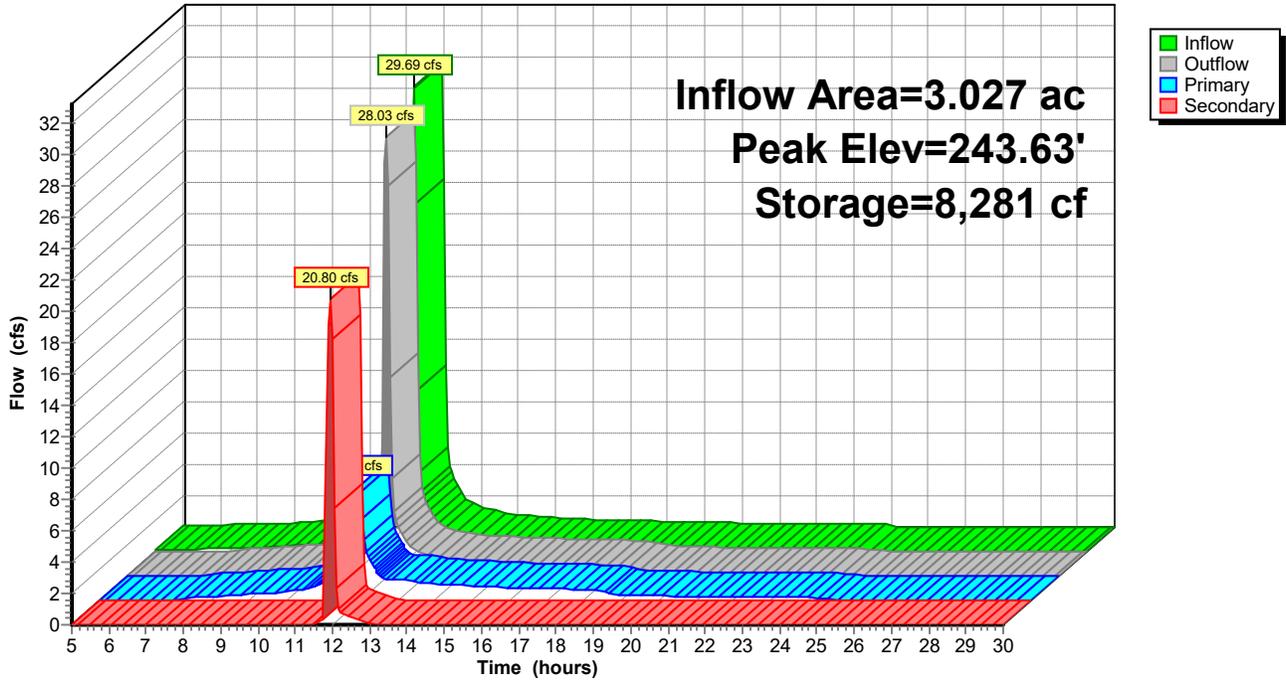
### Pond INFIL BASIN: INFILTRATION BASIN

Hydrograph



### Pond SED BASIN: SEDIMENTATION BASIN

Hydrograph



**200015-POST2**

Prepared by Microsoft

HydroCAD® 10.00 s/n 03289 © 2012 HydroCAD Software Solutions LLC

Type II 24-hr WQv Rainfall=1.20"

Printed 2/11/2021

Page 39

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1: Trib 1** Runoff Area=7,321 sf 15.68% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.0700 '/' Tc=4.7 min CN=48 Runoff=0.00 cfs 0.000 af

**Subcatchment 2: Trib 2** Runoff Area=3,284 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=65' Slope=0.1230 '/' Tc=3.7 min CN=39 Runoff=0.00 cfs 0.000 af

**Subcatchment 3: Trib 3** Runoff Area=12,868 sf 8.21% Impervious Runoff Depth=0.00"  
Flow Length=231' Tc=7.6 min CN=44 Runoff=0.00 cfs 0.000 af

**Subcatchment 4: Trib 4** Runoff Area=131,839 sf 85.67% Impervious Runoff Depth=0.46"  
Flow Length=464' Tc=4.2 min CN=90 Runoff=2.59 cfs 0.115 af

**Reach R1: Reach 1 (Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R2: Reach 2 (1395 Wash Ave)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R3: Reach 3 (I-90)** Inflow=0.00 cfs 0.000 af  
Outflow=0.00 cfs 0.000 af

**Reach R4: Reach 4 (Recharge to Groundwater)** Inflow=0.82 cfs 0.094 af  
Outflow=0.82 cfs 0.094 af

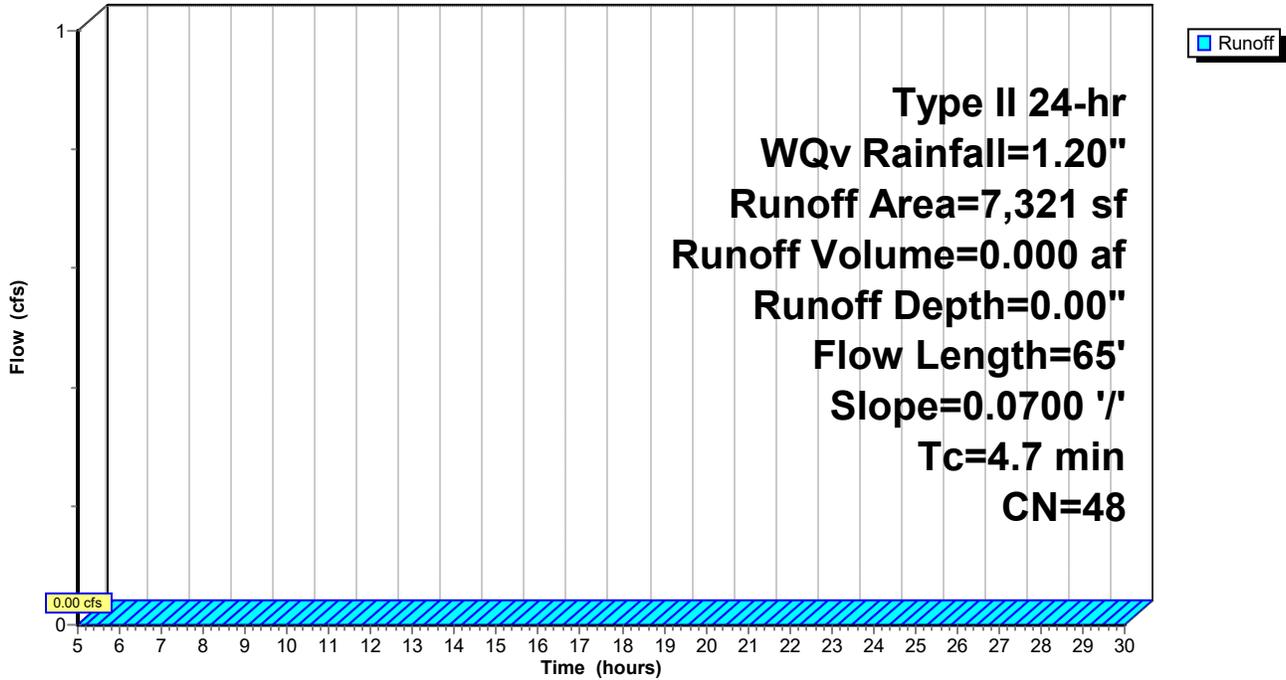
**Pond INFIL BASIN: INFILTRATION BASIN** Peak Elev=236.52' Storage=31 cf Inflow=0.96 cfs 0.094 af  
Outflow=0.82 cfs 0.094 af

**Pond SED BASIN: SEDIMENTATION BASIN** Peak Elev=240.00' Storage=1,796 cf Inflow=2.59 cfs 0.115 af  
Primary=0.96 cfs 0.094 af Secondary=0.00 cfs 0.000 af Outflow=0.96 cfs 0.094 af

**Total Runoff Area = 3.565 ac Runoff Volume = 0.115 af Average Runoff Depth = 0.39"**  
**25.86% Pervious = 0.922 ac 74.14% Impervious = 2.644 ac**

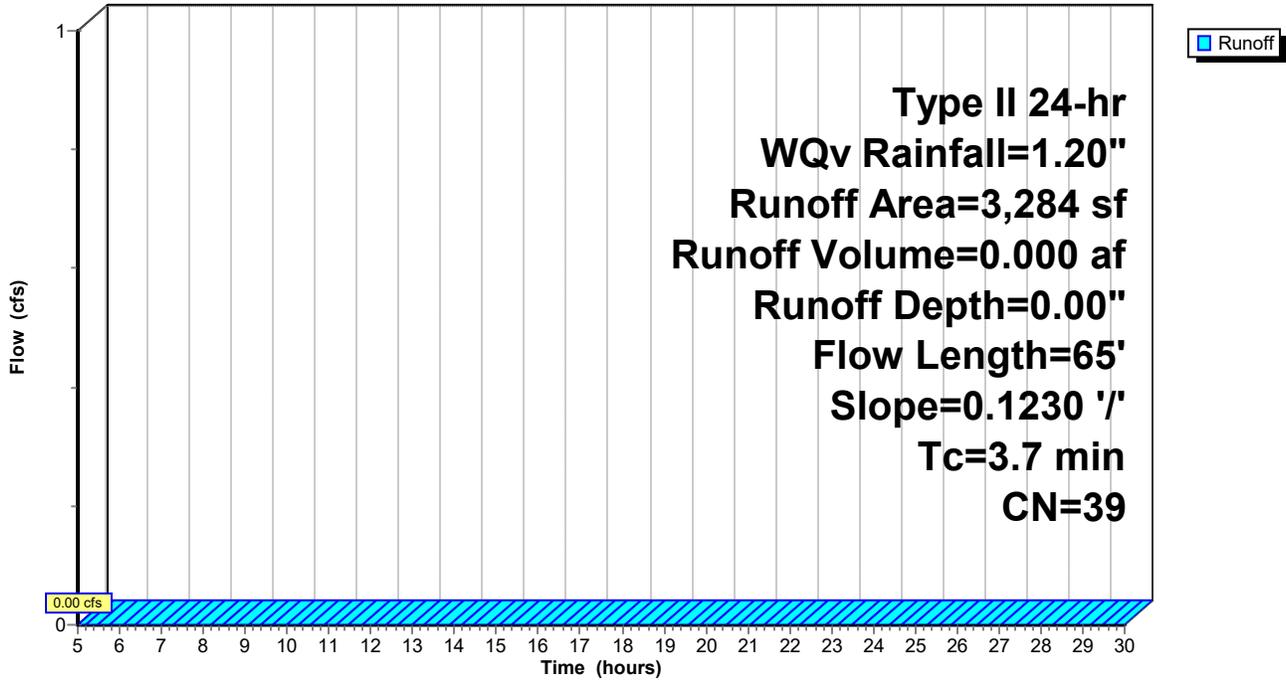
### Subcatchment 1: Trib 1

Hydrograph



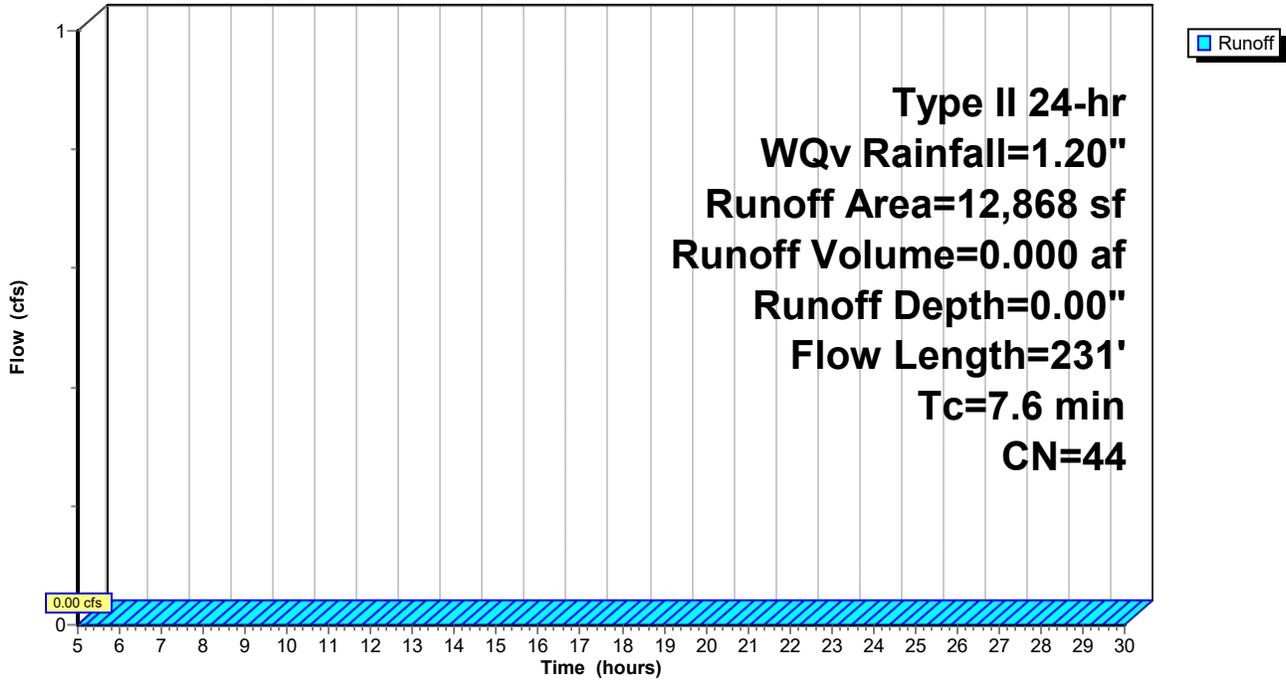
### Subcatchment 2: Trib 2

Hydrograph



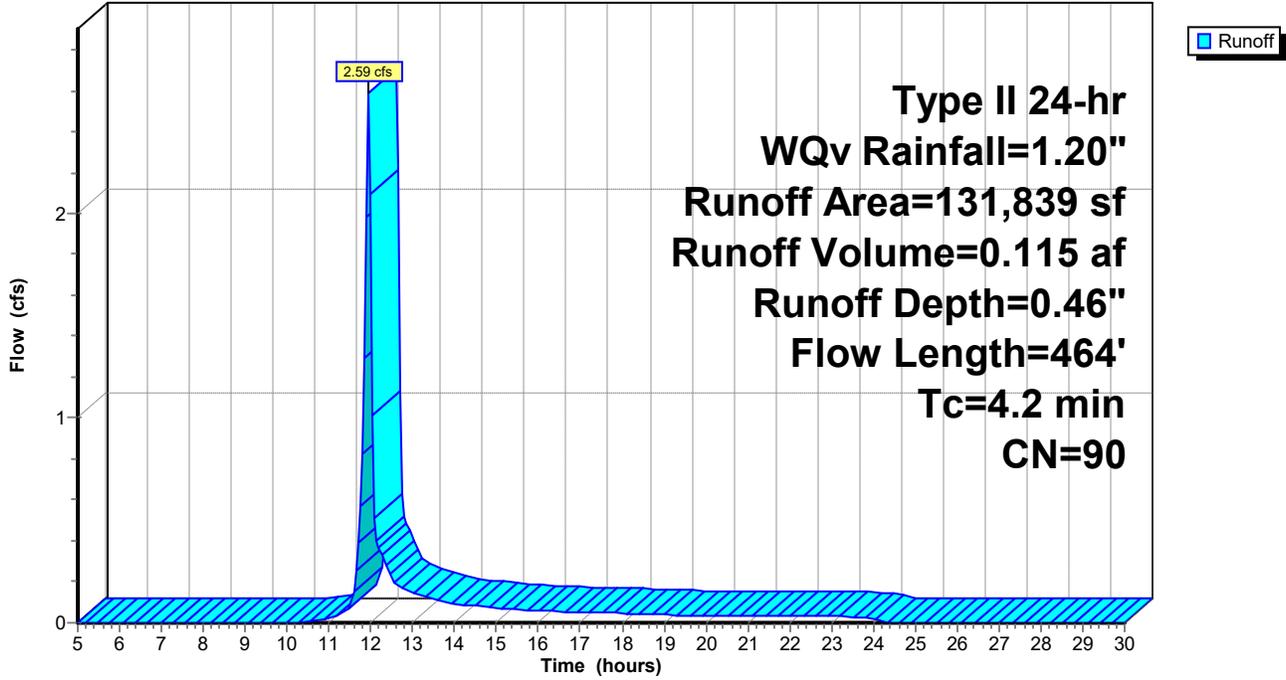
### Subcatchment 3: Trib 3

Hydrograph



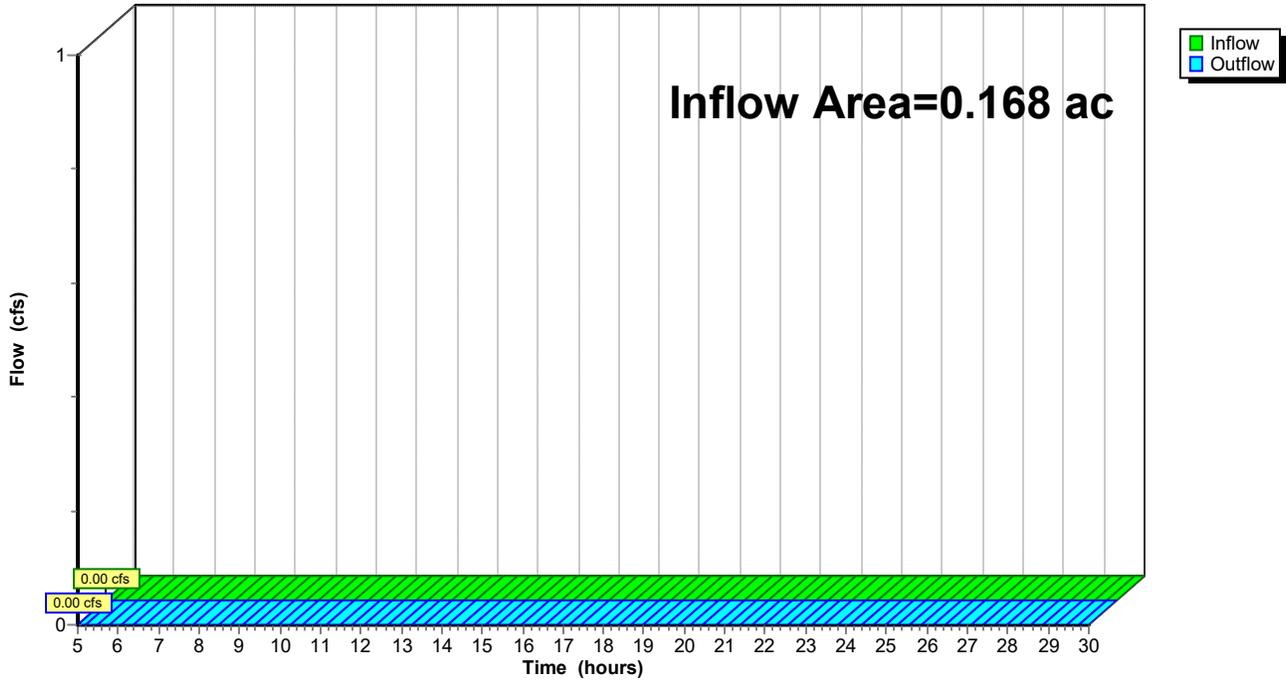
Subcatchment 4: Trib 4

Hydrograph



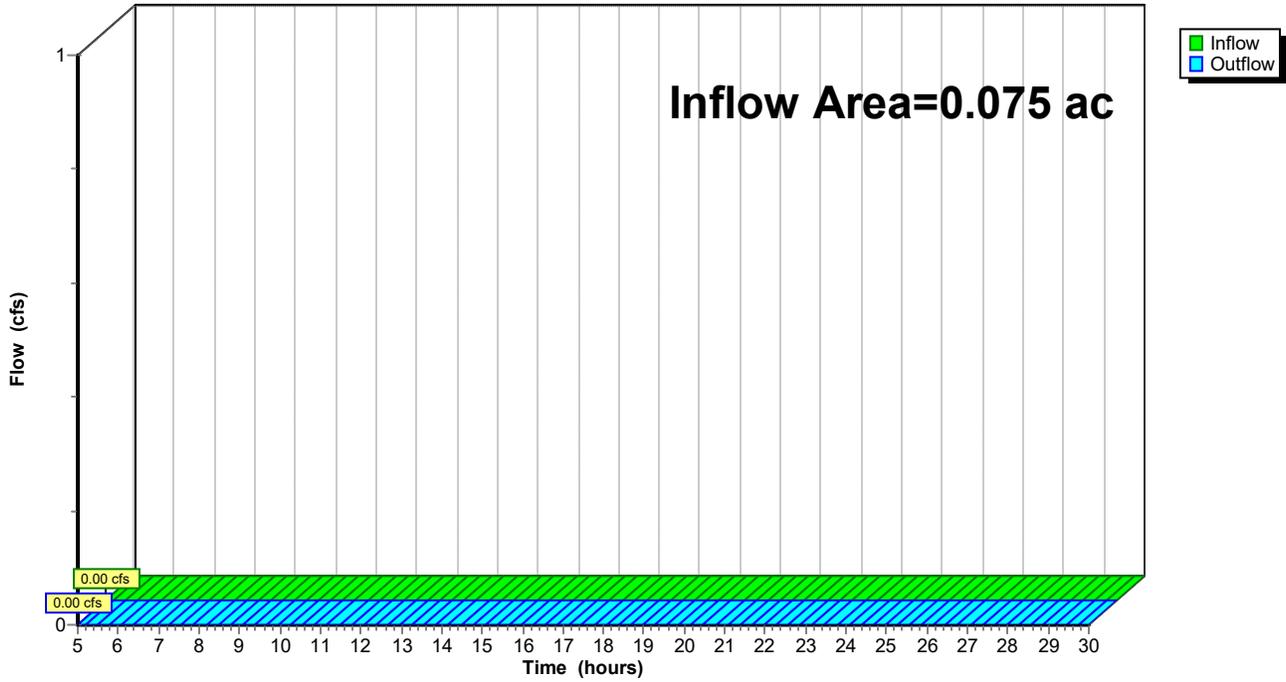
### Reach R1: Reach 1 (Wash Ave)

