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## SITE ENGINEERING REPORT

**72 Cummings Point Road  
Stamford, CT**

**Prepared For**  
72 Cummings Point Road

**Prepared by**  
Redniss & Mead, Inc.  
22 First Street  
Stamford, CT  
(203) 327-0500

**Issued on**  
May 22, 2025



A handwritten signature in black ink, appearing to read "T. Milone".

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Teodoro Milone, P.E.  
CT #22563

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**REDNISS  
& MEAD**

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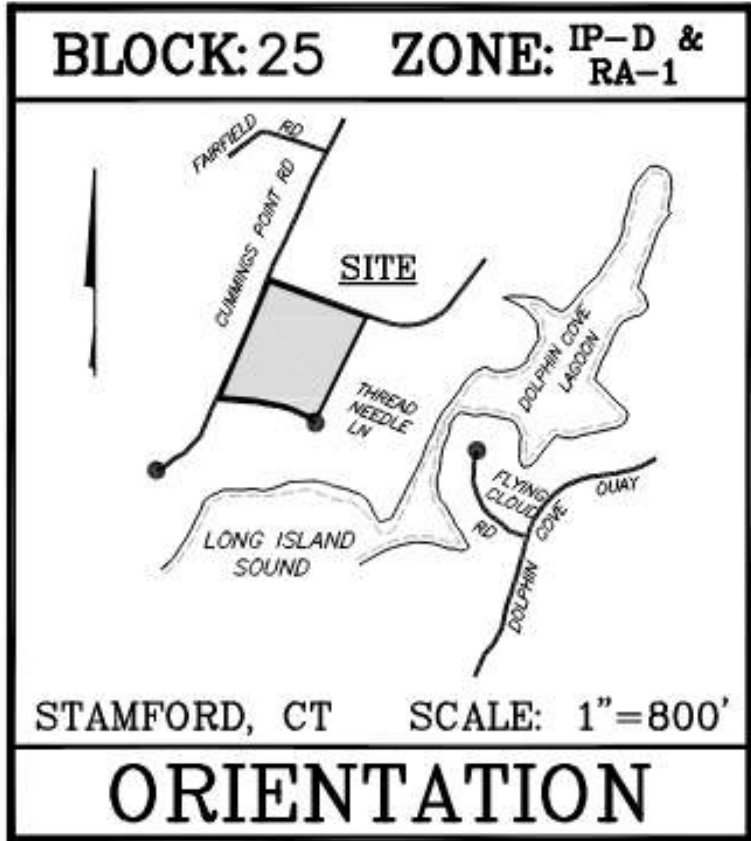
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## Narrative

### **Project Description:**

72 Cummings Point Road, LLC is submitting a Zoning Board application to expand the existing Steven & Alexandra Cohen Foundation building (also known as the Give Foundation building) and associated improvements located at 72 Cummings Point Road (Parcel 2) in Stamford, CT. The 5.3± acre property will be consolidated with an adjacent 0.44± acre parcel to the west, also owned by 72 Cummings Point Road, LLC, resulting in a combined Parcel 2 size of approximately 5.76 acres. The property is located at the southeast corner of Cummings Point Road and Gatehouse Road, within the IP-D Zone, with a small portion lying in the RA-I Zone.

This Site Engineering Report is based on the Zoning Location Survey (ZLS) and the Site Development Plan (Sheet SE-I-SE-5), dated May 22, 2025, prepared by Redniss & Mead, Inc.

### **Existing Conditions:**

The property is currently developed with an office building, the Give Foundation building, a parking lot, driveways, walkways, and a roadway. Existing landscaping includes mature trees, gardens with accent plants and shrubs, and well-maintained lawns. The property is served by public water and sewer and is not located within a designated drinking water supply area. According to FEMA Flood Insurance Rate Map 09001C0518G, effective July 8, 2013 (refer to Appendix A), the property lies within Zone X.

### **Drainage Patterns & Conveyance Systems**

The property's existing stormwater runoff flows into both the Cummings Point Road drainage system (Basin A) and the Gatehouse Road drainage system (Basin B). However, all proposed improvements are located within the portion of the site that drains to the Cummings Point Road system. This system consists of a series of catch basins, manholes, and pipes that discharge into Tomac Cove via a 24-inch reinforced concrete pipe (RCP). An oil/grit separator is situated upstream of the outfall on Parcel 1, which has an approximate watershed area of 8.1 acres. It is important to note that Parcel 1 is also owned by 72 Cummings Point Road, LLC.

The portion of the property tributary to Gatehouse Road drainage system, was not included in the analysis since no improvements are proposed.

### **Soils**

According to the USDA Natural Resources Conservation Service's Web Soil Survey, the soils on the subject parcel are primarily classified as Hydrologic Soil Group B. On-site soil testing, consisting of a series of test pits, were conducted to identify restrictive conditions (such as ledge or groundwater) and to confirm the hydrologic soil group classification. A total of three test pits were performed revealed fill and

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compacted soils with mottled soils, at varying depths ranging from 21 to 42 inches. No ledge was encountered.

The locations of the test pits are shown on Sheet SE-2, and the corresponding results are presented on Sheet SE-4. Based on the observed soil conditions, the characteristics were more consistent with Hydrologic Soil Group C/D than Group B. Given the soil characteristics, the location of mottling the area was considered unsuitable for infiltration practices. As a result, a lined filtration system was considered more appropriate.

### **Proposed Conditions:**

The project includes the construction of an addition to the Give Foundation building, along with modifications to the surrounding walkways and parking areas, as shown on the site plans. The proposed improvements will result in an increase in impervious surface area of approximately 1,676± square feet.

### **Stormwater Management System**

The proposed improvements will result in an increase of approximately 1,676± square feet of impervious coverage compared to existing site conditions. Under the proposed conditions, peak flows and water quality volume (WQV) for storm events up to the 100-year storm are managed through a lined filtration system. This system is located beneath a portion of the existing parking lot. For additional information regarding the filtration system design, refer to the section titled “Proposed Stormwater Treatment Practices.”

The proposed development is classified as a redevelopment project located on a Direct Waterfront parcel that discharges within 500 feet of a tidal wetland. Accordingly, it complies with Stormwater Management Standards 1 through 5. Water quality treatment for the portion of the site tributary to Cummings Point Road is provided by both the existing hydrodynamic separator (Vortechs System Model 16000) on Parcel 1 and the proposed filtration system on Parcel 2. The proposed work does not result in any increase in directly connected impervious area (DCIA).

### **Methodology & General Design Criteria**

The proposed drainage system has been designed to accommodate Type III, 24-hour storm events. Although the project site is located south of the Merritt Parkway, the system has been designed to adequately manage peak runoff for all storm events up to and including the 100-year design storm. It is important to note that the regulatory standard requires mitigation up to and including the 50-year storm event. The 24-hour design storm rainfall amounts and distributions were obtained from the latest NOAA Atlas 14 Point Precipitation Frequency Estimates and storm distribution data (refer to Appendix A).

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## Proposed LID Techniques

Low Impact Development (LID) and site planning techniques were employed to the maximum extent practicable, given the existing constraints of the site. LID strategies implemented include minimizing the extent of land disturbance around the proposed improvements and reducing impervious surfaces wherever feasible. The limit of disturbance has been carefully defined to accommodate the proposed development while minimizing impacts to adjacent trees and existing vegetation.

## Proposed Stormwater Treatment Practices

The design approach to satisfy Standard 1 and 2 of the Stamford Drainage Manual is to design a subsurface filtration system to provide water quality and peak flow control for the proposed improvements further described below:

- The 1,570-square-foot filtration system is located in the northernmost row of the existing parking area, east of the building addition. This lined filtration system consists of conventional asphalt pavement over a crushed stone base ranging from 9 to 14.5 inches in thickness. Beneath the crushed stone is a 12-inch sand layer, which sits atop an 8-inch crushed stone reservoir. A 3-inch perforated pipe is installed at the bottom of the lower stone layer to attenuate peak flows and fully drain the system. Runoff from the building roof is conveyed to the system via a 6-inch perforated pipe that runs along the northern edge of the filtration area, set above the sand layer. Stormwater percolates through the stone and sand layers, providing water quality treatment. The system receives runoff from a portion of the existing Give Foundation building and the entire roof area of the proposed addition, totaling approximately 3,768 square feet of impervious surface. The existing pump station, to be relocated, is being reused (or can be replaced) to direct runoff from the existing roof area to the filtration system, while the building addition is connected via gravity. The system provides approximately 1,193 cubic feet of storage at the top of the inlet pipe. Due to poor soil conditions, a pond liner is installed around the filtration system to ensure proper containment and function.

## Hydrologic Analysis of Peak Rates of Runoff

Hydrologic models have been prepared utilizing the SCS Runoff Curve Number Method from NRCS TR-55 to analyze the pre- and post-development rainfall runoff rates and volumes. The watershed area, curve number (CN), and time of concentration (TC) were calculated for the property. The pre-development drainage basin boundary and the post-development drainage basin boundaries are shown in [Appendix B](#). The results of the HydroCad model used to analyze the pre- and post-development watershed conditions are presented in [Appendix D](#). A comparison of the pre- and post-development peak discharge rates is provided in the tables below.

Return Period (years)	Peak Flow (cfs)			
	Ex	Pr	Change	% Change
1	4.93	4.93	0.00	0.0%
2	6.93	6.91	-0.02	-0.3%
5	10.38	10.35	-0.03	-0.3%
10	13.36	13.26	-0.10	-0.7%
25	17.49	17.33	-0.16	-0.9%
50	20.56	20.37	-0.19	-0.9%
100	23.86	23.63	-0.23	-1.0%

Comparison of the peak discharge rates for pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the proposed development will be decreased or maintained. Therefore, the proposed development will not adversely impact the downstream or adjacent properties or receiving water bodies or courses.

### **Compliance with Stormwater Management Standards**

The project site will be designed to meet the Stamford Stormwater Management Standards to the maximum extent practicable as summarized below:

#### **Standard I: Runoff and Pollutant Reduction**

- A. The runoff and pollutant reduction requirements for this project is to retain the WQV. The existing and proposed Stormwater Treatment Practice (proposed filtration system and existing hydrodynamic separator) provide treatment to all on-site impervious coverage tributary to Cumming's Point Road. No improvements are proposed within the Gate House Road watershed area. The table below provides additional information:

Standard I (Retention and Treatment) Calculations					
Drainage Area ID	Description	Total Area (SF)	Impervious Area (SF)	WQV Required (CF)	WQV Treated (CF)
Tomac Cove	Cummings Point Road	229,106	127,416	10,511	11,406
Dolphin Cove Quay	Gate House Road	21,874	9,941	803	0
		<b>Total</b>	137,357	11,314	11,406

- B. Due to high seasonal groundwater levels and compacted soils, on-site infiltration is not proposed. Instead, stormwater treatment is provided through the lined filtration system and the existing hydrodynamic separator, both of which meet the applicable treatment requirements. For additional information, refer to the soils data provided on Sheet SE-4. The proposed development has been designed within areas previously developed.
- C. Noted.
- D. All runoff from the site's parking lots is tributary to an existing hydrodynamic separator sized to treat the 25-year storm. Parking is proposed to be reduced by eight spaces.
- E. Noted.

### **Standard 2: Peak Flow Control**

- A. Stream channel protection is not required for this project as the subject development does not propose one or more acres of impervious coverage.
- B. Peak rates of runoff are being reduced. The downstream system was previously designed to conveyance flow including the 25-year design storm event as required in Section 3.2 of the Drainage Manual.
- C. The post-development peak flow rates from the 1-year, 2-year, 5-year, 10-year, 25-year and 50-year, 24-hour storms are controlled to the corresponding pre-development peak discharge rates. Reference is made to the HydroCAD report found in [Appendix D](#).
- D. No changes to the outlet is being proposed. The project is reducing the peak flow improving the outlet conveyance during the 100-year storm event.
- E. N/A

### **Standard 3: Construction Erosion and Sediment Control**

- A. Site plan sheet SE-3 depicts erosion control measures to be implemented to control construction related impacts. Sediment and erosion controls such as silt fencing, stone tracking pads at construction zone entrance/exit point, silt sack area drain protection, and tree protection are proposed.

### **Standard 4: Operation and Maintenance**

- A. A Standard City of Stamford Drainage Maintenance Agreement will be executed with the Environmental Protection Board (EPB). A draft maintenance agreement has been prepared and is included in [Appendix F](#).
- B. The construction plans will include notes describing the long-term maintenance requirements for the site-specific drainage system(s) including routine and non-route inspection and maintenance tasks to be undertaken after construction is completed as well as the schedule for implementing these tasks. This information will be added to the plan set prior to filing for a building permit.

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## **Standard 5: Stormwater Management Report**

- A. This document and its associated appendices serve as the required Stormwater Management Report.
- B. Based on the above information, the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities.

### **Conclusion:**

As noted above, the proposed improvements are designed in accordance with the City of Stamford Stormwater Drainage Manual and will not adversely impact adjacent or downstream properties or City-owned drainage facilities.

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## Appendix A

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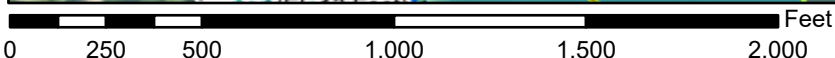
FEMA Flood Insurance Map  
USGS Quadrangle Map – Site Vicinity Map  
City of Stamford Rainfall Intensity – Duration Curves  
NOAA Atlas 14 Volume 10 – Precipitation Frequency  
NRCS Web Soil Survey

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# National Flood Hazard Layer FIRMMette



73°33'29"W 41°1'52"N



1:6,000 73°32'52"W 41°1'25"N

Basemap Imagery Source: USGS National Map 2023

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



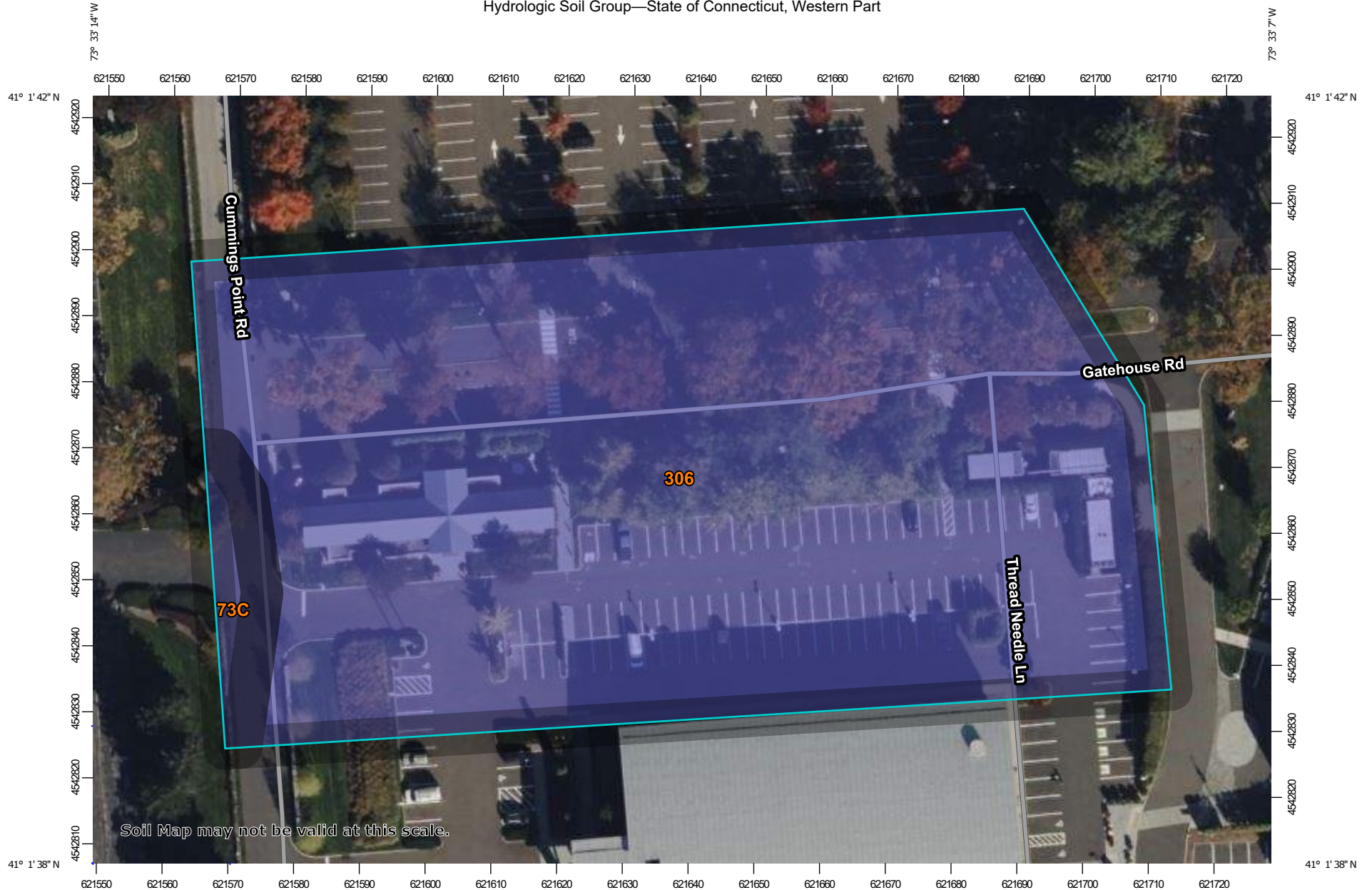
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

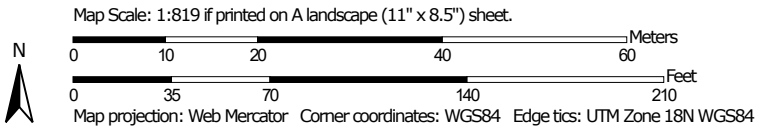
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/23/2025 at 5:45 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—State of Connecticut, Western Part



Soil Map may not be valid at this scale.



## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	0.1	2.3%
306	Udorthents-Urban land complex	B	2.5	97.7%
<b>Totals for Area of Interest</b>			<b>2.6</b>	<b>100.0%</b>

### Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



**NOAA Atlas 14, Volume 10, Version 3**  
**Location name: Stamford, Connecticut, USA\***  
**Latitude: 41.0273°, Longitude: -73.553°**  
**Elevation: 27 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerials](#)

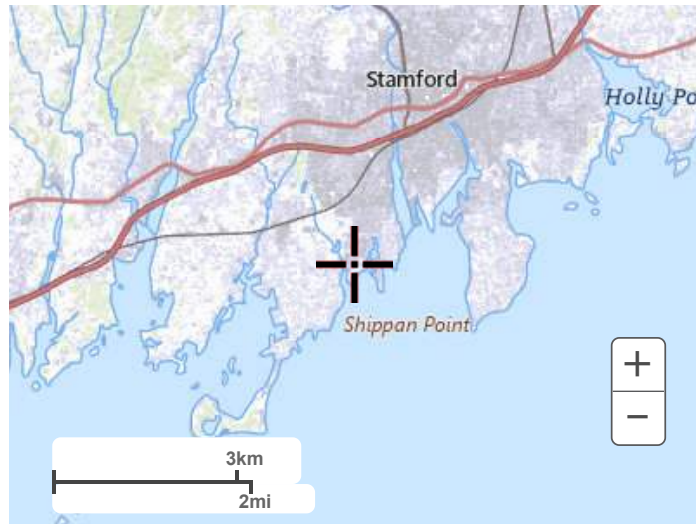
**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
<b>5-min</b>	<b>0.364</b> (0.280-0.466)	<b>0.425</b> (0.327-0.545)	<b>0.525</b> (0.403-0.675)	<b>0.608</b> (0.464-0.784)	<b>0.723</b> (0.534-0.964)	<b>0.810</b> (0.587-1.10)	<b>0.899</b> (0.633-1.26)	<b>0.997</b> (0.670-1.42)	<b>1.13</b> (0.734-1.66)	<b>1.24</b> (0.787-1.86)
<b>10-min</b>	<b>0.516</b> (0.397-0.660)	<b>0.603</b> (0.463-0.772)	<b>0.745</b> (0.571-0.957)	<b>0.862</b> (0.657-1.11)	<b>1.02</b> (0.757-1.37)	<b>1.15</b> (0.831-1.56)	<b>1.27</b> (0.897-1.78)	<b>1.41</b> (0.948-2.01)	<b>1.61</b> (1.04-2.36)	<b>1.76</b> (1.12-2.63)
<b>15-min</b>	<b>0.607</b> (0.467-0.776)	<b>0.709</b> (0.545-0.908)	<b>0.876</b> (0.671-1.12)	<b>1.01</b> (0.773-1.31)	<b>1.20</b> (0.891-1.61)	<b>1.35</b> (0.977-1.83)	<b>1.50</b> (1.06-2.09)	<b>1.66</b> (1.12-2.37)	<b>1.89</b> (1.22-2.77)	<b>2.07</b> (1.31-3.09)
<b>30-min</b>	<b>0.848</b> (0.653-1.08)	<b>0.992</b> (0.763-1.27)	<b>1.23</b> (0.940-1.58)	<b>1.42</b> (1.08-1.83)	<b>1.69</b> (1.25-2.25)	<b>1.89</b> (1.37-2.57)	<b>2.10</b> (1.48-2.93)	<b>2.33</b> (1.56-3.32)	<b>2.64</b> (1.71-3.87)	<b>2.88</b> (1.82-4.30)
<b>60-min</b>	<b>1.09</b> (0.839-1.39)	<b>1.28</b> (0.980-1.63)	<b>1.58</b> (1.21-2.03)	<b>1.83</b> (1.40-2.36)	<b>2.18</b> (1.61-2.90)	<b>2.44</b> (1.77-3.30)	<b>2.71</b> (1.90-3.77)	<b>2.99</b> (2.01-4.26)	<b>3.38</b> (2.19-4.96)	<b>3.69</b> (2.33-5.50)
<b>2-hr</b>	<b>1.42</b> (1.10-1.80)	<b>1.67</b> (1.29-2.12)	<b>2.08</b> (1.60-2.65)	<b>2.42</b> (1.86-3.10)	<b>2.89</b> (2.15-3.83)	<b>3.25</b> (2.36-4.38)	<b>3.62</b> (2.55-5.01)	<b>4.01</b> (2.71-5.68)	<b>4.57</b> (2.97-6.65)	<b>5.01</b> (3.18-7.42)
<b>3-hr</b>	<b>1.64</b> (1.27-2.07)	<b>1.93</b> (1.50-2.45)	<b>2.42</b> (1.87-3.08)	<b>2.82</b> (2.17-3.60)	<b>3.38</b> (2.52-4.46)	<b>3.80</b> (2.78-5.10)	<b>4.24</b> (3.01-5.86)	<b>4.72</b> (3.18-6.65)	<b>5.39</b> (3.51-7.82)	<b>5.93</b> (3.77-8.76)
<b>6-hr</b>	<b>2.05</b> (1.60-2.58)	<b>2.44</b> (1.91-3.08)	<b>3.08</b> (2.40-3.89)	<b>3.61</b> (2.79-4.57)	<b>4.33</b> (3.25-5.70)	<b>4.88</b> (3.59-6.52)	<b>5.45</b> (3.90-7.52)	<b>6.09</b> (4.13-8.54)	<b>7.02</b> (4.58-10.1)	<b>7.77</b> (4.96-11.4)
<b>12-hr</b>	<b>2.52</b> (1.98-3.14)	<b>3.01</b> (2.36-3.77)	<b>3.82</b> (2.99-4.80)	<b>4.49</b> (3.50-5.66)	<b>5.42</b> (4.09-7.09)	<b>6.11</b> (4.52-8.14)	<b>6.84</b> (4.93-9.41)	<b>7.69</b> (5.23-10.7)	<b>8.91</b> (5.84-12.8)	<b>9.93</b> (6.35-14.5)
<b>24-hr</b>	<b>2.93</b> (2.32-3.64)	<b>3.55</b> (2.81-4.42)	<b>4.57</b> (3.60-5.69)	<b>5.41</b> (4.24-6.78)	<b>6.57</b> (4.99-8.55)	<b>7.43</b> (5.54-9.86)	<b>8.35</b> (6.06-11.5)	<b>9.44</b> (6.44-13.1)	<b>11.1</b> (7.26-15.7)	<b>12.4</b> (7.97-18.0)
<b>2-day</b>	<b>3.28</b> (2.61-4.04)	<b>4.03</b> (3.21-4.98)	<b>5.27</b> (4.18-6.53)	<b>6.30</b> (4.96-7.84)	<b>7.71</b> (5.90-10.0)	<b>8.76</b> (6.57-11.6)	<b>9.90</b> (7.24-13.6)	<b>11.3</b> (7.71-15.5)	<b>13.3</b> (8.79-18.9)	<b>15.1</b> (9.73-21.7)
<b>3-day</b>	<b>3.54</b> (2.83-4.35)	<b>4.37</b> (3.49-5.38)	<b>5.72</b> (4.55-7.06)	<b>6.84</b> (5.41-8.48)	<b>8.39</b> (6.44-10.8)	<b>9.53</b> (7.17-12.6)	<b>10.8</b> (7.90-14.7)	<b>12.3</b> (8.42-16.8)	<b>14.6</b> (9.60-20.5)	<b>16.5</b> (10.6-23.6)
<b>4-day</b>	<b>3.79</b> (3.04-4.65)	<b>4.66</b> (3.73-5.72)	<b>6.08</b> (4.85-7.49)	<b>7.26</b> (5.76-8.98)	<b>8.89</b> (6.83-11.4)	<b>10.1</b> (7.61-13.2)	<b>11.4</b> (8.37-15.5)	<b>13.0</b> (8.91-17.7)	<b>15.3</b> (10.1-21.6)	<b>17.4</b> (11.2-24.8)
<b>7-day</b>	<b>4.51</b> (3.63-5.51)	<b>5.45</b> (4.38-6.66)	<b>6.99</b> (5.60-8.56)	<b>8.26</b> (6.58-10.2)	<b>10.0</b> (7.73-12.8)	<b>11.3</b> (8.56-14.8)	<b>12.7</b> (9.36-17.1)	<b>14.4</b> (9.93-19.5)	<b>16.9</b> (11.2-23.6)	<b>19.0</b> (12.3-26.9)
<b>10-day</b>	<b>5.22</b> (4.22-6.35)	<b>6.21</b> (5.01-7.55)	<b>7.82</b> (6.28-9.54)	<b>9.16</b> (7.31-11.2)	<b>11.0</b> (8.50-14.0)	<b>12.4</b> (9.36-16.0)	<b>13.8</b> (10.2-18.5)	<b>15.5</b> (10.7-21.0)	<b>18.0</b> (12.0-25.0)	<b>20.1</b> (13.0-28.4)
<b>20-day</b>	<b>7.36</b> (5.98-8.88)	<b>8.46</b> (6.86-10.2)	<b>10.3</b> (8.30-12.4)	<b>11.8</b> (9.45-14.3)	<b>13.8</b> (10.7-17.4)	<b>15.4</b> (11.7-19.6)	<b>17.0</b> (12.4-22.3)	<b>18.7</b> (13.0-25.1)	<b>21.1</b> (14.1-29.1)	<b>23.0</b> (15.0-32.3)
<b>30-day</b>	<b>9.12</b> (7.44-11.0)	<b>10.3</b> (8.40-12.4)	<b>12.3</b> (9.95-14.8)	<b>13.9</b> (11.2-16.8)	<b>16.1</b> (12.5-20.1)	<b>17.8</b> (13.5-22.6)	<b>19.5</b> (14.3-25.4)	<b>21.3</b> (14.9-28.4)	<b>23.6</b> (15.8-32.4)	<b>25.4</b> (16.5-35.5)
<b>45-day</b>	<b>11.3</b> (9.26-13.6)	<b>12.6</b> (10.3-15.1)	<b>14.7</b> (12.0-17.7)	<b>16.5</b> (13.3-19.9)	<b>18.9</b> (14.7-23.4)	<b>20.8</b> (15.8-26.2)	<b>22.6</b> (16.5-29.1)	<b>24.4</b> (17.1-32.5)	<b>26.7</b> (17.9-36.5)	<b>28.4</b> (18.5-39.5)
<b>60-day</b>	<b>13.1</b> (10.8-15.7)	<b>14.5</b> (11.9-17.4)	<b>16.8</b> (13.7-20.1)	<b>18.6</b> (15.1-22.4)	<b>21.2</b> (16.6-26.2)	<b>23.2</b> (17.7-29.1)	<b>25.2</b> (18.4-32.3)	<b>27.0</b> (19.0-35.8)	<b>29.3</b> (19.7-39.9)	<b>30.9</b> (20.2-42.9)

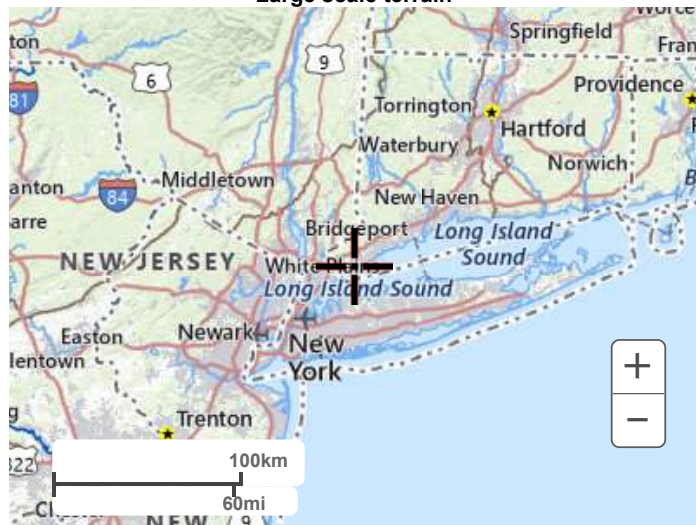
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

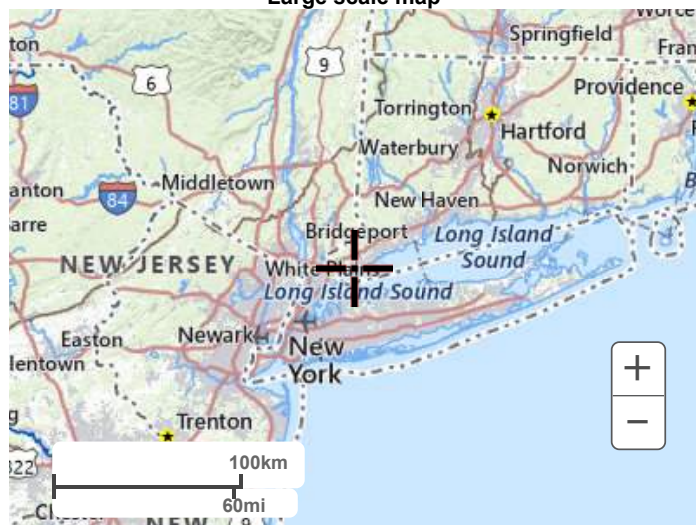
**PF graphical**



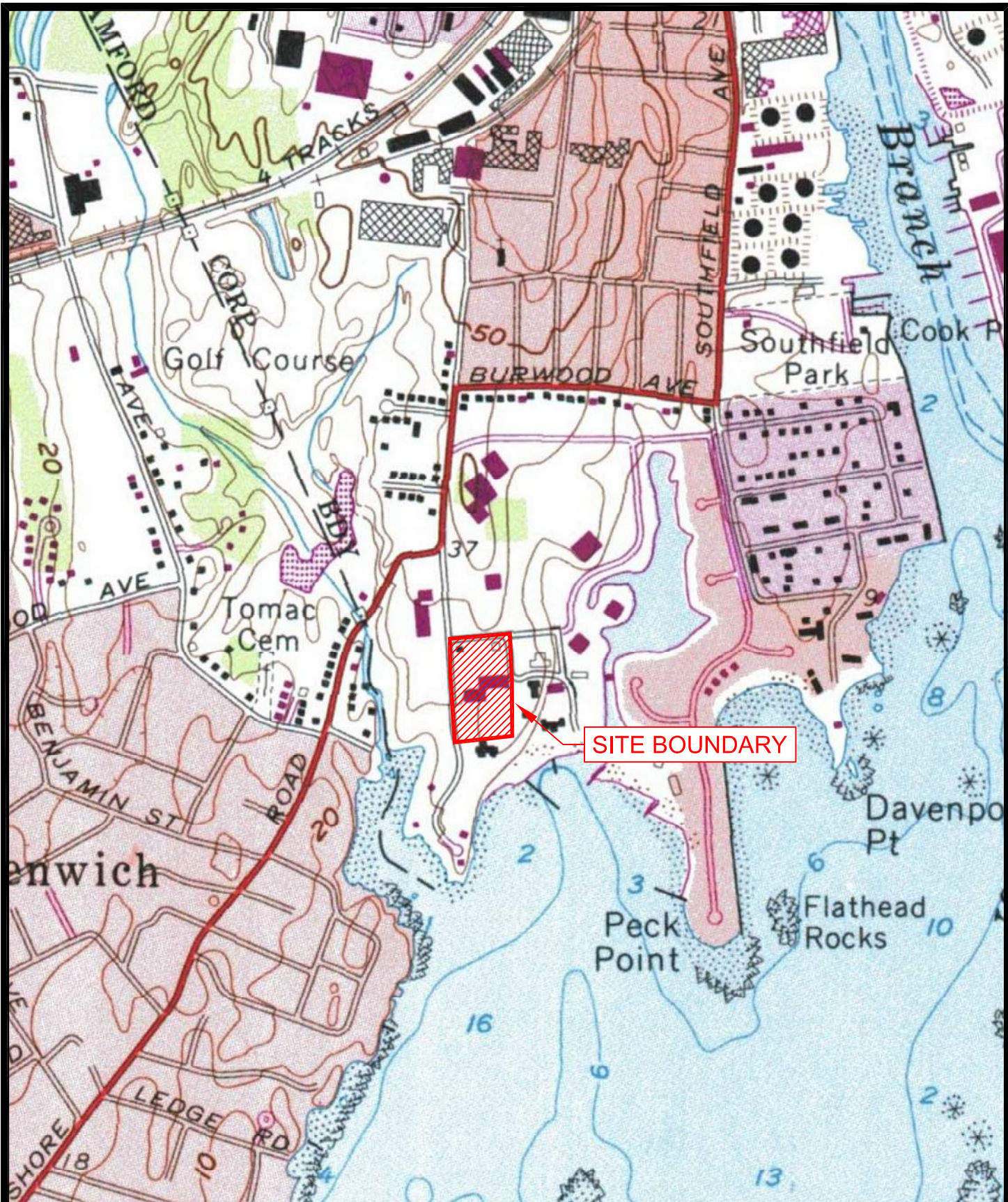
Large scale terrain



Large scale map



Large scale aerial



**USGS QUADRANGLE MAP  
72 CUMMINGS POINT ROAD  
STAMFORD, CT**

**REDNISS  
& MEAD**

COMM. NO.: 2086

DATE: 10/12/2022

SCALE: 1"=1,000'

