CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE
BOUNDARIES

Boundaries LLC
179 Pachaug River Drive
P.O. Box 184
Griswold, CT 06351
T 860.376.2006 | F 860.376.5899

www.boundariesllc.net

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

CRICKET'S CORNER, LLC
1645 ROUTE 85
MONTVILLE, CONNECTICUT 06370

FEBRUARY 2025

PREPARED BY:

BOUNDARIES LLC

PROJECT I.D. NO. 24-3432

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Introduction

Boundaries LLC has prepared the following stormwater management report for proposed improvements to two vacant adjacent parcels located at 1645 Route 85 and 879 Chesterfield Road in Montville. 879 Chesterfield Road is to be merged with 1645 Route 85. The stormwater management system has been designed to meet the requirements of the Connecticut Department of Energy and Environmental Protection (CT DEEP) Stormwater Quality Manual including peak flow control and pollution prevention. The proposed improvements consist of the construction of a 2-story wood framed building having a 6,300 SF footprint to contain a 6-classroom daycare facility on the ground floor and 2 3-bedroom apartment units on the second floor, construction of 2 playground areas to support the daycare facility, new paved circulation drives and parking areas to support the proposed uses, subsurface sewage disposal system, drilled well, and stormwater management system.

The project area is identified on the Location Map included as Figure 1.

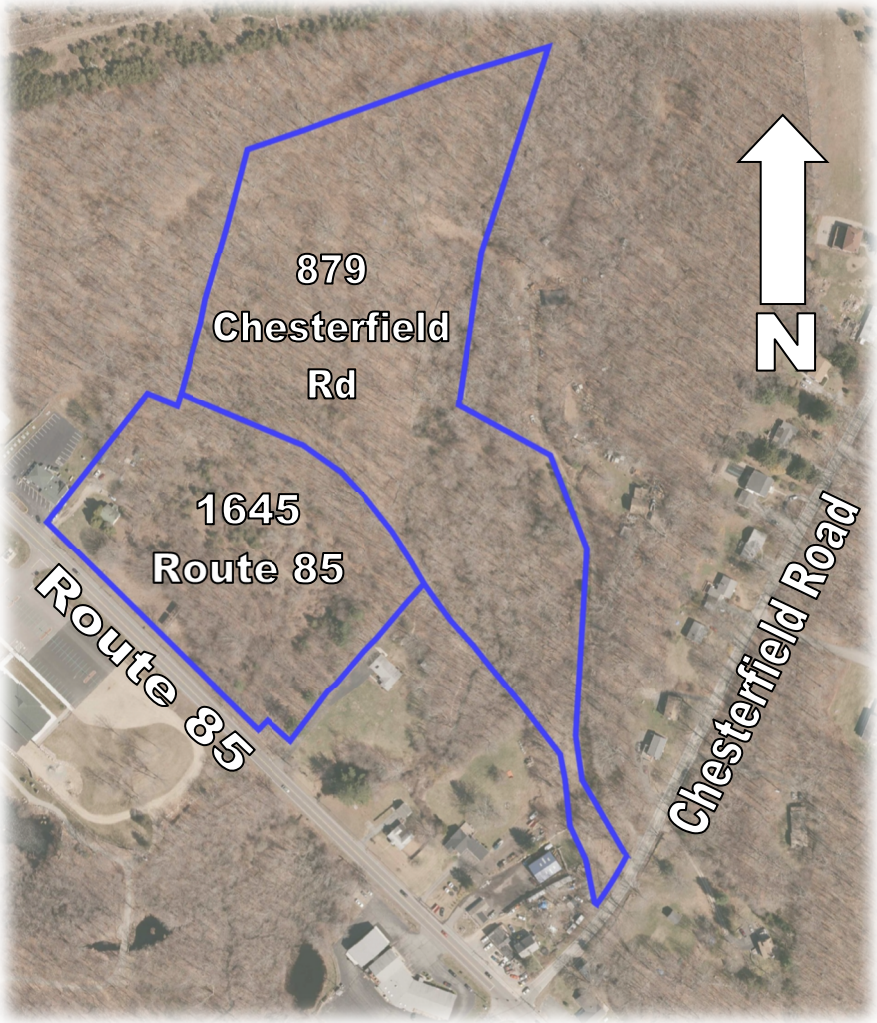
According to the Natural Resources Conservation Service (NRCS) Web Soil Survey the soils on the site consist of the following: Ridgebury, Leicester, and Whitman soils, 0 to 8% slopes, extremely stony, classified as Hydrologic Soil Group D; Agawam fine sandy loam, 3 to 8% slopes, classified as Hydrologic Soil Group B; Canton and Charlton fine sandy loams, 3 to 15% slopes, extremely stony, classified as Hydrologic Soil Group B; Charlton-Chatfield complex, 0 to 15% slopes, very rocky, classified as Hydrologic Soil Group B; and Hollis-Chatfield-rock outcrop complex, 15 to 45% slopes, classified as Hydrologic Soil Group D. The Soils Report is provided in Appendix A.