Hydrograph



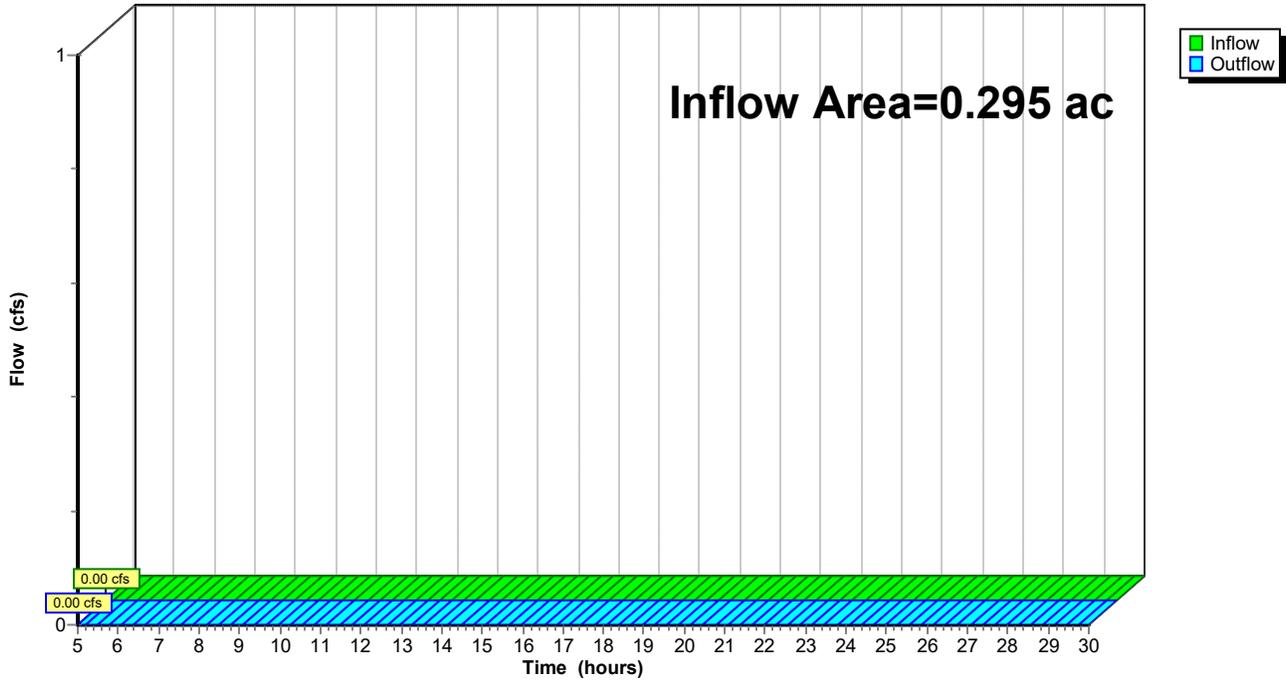
### Reach R2: Reach 2 (1395 Wash Ave)

Hydrograph



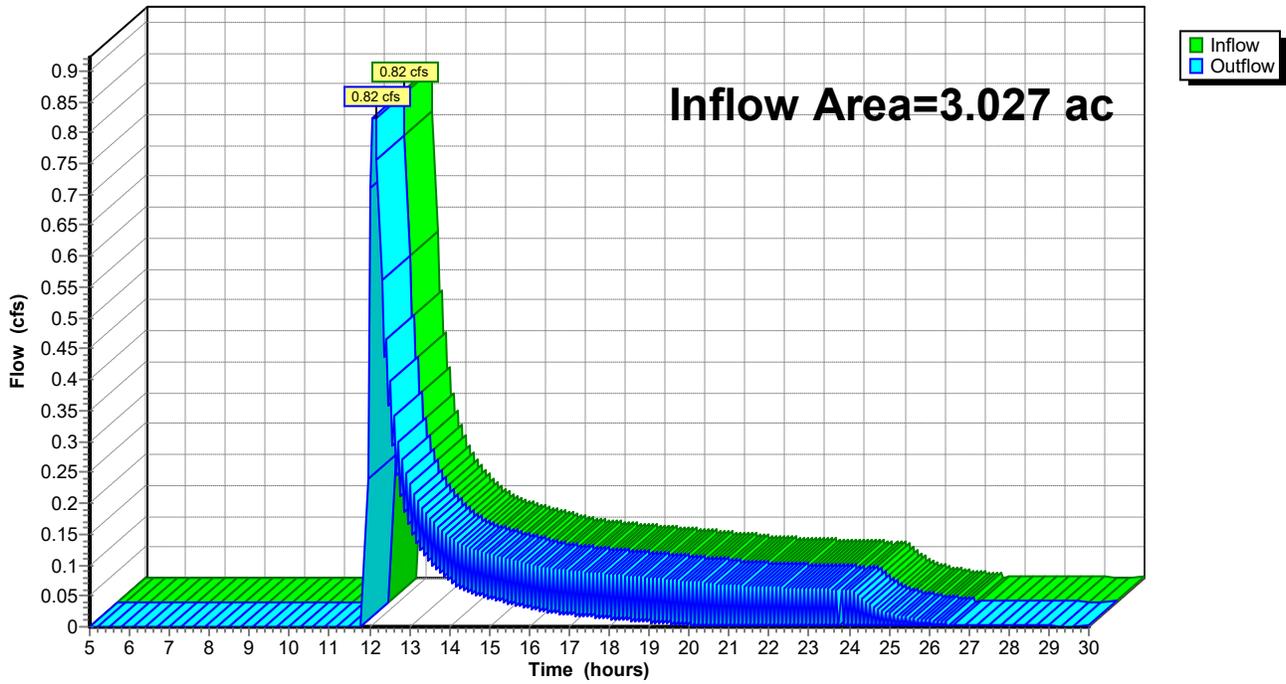
### Reach R3: Reach 3 (I-90)

Hydrograph



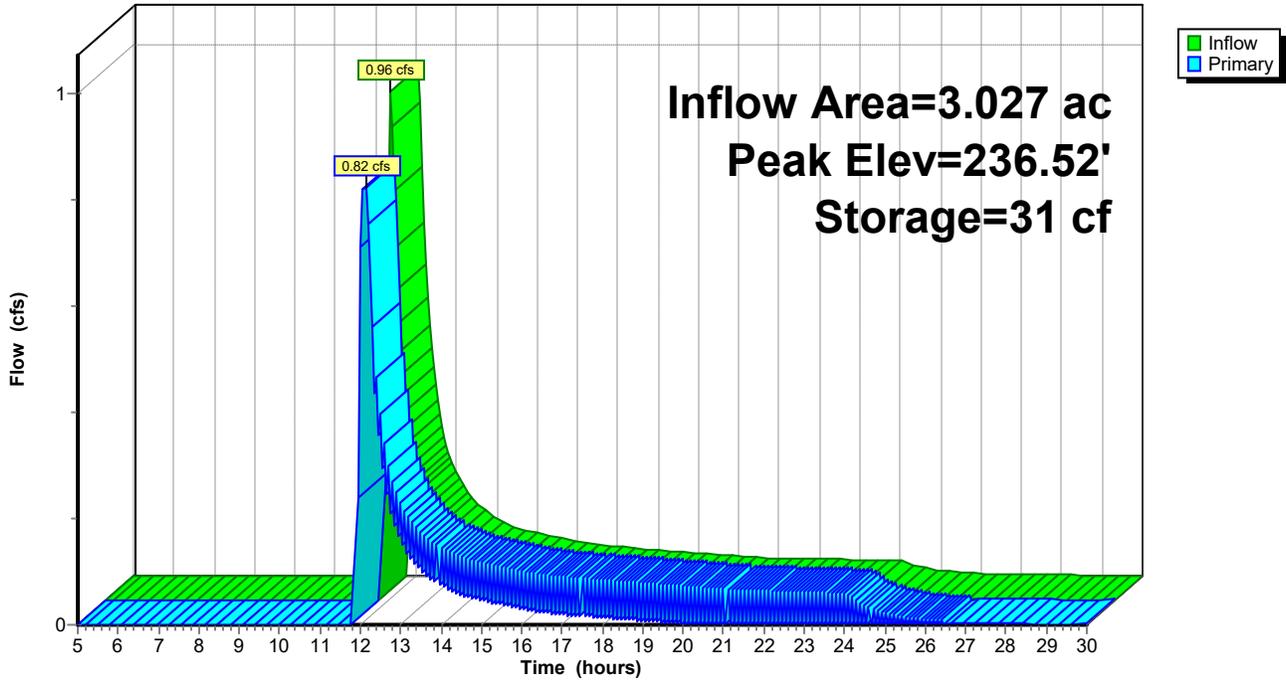
### Reach R4: Reach 4 (Recharge to Groundwater)

Hydrograph

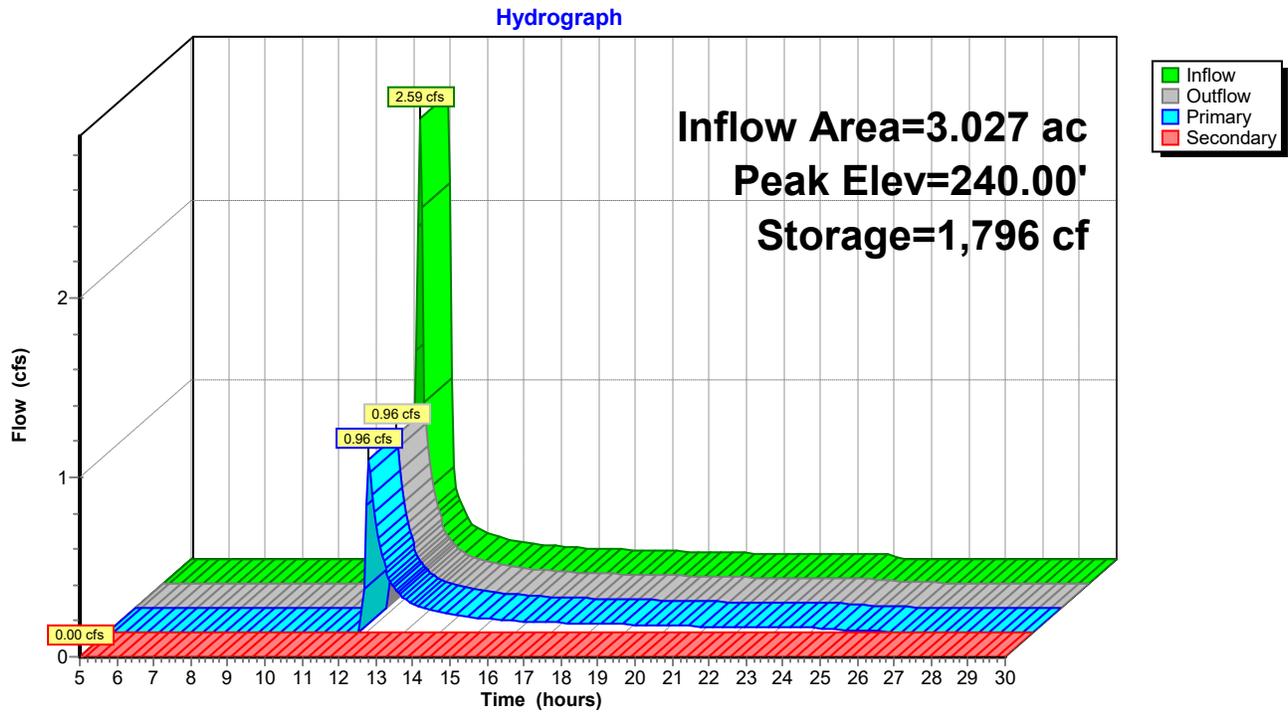


### Pond INFIL BASIN: INFILTRATION BASIN

Hydrograph



### Pond SED BASIN: SEDIMENTATION BASIN



**APPENDIX #5**

**MAINTENANCE PLAN**

Facility Owner (Responsible Party):  
1415 Washington Property LLC  
Liberty Plaza #2800  
New York, NY 10006

The facility owner will be responsible to provide capital funding for this facility. The source will be from infrastructure funds set aside for construction. On an annual basis the responsible party will budget funds to fund the annual operating and maintenance costs. The facility owner must maintain all drainage facilities, stormwater quantity control facilities and all stormwater quality control facilities in accordance with approved plans and with this maintenance manual. Complete inspection form and retain with SWPPP. Inspection may be performed by a Qualified Inspector or a Qualified Professional. The Qualified Inspector is defined in GP #0-20-001 as follows:

**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years. It can also mean a person that meets the *Qualified Professional qualifications in addition to the Qualified Inspector qualifications.*

The Qualified Professional is defined in GP #0-20-001 as follows:

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be

prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

The elements of this SWPPP which require inspection include:

**Overall Function of discharge structure and porous pavement**

This inspection includes pipe from roof drains to the drywell sections and underdrain pipes from the dry well. Also examine the quality of vegetation cover. If vegetation is not in healthy condition report to owner and schedule another site visit after vegetation is restored to required levels.

**Vegetation cover within the tributary area.** The inspection shall verify that on lawns or other seeded areas that vegetation covers a minimum of 90% of the exposed ground. Other areas such as mulch beds or landscaped areas shall be inspected to verify that proper mulching is in place.

**Housekeeping Section** – This section describes items requiring regular checking and should be conducted on a daily basis.

**Daily inspection.**

Debris cleanup – Remove and dispose of all debris encountered on parking area, on lawn areas or in area adjacent to public right-of-way.

Materials storage – Verify that all materials identified in the Housekeeping Section have been properly stored.

Winter Conditions and Transition Periods - Follow winter conditions for construction between November 15<sup>th</sup> and April 1<sup>st</sup>. After April 1<sup>st</sup> during spring thaw, if ground remains unstabilized extend winter conditions. Prior to November 15<sup>th</sup>, if freezing occurs and ground remains unstabilized extend winter conditions.

Oil & Grease – Any visible oil and grease shall be treated with proper materials to capture residue. Remove any materials from the site. If possible, determine cause of accumulation of oil & grease and address these.

**Monthly** inspection or inspection after every significant rainfall (0.5 inches in 24 hours) shall determine whether the following benchmarks are reached in which case appropriate action shall be taken.

Condition of vegetation –Areas with seeded lawns should be maintained in accordance with good cultural practices. Mow and remove clippings if required. Dead or diseased plant material shall be replaced.

**Annual** inspection shall determine whether the benchmarks listed in the checklist are met.

## Operation, Maintenance and Management Inspection Checklist (Complete in 2 Pages)

**Project:** Student Housing Project  
**Location:** 1415 Washington Avenue  
City of Albany, Albany County, NY  
**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_  
**Inspector:** \_\_\_\_\_

MAINTENANCE ITEM	SATISFACTORY(S)/ UNSATISFACTORY(U)	COMMENTS
<b><u>DAILY</u></b>		
<b><u>1. Cleanup</u></b>		
Contributing areas clean of debris	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
<b><u>2. Oil and Grease (Monthly)</u></b>		
Keep Pavement area free of		_____
of oil & grease	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
<b><u>3. Vegetation Control (Monthly)</u></b>		
Keep drainage area stabilized	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
No evidence of erosion	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
Area mowed and clipping removed	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
<b><u>4. Infiltration and Sediment Basins, Piping (Annual)</u></b>		
Structure, Top & Frame in Good Cond.	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
Silt build up less than 6 inches	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
Vacuum clean if silt build up greater than 6 inches	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
<b><u>5. Winter Conditions and Transition Periods (Daily)</u></b>		
Follow winter conditions for construction between November 15 <sup>th</sup>		_____
and April 1 <sup>st</sup>	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
After April 1 <sup>st</sup> during spring thaw, if ground remains unstabilized		_____
extend winter conditions	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____
Prior to November 15 <sup>th</sup> , if freezing occurs and ground remains unstabilized		_____
extend winter conditions	<input type="checkbox"/> (S) <input type="checkbox"/> (U)	_____



**APPENDIX #6**

**MAINTENANCE AGREEMENT**

STORMWATER MANAGEMENT SYSTEM MAINTENANCE AGREEMENT  
1415 Washington Avenue

THIS AGREEMENT ("Agreement") is made and entered into on the \_\_\_\_ day of \_\_\_\_\_, 2020, by and between 1415 Washington Property LLC with an address at Liberty Plaza #2800 New York, NY 10006 (hereinafter referred to as the "Facility Owner"), and

CITY OF ALBANY, a municipal corporation with an address at 24 Eagle Street, Albany, New York 12207 (hereinafter referred to as the "City").

WITNESSETH:

WHEREAS, the Facility Owner is the owner of the subject parcel of land in the City of Albany, County of Albany and State of New York as more particularly located at 1415 Washington Avenue, Albany New York.

WHEREAS, the City and the Facility Owner desire that the stormwater management system be built in accordance with the approved project documents and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components; and

WHEREAS, the City has requested this legally binding and enforceable maintenance agreement from the Facility Owner; and

WHEREAS, the Facility Owner is representing the following design documents, with their City approved revisions, as containing all necessary information to construct, operate and maintain the stormwater management system for the lifetime of the facility:

a. Plan set submitted to the City representing a stormwater management system including stormwater collection, conveyance and storage using structures designed and specified by Hershberg & Hershberg, Consulting Engineers, sealed by Daniel R. Hershberg, P.E., as the Engineer of Record. The plan sheets showing features associated with the stormwater management system are listed below.

<u>Sheet#</u>	<u>Date</u>	<u>Drawing Title</u>
C-1	1/24/20 Rev: 10/16/20	Existing Conditions and Demolition Plan
C-2	1/24/20 Rev: 10/16/20	Site Plan
C-3	1/24/20 Rev: 10/16/20	Water Main Plan/Profile and Details
C-4	1/24/20 Rev: 10/16/20	Sanitary Sewer Plan/Profile and Details
C-5 to C-6	1/24/20 Rev: 10/16/20	SWPPP Plan and Details
C-7 to C-8	1/24/20 Rev: 10/16/20	Erosion and Sediment Control Plan and Details
C-9	1/24/20 Rev: 10/16/20	Site Details
C-10	1/24/20 Rev: 10/16/20	Lighting Plan
C-11	1/24/20 Rev: 10/16/20	Maintenance and Protection of Traffic Plan
C-12	1/24/20 Rev: 10/16/20	Truck Routing Plan
L1 to L4	1/24/20 Rev: 10/16/20	Landscaping Plan

b. *STORM WATER POLLUTION PREVENTION PLAN (SWPPP) & STORM WATER MANAGEMENT REPORT (SWMR), 1415 Washington Avenue Student Housing prepared by Hershberg & Hershberg, Consulting Engineers and Land Surveyors, dated October 12, 2020,*

IN CONSIDERATION THEREOF, the parties agree as follow:

1. The Facility Owner shall be responsible for maintaining the storm water facility in a manner to prevent silt from becoming tributary to the City's storm water drainage system.
2. Operation and maintenance, including inspection and cleaning of the full storm water drainage system, shall be the responsibility of the Facility Owner.
3. In the event the Facility Owner fails to maintain the system in a manner to control storm water the City may order the system cleaned and bill the Facility Owner the full cost of this work at labor cost (direct labor plus 50% salary burden) and materials (at cost) if work is performed by the Department of Water & Water Supply; or the cost of a subcontractor plus 10% of the subcontractor's bill if the Department of Water & Water Supply obtains a subcontractor to perform the work. Invoices are payable to the Department of Water & Water Supply within ten (10) business days from the date of invoice. In the event payment for costs is not received within said ten (10) day period, the Department of Water & Water Supply shall have the right to file a lien in the amount of the invoice, together with reasonable costs of collection incurred in connection therewith, against the property of the Facility Owner.

4. The City has the right to access the premises for periodic inspections and to perform any maintenance of the stormwater system.

5. The Facility Owner shall disclose this Agreement to any successor or assignees in interest.

6. This Agreement is binding on the Facility Owner and any successor or assignees in interest hereof.

7. Facility Owner agrees to defend, indemnify, and save harmless the CITY and its officers, employees and agents, from and against all claims, actions, causes of action, injuries, damages, losses, liabilities, and expenses (including, without limitation, reasonable attorney's fees and court costs) arising out of, or in consequence of, any negligent or intentional act or omission of Facility Owner to the extent of its or their responsibility for such claims, actions, causes of action, injuries, damages, losses, liabilities, and expenses. The provisions of this Article shall survive any termination or expiration of this Agreement.

**[Signatures on next page]**

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their duly authorized officers as of the day and year first above written.