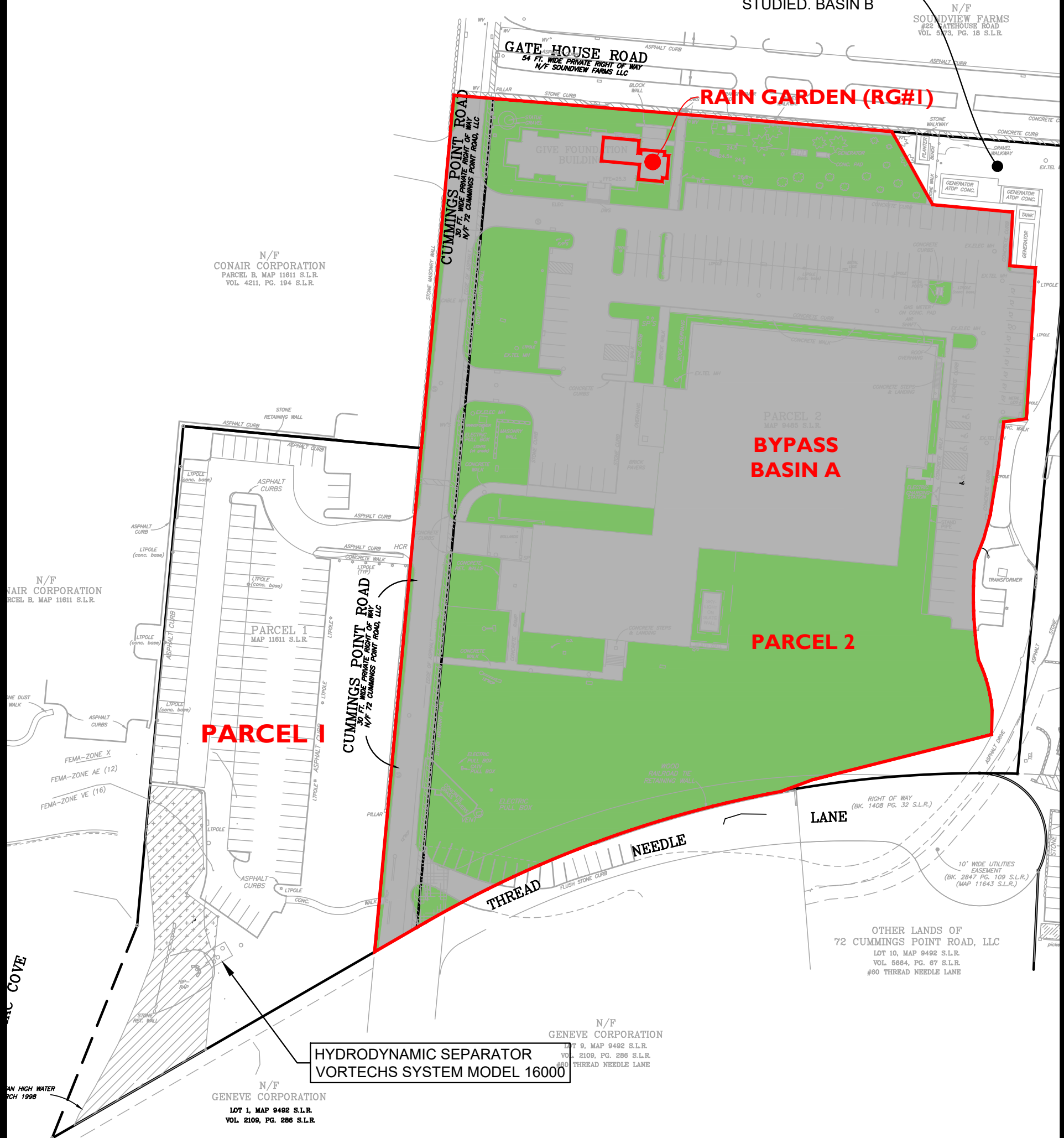
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## **Appendix B**

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Existing On-Site Drainage Basin Map  
Proposed On-Site Drainage Basin Map  
LID Map

EXISTING ON-SITE  
WATERSHED TO GATE  
HOUSE ROAD. NOT  
STUDIED. BASIN B



N/F  
CONAIR CORPORATION  
PARCEL B, MAP 11611 S.L.R.  
VOL. 4211, PG. 194 S.L.R.

N/F  
SOUNDVIEW FARMS  
#22 WATERHOUSE ROAD  
VOL. 5793, PG. 18 S.L.R.

N/F  
CONAIR CORPORATION  
PARCEL B, MAP 11611 S.L.R.

PARCEL 1  
MAP 11611 S.L.R.

BYPASS  
BASIN A

PARCEL 2

CUMMINGS POINT ROAD  
30 FT. WIDE PRIVATE RIGHT OF WAY  
N/F 72 CUMMINGS POINT ROAD, LLC

LANE  
RIGHT OF WAY  
(BK. 1408 PG. 32 S.L.R.)


OTHER LANDS OF  
72 CUMMINGS POINT ROAD, LLC  
LOT 10, MAP 9492 S.L.R.  
VOL. 5864, PG. 67 S.L.R.  
#60 THREAD NEEDLE LANE

N/F  
GENEVE CORPORATION  
LOT 9, MAP 9492 S.L.R.  
VOL. 2109, PG. 286 S.L.R.  
#60 THREAD NEEDLE LANE

N/F  
GENEVE CORPORATION  
LOT 1, MAP 9492 S.L.R.  
VOL. 2109, PG. 286 S.L.R.

DRAINAGE BASIN SUMMARY TABLE			
BASIN A	IMPERVIOUS (SF)	LAWN (SF)	SIZE (SF)
BYPASS	124,777	103,366	228,143
INFIL#1	963	-	963

**EXISTING DRAINAGE BASIN A**  
**72 CUMMINGS POINT ROAD**  
**STAMFORD, CT**



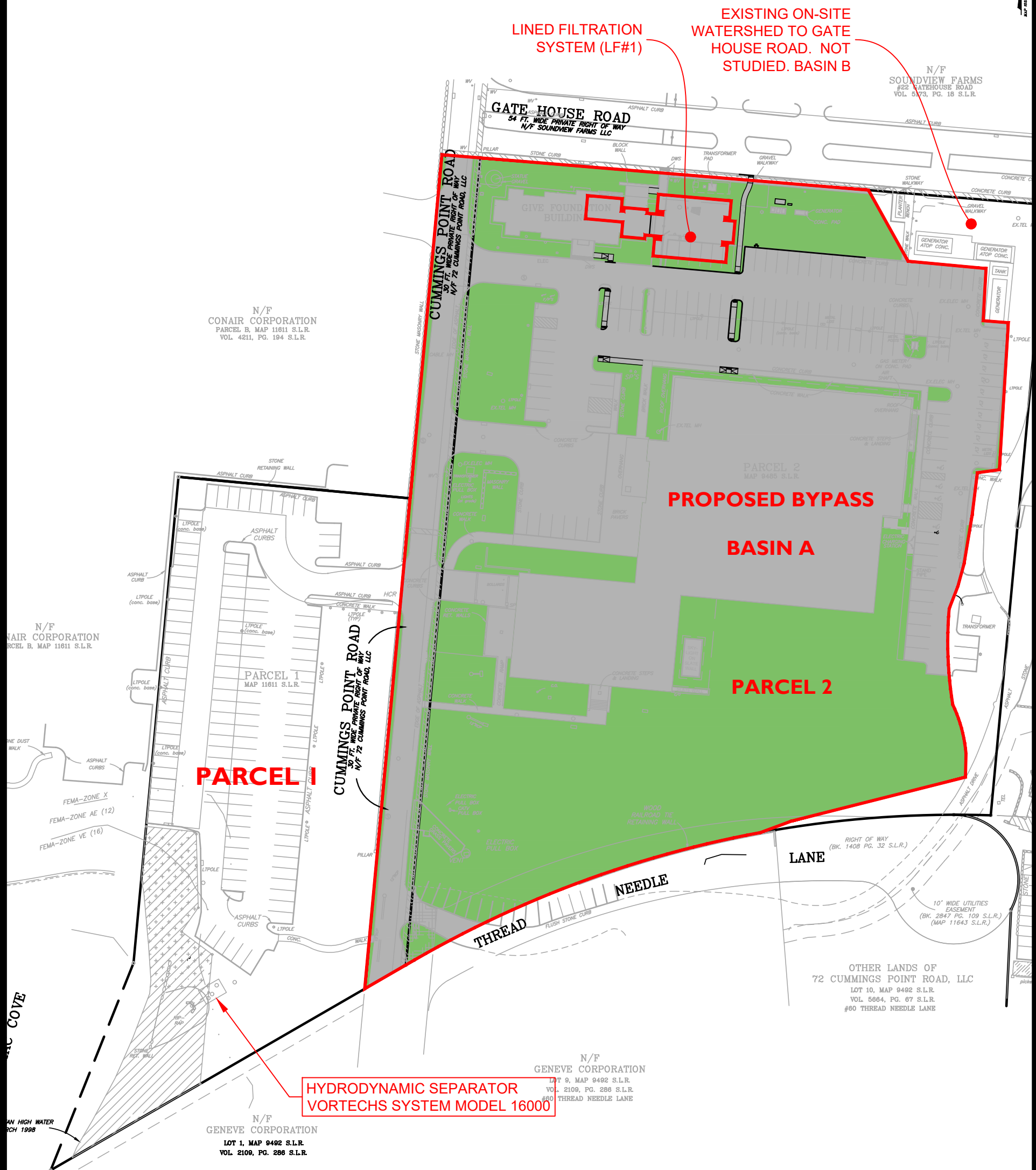
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PERMITTING

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www.rednissmead.com

COMM. NO.:	DATE:
2086ZE	05/22/2025
	SCALE:
	1"=80'

LINED FILTRATION SYSTEM (LF#1)  
 EXISTING ON-SITE WATERSHED TO GATE HOUSE ROAD. NOT STUDIED. BASIN B



DRAINAGE BASIN SUMMARY TABLE			
BASIN A	IMPERVIOUS (SF)	LAWN (SF)	SIZE (SF)
BYPASS	123,648	101,690	225,338
INFIL#1	3,768	-	3,768

**PROPOSED DRAINAGE BASIN A**  
**72 CUMMINGS POINT ROAD**  
**STAMFORD, CT**



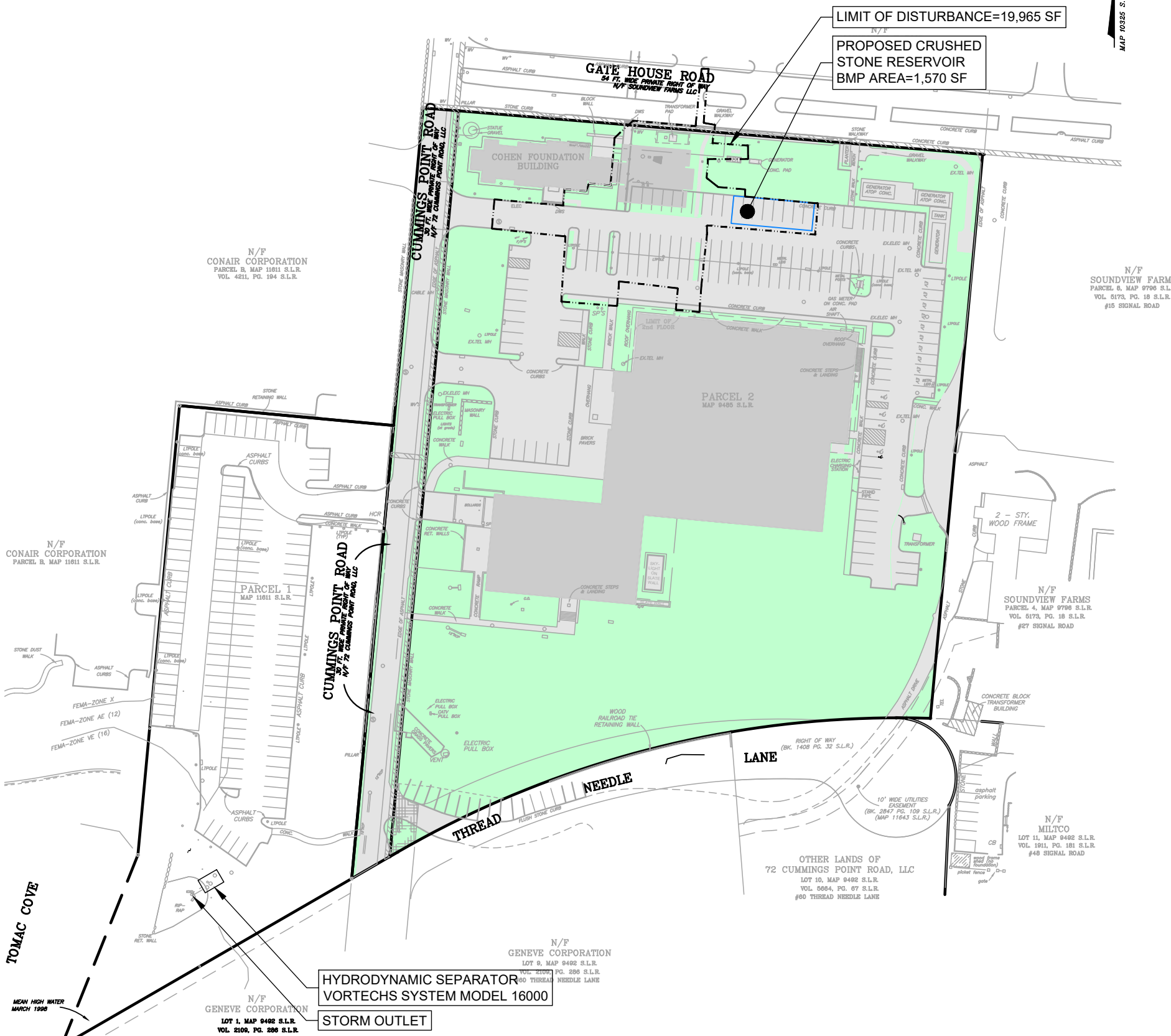
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2086ZE	05/22/2025
	SCALE:
	1"=60'

MAP 70326 S.L.R.



## LOW IMPACT DEVELOPMENT PLAN

### 72 CUMMINGS POINT ROAD STAMFORD, CT

#### LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED BMP
- BUILDING
- IMPERVIOUS AREA
- PERVIOUS AREA

SUMMARY TABLE			
TOTAL SITE AREA	250,975 SF	TOTAL DISTURBED AREA	19,965 SF
PRE-DEVELOPMENT IMPERVIOUS	135,681 SF	POST-DEVELOPMENT IMPERVIOUS	137,357 SF
PRE-DEVELOPMENT DCIA	9,941 SF	POST-DEVELOPMENT DCIA	9,941 SF
DIFFERENCE IN DCIA		0 SF	



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SCALE: <b>1"=60'</b>	

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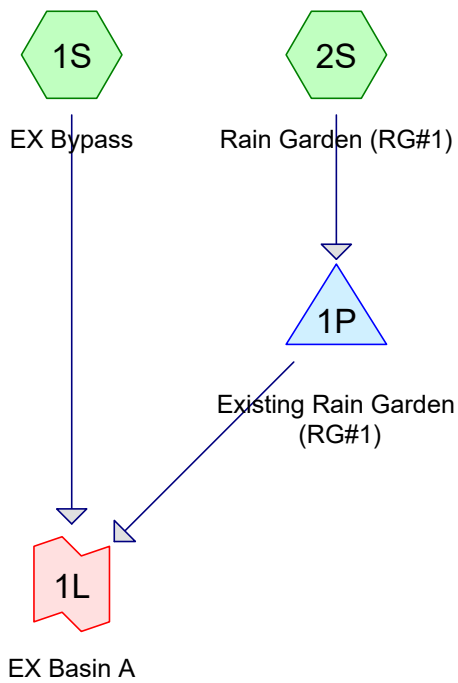
# Appendix C

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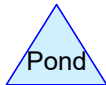
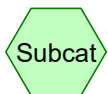
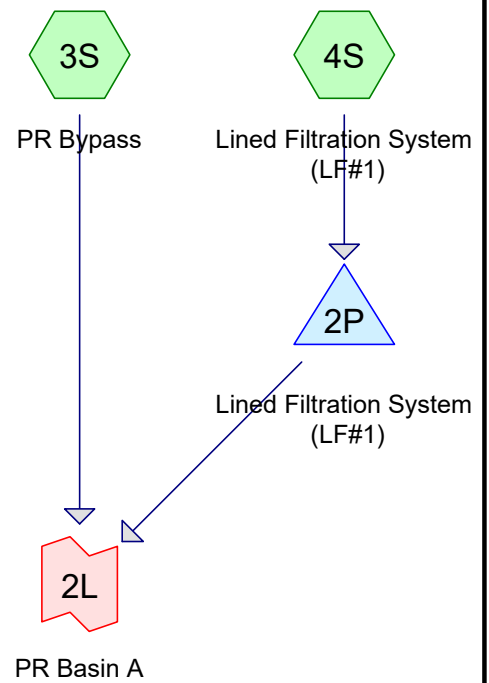
HydroCAD Report

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Existing Conditions



Proposed Conditions



## 2086 Hydrocad 2025

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### Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 year	Type III 24-hr		Default	24.00	1	2.93	2
2	2 year	Type III 24-hr		Default	24.00	1	3.55	2
3	5 year	Type III 24-hr		Default	24.00	1	4.57	2
4	10 year	Type III 24-hr		Default	24.00	1	5.41	2
5	25 year	Type III 24-hr		Default	24.00	1	6.57	2
6	50 year	Type III 24-hr		Default	24.00	1	7.43	2
7	100 year	Type III 24-hr		Default	24.00	1	8.35	2