Pre- and post-development conditions hydrographs were estimated using the hydrologic modeling program HydroCAD. The methodology selected was NRCS TR-20. Times of concentration were estimated using multiple segment flow paths as described in the NRCS TR-55 manual. The NOAA Type D 24-hour storm was analyzed under antecedent moisture condition two. Design storm rainfall depths were accessed from the NOAA Precipitation Frequency Data server on November 25, 2024. HydroCAD modeling results are presented in Appendix B. The water quality volume was calculated using the methods detailed in the CT DEEP Stormwater Quality Manual. Supporting stormwater calculations are included in Appendix C.

The watershed delineations are included in Appendix D.

Pre-Development Conditions

The site consists of two existing adjacent parcels, 1645 Route 85 containing 6.16 acres more or less and 879 Chesterfield Road containing 11.72 acres more or less. 1645 Route 85 is located northerly of Route 85 and 879 Chesterfield Road is located westerly of Chesterfield Road. 1645 Route 85 is identified as Montville Tax Assessor's map 12, block 9, lot 0. 879 Chesterfield Road is identified as Montville Tax Assessor's map 5, block 15, lot 0C. Both properties are located in the Commerical-2 zoning district (C-2). 879 Chesterfield Road is to be merged with 1645 Route 85. The subject properties are mostly wooded with the exception of a grassed area along the frontage associated with 1645 Route 85 where a now removed residence once existed. The properties generally slope from northwest to southeast and runoff from the properties flow partially to inland wetlands along the eastern portion of 879 Chesterfield Road and the remaining runoff flows to an off-site culvert to the southeast of the property. Pre-development aerial photography of the properties is shown below.



Aerial Photograph of Site (2016)

The pre-development watersheds are shown in Appendix D. The pre-development watersheds were delineated using topographic survey data for the subject parcel and aerial mapping for off-site contributing areas.

Runoff Curve Numbers (CN) used for the pre-development conditions analysis are as follows: 55 (woods, good ground cover) for wooded areas in Hydrologic Soil Group B, 77 (woods, good ground cover) for wooded areas in Hydrologic Soil Group D, 61 (>75% grass cover) for grassed areas in Hydrologic Soil Group B, and 98 (impervious) for existing impervious areas such as paved/concrete areas, gravel areas and rooftops.

The pre-development watersheds are described further below:

Drainage Area #1 (DA-1)
This 2.04± acre drainage area encompasses the area that contributes runoff to the inland wetlands along the eastern portion of the property. The drainage area is comprised of wooded areas. The weighted CN of the drainage area is 57. Runoff from this area flows southeasterly overland to the inland wetlands.

Drainage Area #2 (DA-2)
This 10.08± acre drainage area encompasses the area that contributes runoff to an off-site culvert to the southeast of the property. The drainage area is comprised of grassed areas, wooded areas, and off-site impervious surfaces including rooftops and paved circulation areas. The weighted CN of the drainage area is 61. Runoff from this area flows southeasterly overland to the culvert.

Existing conditions peak runoff rates were analyzed at the discharge locations at the inland wetland boundary and the culvert. Existing conditions peak flow rates are summarized below in Table 1. Detailed modeling results are included in Appendix B.