CITY OF ALBANY, NEW YORK

BY: \_\_\_\_\_  
KATHY M. SHEEHAN  
MAYOR, CITY OF ALBANY

REHABILITATION SUPPORT SERVICES, INC.

BY \_\_\_\_\_ -

STATE OF NEW YORK)

) ss.:

COUNTY OF ALBANY)

On the \_ day of \_\_\_\_\_, 202\_, before me the undersigned, a Notary Public in and for said State, personally appeared \_\_\_\_\_, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public

STATE OF NEW YORK)

) ss.:

COUNTY OF \_\_\_\_\_-)

On the \_ day of \_\_\_\_\_, 202\_, before me the undersigned, a Notary Public in and for said State, personally appeared \_\_\_\_\_, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public

**APPENDIX #7**

**SPILL RESPONSE PLAN**

## **SPILL RESPONSE PLAN**

### **1415 Washington Avenue**

In addition to the good housekeeping and material management practices discussed in relevant sections of this plan, the following practices will be implemented for spill prevention and cleanup:

Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies. Any spill in excess or suspected to be in excess of two gallons will be reported to the NYSDEC Spill Response Unit. Notification to NYSDEC (1-800-457- 7362) must be completed within two hours of the discovery of the spill.

Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to: absorbent pads, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

All spills will be cleaned up immediately after discovery.

The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with spilled substance.

Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.

The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

The contractor/trained individual will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area on the onsite construction office or trailer.

A Spill Response Report notification are provided below.

**SPILL RESPONSE REPORT**

**1415 Washington Avenue**

**Within 1 hour of a spill discovery less than 2 gallons in volume the following must be notified:**

1415 Washington Property LLC, 914-879-2005

City of Albany, Randy Milano, P.E., City Engineer, 518-427-7481

City of Albany, Neil O'Connor, P.E., 518-434-5300

***Within 1 hour of a spill discovery greater than 2 gallons in volume the following must be notified:***

NYSDEC Spill Response Hotline 800-457-7362

1415 Washington Property LLC, 914-879-2005

City of Albany, Randy Milano, P.E., City Engineer, 518-427-7481

City of Albany, Neil O'Connor, P.E., 518-434-5300

Spill Response Contractor, *To Be Designated*

## **APPENDIX #8**

# **GREEN INFRASTRUCTURE WORKSHEET**

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?..... **No**

Design Point: P= 1.20 inch *Manually enter P, Total Area and Impervious Cover.*

Breakdown of Subcatchments						
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Description
1	3.24	2.59	80%	0.77	10,860	Infiltration Basin
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	3.24	2.59	80%	0.77	10,860	Subtotal 1
<b>Total</b>	3.24	2.59	80%	0.77	10,860	Initial WQv

**0.25** **af**

Identify Runoff Reduction Techniques By Area			
Technique	Total Contributing Area	Contributing Impervious Area	Notes
	(Acre)	(Acre)	
Conservation of Natural Areas	0.00	0.00	<i>minimum 10,000 sf</i>
Riparian Buffers	0.00	0.00	<i>maximum contributing length 75 feet to 150 feet</i>
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	<i>Up to 100 sf directly connected impervious area may be subtracted per tree</i>
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	

Recalculate WQv after application of Area Reduction Techniques						
	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Runoff Coefficient Rv	WQv (ft <sup>3</sup> )	
"<<Initial WQv"	3.24	2.59	80%	0.77	10,860	
Subtract Area	0.00	0.00				
WQv adjusted after Area Reductions	<b>3.24</b>	<b>2.59</b>	80%	0.77	10,860	
Disconnection of Rooftops		0.00				
Adjusted WQv after Area Reduction and Rooftop Disconnect	3.24	2.59	80%	0.77	<b>10,860</b>	<b>0.25</b> <b>af</b>
WQv reduced by Area Reduction techniques					0	<b>0.00</b> <b>af</b>

Total Water Quality Volume Calculation

$$WQv(\text{acre-feet}) = [(P)(Rv)(A)] / 12$$

Additional Subcatchments						
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Description
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Subtotal	0.00	0.00			0	Subtotal

Total Water Quality Volume Calculation

$$WQv(\text{acre-feet}) = [(P)(Rv)(A)] / 12$$

0.00	af
------	----

Total Water Quality Volume Calculation

$$WQv(\text{acre-feet}) = [(P)(Rv)(A)] / 12$$

All Subcatchments						
Catchment	Total Area (Acres)	Impervious Cover (Acres)	Percent Impervious %	Runoff Coefficient Rv	WQv (ft <sup>3</sup> )	Description
1	3.24	2.59	0.80	0.77	10859.51	Infiltration
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techniques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	3.24	2.59	0	10860
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4				
	Bioretention & Infiltration Bioretention	F-5	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4)	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2)	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction →			0.00	0.00	0	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			3.24	2.59	0	10860
Totals by Standard SMP →			0.00	0.00		0
Totals ( Area + Volume + all SMPs) →			3.24	2.59	0	10,860
Impervious Cover v		okay				

	Total Area $v$	okay				
--	----------------	------	--	--	--	--

# Minimum RRv

**Enter the Soils Data for the site**

Soil Group	Acres	S
A		55%
B		40%
C	2.68	30%
D		20%
Total Area	2.68	

**Calculate the Minimum RRv**

S =	<b>0.30</b>	
Impervious =	2.59	<i>acre</i>
Precipitation	1.2	<i>in</i>
Rv	0.95	
<b>Minimum RRv</b>	<b>3,215</b>	<b><i>ft3</i></b>
	0.07	<i>af</i>

# NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	10860	0.249
30	Total RRV Provided	0	0.000
31	Is RRV Provided $\geq$ WQv Required?	No	
32	Minimum RRV	3215	0.074
32a	Is RRV Provided $\geq$ Minimum RRV Required?	No	
Contact Regional Office			
33a	Total WQv Treated	10860	0.249
34	Sum of Volume Reduced & Treated	10860	0.249
34	Sum of Volume Reduced and Treated	10860	0.249
35	Is Sum RRV Provided and WQv Provided $\geq$ WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	<i>Cpv</i>	
37	Overbank	<i>Qp</i>	
37	Extreme Flood Control	<i>Qf</i>	
	Are Quantity Control requirements met?		

# NOI QUESTIONS

0.00%

# Planning

Practice	Description	Application
<b>Preservation of Undisturbed Areas</b>	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	Considered & Applied
<b>Preservation of Buffers</b>	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	Considered & Not Applied
<b>Reduction of Clearing and Grading</b>	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Considered & Applied
<b>Locating Development in Less Sensitive Areas</b>	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Considered & Applied
<b>Open Space Design</b>	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	Considered & Not Applied
<b>Soil Restoration</b>	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Considered & Applied
<b>Roadway Reduction</b>	Minimize roadway widths and lengths to reduce site impervious area	Considered & Applied
<b>Sidewalk Reduction</b>	Minimize sidewalk lengths and widths to reduce site impervious area	Considered & Applied
<b>Driveway Reduction</b>	Minimize driveway lengths and widths to reduce site impervious area	Considered & Applied
<b>Cul-de-sac Reduction</b>	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	
<b>Building Footprint Reduction</b>	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	
<b>Parking Reduction</b>	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	

# Infiltration Basin Worksheet

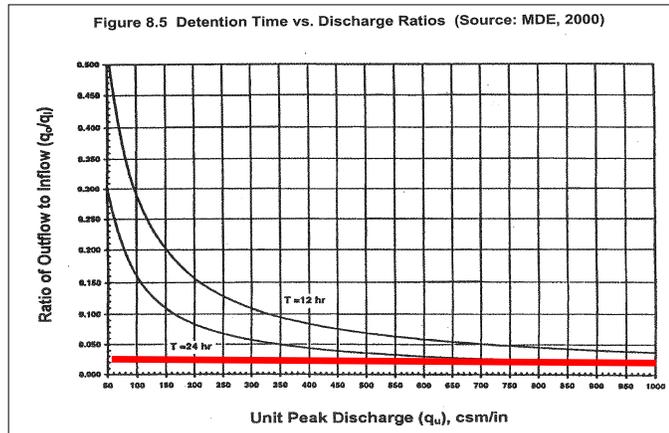
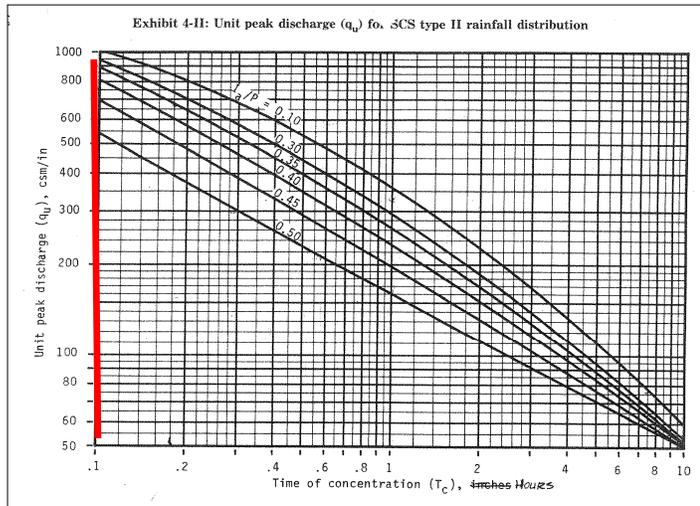
<b>Design Point:</b>							
<b>Enter Site Data For Drainage Area to be Treated by Practice</b>							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft <sup>3</sup> )	Precipitation (in)	Description
1	3.24	2.59	0.80	0.77	10859.51	1.20	Infiltration Basin
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	80%	0.77	10,860	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	ft <sup>3</sup>	
<b>Pretreatment Techniques to Prevent Clogging</b>							
Infiltration Rate			7.65	in/h	Okay		
Pretreatment Sizing			75	% WQv	25% minimum; 50% if >2 in/hr 100% if >5in/hour		
Pretreatment Required Volume			8,145	ft <sup>3</sup>			
Pretreatment Provided			8,281	ft <sup>3</sup>			
Pretreatment Techniques utilized			<i>Sedimentation Basin</i>				
<b>Size An Infiltration Basin</b>							
Design Volume	10,860	ft <sup>3</sup>	WQv				
Basal Area Required	0	ft <sup>2</sup>	<i>Infiltration practices shall be designed to exfiltrate the entire WQv through the floor of each practice.</i>				
Basal Area Provided	0	ft <sup>2</sup>					
Design Depth	0.00	ft					
Volume Provided	0	ft <sup>3</sup>	<i>Storage Volume provided in infiltration basin area (not including pretreatment.</i>				
<b>Determine Runoff Reduction</b>							
<b>RRv</b>	<b>0</b>	ft <sup>3</sup>	<b>90% of the storage provided in the basin or WQv whichever is smaller</b>				
Volume Treated	10,860	ft <sup>3</sup>	<i>This is the portion of the WQv that is not reduced/infiltrated</i>				
Sizing v	Error		<i>The infiltration basin must provide storage equal to or greater than the WQv of the contributing area.</i>				

## **APPENDIX #9**

### **CHANNEL PROTECTION VOLUME**

Tributary Area #1

Initial abstraction (Ia) $Ia=(200/CN-2)$	0.222
CN	90
P inches	2.5
Ia/p	0.089
Tc (hours)	4.200
T = 24 hours	
$q_o/q_i$ (from figure 8.5)	0.100
$V_s/V_r=0.683-1.43(q_o/q_i)+1.64(q_o/q_i)^2-0.804(q_o/q_i)^3$	0.556
Q runoff in inches ( 1 year storm)	1.530
A (tributary area in acres)	2.59
$V_s=Cpv=V_s/V_r \times Q \times 1/12 \times A$ (in ac-ft)	0.183
Cpv (in cubic feet) required	7,992
Cpv (in cubic feet) provided	13,464



**ATTACHMENT NO. 1**

**SPDES PERMIT #GP-0-20-001**



Department of  
Environmental  
Conservation

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
SPDES GENERAL PERMIT  
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70  
of the Environmental Conservation Law

Effective Date: January 29, 2015

Expiration Date: January 28, 2020

John J. Ferguson  
Chief Permit Administrator



---

Authorized Signature

1 / 12 / 15

Date

Address: NYS DEC  
Division of Environmental Permits  
625 Broadway, 4th Floor  
Albany, N.Y. 12233-1750

## PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York’s *State Pollutant Discharge Elimination System (“SPDES”)* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law (“ECL”)*.

This general permit (“permit”) is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent (“NOI”) to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation (“the Department”) regional office (see Appendix G). They are also available on the Department’s website at:

<http://www.dec.ny.gov/>

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

**\*Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES  
 FROM CONSTRUCTION ACTIVITIES**

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(Part I)

I.

## Part I. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

This permit authorizes stormwater *discharges to surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

### B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharges* authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan (“SWPPP”) the reason(s) for the deviation or alternative design and provide information

(Part I.B.1)

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

- (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;
- (ii) Control stormwater *discharges* to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;
- (iii) *Minimize* the amount of soil exposed during *construction activity*;
- (iv) *Minimize* the disturbance of *steep slopes*;
- (v) *Minimize* sediment *discharges* from the site;
- (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;
- (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and
- (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization.** In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering.** *Discharges* from dewatering activities, including *discharges*

(Part I.B.1.c)

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

- (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;
- (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and
- (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited Discharges.** The following *discharges* are prohibited:

- (i) Wastewater from washout of concrete;
- (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- (iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;
- (iv) Soaps or solvents used in vehicle and equipment washing; and
- (v) Toxic or hazardous substances from a spill or other release.

f. **Surface Outlets.** When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

(Part I.B.1.f)

at or below the outlet does not occur.

### **C. Post-construction Stormwater Management Practice Requirements**

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (“SMPs”) are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

#### **a. Sizing Criteria for New Development**

- (i) Runoff Reduction Volume (“RRv”): Reduce the total Water Quality Volume (“WQv”) by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual.** The remaining portion of the total WQv

(Part I.C.2.a.ii)

that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (“Cpv”): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (“Qp”): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.
- (v) Extreme Flood Control Criteria (“Qf”): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.

**b. Sizing Criteria for New Development in Enhanced Phosphorus Removal Watershed**

- (i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

(Part I.C.2.b.ii)

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.

**c. Sizing Criteria for Redevelopment Activity**

(Part I.C.2.c.i)

- (i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.
- (1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
  - (2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
  - (3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
  - (4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

- (ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

- (iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

**d. Sizing Criteria for Combination of Redevelopment Activity and New Development**

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

**D. Maintaining Water Quality**

The Department expects that compliance with the conditions of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or

(Part I.D)

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

#### **E. Eligibility Under This General Permit**

1. This permit may authorize all *discharges* of stormwater from *construction activity to surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges* from *construction activities*.
3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharges* from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharges* from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharges* must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.
4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

#### **F. Activities Which Are Ineligible for Coverage Under This General Permit**

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharges after construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities* or *discharges from construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.
5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which disturb one or more acres of land with no existing *impervious cover*; and
  - c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.
7. *Construction activities* for linear transportation projects and linear utility projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which disturb two or more acres of land with no existing *impervious cover*; and
  - c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
    - 1-5 acres of disturbance - 20 feet
    - 5-20 acres of disturbance - 50 feet
    - 20+ acres of disturbance - 100 feet, or
  - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
    - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
    - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
    - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
    - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
  - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
    - (i) No Affect
    - (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

## II. Part II. OBTAINING PERMIT COVERAGE

### A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (<http://www.dec.ny.gov/>). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

**NOTICE OF INTENT  
NYS DEC, Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, New York 12233-3505**

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (*Change of Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the “SWPPP Preparer Certification” statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

## **B. Permit Authorization**

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
  - a. project review pursuant to the State Environmental Quality Review Act (“SEQRA”) have been satisfied, when SEQRA is applicable. See the Department’s website (<http://www.dec.ny.gov/>) for more information,
  - b. where required, all necessary Department permits subject to the *Uniform Procedures Act (“UPA”)* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,
  - c. the final SWPPP has been prepared, and
  - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

- (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
- (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
- (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

- (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
- (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.

4. The Department may suspend or deny an *owner’s or operator’s* coverage

(Part II.B.4)

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

### **C. General Requirements For Owners or Operators With Permit Coverage**

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:
  - a. The *owner or operator* shall

(Part II.C.3.a)

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

- b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005.
  - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
  - d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.
  - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

#### **D. Permit Coverage for Discharges Authorized Under GP-0-10-001**

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of a *construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

#### **E. Change of *Owner or Operator***

2. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

III. **Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**

**A. General SWPPP Requirements**

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:
  - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;
  - b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and
  - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority.
5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

(Part III.A.6)

*trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

## **B. Required SWPPP Contents**

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:
  - a. Background information about the scope of the project, including the location, type and size of project;
  - b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge(s)*;
  - c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
  - d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

(Part III.B.1.d)

activity at the site that results in soil disturbance;

- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;
- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005;
- j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;
- k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and
- l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Include the reason for the deviation or alternative design

(Part III.B.1.I)

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

The post-construction stormwater management practice component of the SWPPP shall include the following:

- a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;
- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
- c. A Stormwater Modeling and Analysis Report that includes:
  - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
  - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;
  - (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;
  - (iv) Summary table, with supporting calculations, which demonstrates

(Part III.B.2.c.iv)

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

- (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and
  - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;
- d. Soil testing results and locations (test pits, borings);
  - e. Infiltration test results, when required; and
  - f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.
3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria*, Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

### **C. Required SWPPP Components by Project Type**

Unless otherwise notified by the Department, *owners or operators of construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators of the construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

#### IV. Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

##### A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

##### B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.
2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

##### C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:
  - a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
  - d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:
  - a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
  - b. For construction sites where soil disturbance activities are on-going and

(Part IV.C.2.b)

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

- c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.
- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice*” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.
- e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

(Part IV.C.2.e)

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.
4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:
  - a. Date and time of inspection;
  - b. Name and title of person(s) performing inspection;
  - c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
  - d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
  - e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
  - f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
  - g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
  - h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
  - j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
  - k. Identification and status of all corrective actions that were required by previous inspection; and
  - l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
  6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

## V. Part V. TERMINATION OF PERMIT COVERAGE

### A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:
  - a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;
  - b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
  - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.
  - d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice certification statements*” on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the “*MS4 Acceptance*” statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:
  - a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,
  - b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
  - c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,
  - d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

## VI. Part VI. REPORTING AND RETENTION OF RECORDS

### A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

### B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

**VII. Part VII. STANDARD PERMIT CONDITIONS**

**A. Duty to Comply**

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

**B. Continuation of the Expired General Permit**

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

**C. Enforcement**

Failure of the *owner or operator*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

**D. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

(Part VII.E)

### **E. Duty to Mitigate**

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### **F. Duty to Provide Information**

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

### **G. Other Information**

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

### **H. Signatory Requirements**

1. All NOIs and NOTs shall be signed as follows:
  - a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - (i) a president, secretary, treasurer, or vice-president of the

(Part VII.H.1.a.i)

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

- (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

- (i) the chief executive officer of the agency, or

- (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

(Part VII.H.2.b)

individual or any individual occupying a named position) and,

- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

#### **I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

#### **J. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

#### **K. Requirement to Obtain Coverage Under an Alternative Permit**

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharger* authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharger* in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

(Part VII.K.1)

*discharge* under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge(s)*, the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

#### **L. Proper Operation and Maintenance**

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

#### **M. Inspection and Entry**

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.
4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

**N. Permit Actions**

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

**O. Definitions**

Definitions of key terms are included in Appendix A of this permit.

**P. Re-Opener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

**Q. Penalties for Falsification of Forms and Reports**

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

**R. Other Permits**

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

## VIII. APPENDIX A

### Definitions

**Alter Hydrology from Pre to Post-Development Conditions** - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer** - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

**Commence (Commencement of) Construction Activities** - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

**Construction Activity(ies)** - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Direct Discharge (to a specific surface waterbody)** - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)** - means any addition of any pollutant to waters of the State through an outlet or point source.

**Environmental Conservation Law (ECL)** - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Equivalent (Equivalence)** – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization** - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**General SPDES permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

**Groundwater(s)** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Historic Property** – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

**Impervious Area (Cover)** - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

**Larger Common Plan of Development or Sale** - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

**Minimize** – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a *combined sewer*; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System (NPDES)** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**New Development** – means any land disturbance that does meet the definition of Redevelopment Activity included in this appendix.

**NOI Acknowledgment Letter** - means the letter that the Department sends to an owner or operator to acknowledge the Department’s receipt and acceptance of a complete Notice of Intent. This letter documents the owner’s or operator’s authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

**Owner or Operator** - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

**Performance Criteria** – means the design criteria listed under the “Required Elements” sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf ) in Part I.C.2. of the permit.