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Type III 24-hr 1 year Rainfall=2.93"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>1.25"  
 Tc=22.0 min CN=81 Runoff=4.93 cfs 23,831 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>2.70"  
 Tc=5.0 min CN=98 Runoff=0.06 cfs 216 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>1.25"  
 Tc=22.0 min CN=81 Runoff=4.87 cfs 23,538 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>2.70"  
 Tc=5.0 min CN=98 Runoff=0.25 cfs 847 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.90' Storage=216 cf Inflow=0.06 cfs 216 cf  
 Outflow=0.00 cfs 0 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=23.69' Storage=337 cf Inflow=0.25 cfs 847 cf  
 Outflow=0.06 cfs 791 cf

**Link 1L: EX Basin A** Inflow=4.93 cfs 23,831 cf  
 Primary=4.93 cfs 23,831 cf

**Link 2L: PR Basin A** Inflow=4.93 cfs 24,330 cf  
 Primary=4.93 cfs 24,330 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 48,433 cf Average Runoff Depth = 1.27"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

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*Type III 24-hr 2 year Rainfall=3.55"*

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>1.74"  
 Tc=22.0 min CN=81 Runoff=6.93 cfs 33,096 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>3.31"  
 Tc=5.0 min CN=98 Runoff=0.08 cfs 266 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>1.74"  
 Tc=22.0 min CN=81 Runoff=6.84 cfs 32,689 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>3.31"  
 Tc=5.0 min CN=98 Runoff=0.31 cfs 1,041 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.93' Storage=235 cf Inflow=0.08 cfs 266 cf  
 Outflow=0.00 cfs 32 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=23.79' Storage=404 cf Inflow=0.31 cfs 1,041 cf  
 Outflow=0.07 cfs 981 cf

**Link 1L: EX Basin A** Inflow=6.93 cfs 33,128 cf  
 Primary=6.93 cfs 33,128 cf

**Link 2L: PR Basin A** Inflow=6.91 cfs 33,670 cf  
 Primary=6.91 cfs 33,670 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 67,092 cf Average Runoff Depth = 1.76"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

Type III 24-hr 5 year Rainfall=4.57"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>2.60"  
 Tc=22.0 min CN=81 Runoff=10.38 cfs 49,379 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>4.33"  
 Tc=5.0 min CN=98 Runoff=0.10 cfs 348 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>2.60"  
 Tc=22.0 min CN=81 Runoff=10.26 cfs 48,772 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>4.33"  
 Tc=5.0 min CN=98 Runoff=0.40 cfs 1,360 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.94' Storage=238 cf Inflow=0.10 cfs 348 cf  
 Outflow=0.01 cfs 113 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=24.02' Storage=513 cf Inflow=0.40 cfs 1,360 cf  
 Outflow=0.09 cfs 1,294 cf

**Link 1L: EX Basin A** Inflow=10.38 cfs 49,493 cf  
 Primary=10.38 cfs 49,493 cf

**Link 2L: PR Basin A** Inflow=10.35 cfs 50,066 cf  
 Primary=10.35 cfs 50,066 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 99,859 cf Average Runoff Depth = 2.62"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

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Type III 24-hr 10 year Rainfall=5.41"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

<b>Subcatchment1S: EX Bypass</b>	Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>3.34" Tc=22.0 min CN=81 Runoff=13.32 cfs 63,430 cf
<b>Subcatchment2S: Rain Garden (RG#1)</b>	Runoff Area=963 sf 100.00% Impervious Runoff Depth>5.17" Tc=5.0 min CN=98 Runoff=0.12 cfs 415 cf
<b>Subcatchment3S: PR Bypass</b>	Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>3.34" Tc=22.0 min CN=81 Runoff=13.15 cfs 62,650 cf
<b>Subcatchment4S: Lined Filtration System</b>	Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>5.17" Tc=5.0 min CN=98 Runoff=0.47 cfs 1,623 cf
<b>Pond 1P: Existing Rain Garden (RG#1)</b>	Peak Elev=24.95' Storage=246 cf Inflow=0.12 cfs 415 cf Outflow=0.04 cfs 181 cf
<b>Pond 2P: Lined Filtration System (LF#1)</b>	Peak Elev=24.22' Storage=605 cf Inflow=0.47 cfs 1,623 cf Outflow=0.11 cfs 1,553 cf
<b>Link 1L: EX Basin A</b>	Inflow=13.36 cfs 63,611 cf Primary=13.36 cfs 63,611 cf
<b>Link 2L: PR Basin A</b>	Inflow=13.26 cfs 64,203 cf Primary=13.26 cfs 64,203 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 128,118 cf Average Runoff Depth = 3.36"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

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Type III 24-hr 25 year Rainfall=6.57"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>4.39"  
Tc=22.0 min CN=81 Runoff=17.43 cfs 83,446 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>6.33"  
Tc=5.0 min CN=98 Runoff=0.15 cfs 508 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>4.39"  
Tc=22.0 min CN=81 Runoff=17.21 cfs 82,420 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>6.33"  
Tc=5.0 min CN=98 Runoff=0.58 cfs 1,987 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.97' Storage=256 cf Inflow=0.15 cfs 508 cf  
Outflow=0.10 cfs 273 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=24.50' Storage=736 cf Inflow=0.58 cfs 1,987 cf  
Outflow=0.12 cfs 1,911 cf

**Link 1L: EX Basin A** Inflow=17.49 cfs 83,719 cf  
Primary=17.49 cfs 83,719 cf

**Link 2L: PR Basin A** Inflow=17.33 cfs 84,331 cf  
Primary=17.33 cfs 84,331 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 168,360 cf Average Runoff Depth = 4.41"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

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Type III 24-hr 50 year Rainfall=7.43"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>5.19"  
Tc=22.0 min CN=81 Runoff=20.49 cfs 98,603 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>7.19"  
Tc=5.0 min CN=98 Runoff=0.17 cfs 577 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>5.19"  
Tc=22.0 min CN=81 Runoff=20.24 cfs 97,390 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>7.19"  
Tc=5.0 min CN=98 Runoff=0.65 cfs 2,257 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.98' Storage=262 cf Inflow=0.17 cfs 577 cf  
Outflow=0.15 cfs 342 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=24.71' Storage=836 cf Inflow=0.65 cfs 2,257 cf  
Outflow=0.13 cfs 2,177 cf

**Link 1L: EX Basin A** Inflow=20.56 cfs 98,945 cf  
Primary=20.56 cfs 98,945 cf

**Link 2L: PR Basin A** Inflow=20.37 cfs 99,567 cf  
Primary=20.37 cfs 99,567 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 198,826 cf Average Runoff Depth = 5.21"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**2086 Hydrocad 2025**

Type III 24-hr 100 year Rainfall=8.35"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment1S: EX Bypass** Runoff Area=228,143 sf 54.69% Impervious Runoff Depth>6.05"  
Tc=22.0 min CN=81 Runoff=23.78 cfs 115,030 cf

**Subcatchment2S: Rain Garden (RG#1)** Runoff Area=963 sf 100.00% Impervious Runoff Depth>8.11"  
Tc=5.0 min CN=98 Runoff=0.19 cfs 650 cf

**Subcatchment3S: PR Bypass** Runoff Area=225,338 sf 54.87% Impervious Runoff Depth>6.05"  
Tc=22.0 min CN=81 Runoff=23.49 cfs 113,616 cf

**Subcatchment4S: Lined Filtration System** Runoff Area=3,768 sf 100.00% Impervious Runoff Depth>8.11"  
Tc=5.0 min CN=98 Runoff=0.73 cfs 2,545 cf

**Pond 1P: Existing Rain Garden (RG#1)** Peak Elev=24.99' Storage=265 cf Inflow=0.19 cfs 650 cf  
Outflow=0.17 cfs 416 cf

**Pond 2P: Lined Filtration System (LF#1)** Peak Elev=24.91' Storage=946 cf Inflow=0.73 cfs 2,545 cf  
Outflow=0.14 cfs 2,461 cf

**Link 1L: EX Basin A** Inflow=23.86 cfs 115,446 cf  
Primary=23.86 cfs 115,446 cf

**Link 2L: PR Basin A** Inflow=23.63 cfs 116,077 cf  
Primary=23.63 cfs 116,077 cf

**Total Runoff Area = 458,212 sf Runoff Volume = 231,842 cf Average Runoff Depth = 6.07"**  
**44.75% Pervious = 205,056 sf 55.25% Impervious = 253,156 sf**

**Summary for Subcatchment 1S: EX Bypass**

Runoff = 23.78 cfs @ 12.30 hrs, Volume= 115,030 cf, Depth> 6.05"  
 Routed to Link 1L : EX Basin A

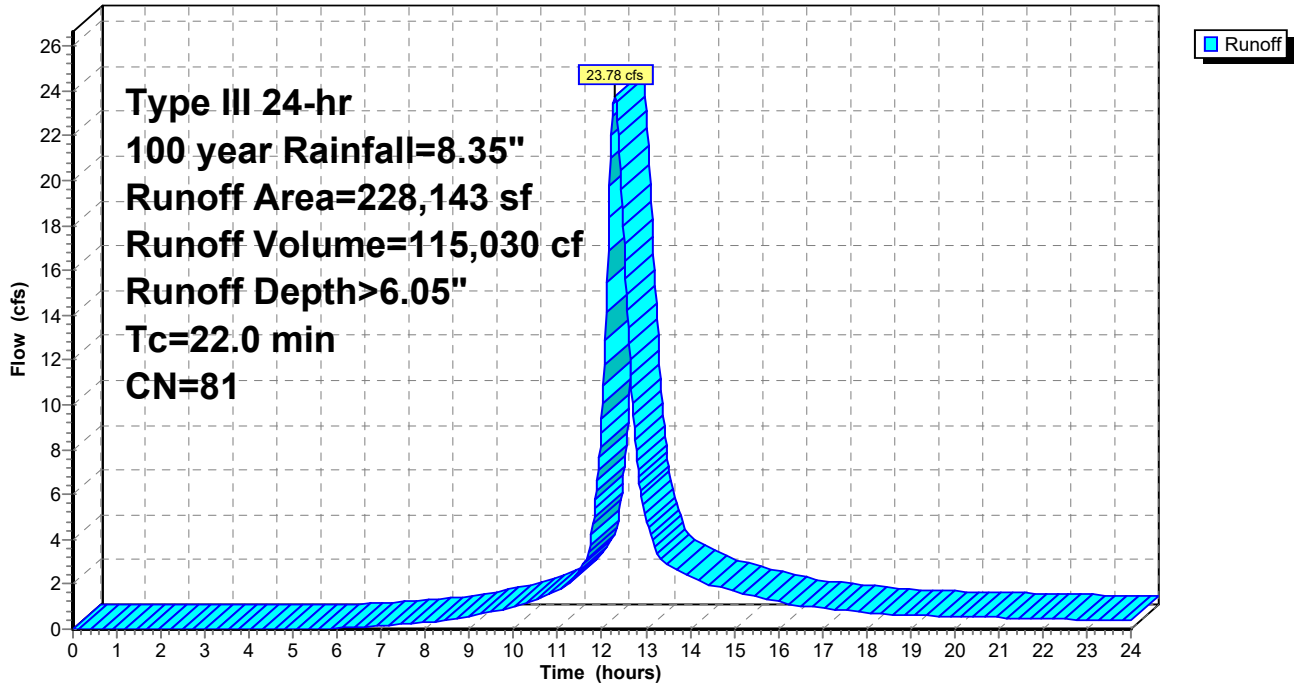
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr 100 year Rainfall=8.35"

Area (sf)	CN	Description
124,777	98	Paved parking, HSG B
103,366	61	>75% Grass cover, Good, HSG B
228,143	81	Weighted Average
103,366		45.31% Pervious Area
124,777		54.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.0					Direct Entry,

**Subcatchment 1S: EX Bypass**

Hydrograph



**Summary for Subcatchment 2S: Rain Garden (RG#1)**

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 650 cf, Depth> 8.11"  
 Routed to Pond 1P : Existing Rain Garden (RG#1)

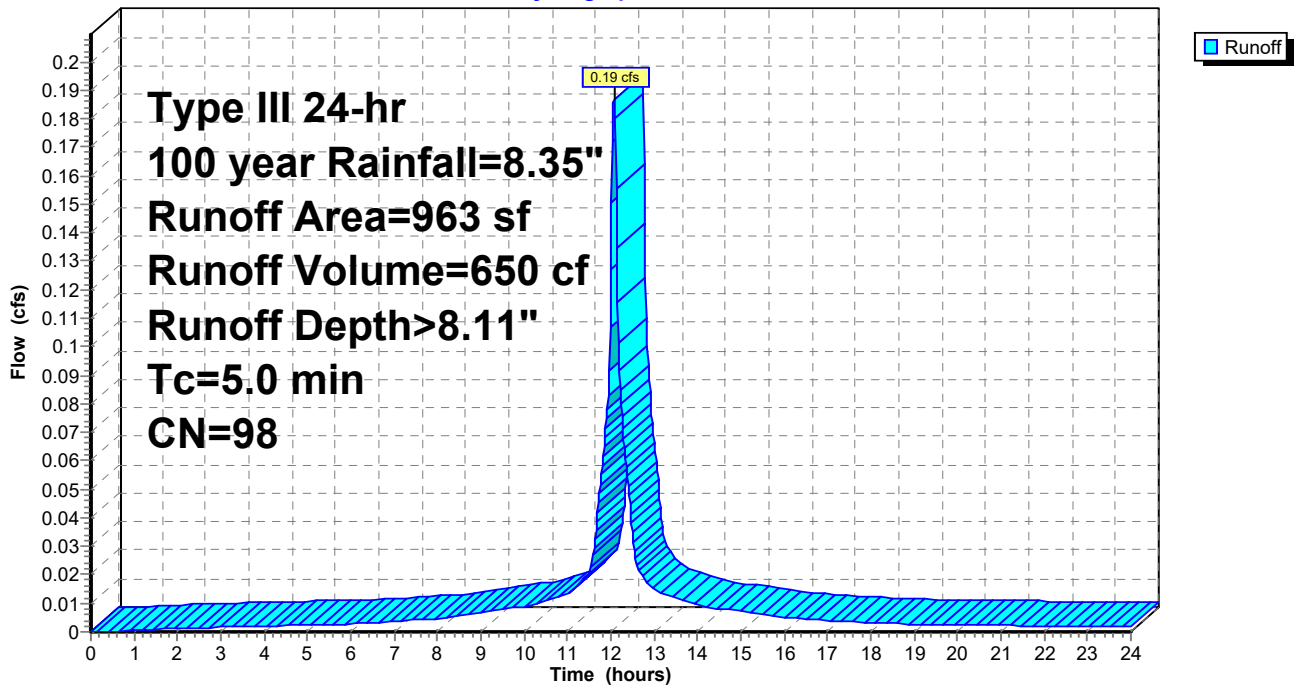
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr 100 year Rainfall=8.35"

Area (sf)	CN	Description
* 963	98	Impervious
963		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 2S: Rain Garden (RG#1)**

Hydrograph



**Summary for Subcatchment 3S: PR Bypass**

Runoff = 23.49 cfs @ 12.30 hrs, Volume= 113,616 cf, Depth> 6.05"  
 Routed to Link 2L : PR Basin A

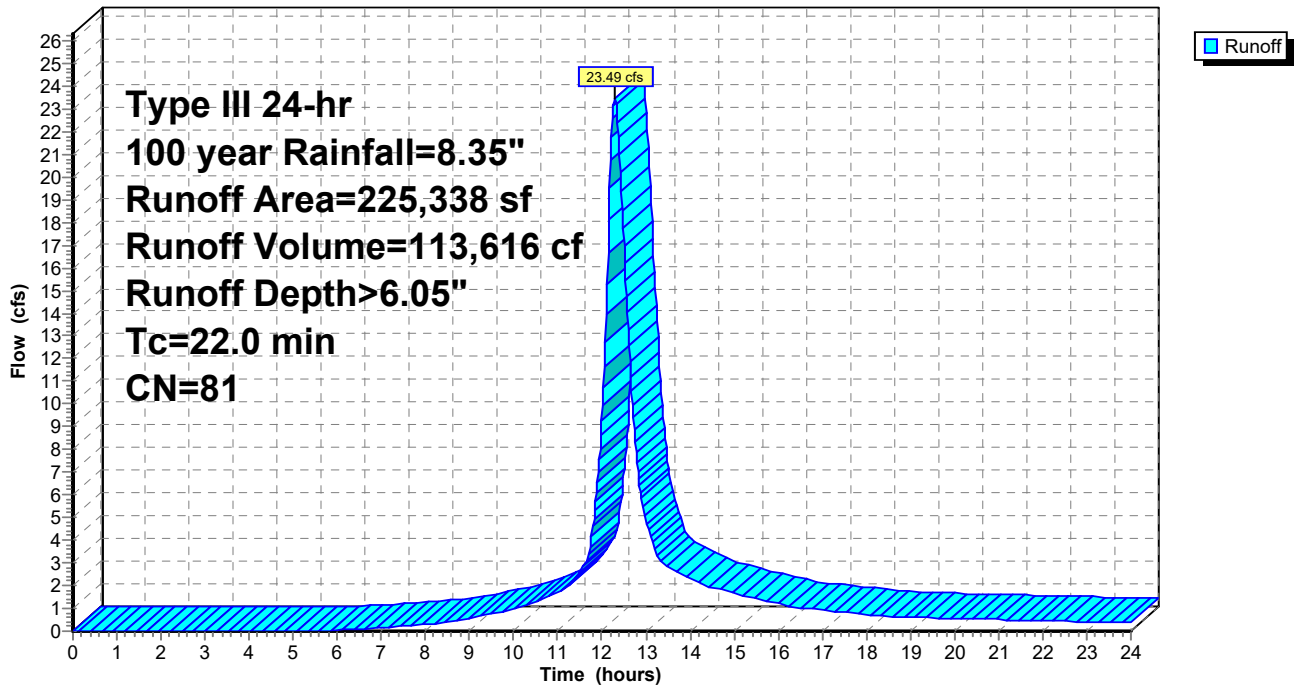
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr 100 year Rainfall=8.35"