Table 1
Peak Runoff Rates – Existing Conditions

Storm Event	Total Peak Runoff Rate to Inland Wetlands (CFS)	Total Peak Runoff Rate to Culvert (CFS)
2-Year	0.41	2.39
10-Year	2.04	8.38
25-Year	3.33	12.87
50-Year	4.38	16.50
100-Year	5.57	20.55

Post-Development Conditions

The proposed improvements consist of the construction of a 2-story wood framed building having a 6,300 SF footprint to contain a 6-classroom daycare facility on the ground floor and 2 3-bedroom apartments on the second floor, construction of 2 playground areas to support the daycare facility, new paved circulation drives and parking areas to support the proposed uses, subsurface sewage disposal system, drilled well, and stormwater management system. Stormwater runoff from the development area will be collected in the proposed infiltration basins. The stormwater management basins will discharge through a reinforced spillway to the undeveloped portions of the property. Stormwater runoff from the undisturbed area will continue to surface flow directly to the inland wetlands and culvert to the southeast of the property.

The proposed stormwater management system meets the following design standards:

- The post-development peak discharge rates from the 2-year, 10-year, 25-year, 50-year, and 100-year storms are less than or equal to pre-development peak discharge rates.
- The emergency outlet has capacity to safely pass the post-development peak runoff from the 100-year storm without erosion.
- The Water Quality Volume is retained on-site.

Proposed conditions watersheds are shown in Appendix D. Proposed conditions watersheds were delineated using topographic survey data and the proposed development plans for the subject parcel. Land uses were determined using the proposed development plans.

Runoff Curve Numbers (CN) used for the proposed conditions analysis are as follows: 55 (woods, good ground cover) for wooded areas in Hydrologic Soil Group B, 77 (woods, good ground cover) for wooded areas in Hydrologic Soil Group D, 61 (>75% grass cover) for grassed areas in Hydrologic Soil Group B, 80 (>75% grass cover) for grassed areas in Hydrologic Soil Group D, and 98 (impervious) for impervious areas such as paved/concrete areas, gravel areas and rooftops.

The proposed conditions watersheds are described further below:

Drainage Area #1A (DA-1A)

This 2.09± acre drainage area encompasses the area that contributes runoff to Stormwater Management Basin #1 (SMB-1). The drainage area is comprised of the developed area of the site consisting of the proposed building, paved parking and circulation areas, playground areas, proposed grassed areas, and undeveloped wooded areas of the site. The weighted CN of the drainage area is 78. Runoff from this area is discharged to SMB-1 by means of surface flow and culverts associated with proposed catch basins and roof drains before discharging to wooded areas upgradient of the inland wetlands on the eastern portion of the property.

Drainage Area #1B (DA-1B)

This 0.73± acre drainage area encompasses the area that contributes runoff directly to the inland wetlands on the eastern portion of the property. The drainage area is comprised of proposed grassed areas and undeveloped wooded areas of the site. The weighted CN of the drainage area is 57. Runoff from this area surface flows directly through wooded areas to the inland wetlands.

Proposed conditions peak runoff rates were analyzed at the discharge location at the inland wetland boundary. The peak runoff rates are summarized in Table 2. Detailed modeling results are included in Appendix B.

Table 2
Peak Runoff Rates to Inland Wetlands – Proposed Conditions vs. Existing Conditions

Storm Event	Proposed Conditions Peak Runoff Rate to Inland Wetlands (CFS)	Existing Conditions Peak Runoff Rate to Inland Wetlands (CFS)	Change in Peak Runoff Rate (CFS)
2-Year	0.17	0.41	-0.24
10-Year	1.41	2.04	-0.63
25-Year	3.15	3.33	-0.18
50-Year	4.31	4.38	-0.07
100-Year	5.41	5.57	-0.16

As demonstrated, the proposed stormwater management system provides peak runoff rate attenuation for all of the modeled storm events.