**Pollutant** - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

**Redevelopment Activity(ies)** – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Regulated, Traditional Land Use Control MS4** - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

**Routine Maintenance Activity** - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

**Site limitations** – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

**State Pollutant Discharge Elimination System (SPDES)** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

**Steep Slope** – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Loads (TMDLs)** - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

**Trained Contractor** - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

**Uniform Procedures Act (UPA) Permit** - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

IX. APPENDIX B

**Required SWPPP Components by Project Type**

**Table 1  
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP  
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS**

<p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</b></p> <ul style="list-style-type: none"> <li>• Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> to one of the 303(d) segments listed in Appendix E</li> <li>• Single family residential subdivisions with 25% or less impervious cover at total site build-out and <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E</li> <li>• Construction of a barn or other agricultural building, silo, stock yard or pen.</li> </ul>
<p><b>The following construction activities that involve soil disturbances of one (1) or more acres of land:</b></p> <ul style="list-style-type: none"> <li>• Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains</li> <li>• Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects</li> <li>• Bike paths and trails</li> <li>• Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project</li> <li>• Slope stabilization projects</li> <li>• Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics</li> <li>• Spoil areas that will be covered with vegetation</li> <li>• Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that <i>alter hydrology from pre to post development</i> conditions</li> <li>• Athletic fields (natural grass) that do not include the construction or reconstruction of <i>impervious area</i> <u>and</u> do not <i>alter hydrology from pre to post development</i> conditions</li> <li>• Demolition project where vegetation will be established and no redevelopment is planned</li> <li>• Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with <i>impervious cover</i></li> <li>• Structural practices as identified in Table II in the “Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State”, excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area</li> </ul>
<p><b>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</b></p> <ul style="list-style-type: none"> <li>• All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.</li> </ul>

**Table 2**  
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES**  
**POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

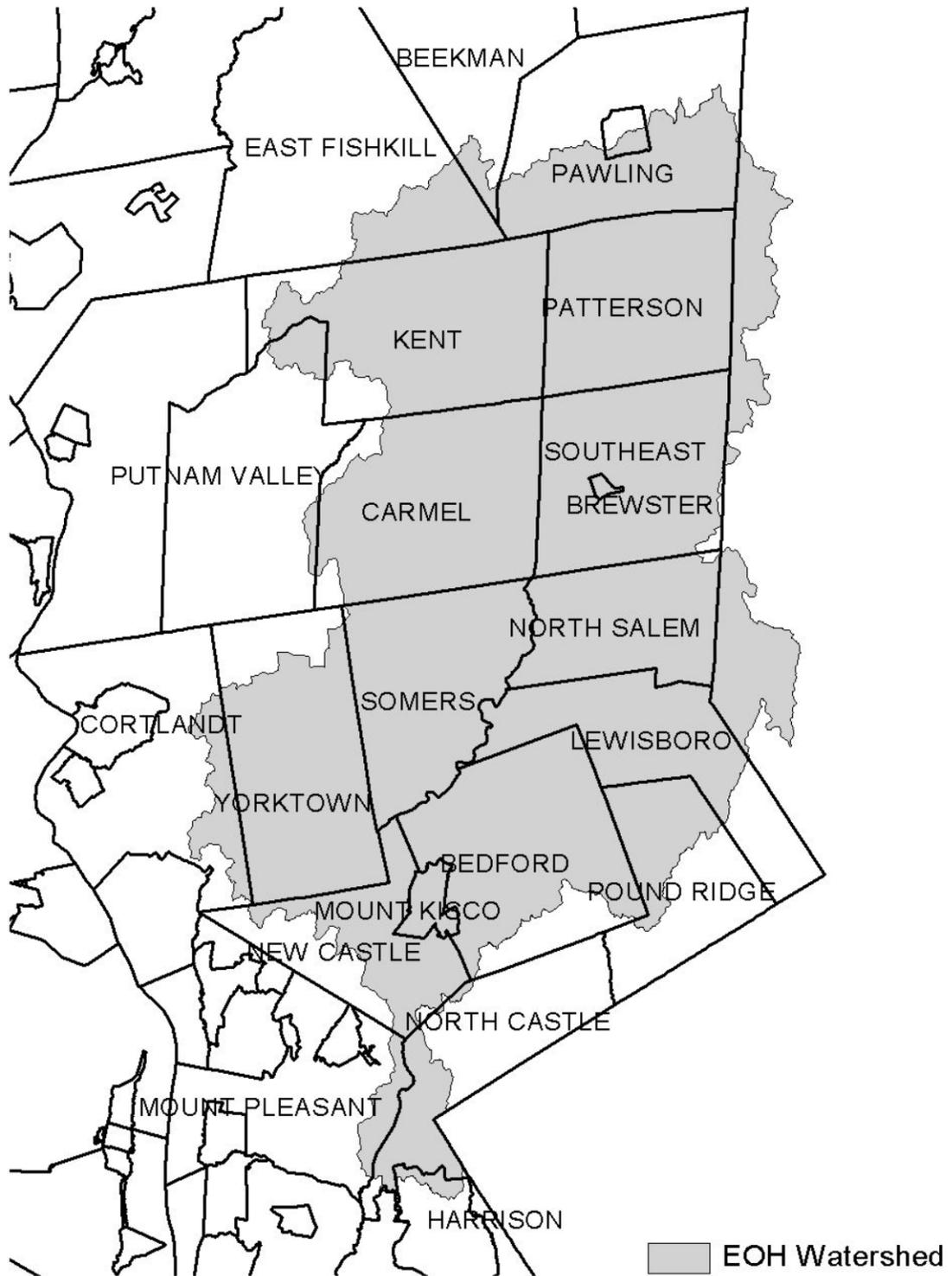
- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

**APPENDIX C****Watersheds Where Enhanced Phosphorus Removal Standards Are Required**

**Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).**

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

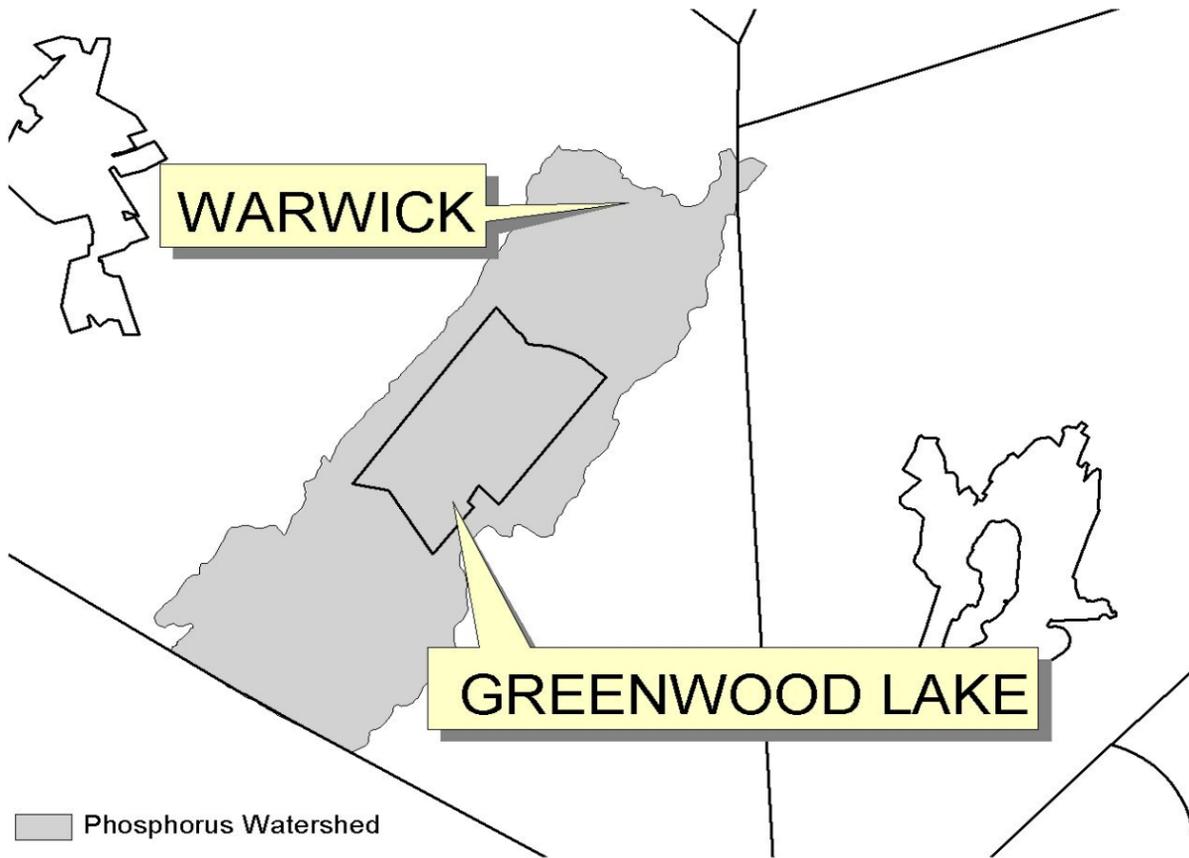
**Figure 1 - New York City Watershed East of the Hudson**



**Figure 2 - Onondaga Lake Watershed**



**Figure 3 - Greenwood Lake Watershed**



**Figure 4 - Oscawana Lake Watershed**

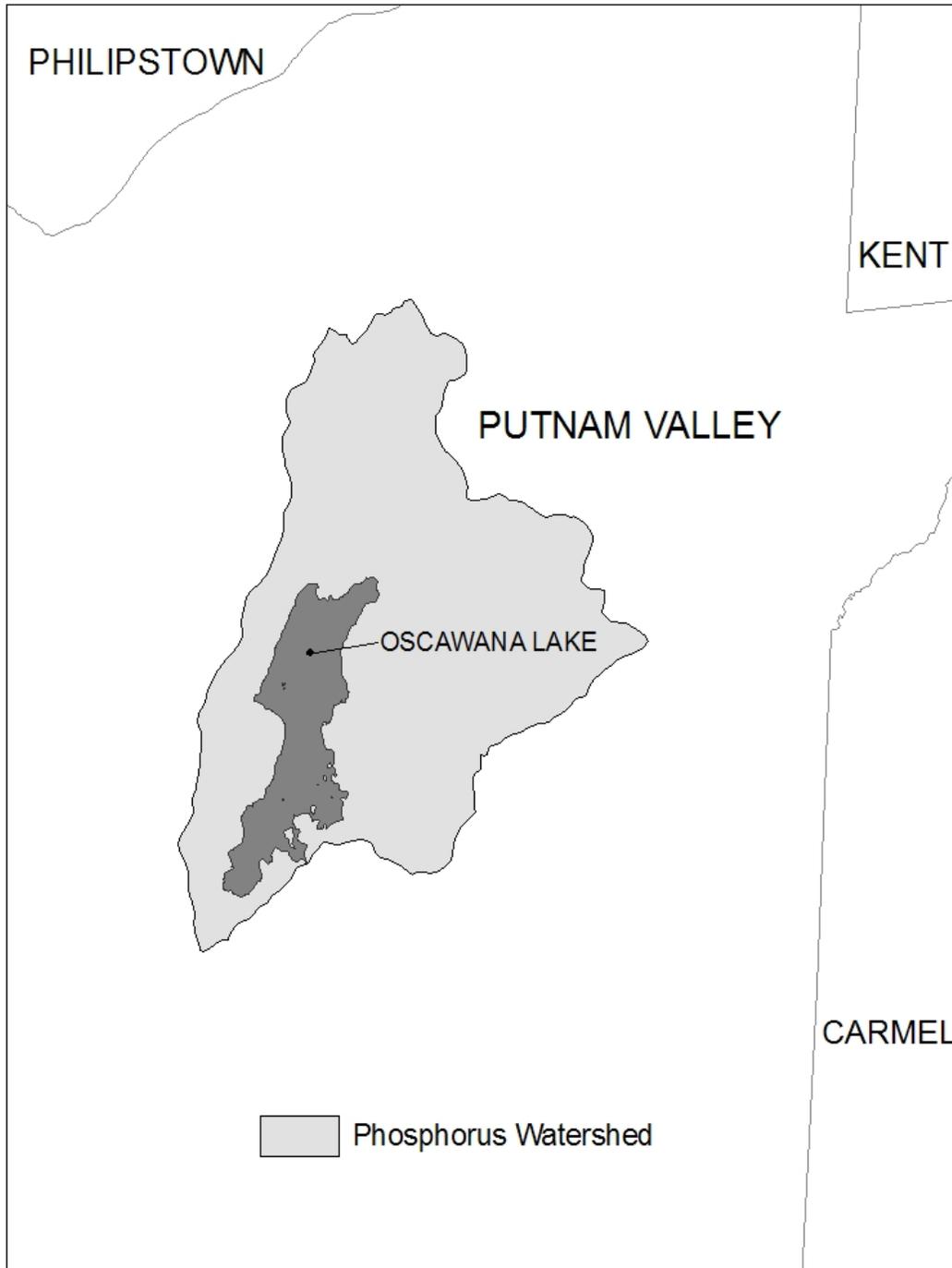
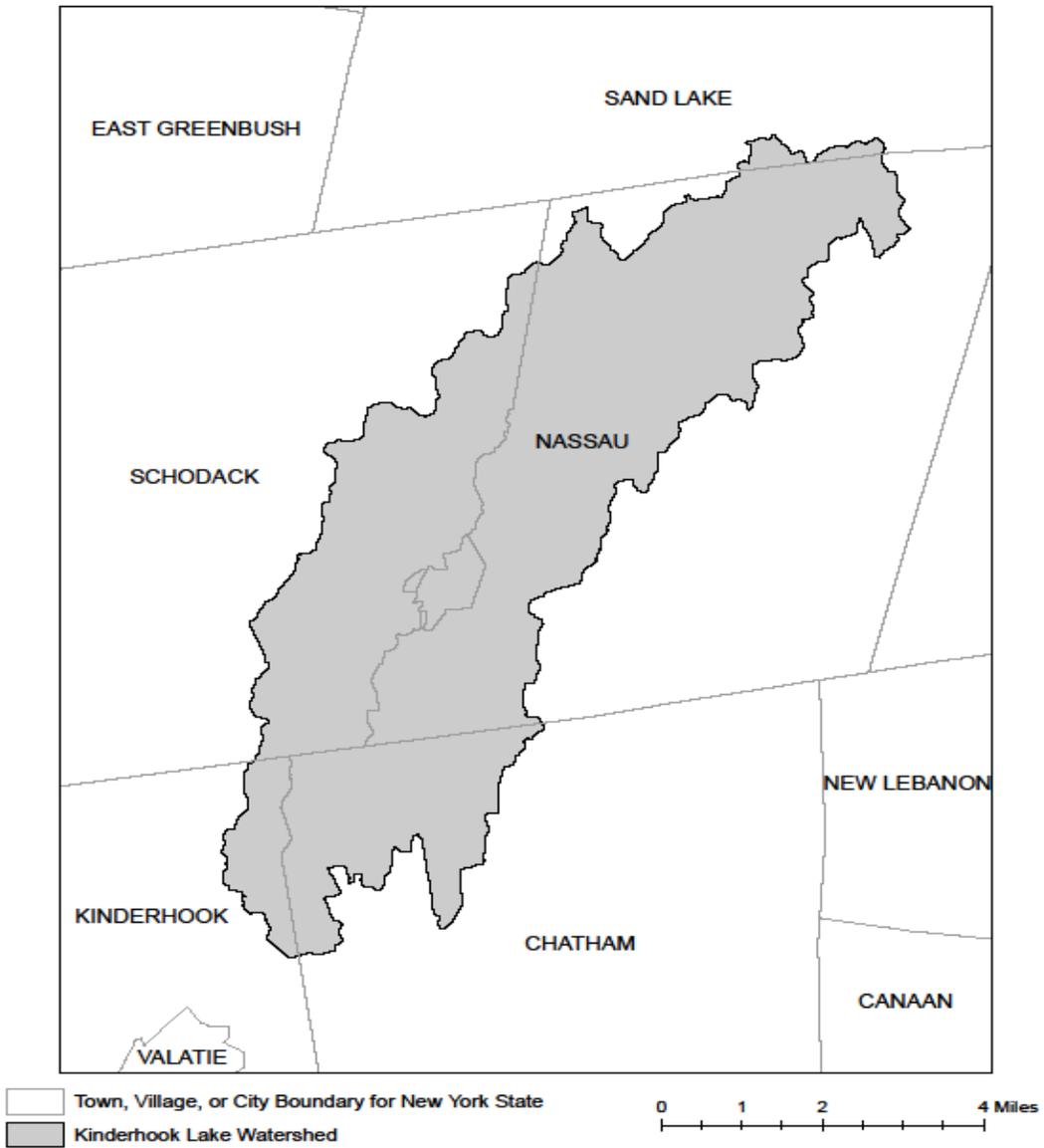


Figure 5: Kinderhook Lake Watershed



XI. **APPENDIX D**

**Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.**

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

XII. APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015.

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Greene	Sleepy Hollow Lake
Albany	Basic Creek Reservoir	Herkimer	Steele Creek tribs
Allegheny	Amity Lake, Saunders Pond	Kings	Hendrix Creek
Bronx	Van Cortlandt Lake	Lewis	Mill Creek/South Branch and tribs
Broome	Whitney Point Lake/Reservoir	Livingston	Conesus Lake
Broome	Fly Pond, Deer Lake	Livingston	Jaycox Creek and tribs
Broome	Minor Tribs to Lower Susquehanna (north)	Livingston	Mill Creek and minor tribs
Cattaraugus	Allegheny River/Reservoir	Livingston	Bradner Creek and tribs
Cattaraugus	Case Lake	Livingston	Christie Creek and tribs
Cattaraugus	Linlyco/Club Pond	Monroe	Lake Ontario Shoreline, Western
Cayuga	Duck Lake	Monroe	Mill Creek/Blue Pond Outlet and tribs
Chautauqua	Chautauqua Lake, North	Monroe	Rochester Embayment - East
Chautauqua	Chautauqua Lake, South	Monroe	Rochester Embayment - West
Chautauqua	Bear Lake	Monroe	Unnamed Trib to Honeoye Creek
Chautauqua	Chadakoin River and tribs	Monroe	Genesee River, Lower, Main Stem
Chautauqua	Lower Cassadaga Lake	Monroe	Genesee River, Middle, Main Stem
Chautauqua	Middle Cassadaga Lake	Monroe	Black Creek, Lower, and minor tribs
Chautauqua	Findley Lake	Monroe	Buck Pond
Clinton	Great Chazy River, Lower, Main Stem	Monroe	Long Pond
Columbia	Kinderhook Lake	Monroe	Cranberry Pond
Columbia	Robinson Pond	Monroe	Mill Creek and tribs
Dutchess	Hillside Lake	Monroe	Shipbuilders Creek and tribs
Dutchess	Wappinger Lakes	Monroe	Minor tribs to Irondequoit Bay
Dutchess	Fall Kill and tribs	Monroe	Thomas Creek/White Brook and tribs
Erie	Green Lake	Nassau	Glen Cove Creek, Lower, and tribs
Erie	Scajaquada Creek, Lower, and tribs	Nassau	LI Tribs (fresh) to East Bay
Erie	Scajaquada Creek, Middle, and tribs	Nassau	East Meadow Brook, Upper, and tribs
Erie	Scajaquada Creek, Upper, and tribs	Nassau	Hempstead Bay
Erie	Rush Creek and tribs	Nassau	Hempstead Lake
Erie	Ellicott Creek, Lower, and tribs	Nassau	Grant Park Pond
Erie	Beeman Creek and tribs	Nassau	Beaver Lake
Erie	Murder Creek, Lower, and tribs	Nassau	Camaans Pond
Erie	South Branch Smoke Cr, Lower, and tribs	Nassau	Halls Pond
Erie	Little Sister Creek, Lower, and tribs	Nassau	LI Tidal Tribs to Hempstead Bay
Essex	Lake George (primary county: Warren)	Nassau	Massapequa Creek and tribs
Genesee	Black Creek, Upper, and minor tribs	Nassau	Reynolds Channel, east
Genesee	Tonawanda Creek, Middle, Main Stem	Nassau	Reynolds Channel, west
Genesee	Oak Orchard Creek, Upper, and tribs	Nassau	Silver Lake, Lofts Pond
Genesee	Bowen Brook and tribs	Nassau	Woodmere Channel
Genesee	Bigelow Creek and tribs	Niagara	Hyde Park Lake
Genesee	Black Creek, Middle, and minor tribs	Niagara	Lake Ontario Shoreline, Western
Genesee	LeRoy Reservoir	Niagara	Bergholtz Creek and tribs
Greene	Schoharie Reservoir	Oneida	Ballou, Nail Creeks
		Onondaga	Ley Creek and tribs
		Onondaga	Onondaga Creek, Lower and tribs

## APPENDIX E

### List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Palmer Lake	Ulster	Esopus Creek, Middle, and minor tribs
Putnam	Lake Carmel	Warren	Lake George
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Warren	Tribs to L.George, Village of L George
Queens	Bergen Basin	Warren	Huddle/Finkle Brooks and tribs
Queens	Shellbank Basin	Warren	Indian Brook and tribs
Rensselaer	Nassau Lake	Warren	Hague Brook and tribs
Rensselaer	Snyders Lake	Washington	Tribs to L.George, East Shr Lk George
Richmond	Grasmere, Arbutus and Wolfes Lakes	Washington	Cossayuna Lake
Rockland	Congers Lake, Swartout Lake	Washington	Wood Cr/Champlain Canal, minor tribs
Rockland	Rockland Lake	Wayne	Port Bay
Saratoga	Ballston Lake	Wayne	Marbletown Creek and tribs
Saratoga	Round Lake	Westchester	Lake Katonah
Saratoga	Dwaas Kill and tribs	Westchester	Lake Mohegan
Saratoga	Tribs to Lake Lonely	Westchester	Lake Shenorock
Saratoga	Lake Lonely	Westchester	Reservoir No.1 (Lake Isle)
Schenectady	Collins Lake	Westchester	Saw Mill River, Middle, and tribs
Schenectady	Duane Lake	Westchester	Silver Lake
Schenectady	Mariaville Lake	Westchester	Teatown Lake
Schoharie	Engleville Pond	Westchester	Truesdale Lake
Schoharie	Summit Lake	Westchester	Wallace Pond
Schuyler	Cayuta Lake	Westchester	Peach Lake
St. Lawrence	Fish Creek and minor tribs	Westchester	Mamaroneck River, Lower
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Mamaroneck River, Upp, and tribs
Steuben	Lake Salubria	Westchester	Sheldrake River and tribs
Steuben	Smith Pond	Westchester	Blind Brook, Lower
Suffolk	Millers Pond	Westchester	Blind Brook, Upper, and tribs
Suffolk	Mattituck (Marratooka) Pond	Westchester	Lake Lincolndale
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Lake Meahaugh
Suffolk	Canaan Lake	Wyoming	Java Lake
Suffolk	Lake Ronkonkoma	Wyoming	Silver Lake
Suffolk	Beaverdam Creek and tribs		
Suffolk	Big/Little Fresh Ponds		
Suffolk	Fresh Pond		
Suffolk	Great South Bay, East		
Suffolk	Great South Bay, Middle		

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

XIII. APPENDIX F

**LIST OF NYS DEC REGIONAL OFFICES**

<b><u>Region</u></b>	<b><u>COVERING THE FOLLOWING COUNTIES:</u></b>	<b><u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u></b>	<b><u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u></b>
<b>1</b>	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
<b>2</b>	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
<b>3</b>	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
<b>4</b>	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
<b>5</b>	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, Po Box 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
<b>6</b>	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
<b>7</b>	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
<b>8</b>	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
<b>9</b>	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

## **ATTACHMENT NO. 2**

### **DEEP RIPPING & DECOMPACTION (APRIL 2008)**



New York State  
**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

Division of Water

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# Deep-Ripping and Decompaction

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April 2008

New York State  
**Department of Environmental Conservation**

Document Prepared by:

John E. Lacey,  
Land Resource Consultant and Environmental Compliance Monitor  
(Formerly with the Division of Agricultural Protection and Development Services,  
NYS Dept. of Agriculture & Markets)

## Alternative Stormwater Management Deep-Ripping and Decompaction

### Description

The two-phase practice of 1) “Deep Ripping;” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor’s densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.



Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

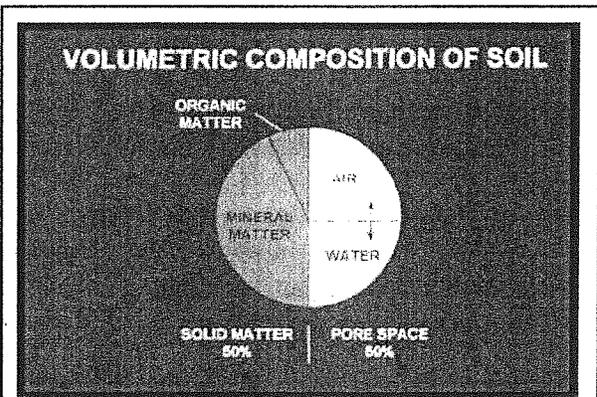


Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

## Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterally) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the “two-phase” practice of Deep Ripping and Decompaction first became established as a “best management practice” through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

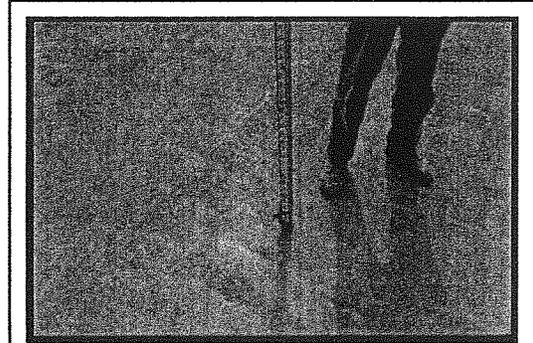


Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

## Benefits

Aggressive “deep ripping” through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by “decompaction,” i.e.: “sub-soiling,” through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area’s direct surface infiltration of rainfall by providing the open site’s mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

## Feasibility/Limitations

The effectiveness of Deep Ripping and Decomposition is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

### Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

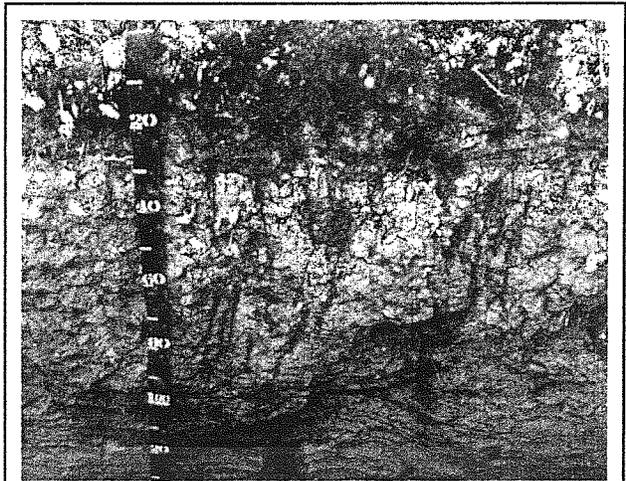


Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompaction (subsoiling); and other measures may be more practical.

### **Slope**

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

### **Local Weather/Timing/Soil Moisture**

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a “plastic” or “liquid” state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the “slicing and smearing” of the material or added “squeezing and compression” instead of the necessary fracturing. Ample drying time is needed for a “rippable” soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The “poor man’s Atterberg field test” for soil plasticity is a simple “hand-roll” method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a “plastic” state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

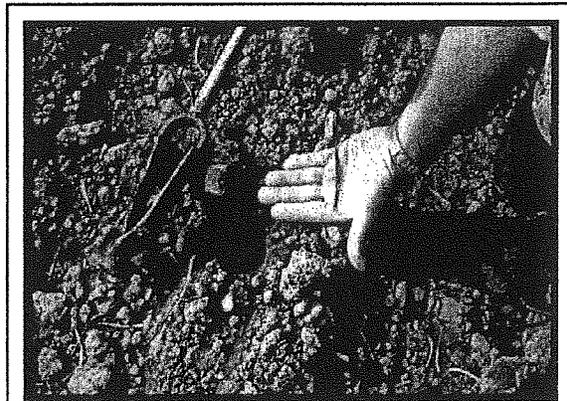


Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

## Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

- 1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and
- 2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, “decompaction,” mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area’s soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

### Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only “scarify” the uppermost surface portion of the mass of compacted subsoil material. The term “chisel plow” is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

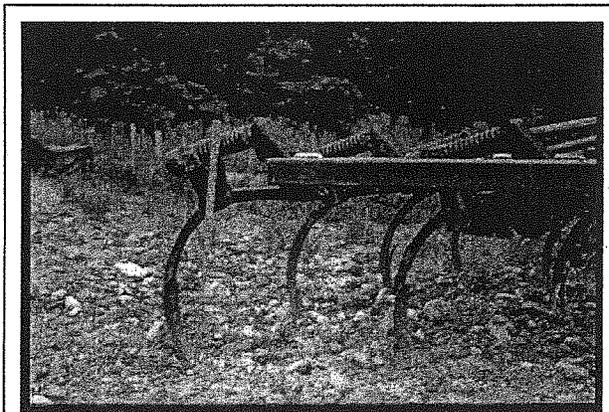


Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

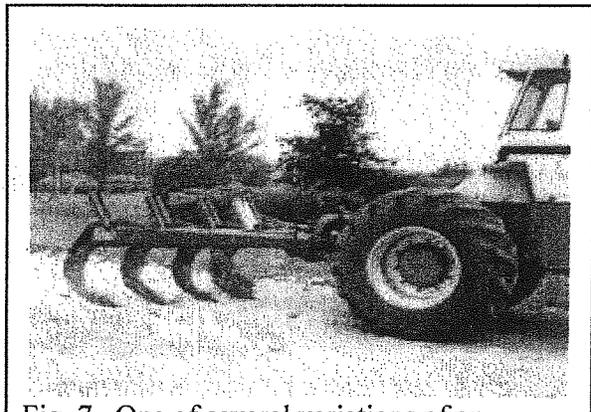


Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a “heavy duty” agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like “lifting and shattering” action up through the soil layers as it is pulled.

### **Pulling-Power of Equipment**

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.



Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.



Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

### Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decomposition (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a  $\frac{3}{4}$  inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decomposition (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

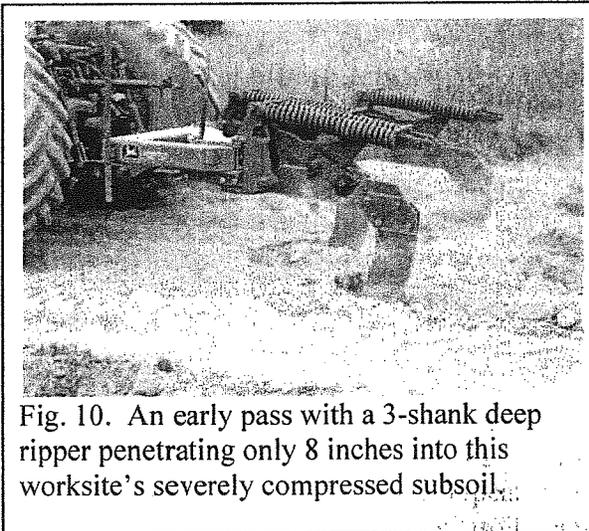


Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

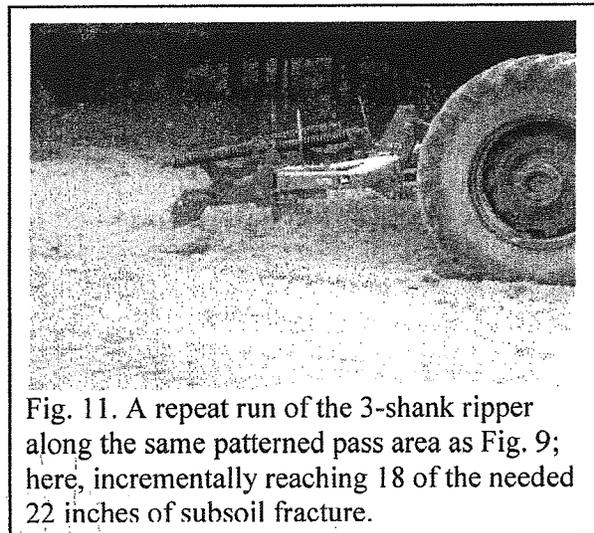


Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decomposition on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decomposition (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

### Large, Unobstructed Areas

For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.
- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.
- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a 3/4-inch cone penetrometer.)



Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

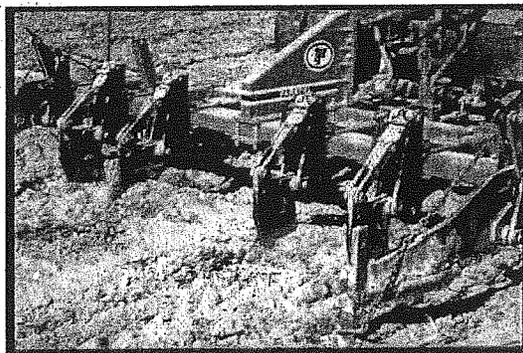


Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

### Corridors

In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad “S” shaped pattern of rips, continually and gradually alternating the “S” curves between opposite edges inside the compacted corridor.
- The third and final series again uses the broad, alternating S pattern, but it is “flip-flopped” to continually cross the previous S pattern along the corridor’s centerline. This final series of the S-pattern curves back along the edge areas skipped by the second series.

## Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompanation is completed, two items are essential for maintaining a site’s soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

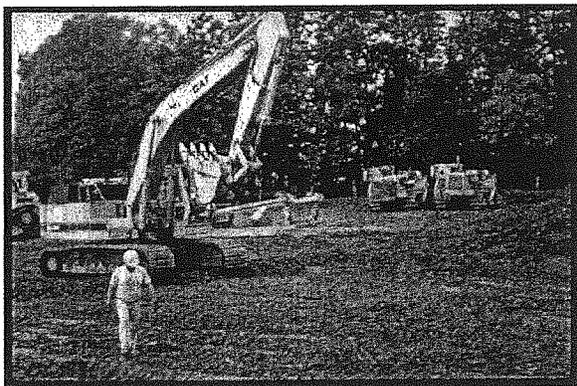


Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.



Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland. The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at \$1800 per day, the net cost is \$900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs \$675 per acre for a combined total of \$1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

## Resources

### Publications:

- American Society of Agricultural Engineers. 1971. *Compaction of Agricultural Soils*. ASAE.
- Brady, N.C., and R.R. Weil. 2002. *The Nature and Properties of Soils*. 13<sup>th</sup> ed. Pearson Education, Inc.
- Baver, L.D. 1948. *Soil Physics*. John Wiley & Sons.
- Carpachi, N. 1987 (1995 fifth printing). *Excavation and Grading Handbook, Revised*. 2<sup>nd</sup> ed. Craftsman Book Company
- Ellis, B. (Editor). 1997. *Safe & Easy Lawn Care: The Complete Guide to Organic Low Maintenance Lawn*. Houghton Mifflin.
- Harpstead, M.I., T.J. Sauer, and W.F. Bennett. 2001. *Soil Science Simplified*. 4<sup>th</sup> ed. Iowa State University Press.
- Magdoff, F., and H. van Es. 2000. *Building Soils for Better Crops*. 2<sup>nd</sup> ed. Sustainable Agricultural Networks
- McCarthy, D.F. 1993. *Essentials of Soil Mechanics and Foundations, Basic Geotechnics* 4<sup>th</sup> ed. Regents/Prentice Hall.
- Plaster, E.J. 1992. *Soil Science & Management*. 3<sup>rd</sup> ed. Delmar Publishers.
- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Dawn-Kerwood Loop Pipeline; Technical Report*. Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.
- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York*. USDA.

### Internet Access:

- Examples of implements:  
V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915 (larger-frame model) V-Rippe*; and, *for 913 (smaller-frame model) V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: *Bigham Brothers Shear Bolt Paratill-Subsoiler*.  
[http://salesmanual.deere.com/sales/salesmanual/en\\_NA/primary\\_tillage/2008/feature/rippers/915v\\_pattern\\_frame.html?sbu=a&link=prodcat](http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=a&link=prodcat) Last visited March 08.
- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey*. <http://websoilsurvey.nrcs.usda.gov/app/> and *USDA-NRCS Official Soil Series Descriptions; View by Name*. <http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi> . Last visited Jan. 08.
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester)*, PSU Extension; as well as *Dickey-john Soil Compaction Tester*.  
<http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf> and <http://cropsoil.psu.edu/Extension/Facts/uc178pdf> Last visited Sept. 07

**ATTACHMENT NO. 3**  
**COMPLETED NOTICE OF INTENT**

# 1415 Washington Avenue

**Alternate ID**

1415 Washington Avenue Student Apartments

**Submission**

HP3-G8XS-0C2Y8

**Revision**

1

**Form Version**

1.29

## Review

This step allows you to review the form to confirm the form is populated completely and accurately, prior to certification and submission.

Please note: Any work you perform filling out a form will not be accessible by NYSDEC staff or the public until you actually submit the form in the 'Certify & Submit' step.

<b>OWNER/OPERATOR INFORMATION</b>
<b>Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)</b> 1415 Washington Property LLC
<b>Owner/Operator Contact Person Last Name (NOT CONSULTANT)</b> Podob
<b>Owner/Operator Contact Person First Name</b> Evan
<b>Owner/Operator Mailing Address</b> Liberty Plaza #2800
<b>City</b> New York
<b>State</b> NY
<b>Zip</b> 10006
<b>Phone</b> 9148792005

**Email**

Evan@scenicinvestment.com

**Federal Tax ID**

None Specified

**PROJECT LOCATION****Project/Site Name**

1415 Washington Avenue Student Apartments

**Street Address (Not P.O. Box)**

1415 Washington Avenue

**Side of Street**

North

**City/Town/Village (THAT ISSUES BUILDING PERMIT)**

ALBANY

**State**

NY

**Zip**

12205

**County**

ALBANY

**DEC Region**

4

**Name of Nearest Cross Street**

West University Drive

**Distance to Nearest Cross Street (Feet)**

530

**Project In Relation to Cross Street**

East

**Tax Map Numbers Section-Block-Parcel**

53.00-1-25

**Tax Map Numbers**

53.00-1-25

**1. Coordinates**

Provide the Geographic Coordinates for the project site. The two methods are:

- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

**Navigate to your location and click on the map to get the X,Y coordinates**

<b>Latitude</b>	<b>Longitude</b>
42.68951505937346	-73.81839828391769

**PROJECT DETAILS****2. What is the nature of this project?**

Redevelopment with no increase in impervious area

**3. Select the predominant land use for both pre and post development conditions.****Pre-Development Existing Landuse**

Multifamily Residential

**Post-Development Future Land Use**

Multifamily Residential

**3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.**

*None Specified*

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage) within the disturbed area.

\*\*\* ROUND TO THE NEAREST TENTH OF AN ACRE. \*\*\*

**Total Site Area (acres)**

3.24

**Total Area to be Disturbed (acres)**

2.87

**Existing Impervious Area to be Disturbed (acres)**

1.83

**Future Impervious Area Within Disturbed Area (acres)**

1.79

**5. Do you plan to disturb more than 5 acres of soil at any one time?**

No

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

**A (%)**

100

**B (%)**

0

**C (%)**

0

**D (%)**

0

**7. Is this a phased project?**

No

**8. Enter the planned start and end dates of the disturbance activities.**

**Start Date**

4/1/2021

**End Date**

8/1/2022

**9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.**

Hudson River

**9a. Type of waterbody identified in question 9?**

River Off Site

**Other Waterbody Type Off Site Description**

*None Specified*

**9b. If "wetland" was selected in 9A, how was the wetland identified?**

*None Specified*

**10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?**

No

**11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?**

No

**12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?**

No

**If No, skip question 13.**

**13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?**

No

**If Yes, what is the acreage to be disturbed?**

*None Specified*

**14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?**

No

**15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?**

No

**16. What is the name of the municipality/entity that owns the separate storm sewer system?**

*None Specified*

**17. Does any runoff from the site enter a sewer classified as a Combined Sewer?**

No

**18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?**

No

**19. Is this property owned by a state authority, state agency, federal government or local government?**

No

**20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)**

No

## REQUIRED SWPPP COMPONENTS

**21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?**

Yes

**22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?**

Yes

**If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.**

**23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?**

Yes

**24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:**

Professional Engineer (P.E.)

**SWPPP Preparer**

Hershberg & Hershberg

**Contact Name (Last, Space, First)**

Hershberg, Daniel

**Mailing Address**

18 Locust Street

**City**

ALBANY

**State**

NY

**Zip**

12203

**Phone**

5184593096

**Email**

dan@hhershberg.com

**Download SWPPP Preparer Certification Form**

Please take the following steps to prepare and upload your preparer certification form:

- 1) Click on the link below to download a blank certification form
- 2) The certified SWPPP preparer should sign this form
- 3) Scan the signed form
- 4) Upload the scanned document

[Download SWPPP Preparer Certification Form](#)

**Please upload the SWPPP Preparer Certification**

*No files uploaded*

**Comment**

*None Specified*

At least one file is required.