Area (sf)	CN	Description
123,648	98	Paved parking, HSG B
101,690	61	>75% Grass cover, Good, HSG B
225,338	81	Weighted Average
101,690		45.13% Pervious Area
123,648		54.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.0					Direct Entry,

**Subcatchment 3S: PR Bypass**

Hydrograph



**Summary for Subcatchment 4S: Lined Filtration System (LF#1)**

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 2,545 cf, Depth> 8.11"

Routed to Pond 2P : Lined Filtration System (LF#1)

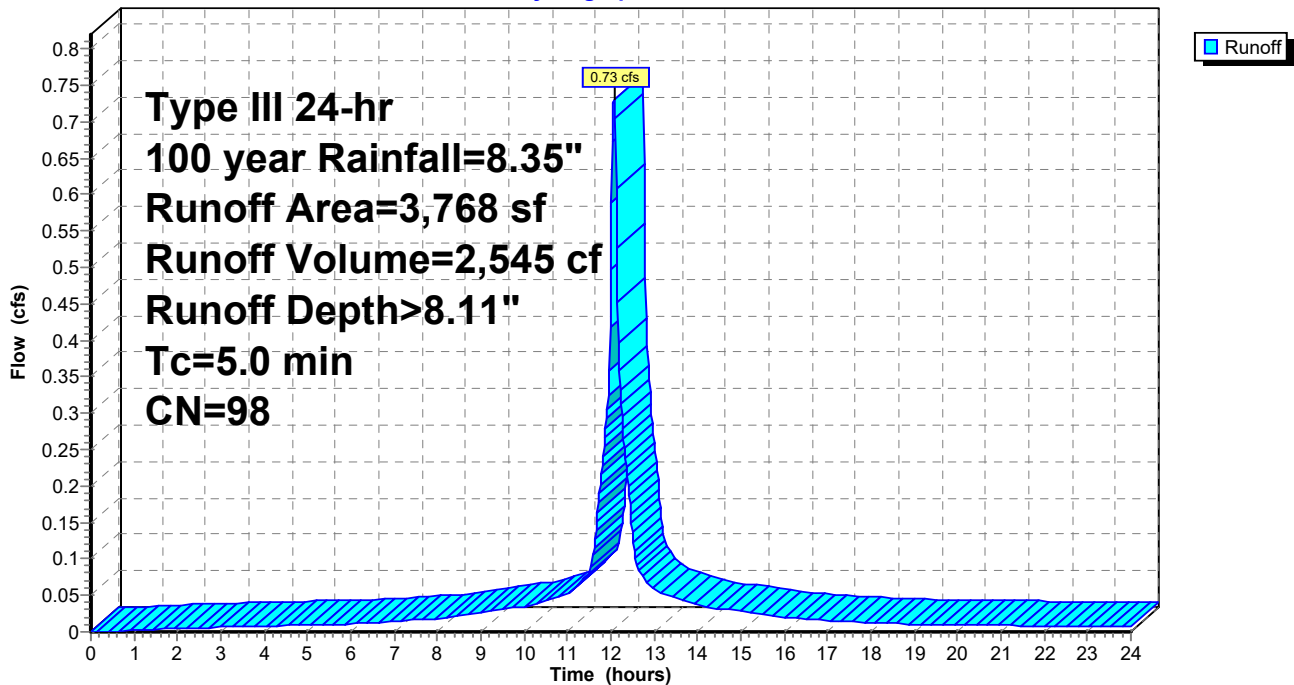
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr 100 year Rainfall=8.35"

Area (sf)	CN	Description
* 3,768	98	Impervious
3,768		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

**Subcatchment 4S: Lined Filtration System (LF#1)**

Hydrograph



**2086 Hydrocad 2025**

Type III 24-hr 100 year Rainfall=8.35"

Prepared by Redniss & Mead, Inc

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**Summary for Pond 1P: Existing Rain Garden (RG#1)**

Inflow Area = 963 sf, 100.00% Impervious, Inflow Depth > 8.11" for 100 year event  
 Inflow = 0.19 cfs @ 12.07 hrs, Volume= 650 cf  
 Outflow = 0.17 cfs @ 12.10 hrs, Volume= 416 cf, Atten= 8%, Lag= 2.0 min  
 Primary = 0.17 cfs @ 12.10 hrs, Volume= 416 cf  
 Routed to Link 1L : EX Basin A

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Peak Elev= 24.99' @ 12.10 hrs Surf.Area= 520 sf Storage= 265 cf

Plug-Flow detention time= 210.7 min calculated for 416 cf (64% of inflow)  
 Center-of-Mass det. time= 104.6 min ( 843.9 - 739.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	24.05'	771 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.05	406	0.0	0	0
24.55	406	30.0	61	61
25.80	730	100.0	710	771

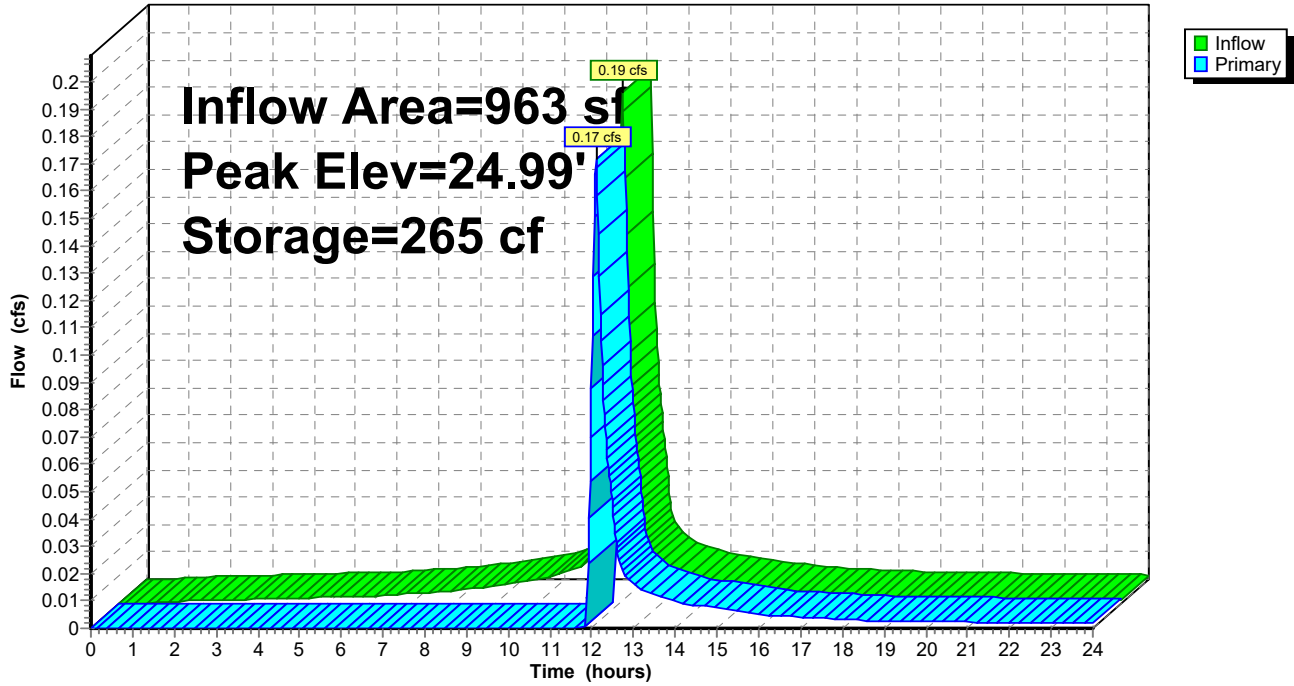
Device	Routing	Invert	Outlet Devices
#1	Primary	24.93'	<b>4.0' long x 0.5' breadth Area Drain</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

**Primary OutFlow** Max=0.17 cfs @ 12.10 hrs HW=24.99' (Free Discharge)

↑**1=Area Drain** (Weir Controls 0.17 cfs @ 0.69 fps)

### Pond 1P: Existing Rain Garden (RG#1)

Hydrograph



**Stage-Area-Storage for Pond 1P: Existing Rain Garden (RG#1)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
24.05	406	0	24.57	411	69
24.06	406	1	24.58	414	73
24.07	406	2	24.59	416	77
24.08	406	4	24.60	419	82
24.09	406	5	24.61	422	86
24.10	406	6	24.62	424	90
24.11	406	7	24.63	427	94
24.12	406	9	24.64	429	98
24.13	406	10	24.65	432	103
24.14	406	11	24.66	435	107
24.15	406	12	24.67	437	111
24.16	406	13	24.68	440	116
24.17	406	15	24.69	442	120
24.18	406	16	24.70	445	125
24.19	406	17	24.71	447	129
24.20	406	18	24.72	450	134
24.21	406	19	24.73	453	138
24.22	406	21	24.74	455	143
24.23	406	22	24.75	458	147
24.24	406	23	24.76	460	152
24.25	406	24	24.77	463	156
24.26	406	26	24.78	466	161
24.27	406	27	24.79	468	166
24.28	406	28	24.80	471	171
24.29	406	29	24.81	473	175
24.30	406	30	24.82	476	180
24.31	406	32	24.83	479	185
24.32	406	33	24.84	481	190
24.33	406	34	24.85	484	194
24.34	406	35	24.86	486	199
24.35	406	37	24.87	489	204
24.36	406	38	24.88	492	209
24.37	406	39	24.89	494	214
24.38	406	40	24.90	497	219
24.39	406	41	24.91	499	224
24.40	406	43	24.92	502	229
24.41	406	44	24.93	504	234
24.42	406	45	24.94	507	239
24.43	406	46	24.95	510	244
24.44	406	48	24.96	512	249
24.45	406	49	24.97	515	254
24.46	406	50	24.98	517	259
24.47	406	51	24.99	520	265
24.48	406	52	25.00	523	270
24.49	406	54	25.01	525	275
24.50	406	55	25.02	528	280
24.51	406	56	25.03	530	286
24.52	406	57	25.04	533	291
24.53	406	58	25.05	536	296
24.54	406	60	25.06	538	302
24.55	406	61	25.07	541	307
24.56	409	65	25.08	543	312

**Stage-Area-Storage for Pond 1P: Existing Rain Garden (RG#1) (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
25.09	546	318	25.61	681	637
25.10	549	323	25.62	683	644
25.11	551	329	25.63	686	651
25.12	554	334	25.64	689	657
25.13	556	340	25.65	691	664
25.14	559	346	25.66	694	671
25.15	562	351	25.67	696	678
25.16	564	357	25.68	699	685
25.17	567	362	25.69	701	692
25.18	569	368	25.70	704	699
25.19	572	374	25.71	707	706
25.20	574	380	25.72	709	713
25.21	577	385	25.73	712	720
25.22	580	391	25.74	714	728
25.23	582	397	25.75	717	735
25.24	585	403	25.76	720	742
25.25	587	409	25.77	722	749
25.26	590	414	25.78	725	756
25.27	593	420	25.79	727	764
25.28	595	426	25.80	<b>730</b>	<b>771</b>
25.29	598	432			
25.30	600	438			
25.31	603	444			
25.32	606	450			
25.33	608	456			
25.34	611	463			
25.35	613	469			
25.36	616	475			
25.37	619	481			
25.38	621	487			
25.39	624	493			
25.40	626	500			
25.41	629	506			
25.42	632	512			
25.43	634	519			
25.44	637	525			
25.45	639	531			
25.46	642	538			
25.47	644	544			
25.48	647	551			
25.49	650	557			
25.50	652	564			
25.51	655	570			
25.52	657	577			
25.53	660	583			
25.54	663	590			
25.55	665	597			
25.56	668	603			
25.57	670	610			
25.58	673	617			
25.59	676	623			
25.60	678	630			

**Summary for Pond 2P: Lined Filtration System (LF#1)**

Inflow Area = 3,768 sf, 100.00% Impervious, Inflow Depth > 8.11" for 100 year event  
 Inflow = 0.73 cfs @ 12.07 hrs, Volume= 2,545 cf  
 Outflow = 0.14 cfs @ 12.49 hrs, Volume= 2,461 cf, Atten= 80%, Lag= 25.0 min  
 Primary = 0.14 cfs @ 12.49 hrs, Volume= 2,461 cf  
 Routed to Link 2L : PR Basin A

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2  
 Peak Elev= 24.91' @ 12.49 hrs Surf.Area= 4,710 sf Storage= 946 cf

Plug-Flow detention time= 105.1 min calculated for 2,459 cf (97% of inflow)  
 Center-of-Mass det. time= 84.7 min ( 824.1 - 739.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	23.15'	408 cf	<b>Stone Storage (Prismatic)</b> Listed below (Recalc) 1,021 cf Overall x 40.0% Voids
#2	23.80'	471 cf	<b>Sand layer (Prismatic)</b> Listed below (Recalc) 1,570 cf Overall x 30.0% Voids
#3	24.80'	612 cf	<b>Stone Storage (Prismatic)</b> Listed below (Recalc) 1,531 cf Overall x 40.0% Voids
		1,492 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.15	1,570	0	0
23.80	1,570	1,021	1,021

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.80	1,570	0	0
24.80	1,570	1,570	1,570

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.80	1,570	0	0
25.55	1,570	1,178	1,178
26.00	0	353	1,531

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	<b>6.0" Round Culvert</b> L= 123.0' Ke= 0.500 Inlet / Outlet Invert= 22.50' / 19.90' S= 0.0211 '/' Cc= 0.900 n= 0.011, Flow Area= 0.20 sf
#2	Device 1	23.15'	<b>3.0" Round Flat Perforated Pipe</b> L= 68.0' Ke= 0.500 Inlet / Outlet Invert= 23.15' / 23.15' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.05 sf
#3	Device 2	23.15'	<b>0.5" Vert. Perforations in underdrain X 326.40</b> C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 12.49 hrs HW=24.91' (Free Discharge)

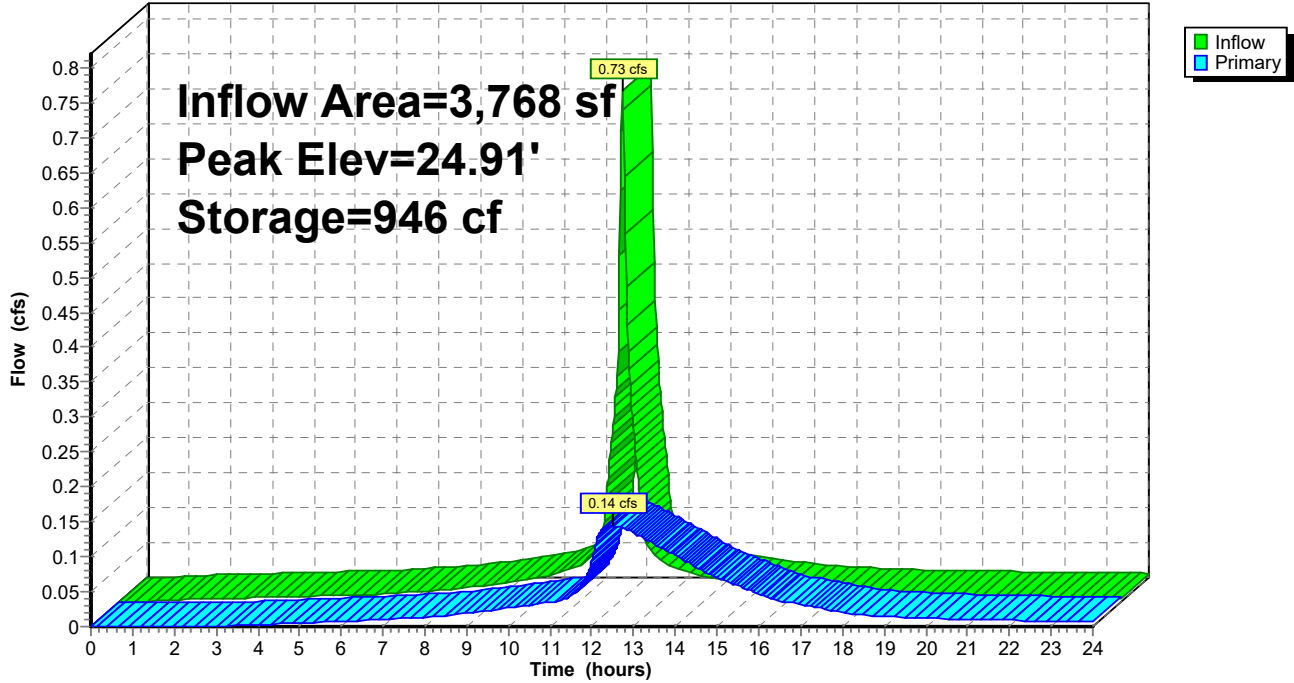
1=Culvert (Passes 0.14 cfs of 1.15 cfs potential flow)

2=Flat Perforated Pipe (Barrel Controls 0.14 cfs @ 2.94 fps)

3=Perforations in underdrain (Passes 0.14 cfs of 2.82 cfs potential flow)

### Pond 2P: Lined Filtration System (LF#1)

Hydrograph



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Type III 24-hr 100 year Rainfall=8.35"