Drainage Area #2A (DA-2A)
This 4.02± acre drainage area encompasses the area that contributes runoff to Stormwater Management Basin #2 (SMB-2). The drainage area is comprised of the developed area of the site consisting of paved circulation areas, proposed grassed areas, undeveloped wooded areas, and off-site impervious surfaces including rooftops and paved circulation areas. The weighted CN of the drainage area is 76. Runoff from this area is discharged to SMB-2 by means of surface flow and culverts associated with proposed catch basins before discharging to undeveloped wooded portions of the property, upgradient of the culvert.

Drainage Area #2B (DA-2B)
This 5.29± acre drainage area encompasses the area that contributes runoff directly to undeveloped wooded portions of the property, upgradient of the culvert. The drainage area is comprised of proposed grassed areas and undeveloped wooded areas of the site. The weighted CN of the drainage area is 56. Runoff from this area surface flows directly to undeveloped wooded portions of the property upgradient of the culvert.

Proposed conditions peak runoff rates were analyzed at the discharge location at the off-site culvert. The peak runoff rates are summarized in Table 3. Detailed modeling results are included in Appendix B.

Table 3
Peak Runoff Rates to Culvert – Proposed Conditions vs. Existing Conditions

Storm Event	Proposed Conditions Peak Runoff Rate to Culvert (CFS)	Existing Conditions Peak Runoff Rate to Culvert (CFS)	Change in Peak Runoff Rate (CFS)
2-Year	1.28	2.39	-1.11
10-Year	7.74	8.38	-0.64
25-Year	11.37	12.87	-1.50
50-Year	13.98	16.50	-2.52
100-Year	19.00	20.55	-1.55

As demonstrated, the proposed stormwater management system provides peak runoff rate attenuation for all of the modeled storm events.

The proposed stormwater collection system consists of ten catch basins, five yard drains, two stormwater management basins, and piping connecting the stormwater structures to the stormwater management basins. The proposed collection system is sized for the 25-year storm event. A summary of the pipe capacities and 25-year storm flows are presented below in Table 4.

Table 4
Stormwater Collection Design Summary

Drainage Structure	Peak Runoff for 25-Year Storm (CFS)	Slope (FT/FT)	Mannings Capacity (CFS)
12" RCP Culvert (P-CB 1 to P-CB 2)	0.457	0.020	5.048
12" RCP Culvert (P-CB 2 to P-CB 4)	0.978	0.063	8.939
12" RCP Culvert (P-CB 3 to P-CB 4)	0.470	0.020	5.048
12" RCP Culvert (P-CB 4 to P-CB 5)	2.081	0.083	10.260
12" RCP Culvert (P-CB 5 to P-CB 7)	2.329	0.048	7.858
12" RCP Culvert (P-FEU 1 to P-CB 6)	4.259	0.081	10.174
12" RCP Culvert (P-CB 6 to P-CB 7)	5.095	0.024	5.507
15" RCP Culvert (P-CB 7 to SMB-2)	7.970	0.015	8.027
6" PVC Culvert (P-YD 1 to P-YD 2)	0.220	0.015	0.749
6" PVC Culvert (P-YD 2 to P-YD 3)	0.237	0.015	0.755
6" PVC Culvert (P-YD 3 to P-YD 4)	0.241	0.015	0.746
6" PVC Culvert (P-YD 4 to P-YD 5)	0.245	0.015	0.755
8" PVC Culvert (P-YD 5 to P-CB 10)	1.707	0.018	1.740
12" RCP Culvert (P-CB 8 to P-CB 9)	0.950	0.152	13.905
12" RCP Culvert (P-CB 9 to P-CB 10)	1.396	0.013	4.124
12" RCP Culvert (P-CB 10 to SMB-1)	6.701	0.163	14.415

The stormwater management basin outlets will be protected from erosion by pre-formed riprap scour holes in accordance with the recommendations of the CT DOT Drainage Manual. The modeled velocities of the 100-year discharges as compared to typical allowable velocities for the proposed surface is presented in Table 5.