## EROSION & SEDIMENT CONTROL CRITERIA

**25. Has a construction sequence schedule for the planned management practices been prepared?**

Yes

**26. Select all of the erosion and sediment control practices that will be employed on the project site:**

### Temporary Structural

Silt Fence

Stabilized Construction Entrance

Storm Drain Inlet Protection

### Biotechnical

None

### Vegetative Measures

None

### Permanent Structural

None

### Other

*None Specified*

## POST-CONSTRUCTION CRITERIA

**\* IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

**27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.**

Preservation of Undisturbed Area

Reduction of Clearing and Grading

Driveway Reduction

**27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).**

All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

**28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)**

0.216

**29. Post-construction SMP Identification**

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

**30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)**

0.216

**31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?**

Yes

**If Yes, go to question 36. If No, go to question 32.**

**32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)**

0.064

**32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?**

Yes

**If Yes, go to question 33.**

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

**33. SMPs**

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

**33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)**

0

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

**34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).**

.216

**35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?**

Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

**36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.**

**CPv Required (acre-feet)**

*None Specified*

**CPv Provided (acre-feet)**

*None Specified*

**36a. The need to provide channel protection has been waived because:**

*None Specified*

**37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.**

**Overbank Flood Control Criteria (Qp)**

**Pre-Development (CFS)**

*None Specified*

**Post-Development (CFS)**

*None Specified*

**Total Extreme Flood Control Criteria (Qf)**

**Pre-Development (CFS)**

*None Specified*

**Post-Development (CFS)**

*None Specified*

**37a. The need to meet the Qp and Qf criteria has been waived because:**

*None Specified*

**38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?**

Yes

**If Yes, Identify the entity responsible for the long term Operation and Maintenance**

*None Specified*

**39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.**

*None Specified*

**POST-CONSTRUCTION SMP IDENTIFICATION**

**Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs**

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**RR Techniques (Area Reduction)**

Round to the nearest tenth

**Total Contributing Acres for Conservation of Natural Area (RR-1)**

*None Specified*

**Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)**

*None Specified*

**Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)**

*None Specified*

**Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)**

*None Specified*

**Total Contributing Acres for Tree Planting/Tree Pit (RR-3)**

*None Specified*

**Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)**

*None Specified*

**Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)**

*None Specified*

**RR Techniques (Volume Reduction)**

**Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)**

*None Specified*

**Total Contributing Impervious Acres for Vegetated Swale (RR-5)**

*None Specified*

**Total Contributing Impervious Acres for Rain Garden (RR-6)**

*None Specified*

**Total Contributing Impervious Acres for Stormwater Planter (RR-7)**

*None Specified*

**Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)**

*None Specified*

**Total Contributing Impervious Acres for Porous Pavement (RR-9)**

*None Specified*

**Total Contributing Impervious Acres for Green Roof (RR-10)**

*None Specified*

**Standard SMPs with RRv Capacity**

**Total Contributing Impervious Acres for Infiltration Trench (I-1)**

*None Specified*

**Total Contributing Impervious Acres for Infiltration Basin (I-2)**

2.25

**Total Contributing Impervious Acres for Dry Well (I-3)**

*None Specified*

**Total Contributing Impervious Acres for Underground Infiltration System (I-4)**

*None Specified*

**Total Contributing Impervious Acres for Bioretention (F-5)**

*None Specified*

**Total Contributing Impervious Acres for Dry Swale (O-1)**

*None Specified*

**Standard SMPs**

**Total Contributing Impervious Acres for Micropool Extended Detention (P-1)**

*None Specified*

**Total Contributing Impervious Acres for Wet Pond (P-2)**

*None Specified*

**Total Contributing Impervious Acres for Wet Extended Detention (P-3)**

*None Specified*

**Total Contributing Impervious Acres for Multiple Pond System (P-4)**

*None Specified*

**Total Contributing Impervious Acres for Pocket Pond (P-5)**

*None Specified*

**Total Contributing Impervious Acres for Surface Sand Filter (F-1)**

*None Specified*

**Total Contributing Impervious Acres for Underground Sand Filter (F-2)**

*None Specified*

**Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)**

*None Specified*

**Total Contributing Impervious Acres for Organic Filter (F-4)**

*None Specified*

**Total Contributing Impervious Acres for Shallow Wetland (W-1)**

*None Specified*

**Total Contributing Impervious Acres for Extended Detention Wetland (W-2)**

*None Specified*

**Total Contributing Impervious Acres for Pond/Wetland System (W-3)**

*None Specified*

**Total Contributing Impervious Acres for Pocket Wetland (W-4)**

*None Specified*

**Total Contributing Impervious Acres for Wet Swale (O-2)**

*None Specified*

**Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)**

**Total Contributing Impervious Area for Hydrodynamic**

*None Specified*

**Total Contributing Impervious Area for Wet Vault***None Specified***Total Contributing Impervious Area for Media Filter***None Specified***"Other" Alternative SMP?***None Specified***Total Contributing Impervious Area for "Other"***None Specified***Provide the name and manufacturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.****Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.****Manufacturer of Alternative SMP***None Specified***Name of Alternative SMP***None Specified***OTHER PERMITS****40. Identify other DEC permits, existing and new, that are required for this project/facility.***None***If SPDES Multi-Sector GP, then give permit ID***None Specified***If Other, then identify***None Specified***41. Does this project require a US Army Corps of Engineers Wetland Permit?***No***If "Yes," then indicate Size of Impact, in acres, to the nearest tenth***None Specified***42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.***None Specified***MS4 SWPPP ACCEPTANCE**

**43. Is this project subject to the requirements of a regulated, traditional land use control MS4?**

Yes - Please attach the MS4 Acceptance form below

**If No, skip question 44**

**44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?**

*None Specified*

**MS4 SWPPP Acceptance Form Download**

Download form from the link below. Complete, sign, and upload.

MS4 SWPPP Acceptance Form

**MS4 Acceptance Form Upload**

*No files uploaded*

**Comment**

*None Specified*

**OWNER/OPERATOR CERTIFICATION**

The owner/operator must download, sign, and upload the certification form in order to complete this application.

**Owner/Operator Certification Form Download**

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

**Upload Owner/Operator Certification Form**

*No files uploaded*

**Comment**

*None Specified*

At least one file is required.

**ATTACHMENT NO. 4**

**NOTICE OF TERMINATION  
(BLANK FOR FUTURE USE)**



New York State Department of Environmental Conservation  
Division of Water

625 Broadway, 4th Floor  
Albany, New York 12233-3505

\*(NOTE: Submit completed form to address above)\*

**NOTICE OF TERMINATION** for Storm Water Discharges Authorized  
under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR \_\_\_\_\_

**I. Owner or Operator Information**

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

5. Contact Person E-Mail:

**II. Project Site Information**

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

**III. Reason for Termination**

9a.  All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.  
\*Date final stabilization completed (month/year): \_\_\_\_\_

9b.  Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR \_\_\_\_\_  
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c.  Other (Explain on Page 2)

**IV. Final Site Information:**

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices?  yes  no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed?  
 yes  no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?  
\_\_\_\_\_

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the  
SPDES General Permit for Construction Activity - continued**

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit?  yes  no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
- For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? \_\_\_\_\_ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4?  yes  no  
(If Yes, complete section VI - "MS4 Acceptance" statement)

**V. Additional Information/Explanation:**

(Use this section to answer questions 9c. and 10b., if applicable)

**VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative** (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the  
SPDES General Permit for Construction Activity - continued**

**VII. Qualified Inspector Certification - Final Stabilization:**

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):**

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**IX. Owner or Operator Certification**

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

**ATTACHMENT NO. 5**

**CERTIFICATION OF CONTRACTOR**

## Contractor/Subcontractor SWPPP Certification

**NOTE: This SWPPP identifies for each measure identified in the SWPPP, the contractor(s) and subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the SWPPP must sign a copy of the certification statement. All certifications must be included in the SWPPP. Additionally, new contractors and subcontractors need to similarly certify. All contractors and subcontractors identified in a SWPPP shall sign a copy of this certification statement before undertaking any construction activity at the site identified in the SWPPP:**

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

### SERVICES PROVIDED BY THIS CONTRACTOR/SUBCONTRACTOR:

**(Contractor/Subcontractor must complete)**

List all trades covered: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name & Title (Print or Type)

\_\_\_\_\_  
Name of Entity Constituting Contractor/Subcontractor (Print or Type)

\_\_\_\_\_  
Address of Entity Constituting Contractor/Subcontractor (Print or Type)

\_\_\_\_\_  
Phone Number/Fax Number of Entity Constituting Contractor/Subcontractor (Print or Type)

**Signatory Requirements** – This SWPPP certification shall be signed as follows:

- a. For a corporation: by (1) a president, secretary, treasurer, or vice- president of the corporation in charge of a principal business function, or any other person authorized to and who performs similar policy or decision making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

**ATTACHMENT NO. 6**

**CERTIFICATION OF OWNER/DEVELOPER**

## Owner/Developer SWPPP Certification

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

---

Signature

---

Name (Print or Type)

---

Title (Print or Type)

---

Name of Entity Constituting Owner/Developer (Print or Type)

---

Address of Entity Constituting Owner/Developer (Print or Type)

---

Phone Number/Fax Number of Entity Constituting Owner/Developer (Print or Type)

**Signatory Requirements** – This SWPPP certification shall be signed as follows:

- a. For a corporation: by (1) a president, secretary, treasurer, or vice- president of the corporation in charge of a principal business function, or any other person authorized to and who performs similar policy or decision making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

**ATTACHMENT NO. 6  
SAMPLE INSPECTION FORM  
FOR USE  
DURING CONSTRUCTION  
UNTIL FILING OF NOTICE OF TERMINATION  
(NOT)  
UNDER SPDES GENERAL PERMIT  
(GP# 0-20-001)**

**SPDES GP-0-15-002**  
**Part IV.C.4**  
**Inspection Form**  
**(Attach additional pages as required)**

a. Date and time of inspection; \_\_\_\_\_

b. Name and title of person(s) performing inspection;

\_\_\_\_\_

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

\_\_\_\_\_

d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

\_\_\_\_\_

\_\_\_\_\_

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h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

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i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

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j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection;

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

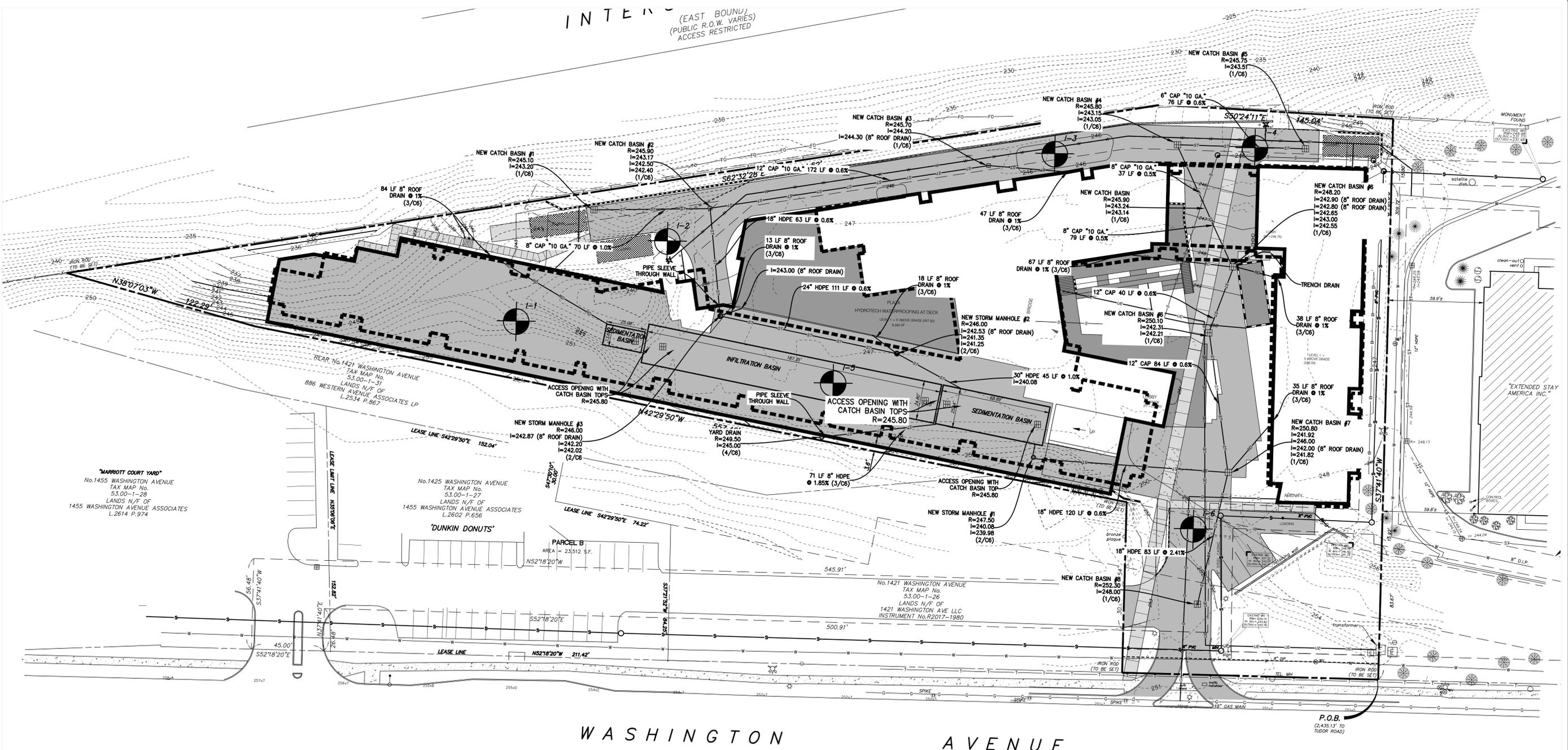
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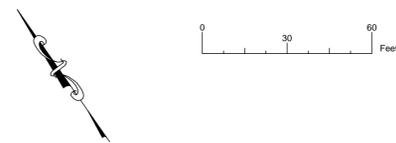
**MAP POCKET #1**  
**MAP C-5**  
**SWPPP PLAN AND DETAILS**

INTER (EAST BOUND)  
(PUBLIC R.O.W. VARIES)  
ACCESS RESTRICTED



INFILTRATION TEST RESULTS

TEST PIT NUMBER	AVERAGE INFILTRATION RATE (INCHES/HOUR)
I-1	24.0
I-2	17.5
I-3	10.8
I-4	17.0
I-5	12.3
I-6	10.2



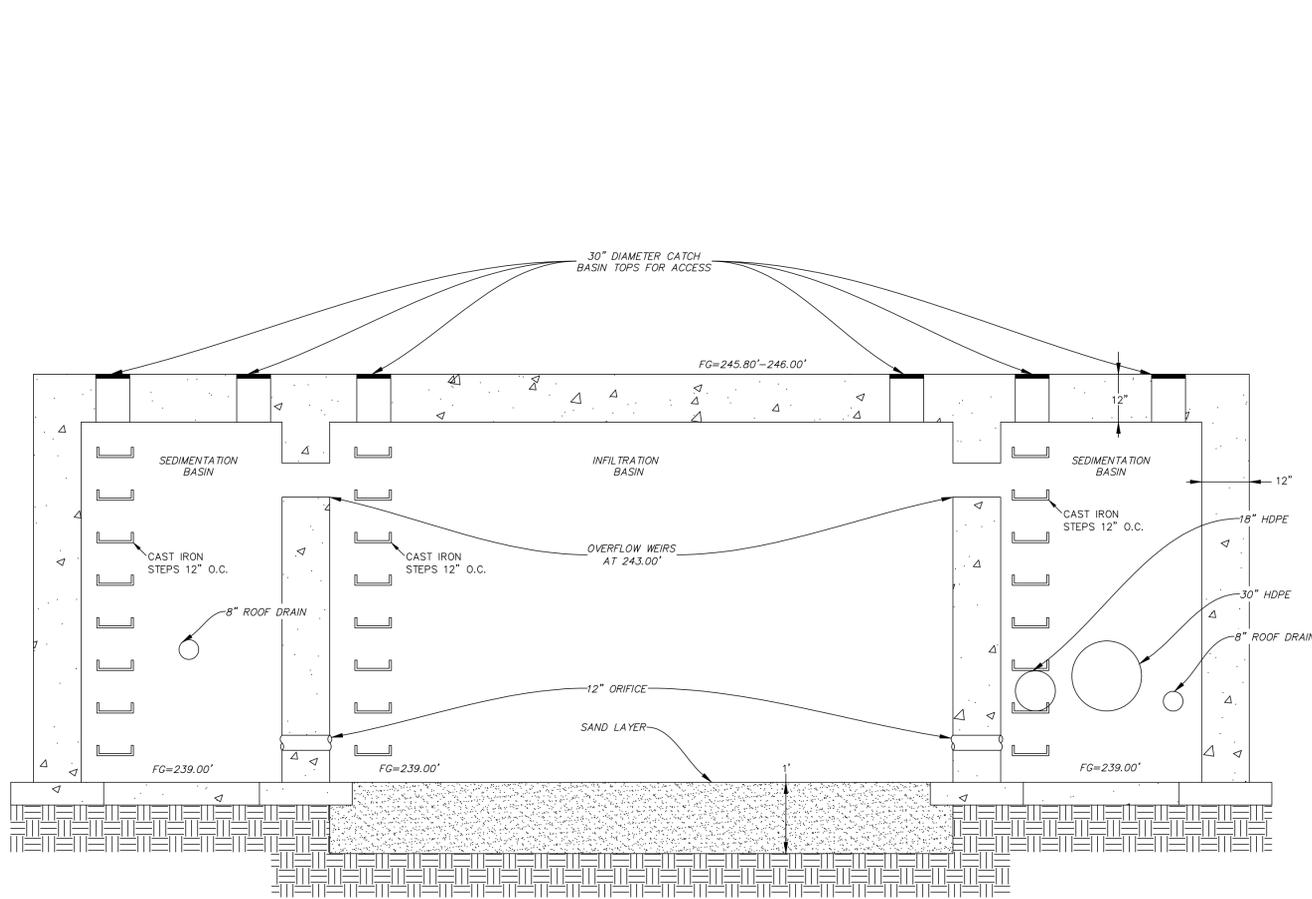
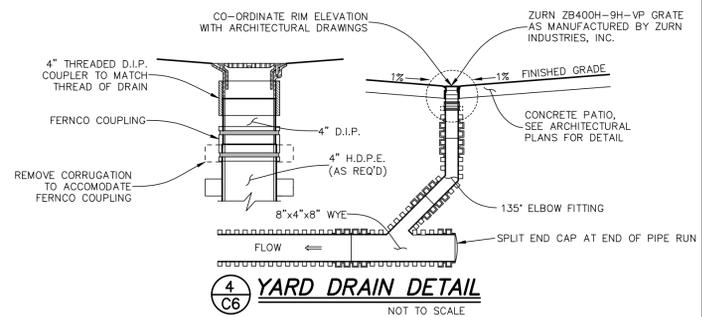
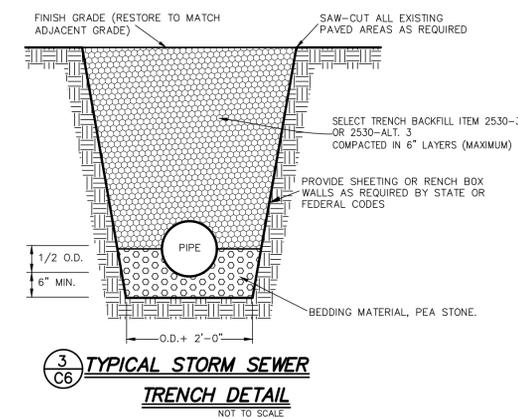
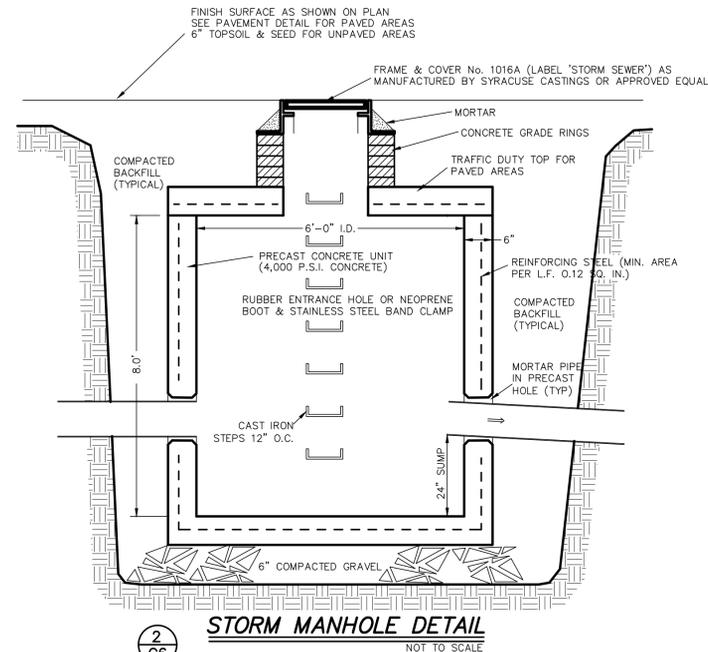
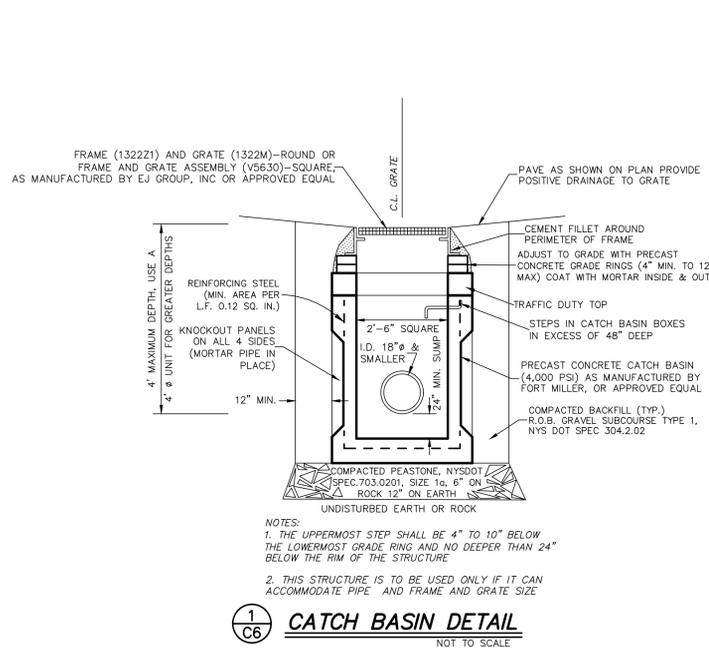
**HERSHBERG & HERSHBERG**  
Consulting Engineers and Land Surveyors  
18 Locust Street  
Albany, New York 12203