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**Stage-Area-Storage for Pond 2P: Lined Filtration System (LF#1)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
23.15	0	23.67	327	24.19	592
23.16	6	23.68	333	24.20	597
23.17	13	23.69	339	24.21	601
23.18	19	23.70	345	24.22	606
23.19	25	23.71	352	24.23	611
23.20	31	23.72	358	24.24	615
23.21	38	23.73	364	24.25	620
23.22	44	23.74	371	24.26	625
23.23	50	23.75	377	24.27	630
23.24	57	23.76	383	24.28	634
23.25	63	23.77	389	24.29	639
23.26	69	23.78	396	24.30	644
23.27	75	23.79	402	24.31	648
23.28	82	23.80	408	24.32	653
23.29	88	23.81	413	24.33	658
23.30	94	23.82	418	24.34	663
23.31	100	23.83	422	24.35	667
23.32	107	23.84	427	24.36	672
23.33	113	23.85	432	24.37	677
23.34	119	23.86	436	24.38	681
23.35	126	23.87	441	24.39	686
23.36	132	23.88	446	24.40	691
23.37	138	23.89	451	24.41	696
23.38	144	23.90	455	24.42	700
23.39	151	23.91	460	24.43	705
23.40	157	23.92	465	24.44	710
23.41	163	23.93	469	24.45	714
23.42	170	23.94	474	24.46	719
23.43	176	23.95	479	24.47	724
23.44	182	23.96	484	24.48	728
23.45	188	23.97	488	24.49	733
23.46	195	23.98	493	24.50	738
23.47	201	23.99	498	24.51	743
23.48	207	24.00	502	24.52	747
23.49	214	24.01	507	24.53	752
23.50	220	24.02	512	24.54	757
23.51	226	24.03	517	24.55	761
23.52	232	24.04	521	24.56	766
23.53	239	24.05	526	24.57	771
23.54	245	24.06	531	24.58	776
23.55	251	24.07	535	24.59	780
23.56	257	24.08	540	24.60	785
23.57	264	24.09	545	24.61	790
23.58	270	24.10	550	24.62	794
23.59	276	24.11	554	24.63	799
23.60	283	24.12	559	24.64	804
23.61	289	24.13	564	24.65	809
23.62	295	24.14	568	24.66	813
23.63	301	24.15	573	24.67	818
23.64	308	24.16	578	24.68	823
23.65	314	24.17	582	24.69	827
23.66	320	24.18	587	24.70	832

**2086 Hydrocad 2025**

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Type III 24-hr 100 year Rainfall=8.35"

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**Stage-Area-Storage for Pond 2P: Lined Filtration System (LF#1) (continued)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
24.71	837	25.23	1,149	25.75	1,448
24.72	842	25.24	1,156	25.76	1,451
24.73	846	25.25	1,162	25.77	1,455
24.74	851	25.26	1,168	25.78	1,458
24.75	856	25.27	1,174	25.79	1,461
24.76	860	25.28	1,181	25.80	1,464
24.77	865	25.29	1,187	25.81	1,466
24.78	870	25.30	1,193	25.82	1,469
24.79	874	25.31	1,199	25.83	1,471
24.80	879	25.32	1,206	25.84	1,474
24.81	885	25.33	1,212	25.85	1,476
24.82	892	25.34	1,218	25.86	1,478
24.83	898	25.35	1,225	25.87	1,480
24.84	904	25.36	1,231	25.88	1,481
24.85	911	25.37	1,237	25.89	1,483
24.86	917	25.38	1,243	25.90	1,485
24.87	923	25.39	1,250	25.91	1,486
24.88	929	25.40	1,256	25.92	1,487
24.89	936	25.41	1,262	25.93	1,488
24.90	942	25.42	1,269	25.94	1,489
24.91	948	25.43	1,275	25.95	1,490
24.92	955	25.44	1,281	25.96	1,490
24.93	961	25.45	1,287	25.97	1,491
24.94	967	25.46	1,294	25.98	1,491
24.95	973	25.47	1,300	25.99	1,491
24.96	980	25.48	1,306	26.00	<b>1,492</b>
24.97	986	25.49	1,313		
24.98	992	25.50	1,319		
24.99	999	25.51	1,325		
25.00	1,005	25.52	1,331		
25.01	1,011	25.53	1,338		
25.02	1,017	25.54	1,344		
25.03	1,024	25.55	1,350		
25.04	1,030	25.56	1,356		
25.05	1,036	25.57	1,362		
25.06	1,042	25.58	1,368		
25.07	1,049	25.59	1,374		
25.08	1,055	25.60	1,380		
25.09	1,061	25.61	1,385		
25.10	1,068	25.62	1,391		
25.11	1,074	25.63	1,396		
25.12	1,080	25.64	1,401		
25.13	1,086	25.65	1,406		
25.14	1,093	25.66	1,411		
25.15	1,099	25.67	1,416		
25.16	1,105	25.68	1,420		
25.17	1,112	25.69	1,424		
25.18	1,118	25.70	1,429		
25.19	1,124	25.71	1,433		
25.20	1,130	25.72	1,437		
25.21	1,137	25.73	1,441		
25.22	1,143	25.74	1,444		

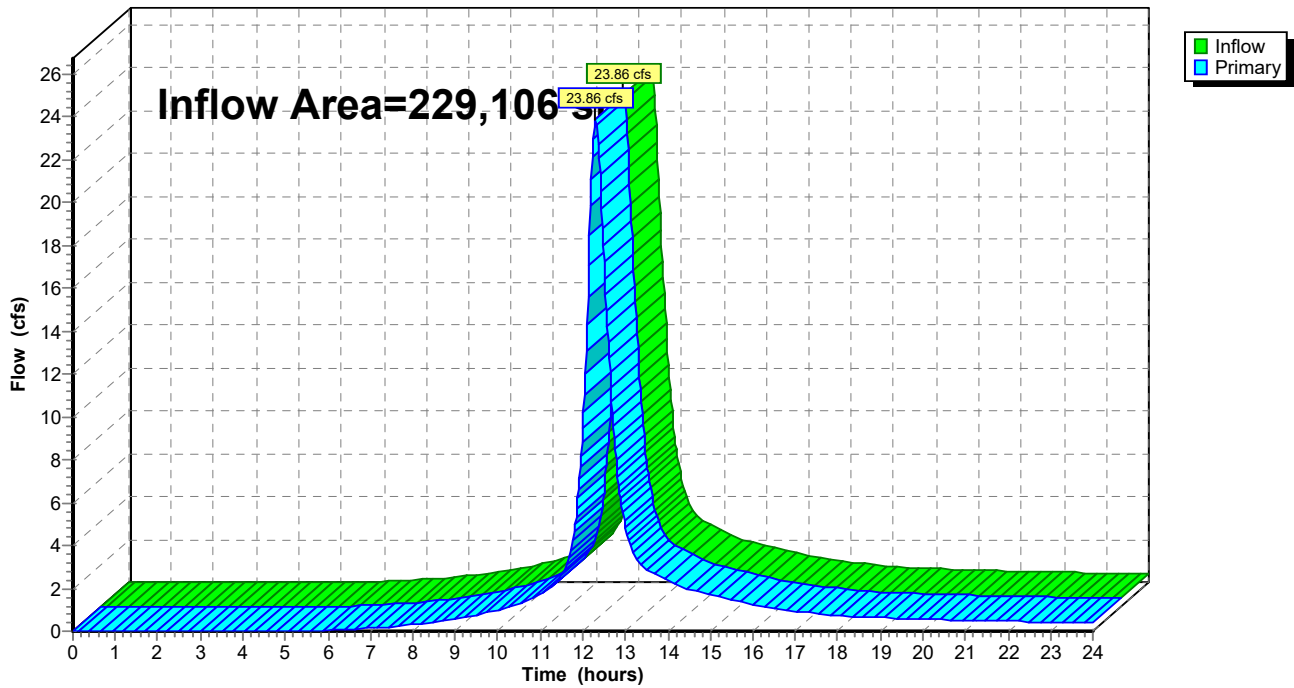
### Summary for Link 1L: EX Basin A

Inflow Area = 229,106 sf, 54.88% Impervious, Inflow Depth > 6.05" for 100 year event  
Inflow = 23.86 cfs @ 12.29 hrs, Volume= 115,446 cf  
Primary = 23.86 cfs @ 12.29 hrs, Volume= 115,446 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

### Link 1L: EX Basin A

Hydrograph



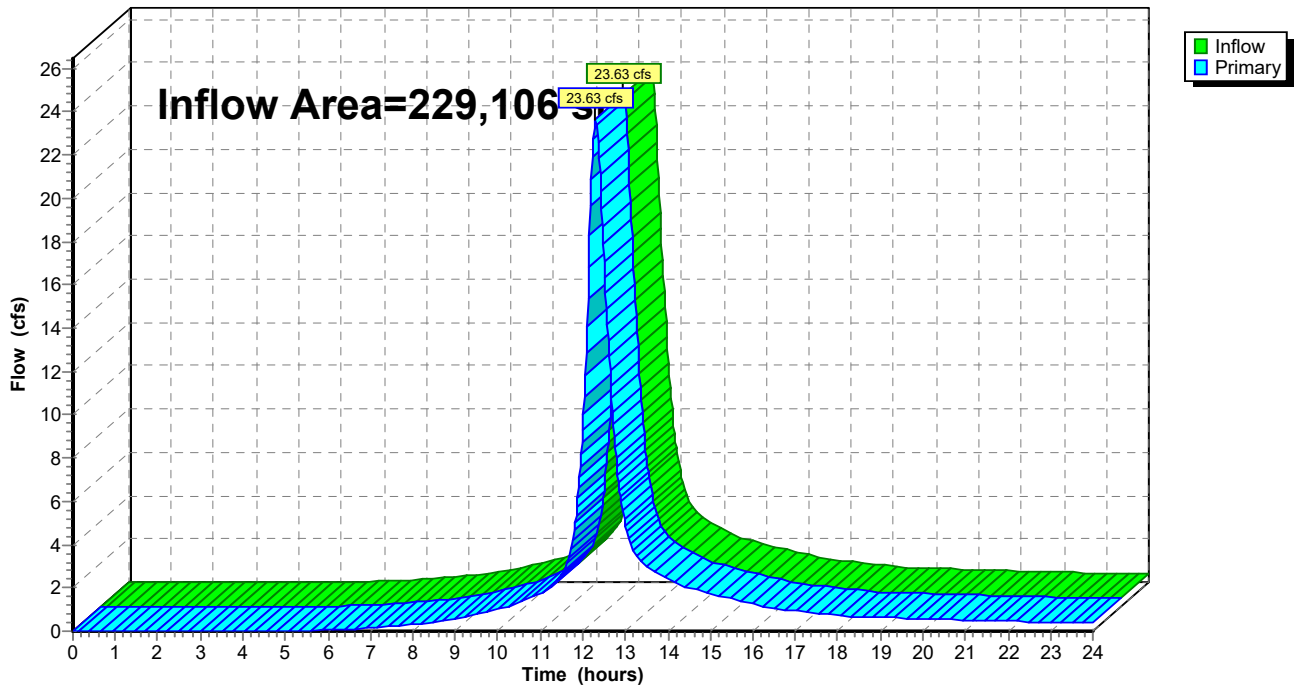
### Summary for Link 2L: PR Basin A

Inflow Area = 229,106 sf, 55.61% Impervious, Inflow Depth > 6.08" for 100 year event  
Inflow = 23.63 cfs @ 12.30 hrs, Volume= 116,077 cf  
Primary = 23.63 cfs @ 12.30 hrs, Volume= 116,077 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

### Link 2L: PR Basin A

Hydrograph



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# Appendix D

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Water Quality Volume

## Water Quality Volume Calculations

<b>Project:</b> <i>Gives Foundation</i>	<b>Project #:</b> <i>2086ZE</i>	<b>Date:</b> <i>5/22/2025</i>
<b>Location:</b> <i>72 Cummings Point Road Stamford, CT</i>	<b>By:</b> <i>AS</i>	<b>Checked:</b> <i>TM</i>

### Filtration System - WQV Required

Area=	0.087	acres
Impervious Area=	0.087	acres
I=	1.000	<sup>a</sup>
R=	0.950	<sup>b</sup>
WQV=	0.007	ac. ft. <sup>c</sup>

<b>WQV Required=</b>	<b>298.30 ft.<sup>3</sup></b>
<b>WQV Provided=</b>	<b>1,193 ft.<sup>3</sup></b>

<sup>a</sup> I=Percent Impervious Coverage

<sup>b</sup> R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

<sup>c</sup> WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

## Water Quality Volume Calculations

<b>Project:</b> <i>Gives Foundation</i>	<b>Project #:</b> 2086ZE	<b>Date:</b> 5/22/2025
<b>Location:</b> 72 Cummings Point Road Stamford, CT	<b>By:</b> AS	<b>Checked:</b> TM

### Water Quality Volume Provided

Filtration System	
<b>WQV Provided=</b>	<b>1,193 ft.<sup>3</sup></b>

Vortechs Model 16000		
Area=	5.173	acres
Impervious Area=	2.839	acres
I=	0.549	<sup>a</sup>
R=	0.544	<sup>b</sup>
WQV=	0.234	ac. ft. <sup>c</sup>
<b>WQV Provided=</b>	<b>10,213 ft.<sup>3</sup></b>	

<b>Total WQV Provided=</b>	<b>11,406</b>	<b>ft.<sup>3</sup></b>
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<sup>a</sup> I=Percent Impervious Coverage

<sup>b</sup> R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

<sup>c</sup> WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

## Water Quality Volume Calculations

<b>Project:</b> <i>Gives Foundation</i>	<b>Project #:</b> <i>2086ZE</i>	<b>Date:</b> <i>5/22/2025</i>
<b>Location:</b> <i>72 Cummings Point Road Stamford, CT</i>	<b>By:</b> <i>AS</i>	<b>Checked:</b> <i>TM</i>

### Site Tributary to Cumming's Point Road - WQV Required

Area=	5.260	acres
Impervious Area=	2.925	acres
I=	0.556	<sup>a</sup>
R=	0.550	<sup>b</sup>
WQV=	0.241	ac. ft. <sup>c</sup>

<b>WQV Required=</b>	<b>10,511 ft.<sup>3</sup></b>
<b>WQV Provided=</b>	<b>11,406 ft.<sup>3</sup></b>

<sup>a</sup> I=Percent Impervious Coverage

<sup>b</sup> R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

<sup>c</sup> WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

## Water Quality Volume Calculations

<b>Project:</b> <i>Gives Foundation</i>	<b>Project #:</b> 2086ZE	<b>Date:</b> 5/22/2025
<b>Location:</b> 72 Cummings Point Road Stamford, CT	<b>By:</b> AS	<b>Checked:</b> TM

### Site Tributary to Gate House Road - WQV Required

Area=	0.502	acres
Impervious Area=	0.218	acres
I=	0.434	<sup>a</sup>
R=	0.441	<sup>b</sup>
WQV=	0.018	ac. ft. <sup>c</sup>

<b>WQV Required=</b>	<b>803</b>	<b>ft.<sup>3</sup></b>
<b>WQV Provided=</b>	<b>-</b>	<b>ft.<sup>3</sup></b>

Note: No work is proposed within this basin

<sup>a</sup> I=Percent Impervious Coverage

<sup>b</sup> R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

<sup>c</sup> WQV=(1"xRxA)/12; Water Quality Volume, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

**VORTECHS SYSTEM® ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION  
BASED ON AN AVERAGE PARTICLE SIZE OF 50 MICRONS**

**72 CUMMINGS POINT ROAD**

**STAMFORD, CT**

**MODEL 16000 IN-LINE**



**Design Ratio<sup>1</sup> =  $\frac{(8.16 \text{ acres}) \times (0.65) \times (449 \text{ gpm/cfs})}{(113.1 \text{ sf})} = 21$**

<u>Rainfall Intensity</u> "/hr	<u>Operating Rate<sup>2</sup></u> gpm/sf	<u>Treated Flow</u> cfs	<u>% Total Rainfall</u> Volume <sup>3</sup>	<u>Rmvl. Effic<sup>4</sup></u> (%)	<u>Rel. Effic<sup>4</sup></u> (%)
0.02	0.4	0.11	9.7%	100.0%	9.7%
0.04	0.8	0.21	9.7%	100.0%	9.7%
0.06	1.3	0.32	9.8%	98.0%	9.6%
0.08	1.7	0.42	7.7%	98.0%	7.5%
0.10	2.1	0.53	8.0%	97.0%	7.8%
0.12	2.5	0.63	5.4%	97.0%	5.3%
0.14	2.9	0.74	4.7%	97.0%	4.5%
0.16	3.4	0.84	5.5%	95.8%	5.3%
0.18	3.8	0.95	3.5%	95.8%	3.3%
0.20	4.2	1.05	4.1%	94.1%	3.8%
0.25	5.3	1.31	6.5%	92.6%	6.0%
0.30	6.3	1.58	5.5%	91.2%	5.0%
0.35	7.4	1.84	4.0%	90.0%	3.6%
0.40	8.4	2.10	2.0%	88.3%	1.8%
0.45	9.5	2.36	2.1%	87.1%	1.9%
0.50	10.5	2.63	2.0%	85.8%	1.7%
0.75	15.8	3.94	5.1%	77.4%	4.0%
1.00	21.0	5.25	2.5%	68.1%	1.7%
1.50	31.5	7.88	1.8%	56.0%	1.0%
2.00	42.0	10.50	0.5%	43.7%	0.2%

**Predicted Annual Runoff Volume Treated = 93.3%**  
**Assumed Removal Efficiency of remaining % = 0.0%**  
**Removal Efficiency Adjustment<sup>5</sup> = 6.5%**  
**Predicted Net Annual Load Removal Efficiency = 87%**

1 - Design Ratio = (Total Drainage Area) x (Runoff Coefficient) x (cfs to gpm conversion) / Grit Chamber Area  
 - The Total Drainage Area and Runoff Coefficient is specified by the site engineer.  
 - The conversion factor from cfs to gpm is 449.

2 - Operating Rate (gpm/sf) = intensity ("/hr) x Design Ratio

3 - Based on 10 years of hourly precipitation data from NCDC station 806, Bridgeport WSO ARPT, Fairfield County, CT

4 - Based on Contech Construction Products laboratory verified removal of an average particle size of 50 microns (see Vortechs Guide).