Table 5
100-year Discharge/Overflow Erosion Potential Evaluation

Stormwater Management Component	100-year Discharge/Overflow Velocity (FPS)	Proposed Surface Treatment	Typical Allowable Velocity (FPS)
12" Culvert Discharge (SMB-1)	5.01	Modified riprap scour hole	14.7 (per DOT Drainage Manual)
Spillway (SMB-1)	0.71	Modified riprap	8.0 (per DOT Drainage Manual)
15" Culvert Discharge (SMB-2)	6.18	Modified riprap scour hole	14.7 (per DOT Drainage Manual)
Spillway (SMB-2)	1.15	Modified riprap	8.0 (per DOT Drainage Manual)

As presented above, the proposed stormwater management system is adequately protected from potential erosion as a result of modeled discharges during the 100-year storm event.

The stormwater management system is also required to retain the Water Quality Volume on-site. Runoff from pavement, roofs, concrete pads, and playground surfaces will be retained in the stormwater management basins. The proposed basins provide sufficient retention capacity for over 100% of the calculated Water Quality Volumes. The volumes retained by the proposed stormwater management basins and sediment forebays were determined using the HydroCAD stage-storage results. The calculations to determine the required volumes are included in Appendix C. The treatment volumes required and provided are presented in Table 6.

Table 6
Runoff Treatment Sizing Criteria

Stormwater Treatment System	Storage Volume Provided (CF)	Treatment Volume Required (CF)
SMB-1 (100%)	6,395	3,905
Sediment Forebay (25%)	1,046	976
SMB-2 (100%)	5,102	4,899
Sediment Forebay (25%)	1,687	1,225

As demonstrated, the stormwater management system provides adequate capacity for retention of the required water quality volumes.

Stormwater Basins

The proposed stormwater basins are located in HSG B soils to the southeast of the development areas. The basins will function as infiltration basins. The basins collect stormwater runoff from the proposed development area, undisturbed woodland and maintained lawns.

Proposed Interior Side Slopes – 3H:1V (both)
Proposed Exterior Side Slopes – 3H:1V (both)
Sum of the Side Slopes – 6H:1V (both)
(Reference 2002 CT Guidelines for SESC, Detention Basins, Page 5-9-13, Earth Embankment, Side Slopes)
Berm Top Width – 8 feet (both)
Retained Volumes – 6,395 cubic feet (SMB-1); 5,102 cubic feet (SMB-2)
Contributing Area Water Quality Volumes – 3,905 cubic feet (SMB-1); 4,899 cubic feet (SMB-2)
Time to Drain After Storm – 35 hours (SMB-1); 22 hours (SMB-2)
(Published Rawl's Rate for HSG B loam)
TSS Removal – 80% with sediment forebays per the Massachusetts DEP Stormwater Handbook, Volume 2, Chapter 2.