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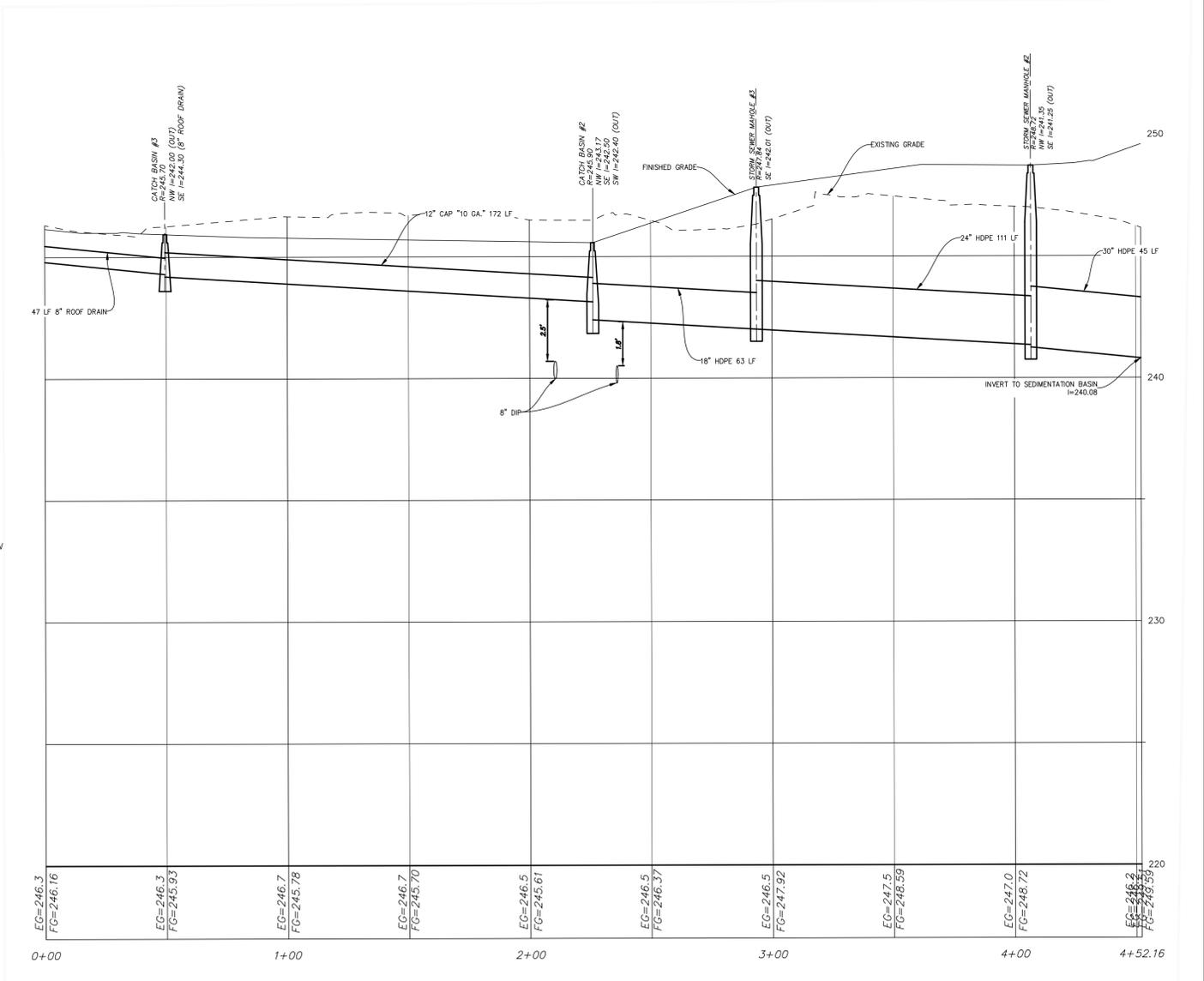


DATE	REVISIONS
10/16/20	GENERAL
10/16/20	FULL SET OF PLANS
12/09/20	RESPONSE REVISIONS

**STORM WATER POLLUTION PREVENTION PLAN**  
**1415 WASHINGTON AVENUE**  
**CITY OF ALBANY, STATE OF NEW YORK**  
COUNTY OF ALBANY, STATE OF NEW YORK  
SCALE: AS NOTED  
DATE: 1/24/2020  
CHK: DRH  
BY: MW  
FILE: 200015



**NOTE:**  
1. SUBMIT SHOP DRAWINGS STAMPED BY A NYS LICENSED ENGINEER SHOWING DETAILS OF CONCRETE SLAB, WALLS, AND FOOTINGS.



**HERSHBERG & HERSHBERG**  
Consulting Engineers and Land Surveyors  
18 Locust Street  
Albany, New York 12203

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STATE OF NEW YORK  
DANIEL R. HERSHBERG  
LICENSED PROFESSIONAL ENGINEER  
No. 244226

DATE	REVISIONS
8/11/2020	GENERAL
10/16/20	FULL SET OF PLANS
12/30/20	RESPONSE REVISIONS

**SWPPP PLAN AND DETAILS**  
1415 WASHINGTON AVENUE  
CITY OF ALBANY, STATE OF NEW YORK  
COUNTY OF ALBANY, STATE OF NEW YORK

DATE: 1/24/2020  
CHK: DRH  
SCALE: AS NOTED  
FILE: 200015

**C6/16**

**MAP POCKET #2**

**MAP C-6**

**EROSION AND SEDIMENT CONTROL PLAN**

**EROSION AND SEDIMENT CONTROL NOTES**

1. THIS PROJECT IS AUTHORIZED UNDER NYSDEC SPDES GENERAL PERMIT GP-0-20-001.
2. ANY CONTRACTOR INVOLVED IN EARTHWORK ACTIVITIES, INCLUDING BUT NOT LIMITED TO: CLEARING, GRADING AND TRENCHING, SHALL REVIEW ALL PERMIT CONDITIONS AND CERTIFY UNDERSTANDING OF THESE CONDITIONS IN WRITING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ALL EROSION CONTROLS DESCRIBED IN GP-0-20-001, AND IT IS NOT THE INTENT OF THESE DRAWINGS TO REPLACE OR DISSEMINATE THE PERMIT REQUIREMENTS. THE CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH THE PERMIT AT ALL TIMES.
3. AT ALL TIMES SOIL DISTURBING ACTIVITIES SHALL REMAIN LESS THAN 1 ACRE. THE CONTRACTOR SHALL COORDINATE EARTHWORK ACTIVITIES AND IMPLEMENTATION OF SOIL STABILIZATION MEASURES TO ENSURE COMPLIANCE TO THIS PERMIT REQUIREMENT. THE SITE WILL BE MONITORED AT ALL TIMES TO ENSURE SOIL DISTURBANCE DOES NOT EXCEED 1 ACRE. IF THE SOIL DISTURBANCE EXCEEDS ONE ACRE, AT ANY TIME, A STOP WORK ORDER WILL BE ISSUED UNTIL THE SITE RECEIVES COVERAGE UNDER SPDES GENERAL PERMIT FOR CONSTRUCTION ACTIVITY.
4. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION AND EQUIPMENT ENTRANCE WHENEVER PRACTICABLE.
5. DISTURBED AREAS SHALL BE STABILIZED WITHIN 14 DAYS OF COMPLETION OR SUSPENSION OF GRADING OPERATIONS.
6. INSTALL TEMPORARY & PERMANENT SEEDING IN ACCORDANCE WITH THE NEW YORK GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL STANDARD AND SPECIFICATION FOR TEMPORARY CONSTRUCTION AREA SEEDING AND FOR MULCHING.

**STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA PLANTINGS, PAGE 4.58**

WATER MANAGEMENT PRACTICES MUST BE INSTALLED AS APPROPRIATE FOR SITE CONDITIONS. THE AREA MUST BE ROUGH GRADED AND SLOPES PHYSICALLY STABLE. LARGE DEBRIS AND ROCKS ARE USUALLY REMOVED. SEEDING MUST BE SEEDING WITHIN 24 HOURS OF DISTURBANCE OR SCARIFICATION OF THE SOIL SURFACE WILL BE NECESSARY PRIOR TO SEEDING.

FERTILIZER OR LIME ARE NOT TYPICALLY USED FOR TEMPORARY SEEDINGS.

IF: SPRING OR SUMMER OR EARLY FALL, THEN SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 LBS. PER ACRE (APPROXIMATELY 0.7 LB./1000 SQ. FT. OR USE 1 LB./1000 SQ. FT.)

IF: LATE FALL OR EARLY WINTER, THEN SEED CERTIFIED "ARROGTOCK" WINTER RYE (CEREAL RYE) AT 1000 LBS. PER ACRE (2.5 LBS./1000 SQ. FT.)

ANY SEEDING METHOD MAY BE USED THAT WILL PROVIDE UNIFORM APPLICATION OF SEED TO THE AREA AND RESULT IN RELATIVELY GOOD SOIL TO SEED CONTACT.

MULCH THE AREA WITH HAY OR STRAW AT 2 TONS/ACRE (APPROX. 90 LBS./1000 SQ. FT. OR 2 BALES). QUALITY OF HAY OR STRAW MULCH ALLOWABLE WILL BE DETERMINED BASED ON LONG TERM USE AND VISUAL CONCERNS. MULCH ANCHORING WILL BE REQUIRED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE OF CONCERN. WOOD FIBER HYDROMULCH OR OTHER SPRAYABLE PRODUCTS APPROVED FOR EROSION CONTROL (NYLON WEB OR MESH) MAY BE USED IF APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. CAUTION IS ADVISED WHEN USING NYLON OR OTHER SYNTHETIC PRODUCTS. THEY MAY BE DIFFICULT TO REMOVE PRIOR TO FINAL SEEDING AND CAN BE A HAZARD TO YOUNG WILDLIFE SPECIES.

**MULCH ANCHORING GUIDE - TABLE 4.3, PAGE 4.41**

ANCHORING METHOD OR MATERIAL	KIND OF MULCH TO BE ANCHORED	MULCH ANCHORING GUIDE	
		HOW TO APPLY	HOW TO APPLY
PEG AND TWINE	HAY OR STRAW	AFTER MULCHING, DIVIDE AREAS INTO BLOCKS APPROXIMATELY 1 SQ. YD. IN SIZE. DRIVE 4-6 PEGS PER BLOCK TO WITHIN 2" TO 3" OF SOIL SURFACE. SECURE MULCH TO SURFACE BY STRETCHING TWINE BETWEEN PEGS IN CROSS-DROSS PATTERN ON SECURE TWINE AROUND EACH PEG WITH 2 OR MORE TIGHT TURNS. DRIVE PEGS FLUSH WITH SOIL. DRIVING STAKES INTO GROUND TIGHTENS THE TWINE.	
MULCH NETTING	HAY OR STRAW	STAPLE THE LIGHT-WEIGHT PAPER, JUTE, WOOD FIBER, OR PLASTIC NETTINGS TO SOIL SURFACE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. SHOULD BE BIODEGRADABLE. MOST PRODUCTS ARE NOT SUITABLE FOR FOOT TRAFFIC.	
WOOD CELLULOSE FIBER	HAY OR STRAW	APPLY WITH HYDROSEEDER IMMEDIATELY AFTER MULCHING. USE 500 LBS. WOOD FIBER PER ACRE. SOME PRODUCTS CONTAIN AN ADHESIVE MATERIAL ("TACKIFIER"), POSSIBLY ADVANTAGEOUS.	
MULCH ANCHORING TOOL	HAY OR STRAW	APPLY MULCH AND PULL A MULCH ANCHORING TOOL (BLUNT, STRAIGHT DISCS) OVER MULCH AS NEAR TO THE CONTOUR AS POSSIBLE. MULCH MATERIAL SHOULD BE "TUCKED" INTO SOIL SURFACE ABOUT 3".	
TACKIFIER	HAY OR STRAW	MIX AND APPLY POLYMERIC AND GUM TACKIFIERS ACCORDING TO MANUFACTURER'S INSTRUCTIONS. AVOID APPLICATION DURING RAIN. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° FAHRENHEIT ARE REQUIRED.	

7. INSTALL PERMANENT RIP-RAP AT ALL PIPE END SECTIONS AT TIME OF INSTALLATION OF PIPE.
8. DURING EXCAVATION OF TEMPORARY SEDIMENT BASIN, FIELD VERIFY A MINIMUM OF 2' SEPARATION DISTANCE FROM GROUND WATER ELEVATION TO SURFACE SAND FILTERS WITH AN IMPERMEABLE BOTTOM AND 3" WITH A PERMEABLE BOTTOM. NOTIFY ENGINEER IMMEDIATELY IF THESE MINIMUM SEPARATION REQUIREMENTS DO NOT EXIST FOR ALTERNATIVE MEANS OF STORMWATER POLLUTION PREVENTION.
9. SEE REMAINDER OF PLANS FOR PERMANENT IMPROVEMENTS. PERMANENT IMPROVEMENTS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY.
10. PAVED AREAS ARE TO BE SWEEP DAILY TO REMOVE ANY SEDIMENT AND ALL NEWLY PAVED AREAS SHALL BE DIRECTED TO THE TEMPORARY OR FINAL SEDIMENT CONTROL BASINS.

**CONSTRUCTION SEQUENCING AND SEDIMENTATION AND EROSION CONTROL DURING CONSTRUCTION**

THE CONSTRUCTION SEQUENCE FOR THIS PROJECT WILL BE GOVERNED BY THE EROSION AND SEDIMENT CONTROL PLAN.

**CONSTRUCTION SEQUENCE**

- ✓ COMMENCE WORK ON SITE WITHIN 10 DAYS OF PRE-CONSTRUCTION MEETING
- ✓ INSTALL SEDIMENTATION FENCE AS INDICATED ON THE PLAN. PRIOR TO COMMENCEMENT OF ANY GRADING - FENCE TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- ✓ UNDERTAKE BUILDING DEMOLITION INCLUDING ASBESTOS ABATEMENT AND UTILITY SHUTOFFS. CLOSE WATER SERVICE AT VALVE PENDING THE ABANDONMENT OF THE WATER MAIN SECTION AS DESCRIBED BELOW. PRIOR TO NEW CONSTRUCTION ITEMS BEING UNDERTAKEN.
- ✓ GRADE AND PREPARE CONSTRUCTION ACCESS. PRIOR TO COMMENCEMENT OF ANY GRADING - CONSTRUCTION ENTRANCE TO REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.

- ✓ THE EXISTING PAVEMENT MUST BE KEPT SWEEP CLEAN TO AVOID TRACKING MATERIALS ONTO ANY STREETS. CONTINUOUSLY FROM INCEPTION TO COMPLETION OF STABILIZATION OR FILING OF NOTICE OF TERMINATION.
- ✓ MAINTAIN THIS AREA CLEAN OF DEBRIS AND VERIFY CONDITION AND SAFETY OF STORAGE OF MATERIALS LISTED BELOW. REQUIRES DAILY INSPECTION. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE OF TERMINATION.
- ✓ ANY CONSTRUCTION MATERIALS, CHEMICALS OR CONSTRUCTION DEBRIS MUST BE STORED IN SEALED RECEPTACLES, TRAILERS OR BUILDINGS. ANY STORAGE PILES OF MATERIALS MEANT FOR INSTALLATION (I.E. SAND, ETC.) MUST BE SURROUNDED BY SEDIMENTATION FENCE. THE LIST OF ANTICIPATED MATERIALS STORED ON SITE DURING CONSTRUCTION IS PROVIDED BELOW AND MUST BE UPDATED IF ANY ADDITIONAL MATERIALS ARE UTILIZED. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE OF TERMINATION.
  - o SELECT FILL
  - o CONCRETE STRUCTURES
  - o PIPES
  - o PIPE SOLVENTS
  - o CONCRETE FOR BUILDING
  - o ROOFING MATERIALS FOR BUILDING
  - o METAL MATERIALS FOR BUILDING
  - o BUILDING MATERIALS FOR BUILDING
- ✓ MSDS SHEETS MUST BE AVAILABLE ON SITE FOR ALL MATERIALS USED OR IMPORTED TO THE SITE. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE OF TERMINATION.
- ✓ ANY CHEMICAL SPILLS MUST BE CONTAINED IMMEDIATELY ON SITE AND REPORTED TO NYSDEC. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE OF TERMINATION.

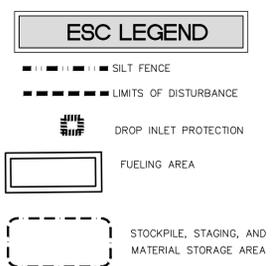
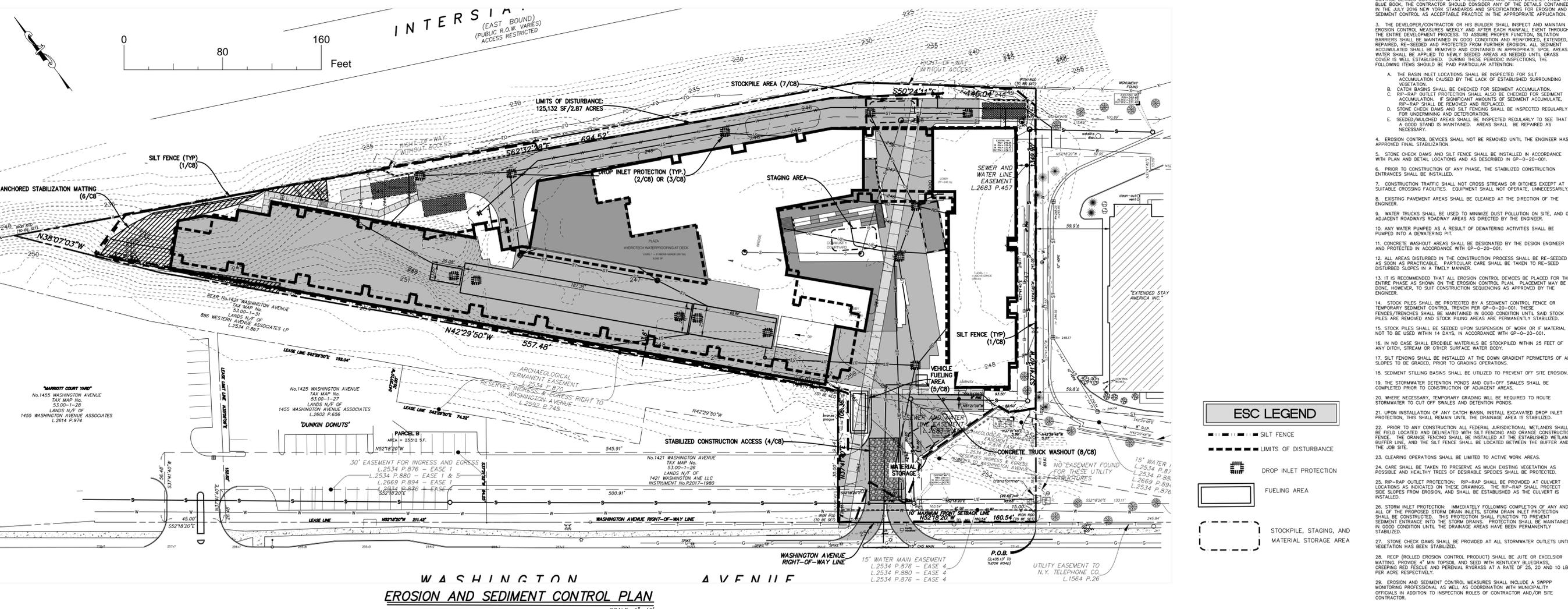
- ✓ OIL AND GREASE SPILLS FROM EQUIPMENT SHALL BE TREATED IMMEDIATELY. CONTINUOUSLY FROM INCEPTION TO FILING OF NOTICE OF TERMINATION.
- ✓ COMMENCE INSTALLATION OF THE TEMPORARY SEDIMENT TRAP AND INTERCEPTION SWALE. PRIOR TO PLACEMENT OF SLAB.
- ✓ CLEAN INTERCEPTION SWALE AND SEDIMENT TRAP AS REQUIRED. CONTINUOUSLY FROM INSTALLATION UNTIL FILING OF NOTICE OF TERMINATION.
- ✓ PERFORM DEEP RIPPING AND DECOMPACTION AS NECESSARY. PRIOR TO INSTALLATION OF PIPE GALLERY FOR INFILTRATION. DELAY THIS STEP TILL IMMEDIATELY BEFORE THE RECHARGE GALLERY IS INSTALLED. THIS STEP MUST BE OBSERVED BY THE DESIGN ENGINEER. SEE ATTACHMENT NO. 8.
- ✓ INSTALL RECHARGE GALLERY WHEN STAGING OR ADDITIONAL ACTIVITIES ARE NO LONGER REQUIRED IN THESE AREAS. ABANDON TEMPORARY SEDIMENT TRAP AND ANY TEMPORARY SWALES. CONNECT ROOF DRAINAGE TO RECHARGE BASIN. RESTORE TRENCHES. WHEN APPROPRIATE.
- ✓ RESTORE PAVEMENT AND LAWS. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ CLEAN THE RECHARGE GALLERY STRUCTURE OF ANY ACCUMULATED SILT. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ FINE GRADE LANDSCAPE BEDS. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ PLACE LANDSCAPE MATERIALS. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ SEED AND MULCH. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ OBTAIN APPROVAL ON NOTICE OF TERMINATION FROM MS4 COORDINATOR AFTER SITE HAS ACHIEVED >80% GRASS COVER. PRIOR TO FILING OF NOTICE OF TERMINATION.
- ✓ FILE NOTICE OF TERMINATION.