5 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Calculated by: JAK 4/1 | Checked by:

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## **Appendix E**

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DCIA Tracking Spreadsheet

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Note to user: complete all cells of this color *only*

Part 1: General Information	
Project Name	Give Foundation Building Expansion
Project Address	72 Cummings Point Road, Stamford, CT
Project Applicant	72 Cummings Point Road, LLC
Date of Submittal	22-May-25
Tax Account Number	002-8016

Part 2: Project Details	
1. What type of development is this? (choose from dropdown)	Redevelopment
2. What is the total area of the project site?	250,975 ft <sup>2</sup>
3. What is the total area of land disturbance for this project?	19,965 ft <sup>2</sup>
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of Tidal Wetlands? (Yes/No)	Yes
5. What is the <u>current</u> <b>DCIA</b> for the site?	9,491 ft <sup>2</sup>
6. Will the proposed development increase <b>DCIA</b> (without consideration of proposed stormwater management)? (Yes/No)	Yes
7. What is the <u>proposed-development</u> <b>total impervious area</b> for the site?	137,357 ft <sup>2</sup>

Part 3: Water Quality Target Total	
Does Standard 1 apply based on information above?	Yes
Water Quality Volume (WQV)	11347.5 ft <sup>3</sup>
Standard 1 requirement	Retain WQV on-site
Required retention volume	11347.5 ft <sup>3</sup>
Provided retention volume for proposed development	11,406.0 ft <sup>3</sup>

Part 4: Proposed DCIA Tracking	
Pre-development <b>total impervious area</b>	135,681 ft <sup>2</sup>
Current <b>DCIA</b>	9,491 ft <sup>2</sup>
Proposed-development <b>total impervious area</b>	137,357 ft <sup>2</sup>
Proposed-development <b>DCIA</b> (after stormwater management)	9,491 ft <sup>2</sup>
Net change in <b>DCIA</b> from <u>pre-development</u> to <u>proposed-development</u>	0 ft <sup>2</sup>

Part 5: Post-Development (As-Built Certified) DCIA Tracking	
Post-development (per as-built) <b>total impervious area</b>	ft <sup>2</sup>
Post-development (per as-built) <b>DCIA</b> (after stormwater management)	ft <sup>2</sup>
Net change in <b>DCIA</b> from <u>pre-development</u> to <u>post-development</u>	ft <sup>2</sup>

**Certification Statement**  
I hereby certify that the information contained in this worksheet is true and correct.

Engineer's Signature  Date May 22, 2025 Engineer's Seal

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# Appendix F

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Operation and Maintenance Agreement

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EXISTING DMA ONFILE WITH THE STAMFORD  
LAND RECORDS TO BE MODIFIED

Block 25

Record and Return to:  
Lisa L. Feinberg  
Carmody Torrance Sandak & Hennessey LLP  
707 Summer Street, 3<sup>rd</sup> Floor  
Stamford, CT 06901

MODIFICATION OF DRAINAGE MAINTENANCE AGREEMENT

AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_, 2016 by and between 72 CUMMINGS POINT ROAD, LLC, a Connecticut Limited Liability Company, with an office at 72 Cummings Point Road in the City of Stamford, County of Fairfield and State of Connecticut (hereinafter referred to as "Owner"), acting herein by Kevin O'Connor, authorized person of the Owner's manager, S.A.C. Capital Advisors, LLC and the CITY OF STAMFORD, a municipal corporation lying within the County of Fairfield and State of Connecticut, acting herein by its duly authorized Mayor, David R. Martin (hereinafter referred to as the "CITY"), the ENVIRONMENTAL PROTECTION BOARD OF THE CITY OF STAMFORD, acting herein by its duly authorized Chairman, Gary H. Stone (hereinafter referred to as the "EPB").

WITNESSETH:

WHEREAS, OWNER has commenced the planning and construction of a +3,726 square foot office building, parking, driveways, drainage, utilities, and other related facilities on land owned by it and as more particularly described on Schedule "A" annexed hereto and made of part hereof (hereinafter referred to as the "Property"); and

WHEREAS, the Property is currently subject to a Drainage Maintenance

Agreement recorded in the Stamford Land Records in Volume 6790 at Page 242 (hereinafter referred to as the "Existing Drainage Maintenance Agreement"); and

WHEREAS, certain drainage facilities ("Drainage Facilities"), including but not limited to all area drains, basins, pipes, manholes, pump chambers, "rain gardens", rip rap, and other related facilities as more particularly described on Schedule "B" attached (the "Construction Plans") shall be installed in connection with the aforesaid construction and in accordance with the Construction Plans and Zoning Board Application No. 215-13 (72 Cummings Point Road, 72 Cummings Point Road, LLC, recorded in Volume 11251 at Page 11 of the Stamford Land Records on May 27, 2015) issued therefore, (the "Permit") and;

WHEREAS, in order to comply with the terms of Condition 10 of the Permit, the parties execute this Agreement.

WHEREAS, OWNER, the CITY and EPB share a joint concern that the Drainage Facilities be maintained in a functioning condition so as to avoid pollution of surface and groundwaters, flooding and/or improper drainage.

NOW, THEREFORE, in consideration of ten dollars and other good and valuable consideration receipt of which is hereby acknowledged by the OWNER, it is hereby agreed as follows:

- 1) OWNER shall clean the drainage facilities or cause such facilities to be cleaned by periodic removal of accumulated sediment and

debris in a good and workman-like manner, at least two (2) times during every twelve (12) month period, which times shall be in the period between April and June and between October and December and more often as the City may determine to be necessary.

- 2) OWNER shall sweep, or cause to be swept, garage facilities, driveways and roadway surfaces located on the Property at least once per calendar quarter.
- 3) OWNER shall utilize only sand or calcium chloride in connection with the de-icing of areas within the Property meaning and intending that road salt (Sodium Chloride) shall not be used for said purpose.
- 4) OWNER shall repair or replace any defects or defective drainage facilities so as to maintain the drainage facilities, at all times, in a fully functional capacity.
- 5) OWNER shall file as-built drainage plans with the EPB immediately upon the completion of work. Said plans shall be prepared by a professional engineer/surveyor registered in the State of Connecticut.
- 6) OWNER grants the CITY and/or EPB, its agents, and employees, the right to enter the Property at all reasonable times upon twenty-four (24) hours notice to the OWNER for the purpose of inspecting the Property to determine if OWNER is complying with the

requirements hereunder. A representative of the Owner shall have the right to accompany the City and/or EPB on their inspection of the Property.

- 7) If, after an inspection is made pursuant to Paragraph Six (6) hereof, the CITY and/or EPB determines that the owner has failed to comply with the aforesaid undertakings, then the CITY and/or EPB shall give written notice of said determination to the then OWNER of the Property which notice shall also specify the said failure. Said notice shall be sent by registered or certified mail to the last known address of said Owner. If the Owner disputes the claim, he shall give written notice thereof to City and/or EPB within ten (10) days of receipt of said notice, and the EPB shall hold a hearing as promptly as possible to decide the merits of the disputed claim. If the claim is not disputed within said ten (10) days, the OWNER shall have thirty (30) days from the receipt of said notice to correct said failure, unless it is impossible to cure said defect within said time, in which case, the necessary repairs shall be immediately commenced and diligently pursued to completion within a reasonable time.
- 8) If the said failure is not remedied within the time frame herein stated, the CITY and/or EPB may proceed to cure the same and charge the actual cost thereof to the OWNER of the Property.
- 9) OWNER agrees to reimburse the CITY and/or EPB for reasonable legal fees and court costs if it becomes necessary for the CITY and/or

EPB to sue for reimbursement of sums expended by the CITY and/or EPB in performance of OWNER'S obligation.

- 10) OWNER agrees and covenants to indemnify and save harmless the CITY and the EPB against any and all claims, suits, actions or judgments arising out of the delay in the performance of any of their obligations pursuant to this Agreement.
- 11) OWNER agrees that this covenant and restriction shall apply to and run with the land. It shall be binding on all future owners, administrators, executors, successors and assigns.
- 12) The OWNER hereby represents to the CITY and EPB that he/she is the owner, in fee simple, of all of the property described in "Schedule A" attached hereto and made a part hereof.
- 13) OWNER agrees that this Agreement and restrictive covenant upon execution of the same, shall be recorded on the land records at the OWNER'S expense at the time that a certificate of occupancy is issued for the Property herein and while the OWNER is in title.
- 14) OWNER agrees not to assert the invalidity of this document.
- 15) OWNER agrees that nothing herein shall be construed to be a limitation upon the right of the EPB to assert and enforce any rights it may have under federal, state or City statute, ordinance or regulation.
- 16) This agreement shall be governed by the laws of the State of

Connecticut.

- 17) This Agreement and the Construction Plans referenced herein are intended to supplement the Existing Drainage Maintenance Agreement. However, to the extent the terms, conditions and provisions of this Agreement conflict with those in the Existing Drainage Maintenance Agreement, the terms, conditions and provisions of this Agreement shall control.

[REMAINDER OF PAGE INTENTIONALLY BLANK]

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the said parties hereto have hereunto set their hands and seals, the day and year first above written.

WITNESSED:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

THE CITY OF STAMFORD

BY \_\_\_\_\_

David R. Martin, Mayor

THE ENVIRONMENTAL PROTECTION BOARD

BY \_\_\_\_\_

Gary H. Stone, Chairman

Marilyn Blauco

72 CUMMINGS POINT ROAD, LLC  
BY: S.A.C. Capital Advisors, LLC  
It's Manager

BY \_\_\_\_\_

K/O  
Kevin O'Connor, Authorized Person

Melissa Baxendale

STATE OF CONNECTICUT }  
COUNTY OF FAIRFIELD }

ss: STAMFORD

Date: \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, the undersigned officer, appeared David R. Martin, acting herein as Mayor of the City of Stamford, known to me (or satisfactorily proved) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purpose therein contained, as for his free act and deed and the free act and deed of The City of Stamford.

\_\_\_\_\_  
Commissioner of the Superior Court  
or Notary Public

STATE OF CONNECTICUT }  
COUNTY OF FAIRFIELD }

ss: STAMFORD

Date: \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, the undersigned officer, appeared Gary H. Stone, acting herein as Chairman of the Environmental Protection Board of the City of Stamford, known to me (or satisfactorily proved) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purpose therein contained, as for his free act and deed and the free act and deed of The Environmental Protection Board of the City of Stamford.

\_\_\_\_\_  
Commissioner of the Superior Court  
or Notary Public

STATE OF CONNECTICUT }  
COUNTY OF FAIRFIELD }

ss: STAMFORD

Date: 09/01/2016

On this 1<sup>st</sup> day of Sept., 2016, before me, the undersigned officer, appeared Kevin O'Connor, acting herein as authorized person of 72 Cummings Point Road, LLC's manager, S.A.C. Capital Advisors, LLC, known to me (or satisfactorily proved) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purpose therein contained, as for his free act and deed and the free act and deed of 72 Cummings Point Road, LLC.

**MAVELYN BLANCO**  
**NOTARY PUBLIC**  
MY COMMISSION EXPIRES NOV. 30, 2017

Marely Blanco  
~~Commissioner of the Superior Court~~  
or Notary Public

## Schedule "B"

- "Site Development Plan," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheet SE-1, by Redniss and Mead, revised July 12, 2016.
- "Site Development Plan," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheet SE-2A, by Redniss and Mead, revised March 18, 2016.
- "Site Development Plan," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheet SE-2B, by Redniss and Mead, revised October 9, 2015.
- "Sediment and Erosion Control Plan," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheet SE-3, by Redniss and Mead, revised October 9, 2015.
- "Notes, Soil Data and Details," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheet SE-4, by Redniss and Mead, revised January 12, 2016.
- "Details," Depicting 72 Cummings Point Road, Stamford, Connecticut, Prepared for 72 Cummings Point Road, LLC, Sheets SE-5, by Redniss and Mead, revised October 9, 2015.
- "Overall Site Plan," Prepared for Point 72: Foundation Building, 72 Cummings Point Road, Stamford, Connecticut, Sheet L1.0, by Eric Rains Landscape Architecture, LLC, revised October 9, 2015.
- "Area Enlargement: Foundation Building Materials Plan," Prepared for Point 72: Foundation Building, 72 Cummings Point Road, Stamford, Connecticut, Sheet L2.0, by Eric Rains Landscape Architecture, LLC, revised October 9, 2015.
- "Area Enlargement: Foundation Building Planting Plan," Prepared for Point 72: Foundation Building, 72 Cummings Point Road, Stamford, Connecticut, Sheet L3.0, by Eric Rains Landscape Architecture, LLC, revised October 9, 2015.
- "Area Enlargement: Foundation Building Lighting Plan," Prepared for Point 72: Foundation Building, 72 Cummings Point Road, Stamford, Connecticut, Sheet L4.0, by Eric Rains Landscape Architecture, LLC, revised October 9, 2015.
- "Details," Prepared for Point 72: Foundation Building, 72 Cummings Point Road, Stamford, Connecticut, Sheet L5.0, by Eric Rains Landscape Architecture, LLC, revised October 9, 2015.

BLOCK NO. 25

**DRAINAGE MAINTENANCE AGREEMENT**

THIS AGREEMENT ("Agreement") made this 23<sup>rd</sup> day of December, 2002, by and between 72 Cummings Point Road, LLC, a Delaware limited liability company with an office at 72 Cummings Point Road, Stamford, Connecticut, acting herein by Peter Nussbaum, duly authorized ("OWNER"); and the CITY OF STAMFORD, a municipal corporation lying within the County of Fairfield and State of Connecticut, acting herein by its duly authorized Mayor, Dannel P. Malloy (hereinafter referred to as the "City"), the ENVIRONMENTAL PROTECTION BOARD OF THE CITY OF STAMFORD, acting herein by its duly authorized Executive Director, David M. Emerson (hereinafter referred to as the "EPB").

**WITNESSETH:**

WHEREAS, Owner has commenced the planning and construction of improvements pursuant to Approval by the Zoning Board as referenced in Application #201-05 on land owned by it and as more particularly described on "Schedule A" annexed hereto (the "Property"); and

WHEREAS, certain drainage facilities ("Drainage Facilities"), including but not limited to all catch basins, traps, sumps, pipes, swales, drains, dissipaters, meter structures, berms, spillways, oil separators and/or detention structures, as more particularly shown and described on the plans listed on Schedule B attached hereto and are to be installed in connection with the aforesaid construction and;

WHEREAS, Owner, the City and the EPB share a joint concern that the Drainage Facilities be maintained in a functioning condition so as to avoid pollution of surface and groundwaters, flooding and/or improper drainage.

December 24, 2002

INST # 2003013182 VOL 08780 P G 0242 RECD 04/11/2003 10:30 23 AM  
DONNA M. DEBUSCH CITY & TOWN CLERK STAMFORD CT  
BLOCK

NOW THEREFORE, in consideration of ten dollars and other good and valuable consideration receipt of which is hereby acknowledged by the Owner, it is hereby agreed as follows:

(1) Owner shall clean the drainage facilities or cause such facilities to be cleaned by periodic removal of accumulated sediment and debris in a good and workman-like manner, at least two (2) times during every twelve (12) month period, which times shall be in the period between April and June and between October and December and more often as the City may determine to be necessary.

(2) Owner shall sweep, or cause to be swept, garage facilities, driveways and roadway surfaces located on the Property at least once per calendar quarter.

(3) Owner shall utilize only sand or calcium chloride or other materials approved by the EPB in connection with the de-icing of areas within the Property meaning and intending that road salt (Sodium Chloride) shall not be used for said purpose.

(4) Owner shall repair or replace any defects or defective drainage facilities so as to maintain the drainage facilities, at all times, in a fully functional capacity.

(5) City and EPB acknowledge receipt of as built drainage plans properly prepared and certified by a professional Engineer registered in the State of Connecticut. Full scale sets of said plans are maintained in the EPB records. A copy of the plans listed on Schedule B hereto are attached to a counterpart original of the Agreement maintained in the office of the EPB.

(6) Owner grants the City and/or EPB, its agents, and employees, the right to enter the Property at all reasonable times for the purpose of inspecting the Property to determine if Owner is complying with all requirements hereunder.

(7) If, after an inspection is made pursuant to Paragraph Six (6) hereof, the City and/or

December 20, 2003

EPB determines that the Owner has failed to comply with the aforesaid undertakings, then the City and/or EPB shall give written notice of said determination to the then Owner of the Property which notice shall also specify the said failure. Said notice shall be sent by registered or certified mail to the last known address of said Owner. If the Owner disputes the claim, he shall give written notice thereof to City and/or EPB within ten (10) days of receipt of said notice, and the EPB shall hold a hearing as promptly as possible to decide the merits of the disputed claim. If the claim is not disputed within said ten (10) days, the Owner shall have thirty (30) days from the receipt of said notice to correct said failure, unless it is impossible to cure said defect within said time, in which case, the necessary repairs shall be immediately commenced and diligently pursued to completion within a reasonable time.

(8) If the said failure is not remedied within the time frame herein stated, the City and/or EPB may proceed to cure the same and charge the actual cost thereof to the Owner of the Property.

(9) Owner agrees to reimburse the City and/or EPB for reasonable legal fees and actual court costs if it becomes necessary for the City and/or EPB to sue for reimbursement of sums expended by the City and/or EPB in performance of Owner's obligation and the City and/or EPB prevail in such suit.

(10) Owner agrees and covenants to indemnify and save harmless the City and the EPB against any and all claims, suits, actions or judgments arising out of the delay in the performance of any of their obligations pursuant to this Agreement.

(11) Owner agrees that this covenant and restriction shall apply to and run with the land. It shall be binding on all future Owners, administrators, executors, successors and assigns.

(12) The Owner hereby represents to the City and EPB that it is the Owner, in fee simple,

December 20, 2002

of all of the property described in "Schedule A" attached hereto and made a part hereof.