Construction Phase Stormwater Management

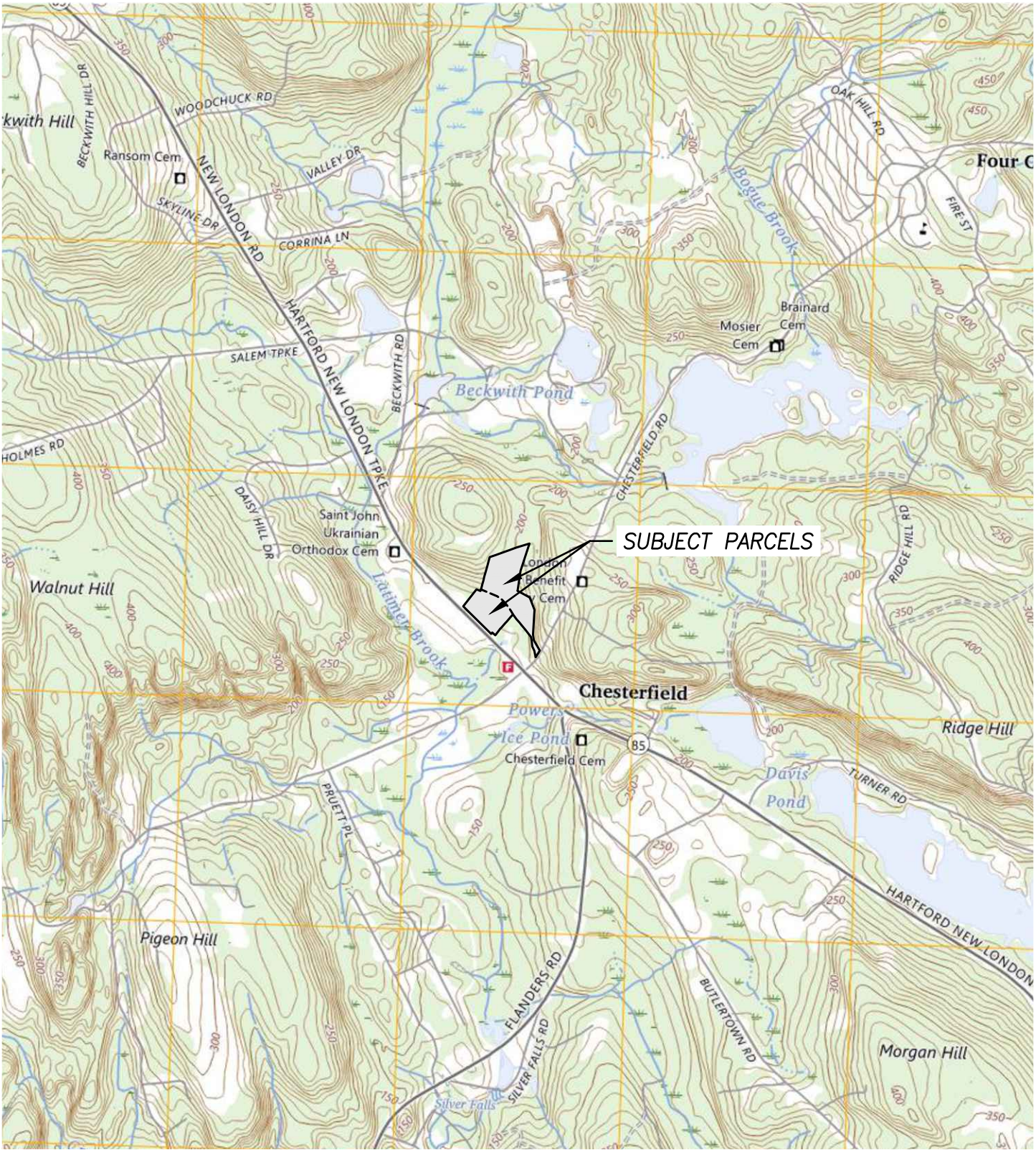
The project results in the temporary disturbance of approximately 3.6 acres of land. The following measures will be taken to protect water quality during construction:

- Install an anti-tracking pad at the construction exit.
- Provide sediment fence barriers and/or wood chip berms at the downgradient project limits.
- Provide a sediment fence barrier upgradient of the infiltration basins to allow for the establishment of vegetation.
- Surround stockpile(s) with sediment fence and seed with rye grass.

Summary

The proposed stormwater management system has been designed in accordance with the CT DEEP Stormwater Quality Manual. The system provides peak flow control and runoff retention and treatment.

The proposed improvements are shown on plans titled “Site Development Plans, Prepared For Cricket’s Corner, LLC, 1645 Route 85, Montville, Connecticut, February 2025, Sheet 1 of 13 through Sheet 13 of 13” prepared by Boundaries LLC.



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Location Map
(Palmertown Quad)
Cricket's Corner, LLC

1645 Route 85 - Montville, CT

SCALE:	1"=2,000'
DATE:	February 2025
JOB NO.	24-3432
FIGURE	1

Appendix A
NRCS Web Soil Survey Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut, Eastern Part

September 25, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:4,860 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	7.8	15.8%
15	Scarboro muck, 0 to 3 percent slopes	0.6	1.2%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	10.2	20.8%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	7.7	15.7%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	14.6	29.8%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.5	5.0%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	5.1	10.4%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	0.6	1.2%
Totals for Area of Interest		**49.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut, Eastern Part

3—Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2t2qt
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 40 percent
Leicester, extremely stony, and similar soils: 35 percent
Whitman, extremely stony, and similar soils: 17 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Leicester, Extremely Stony

Setting

Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bg - 7 to 18 inches: fine sandy loam
BC - 18 to 24 inches: fine sandy loam
C1 - 24 to 39 inches: gravelly fine sandy loam
C2 - 39 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B/D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Whitman, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: peat