**WINTER CONDITIONS ITEMS TO BE ADDRESSED**

1. Identify areas within the site to store snow which is tributary to the temporary perimeter swale. As work progresses this area may move but positive drainage tributary to the temporary perimeter swale must be maintained.
2. Widen stabilized construction access points to a minimum of 28 feet. Where pavement forms a portion of that route, maintain 50 feet of stone pavement meeting the detail as shown on the SWPPP plan. Stockpile a minimum of 25 cubic yard of stone for the purposes of establishing stone access point after snow storms.
3. Where any areas at the street grade or within two feet of the street grade remain disturbed overnight, stabilize those areas using 6" of broken stone.
4. Where equipment or vehicles are traversing the bottom of the excavation, establish paths using 6" of broken stone.
5. At any point on the perimeter where drainage from accumulated snow or ice will drain away from the site protect these areas with fiber rolls or polyethylene coated check dam materials (Fitrex, Erosion roll or equal).
6. If work is to cease for more than 3 days, stabilize all disturbed soils.

**TEMPORARY EROSION AND SEDIMENT CONTROL NOTES**

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE JULY 2016 NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. (SEE THE BLUE BOOK) EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITIES.
2. IT IS THE INTENT OF THESE PLANS AND NOTES TO BE USED AS A GUIDE BY THE CONTRACTOR TO ENSURE THAT NO ERODED MATERIAL MIGRATES FROM THE SITE OR ENTERS ANY WATER COURSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THIS GOAL IS MET. BY IMPLEMENTING THESE PLANS AND ANY ADDITIONAL MEASURES THAT MAY BE NECESSARY. FURTHER MEASURES MAY BE REQUIRED BY THE CITY, VILLAGE, OR TOWN ENGINEER. WHILE MANY OF THE EROSION CONTROL DETAILS CONTAINED WITHIN THESE PLANS ARE TAKEN DIRECTLY FROM THE BLUE BOOK, THE CONTRACTOR SHOULD CONSIDER ANY OF THE DETAILS CONTAINED IN THE JULY 2016 NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AS ACCEPTABLE PRACTICE IN THE APPROPRIATE APPLICATION.
3. THE DEVELOPER/CONTRACTOR OR HIS BUILDER SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT THROUGH THE ENTIRE DEVELOPMENT PROCESS. TO ASSURE PROPER FUNCTION, SITUATION BARRIERS SHALL BE MAINTAINED IN GOOD CONDITION AND REINFORCED, EXTENDED, REPAIRED, RE-SEEDED AND PROTECTED FROM FURTHER EROSION. ALL SEDIMENT ACCUMULATED SHALL BE REMOVED AND CONTAINED IN APPROPRIATE SPILL AREAS. WATER SHALL BE APPLIED TO NEWLY SEEDING AREAS AS NEEDED UNTIL GRASS COVER IS WELL ESTABLISHED. DURING THESE PERIODIC INSPECTIONS, THE FOLLOWING ITEMS SHOULD BE PAID PARTICULAR ATTENTION:
  - A. THE BASIN INLET LOCATIONS SHALL BE INSPECTED FOR SILT ACCUMULATION CAUSED BY THE LACK OF ESTABLISHED SURROUNDING VEGETATION.
  - B. CATCH BASINS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION.
  - C. RIP-RAP OUTLET PROTECTION SHALL ALSO BE CHECKED FOR SEDIMENT ACCUMULATION. IF SIGNIFICANT AMOUNTS OF SEDIMENT ACCUMULATE, RIP-RAP SHALL BE REMOVED AND REPLACED.
  - D. STONE CHECK DAMS AND SILT FENCING SHALL BE INSPECTED REGULARLY FOR UNDERMINING AND DETRIORATION.
  - E. SEEDING/ANCHORED AREAS SHALL BE INSPECTED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE REPAIRED AS NECESSARY.
4. EROSION CONTROL DEVICES SHALL NOT BE REMOVED UNTIL THE ENGINEER HAS APPROVED FINAL STABILIZATION.
5. STONE CHECK DAMS AND SILT FENCE SHALL BE INSTALLED IN ACCORDANCE WITH PLAN AND DETAIL LOCATIONS AND AS DESCRIBED IN GP-0-20-001.
6. PRIOR TO CONSTRUCTION OF ANY PHASE, THE STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED.
7. CONSTRUCTION TRAFFIC SHALL NOT CROSS STREAMS OR DITCHES EXCEPT AT SUITABLE CROSSING FACILITIES. EQUIPMENT SHALL NOT OPERATE, UNNECESSARILY, IN EXISTING PAVEMENT AREAS SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER.
8. WATER TRUCKS SHALL BE USED TO MINIMIZE DUST POLLUTION ON SITE, AND ON ADJACENT ROADWAYS/ROADWAY AREAS AS DIRECTED BY THE ENGINEER.
9. ANY WATER PUMPED AS A RESULT OF DEWATERING ACTIVITIES SHALL BE PUMPED INTO A DEWATERING PIT.
10. CONCRETE WASHOUT AREAS SHALL BE DESIGNATED BY THE DESIGN ENGINEER AND PROTECTED IN ACCORDANCE WITH GP-0-20-099.
11. ALL AREAS DISTURBED IN THE CONSTRUCTION PROCESS SHALL BE RE-SEED AS SOON AS PRACTICABLE. PARTICULAR CARE SHALL BE TAKEN TO RE-SEED DISTURBED SLOPES IN A TIMELY MANNER.
12. IT IS RECOMMENDED THAT ALL EROSION CONTROL DEVICES BE PLACED FOR THE ENTIRE PHASE AS SHOWN ON THE EROSION CONTROL PLAN. PLACEMENT MAY BE DONE, HOWEVER, TO SUIT CONSTRUCTION SEQUENCING AS APPROVED BY THE ENGINEER.
13. STOCK PILES SHALL BE PROTECTED BY A SEDIMENT CONTROL FENCE OR TEMPORARY SEDIMENT CONTROL TRENCH PER GP-0-20-001. THESE FENCES/TRENCHES SHALL BE MAINTAINED IN GOOD CONDITION UNTIL SAID STOCK PILES ARE REMOVED AND STOCK PILING AREAS ARE PERMANENTLY STABILIZED.
14. STOCK PILES SHALL BE SEED UPON SUSPENSION OF WORK OR IF MATERIAL IS NOT TO BE USED WITHIN 14 DAYS, IN ACCORDANCE WITH GP-0-20-001.
15. IN NO CASE SHALL ERODIBLE MATERIALS BE STOCKPILED WITHIN 25 FEET OF ANY DITCH, STREAM OR OTHER SURFACE WATER BODY.
16. SILT FENCING SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETERS OF ALL SLOPES TO BE GRADED, PRIOR TO GRADING OPERATIONS.
17. SEDIMENT STILLING BASINS SHALL BE UTILIZED TO PREVENT OFF SITE EROSION.
18. THE STORMWATER DETENTION PONDS AND CUT-OFF SWALES SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF ADJACENT AREAS.
19. WHERE NECESSARY, TEMPORARY GRADING WILL BE REQUIRED TO ROUTE STORMWATER TO CUT OFF SWALES AND DETENTION PONDS.
20. PRIOR TO INSTALLATION OF ANY CATCH BASIN, INSTALL EXCAVATED DROP INLET PROTECTION. THIS SHALL REMAIN UNTIL THE DRAINAGE AREA IS STABILIZED.
21. PRIOR TO ANY CONSTRUCTION ALL FEDERAL JURISDICTIONAL WETLANDS SHALL BE FIELD LOCATED AND DELINEATED WITH SILT FENCING AND ORANGE CONSTRUCTION FENCE. THE ORANGE FENCING SHALL BE INSTALLED AT THE ESTABLISHED WETLAND BUFFER LINE. THE SILT FENCE SHALL BE INSTALLED BETWEEN THE BUFFER AND THE JOB SITE.
22. CLEARING OPERATIONS SHALL BE LIMITED TO ACTIVE WORK AREAS.
23. CARE SHALL BE TAKEN TO PRESERVE AS MUCH EXISTING VEGETATION AS POSSIBLE AND HEALTHY TREES OF DESIRABLE SPECIES SHALL BE PROTECTED.
24. RIP-RAP OUTLET PROTECTION: RIP-RAP SHALL BE PROVIDED AT CULVERT LOCATIONS AS INDICATED ON THESE DRAWINGS. THE RIP-RAP SHALL PROTECT SOIL SLOPES FROM EROSION, AND SHALL BE ESTABLISHED AS THE CULVERT IS INSTALLED.
25. STORM INLET PROTECTION: IMMEDIATELY FOLLOWING COMPLETION OF ANY AND ALL OF THE PROPOSED STORM DRAIN INLETS, STORM DRAIN INLET PROTECTION SHALL BE CONSTRUCTED. THIS PROTECTION SHALL FUNCTION TO PREVENT SEDIMENT ENTRANCE INTO THE STORM DRAINS. PROTECTION SHALL BE MAINTAINED IN GOOD CONDITION UNTIL THE DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
26. STONE CHECK DAMS SHALL BE PROVIDED AT ALL STORMWATER OUTLETS UNTIL VEGETATION HAS BEEN STABILIZED.
27. RECP (ROLLED EROSION CONTROL PRODUCT) SHALL BE JUTE OR EXCELISOR MATTING. PROVIDE 4" MIN TOPSOIL AND SEED WITH KENTUCKY BLUEGRASS, CREEPING RED FESCUE AND PERENNIAL RYEGRASS AT A RATE OF 25, 20 AND 10 LBS PER ACRE RESPECTIVELY.
28. EROSION AND SEDIMENT CONTROL MEASURES SHALL INCLUDE A SWPPP MONITORING PROFESSIONAL AS WELL AS COORDINATION WITH MUNICIPALITY OFFICIALS IN ADDITION TO INSPECTION ROLES OF CONTRACTOR AND/OR SITE CONTRACTOR.



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DATE	REVISIONS
07/17/2020	GENERAL
10/16/20	FULL SET OF PLANS
12/20/20	RESPONSE REVISIONS

**EROSION AND SEDIMENT CONTROL PLAN**  
1415 WASHINGTON AVENUE  
CITY OF ALBANY, STATE OF NEW YORK  
COUNTY OF ALBANY, STATE OF NEW YORK

SCALE: 1"=40'  
DATE: 1/24/2020  
CHK: DRH  
BY: MW  
FILE: 200015

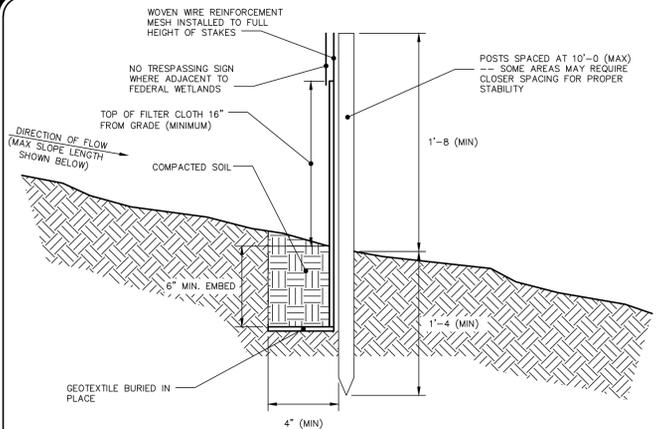
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**MAP POCKET #3**

**MAP C-7**

**EROSION & SEDIMENT CONTROL DETAILS**

.



**MAXIMUM ALLOWABLE SLOPE LENGTH**

MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING RUNOFF TO A SECTION OF SILT FENCE SHALL BE AS FOLLOWS:

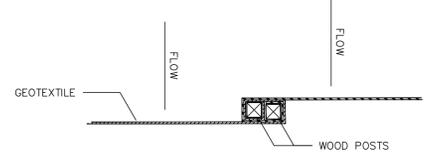
SLOPE STEEPNESS:	MAX. SLOPE LENGTH:
1:2	25 FT
1:3	50 FT
1:4	75 FT
1:5 OR FLATTER	100 FT

NOTE: MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO SILT FENCE SECTION SHALL NOT EXCEED 1/4 ACRE PER 100 FT OF FENCE. CONCENTRATED DISCHARGE OF SEDIMENT LADEN WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO THE FENCING.

**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

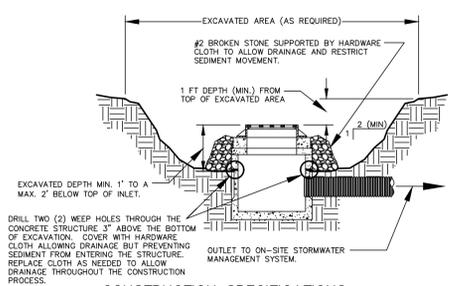
- INSTALL SILT FENCE IN ACCORDANCE WITH "THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", SECTION 7A.
- WOVEN WIRE FENCE SHALL BE 12 1/2 GA., 6" MAXIMUM MESH OPENING, FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE WRAPPED TOGETHER PER SILT FENCE JOINT DETAIL ON THIS SHEET.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED WHEN ACCUMULATION REACHES 1/2 OF DESIGN CAPACITY OF FENCE (1/2 HEIGHT OF FILTER FABRIC) OR WHEN "BULGES" DEVELOP IN FENCING.

- POSTS: STEEL EITHER "1" OR "U" TYPE OR 2" HARDWOOD
- FENCE: WOVEN WIRE, 12 1/2 GA. 6" MAX. MESH OPENING
- FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
- PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.



**SILT FENCE JOINT DETAIL**

**1 CB SILT FENCE DETAIL**  
NOT TO SCALE



**CONSTRUCTION SPECIFICATIONS:**

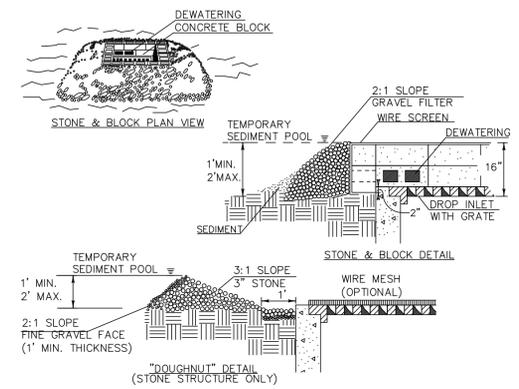
- INSTALL INLET PROTECTION IN ACCORDANCE WITH THE JULY 2016 "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".
- CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
- GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
- WEEP HOLES SHALL BE PROTECTED BY 2" STONE OR GRAVEL.
- UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL EXCAVATION WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.
- THE MAXIMUM DRAINAGE AREA SHALL BE 1 ACRE.

**DESIGN CRITERIA:**

LIMIT THE DRAINAGE AREA TO THE INLET DEVICE TO ONE (1) ACRE. EXCAVATED SIDE SLOPES SHALL BE NO STEEPER THAN 2:1. THE MINIMUM DEPTH SHALL BE 1 FOOT AND THE MAXIMUM DEPTH 2 FEET AS MEASURED FROM THE CREST OF THE INLET STRUCTURE. SHAPE THE EXCAVATED BASIN TO FIT CONDITIONS WITH THE LONGEST DIMENSION ORIENTATED TOWARD THE LONGEST INFLOW AREA TO PROVIDE MAXIMUM TRAP EFFICIENCY. THE CAPACITY OF THE EXCAVATED BASIN SHOULD BE ESTABLISHED TO CONTAIN 900 CUBIC FEET PER ACRE OF DISTURBED AREA. WEEP HOLES, PROTECTED BY FABRIC AND STONE, SHOULD BE PROVIDED FOR DRAINING THE TEMPORARY POOL.

INSPECT AND CLEAN THE EXCAVATED BASIN AFTER EVERY STORM. SEDIMENT SHOULD BE REMOVED WHEN 50 PERCENT OF THE STORAGE VOLUME IS ACHIEVED. THIS MATERIAL SHOULD BE INCORPORATED INTO THE SITE IN A STABILIZED MANNER.

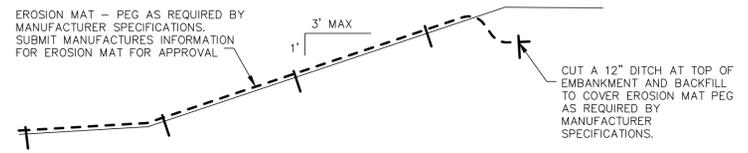
**2 CB EXCAVATED DROP INLET PROTECTION**  
NOT TO SCALE



**CONSTRUCTION SPECIFICATIONS**

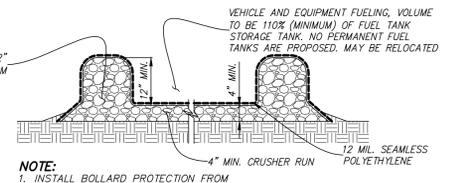
- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2" MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
- HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
- USE CLEAN STONE OR GRAVEL 1/2" - 3/4" IN DIAMETER PLACED 2" BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
- FOR STONE STRUCTURES ONLY, A 1" THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3" STONE AS SHOWN ON THE DRAWINGS. MAXIMUM DRAINAGE AREA 1 ACRE.

**3 CB STONE AND BLOCK DROP INLET PROTECTION DETAIL**  
NOT TO SCALE



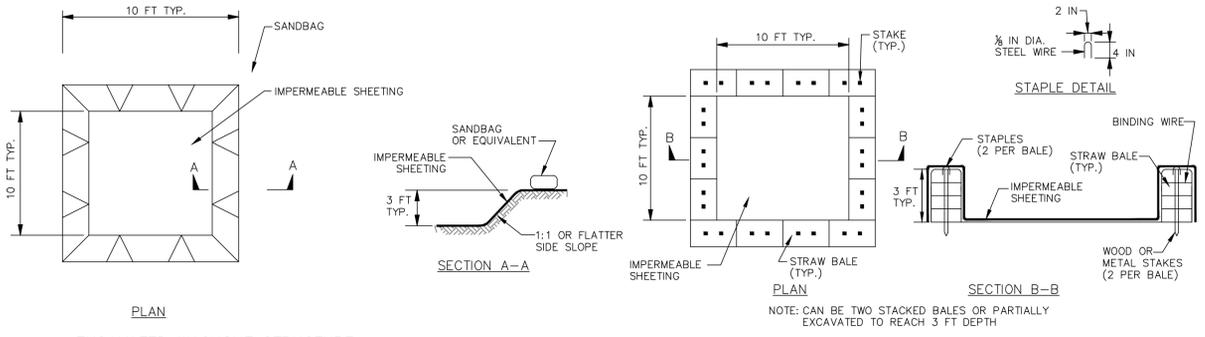
NOTE: USE THIS DETAIL AS REQUIRED TO STABILIZE SLOPES DURING CONSTRUCTION AND UPON COMPLETION OF CLEARING AND GRADING TO PREVENT EROSION OF SLOPES.

**6 CB ANCHORED STABILIZATION MATTING DETAIL**  
NOT TO SCALE



NOTE: 1. INSTALL BOLLARD PROTECTION FROM CONSTRUCTION ACTIVITY (4' O.C. MIN.).

**5 CB VEHICLE AND EQUIPMENT FUELING DETAIL**  
NOT TO SCALE

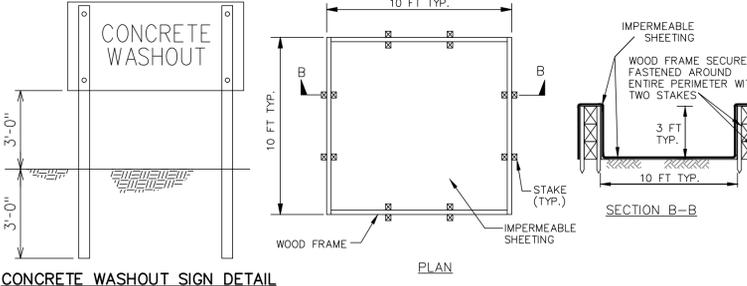


**EXCAVATED WASHOUT STRUCTURE**

**WASHOUT STRUCTURE WITH STRAW BALES**

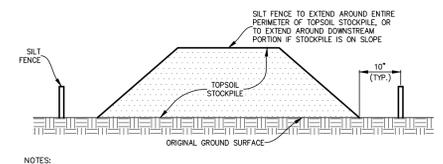
**CONSTRUCTION SPECIFICATIONS**

- LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
- SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
- PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
- PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
- KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.



**WASHOUT STRUCTURE WITH WOOD PLANKS**

**8 CB ONSITE CONCRETE TRUCK WASHOUT STRUCTURE DETAIL**  
NOT TO SCALE



- NOTES:
- AN ON-SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE TOPSOIL STOCKPILE AND OFF-SITE PROPERTY.
  - REFERENCE IS MADE TO THE SILT FENCE DETAIL FOR MATERIALS AND INSTALLATION METHODS.
  - IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH BURLAP MATTING OR SEEDED WITHIN 7 DAYS OF COMPLETION TO MINIMIZE EROSION.
  - INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF 1/2". REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
  - SEDIMENT TRAPPED BY THE FENCES SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SIGNIFICANT ACCUMULATION OCCURS.
  - SILT FENCES SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN DIRECTED BY THE CITY.

**7 CB TEMPORARY TOPSOIL STOCKPILE DETAIL**  
NOT TO SCALE



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Albany, New York 12203

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10/16/20	FULL SET OF PLANS

EROSION AND SEDIMENT CONTROL DETAILS  
1415 WASHINGTON AVENUE  
CITY OF ALBANY, STATE OF NEW YORK  
COUNTY OF ALBANY, STATE OF NEW YORK  
SCALE: AS NOTED  
DATE: 1/24/2020  
CHK: DRH  
BY: MW  
200015-1.DWG

**POCKET #4**  
**EMPTY MAP POCKET**  
**FOR ADDENDUMS**