(13) Owner agrees that this Agreement and restrictive covenant upon execution of the same, shall be recorded on the land records at the Owner's expense at the time that a permit is issued for the Property herein and while the Owner is in title.

(14) Owner agrees not to assert the invalidity of this document.

(15) Owner agrees that nothing herein shall be construed to be a limitation upon the right of the EPB to assert and enforce any rights it may have under federal, state or City statute, ordinance or regulation.

(16) This agreement shall be governed by the laws of the State of Connecticut.

December 20, 2000

IN WITNESS WHEREOF, the said parties hereto have hereunto set their hands and seals,  
the day and year first above written.

WITNESSED:

Signed, sealed and delivered  
in the presence of:

Cindy Gnanini  
Vivienne Allen

CITY OF STAMFORD

Dannel P. Malloy  
By: Dannel P. Malloy, Mayor

Richard Talant  
RICHARD H. TALANT  
Mary DeLoe  
Mary DeLoe

ENVIRONMENTAL PROTECTION  
BOARD OF THE CITY OF STAMFORD

David Emerson  
By: David Emerson, Executive Director

Janina Cabot  
Janina Cabot

72 Campings Post Road, LLC

Peter Nussbaum  
By: Peter Nussbaum

Approved as to Form  
Corporation Counsel

Michael S. Toma  
By: Michael S. Toma  
Date: 3-10-03

Unofficial Copy

STATE OF CONNECTICUT )  
 ) ss: Stamford  
COUNTY OF FAIRFIELD )

~~November~~ 4<sup>3</sup>, 2002

On this the \_\_\_ day of December, 2002, before me, the undersigned officer, appeared Dannel P. Malloy, acting herein as Mayor of the City of Stamford, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purposes therein contained, as his free act and deed and the free act and deed of The City of Stamford.

*Michael J. Loria*

Commissioner of the Superior Court

STATE OF CONNECTICUT )  
 ) ss: Stamford  
COUNTY OF FAIRFIELD )

~~November~~ 23, 2002

On this 23<sup>rd</sup> day of December, 2002, before me, the undersigned officer, appeared David Emerson, acting herein as Executive Director of the Environmental Protection Board of the City of Stamford, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purpose therein contained, as his free act and deed and the free act and deed of The Environmental Protection Board of The City of Stamford.

*Mary J. Sullivan*

Commissioner of the Superior Court

STATE OF CONNECTICUT )  
 ) ss: Stamford  
COUNTY OF FAIRFIELD )

My Commission Expires 9/30/2003  
~~November~~ 23, 2002

On this 23 day of December, 2002, before me, the undersigned officer, appeared Peter Nussbaum, acting herein as General Counsel, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledge that he executed the same for the purposes therein contained, as for his free act and deed and the free act and deed of 72 Cummings Point Road, LLC.

*William J. Hennessey, Jr.*

Commissioner of the Superior Court

William J. Hennessey, Jr.

SCHEDULE A

PARCEL 1

All that certain tract of land known and designated as "Revised Parcel 1 Area = 1.884 ac." on map entitled, "Map Showing Adjustment of Lot Line properties of Leandro Rizzuto and Sound View Farms Stamford, Conn." Now on file in the office of the Town Clerk of the City of Stamford and numbered 116411, reference thereto being had.

PARCEL 2

All that certain tract of land with the buildings thereon, situated in the City of Stamford, known and designated as "Parcel 2 Area = 5.3225 Ac." on Map entitled "Map Showing Subdivision Prepared for Sound View Farms, Stamford, Conn." Now on file in the office of the Town Clerk of the City of Stamford and numbered 9485, reference thereto being had; said premises being bounded and described as follows: Beginning at a point on the easterly line of Cummings Point Road, which point is 570.03 feet southerly along said easterly line from the southerly line of Fairfield Avenue and running thence through land of Soundview Farms south 85 degrees 15' 10" east 439.98 feet, and south 05 degrees 17' 20" west 474.11 feet to land now or formerly of Cummings Point Corp.; running thence along land now or formerly of Cummings Point Corp. on a curve to the left having a radius of 837.84 feet, a distance of 465.77 feet and south 59 degrees 58' 54" west 7.65 feet to a point on the easterly line of Cummings Point Road, running thence along the easterly line of Cummings Point Road north 05 degrees 17' 20" east 615.77 feet and north 05 degrees 28' 10" east 11.19 feet to the point of beginning.

SCHEDULE B

- SE-1, Grading & Drainage Plan, last revised 3-21-02
- SE-2, Sediment and Erosion Control Plan, last revised 3-21-02
- SE-3, Notes, Sanitary & Storm Sewer Information, last revised 3-21-02
- SE-4, Details, last revised 3-21-02
- SE-5, Details, last revised 3-21-02
- SE-6, Utility Layout Plan, last revised 3-21-02

Unofficial Copy Unofficial Copy

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## **Appendix G**

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### Checklist for Stormwater Management Report





City of Stamford  
 Engineering Bureau  
 888 Washington Boulevard, 7th Floor Stamford, CT 06901  
 Phone 203-977-4189

**II. Existing Conditions Plan Elements**

	Show and label all property boundaries with linear bearing / distances and curve information
	Required zoning setbacks
	Show and label monument information
	Show and label at least one permanent benchmark on the parcel with northing, easting and elevation
	Label adjacent property ownership information
	Existing contours based on NAVD 88 (no exceptions) at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent at a minimum of 20 ft. beyond the property boundaries of the subject parcel
	Show spot elevations at low points, high points, and where topography is flatter than 2 percent
	All buildings and structures (label current use and finished floor elevations)
	All pavement, parking, driveways, property access points
	All roadways, streets, and rights-of-way. Label streets as public or private with street name
	All patios, decks, walkways, sidewalks, curb ramps (both adjacent to and opposite and existing roadways or intersections)
	Show and label (size, material, inverts) all existing utilities (overhead and underground) within the right-of-way and the project site (label ownership) including but not limited to water, gas and electrical services, wells, storm sewers, sanitary sewers and subsurface sewerage disposal systems.
	Show and label existing conveyance systems (swales, ditches, storm drains) including dimensions, elevations, sizes, slopes, and direction of flow
	Show and label boundaries of all easements, both public and private, with type, owner, and width
	Show and label all other existing features and improvements (e.g. light poles, mature trees of 8" (dbh) diameter or greater, vegetation, walls with top and bottom elevations, fences, pavement markings)

**III. Resource Areas**

N/A	Show and label limits of inland wetlands, tidal wetlands and any associated setbacks.
	Show and label existing natural site features including tree canopy, outcroppings, permanent and intermittent watercourses, waterbodies, streams
	Show and label limits of floodplain and floodway along with FIRM references (Community Number, Panel, Suffix, and Date) including any effective Letters of Map Revision/Amendment, zone designation and elevation.
	Show and label any Conservation Easement Areas
N/A	Show and label Connecticut Coastal Jurisdiction Line (CJL)
N/A	Show and label existing steep slopes (25% and greater)



## **Checklist for Stormwater Management Report**

### **I. Project Report**

#### **A. Applicant / Site Information**

	Applicant name, legal address, contact information (email & phone)
	Engineers name, legal address, contact information (email & phone)
	Site address and legal description
	Current / proposed zoning and land use
	Site vicinity map (8.5" x 11")

#### **B. Project Description and Purpose**

	Project description including proposed project elements and anticipated construction schedule
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#### **C. Existing Conditions Description**

	Site area, ground cover, vegetation, features (roads, buildings, utilities, etc.)
	Site topography, slopes, drainage patterns, conveyances systems (swales, storm drains, etc.), stormwater discharge locations
	Receiving waterbody information including stormwater impairments and TMDL information (See the most recent <a href="#">State of Connecticut Integrated Water Quality Report</a> )
	Site soils information including soil types, hydrologic soil group, bedrock / outcroppings, groundwater elevation, significant geologic features
	Provide NRCS Soils Mapping
	Resource protection areas (wetlands, streams, lakes, etc.), buffers, floodplains, floodways

#### **D. Summary of Applicable General Design Criteria**

	Methodology, design storm frequency
	Hydrologic design criteria
	Hydraulic design criteria
	Flood hazard areas

	<b><u>Applying under "Lite" Stormwater Management: Skip to Section I</u></b> (Refer to Flow Chart on page vii of the City of Stamford Stormwater Drainage Manual)
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#### **E. Project Type in Accordance with Standard 1 Definitions**

	Area of disturbance, receiving waterbody classification (High Quality, Tidal Wetlands, Direct Waterfront)
	Project type (development, redevelopment, linear development)
	Pollutant reduction standard per flowchart Section 2.4



F. Summary of LID Site Constraints

	Description of sensitive areas for protection
N/A	Mature tree inventory, which shall include 8-inch (dbh) diameter trees or greater
N/A	Steep slopes
N/A	Ledge and bedrock depth
	Seasonal high groundwater elevation
N/A	Pollutant hotspots
	Summary of infiltration rates

G. Summary of Proposed Stormwater Treatment Practices

	Proposed LID controls (i.e. minimize impervious, minimize DCIA, minimize disturbance, increase time of concentrations, other LID controls and strategies)
	Location, size, types
	Design criteria and references
	Stormwater treatment practice, drainage area characteristics / details

H. Summary of Compliance with Standards 1

	Required pollutant reduction criteria
	Provided pollutant reduction (WQV) by stormwater treatment practice
	Summary of compliance with Standard 1

I. Summary of Compliance with Standards 2, 3, and 4

	Description of proposed stormwater management system
	Pre-development site hydrology with delineation of each watershed area and sub-basin
	Post-development site hydrology with delineation of each watershed area and sub-basin
	Comparison table of pre- and post-development hydrology, peak flow, volume, and percent difference
	Summary table of watershed areas and sub-basin areas, time of concentration and runoff coefficients
N/A	Summary table demonstrating the 2-year, 24-hour post development peak flow rate is less than or equal to the lowest of either: - The pre-development 1-year, 24-hour storm peak flow rate - 50 percent of the pre-development 2-year, 24-hour storm peak flow rate
N/A	Conveyance protection, emergency outlet sizing
N/A	Hydraulic grade line summary and tail water elevation used in analysis
	Construction erosion and sediment control description, Standard 3
	Operation and Maintenance, maintenance tasks and schedule on construction plans per Standard 4



J. Summary of Compliance with Applicable Drainage Facility Design Requirements

	Description of applicable design requirements and compliance
	Description of proposed drainage facilities and compliance

K. Stormwater Management Report

	Signed and stamped by professional engineer licensed in the State of Connecticut
	Drainage impact statement in accordance with Standard 5B.

II. **Supporting Calculations** (as appendix to Project Report)

	<b><u>Applying under "Lite" Stormwater Management: Skip to Section N</u></b>
--	--

L. Water Quality Volume / Water Quality Flow Calculations

	Calculations demonstrating the total Water Quality Volume generated by the post-development site and the required retention/treatment volume per Standard 1 in cubic feet.
	Calculations demonstrating the total Water Quality Volume retained/treated by each stormwater treatment practice and the total Water Quality Volume generated by the post-development contributing drainage area to each stormwater treatment practice

M. Stormwater Treatment Practice Sizing Calculations

	Calculations demonstrating how each stormwater treatment practice has been designed and sized in accordance with the Structural Stormwater BMP Design references in Appendix B. Calculations will vary by stormwater treatment practice, but a minimum, applicants shall provide calculations in accordance with design criteria from the Connecticut Stormwater Quality Manual.
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N. Hydrologic and Hydraulic Design Calculations

N/A	Stream channel protection, Standard 2A
N/A	Conveyance protection, Standard 2B
	Peak flow control (1-year, 2-year, 5-year, 10-year, 25-year, and 50-year storms), Standard 2C
N/A	Inlet analysis
N/A	Gutter flow (Site by site basis as requested by Engineering Bureau)
N/A	Storm sewers and culverts (velocities, capacity, hydraulics)
N/A	Hydraulic grade line required when pipe is flowing at full capacity <ul style="list-style-type: none"> <li>o Provide existing and proposed summary table</li> <li>o Provide existing and proposed mapping, label structures</li> </ul>
	Detention facilities (outlet structure, stage/storage, freeboard)
	Emergency outlet sizing, safely pass the 100 year storm, Standard 2D
N/A	Outlet protection calculations, based on conveyance protection (i.e. riprap, energy dissipater)



O. Hydrologic and Hydraulic Model, Existing and Proposed

	Drainage routing diagram
	Summary
	Storage pond input

P. Downstream analysis (Site by site basis as required by the Engineering Bureau)

N/A

	Downstream analysis, Standard 2E
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**III. Supporting Mapping** (as appendix to Project Report)

Q. Pre-Development Drainage Basin Area Mapping

N/A

	11" x 17" or 8.5" x 11" sheet size
	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
	Locations of existing stormwater discharges
	Perennial and intermittent streams, wetlands, and floodplain / floodways
	NRCS soil types, locations, boring locations, infiltration testing locations
	Vegetation and groundcover
	Existing roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
	Location, size, type of existing structural stormwater controls, facilities and conveyance systems

R. Post-Development Drainage Basin Area Mapping

N/A

	11" x 17" or 8.5" x 11" sheet size
	Topography, drainage patterns, drainage area boundaries and sub basins, flow paths, times of concentration
	Locations of proposed stormwater discharges
	Perennial and intermittent streams, wetlands, and floodplain / floodways
	NRCS soil types, locations, boring locations, infiltration testing locations
	Vegetation, ground cover and proposed limits of clearing/disturbance
	Proposed, roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, decks and other structures
	Location, size, type of proposed structural stormwater controls, facilities and conveyance systems

**IV. DCIA Tracking Worksheet** (as appendix to Project Report)

	DCIA Tracking Worksheet (Use form found in Appendix E)
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**V. Proposed LID Review Map**

	<b>Applying under "Lite" Stormwater Management - Proposed LID Review Map <u>NOT</u> required.</b>
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**A. General**

	Site address
	Applicant name, legal address, contact information
	Engineers name, address, contact information
	North arrow, bar scale, horizontal and vertical datum
	Drawing scale shall be set at 1"=20' or 1"=40' when possible
	Signed and stamped by a Licensed Professional Engineer in the State of Connecticut
	11" x 17" or 24" x 36" sheet size unless otherwise approved
	Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
	Locations of existing stormwater discharges
	Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
	Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.)

**B. LID Constraints:**

	Boring / test pit locations
	Infiltration testing locations and results
	Vegetation and proposed limits of clearing / disturbance
	NRCS soils mapping
N/A	Steep slopes
N/A	Surface waters / Perennial and intermittent streams
	Resource protection areas and buffers, wetlands, floodplain / floodways
	Existing vegetation and mature trees, which shall include 8-inch (dbh) diameter trees or greater
N/A	Poor soils (HSG C & D)
N/A	Shallow bedrock / ledge
	Seasonal high groundwater elevation
N/A	Other site constraints (e.g. brownfield caps)

**C. Proposed Stormwater Treatment Measures:**

	Location, size, type, limits, and WQV provided by each proposed stormwater treatment practices
	Drainage area to each proposed stormwater treatment practice (total area, impervious area, WQV)

**D. Site Summary Table:**

	Total site area, disturbed area, pre- and post-development impervious areas
	Required pollutant reduction volume (retention or detention)
	Provided pollutant reduction volume (retention or detention)



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**Checklist for Stormwater Management Plan / Construction Plans**

**A. General**

Site orientation, address and legal description
Applicant name, legal address, contact information
Engineers name, address, contact information
North arrow, bar scale, horizontal and vertical datum
Drawing scale shall be set at 1"=20' or 1"=40' when possible
Stamped by a Licensed Professional Engineer in the State of Connecticut
24" x 36" sheet size unless otherwise approved

**B. Site Development Plans**

N/A

City of Stamford Standard Notes
As required by the Drainage Maintenance Agreement, provide a written narrative describing the nature of the proposed development activity and the program for operation and maintenance of drainage facilities and control measures throughout the life of the project.
Existing and proposed contours based on NAVD 88 at 2 foot contour interval or 1 foot contour interval when slope is flatter than 2 percent
All required spot elevations to clearly depict positive pitch
Top and bottom elevation of all walls
Roads, buildings, driveways, parking areas, walks, patios, pools and other impervious surfaces, and decks and other structures
All utilities and easements
Location, size, maintenance access, type of proposed structural stormwater controls and facilities with elevations and inverts
Location, size, maintenance access, type of proposed non-structural stormwater controls and facilities with elevations and inverts
Location, size, type of proposed stormwater infrastructure, inlets, manholes, infiltration and detentions systems, control structures with elevations and inverts
Location, size, ownership of stormwater conveyance systems (swales, pipes, etc.) with elevations and inverts
Identify roof leaders, curtain drains and foundation drains with elevations and inverts
Proposed water quality treatment systems, size and model type
Final stabilization measures which may include slope stabilization

**C. Erosion and Sedimentation Control Plan**

Phasing and schedule
Construction access and staging and stock pile areas
Operation and maintenance of erosion and sedimentation controls
Tree protection
Downstream protection such as location of silt fencing
Limit of disturbance
Construction fencing



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**D. Construction Details**

	Standard City of Stamford details
	Infiltration system details
	Control structure details
	Water quality treatment details
	Infiltration testing results

**Checklist for Certificate of Occupancy**

	Final Improvement Location Survey
	Stormwater Management Certification Form
	Final DCIA Tracking Worksheet
	Standard City of Stamford Drainage Maintenance Agreement (Agreement Covenant)

Other Certifications at the discretion of the Engineering Bureau and/or EPB

	Wall Certification
	Landscape Certification
	Landscape Maintenance Agreement
	Waiver Covering Storm Sewer Connection
	Waiver Covering Granite Block, Depressed Curb, and Driveway Aprons
	Flood Certification