A - 1 to 10 inches: fine sandy loam
Bg - 10 to 17 inches: gravelly fine sandy loam
Cdg - 17 to 61 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 7 to 38 inches to densic material
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs, swamps
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

15—Scarboro muck, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkt
Elevation: 0 to 1,350 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro

Setting

Landform: Drainageways, depressions, outwash deltas, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Linear, concave
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam
Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Timakwa

Percent of map unit: 10 percent
Landform: Swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Walpole

Percent of map unit: 8 percent
Landform: Deltas, depressions, outwash plains, depressions, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Deerfield

Percent of map unit: 2 percent
Landform: Terraces, outwash plains
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam
Bw1 - 11 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
2C1 - 26 to 45 inches: loamy fine sand
2C2 - 45 to 55 inches: loamy fine sand
2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent
Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Walpole

Percent of map unit: 3 percent
Landform: Deltas, depressions, outwash terraces, depressions, outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Hinckley

Percent of map unit: 3 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

61B—Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w81v
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

62C—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2wks7
Elevation: 0 to 1,310 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 50 percent
Charlton, extremely stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Leicester, extremely stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

73C—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2w698
Elevation: 0 to 1,550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent
Chatfield, very stony, and similar soils: 30 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Chatfield, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Hollis, very stony

Percent of map unit: 5 percent
Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

75E—Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 9lqp
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Chatfield

Setting

Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 0 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Charlton
Percent of map unit: 7 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Leicester
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, very stony
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Unnamed, red parent material
Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, sandy subsoil
Percent of map unit: 1 percent
Hydric soil rating: No

Brimfield
Percent of map unit: 1 percent
Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

85B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 2w679
Elevation: 0 to 1,530 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton, very stony, and similar soils: 55 percent
Montauk, very stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony

Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, very stony

Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

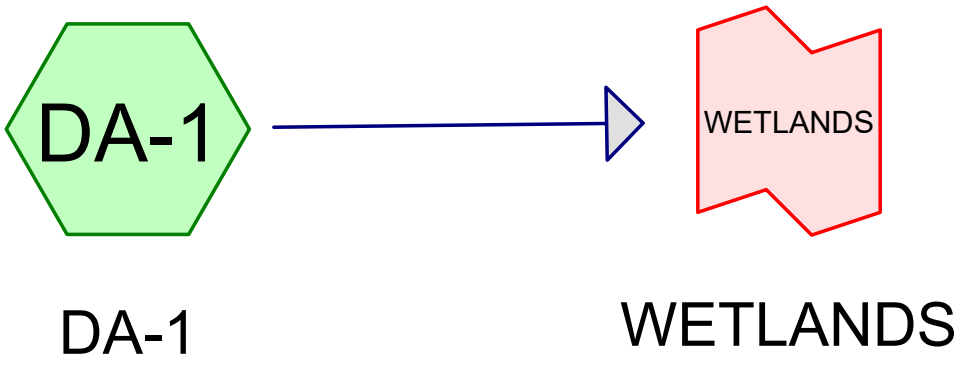
Ridgebury, very stony

Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, very stony

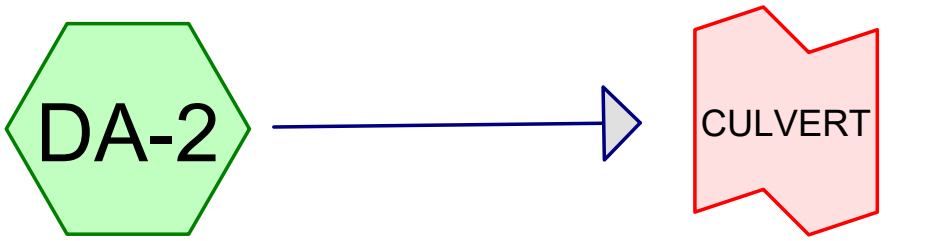
Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Appendix B
HydroCAD Modeling Results



DA-1

WETLANDS



DA-2

CULVERT

Subcat Reach Pond Link

Routing Diagram for Crickets Corner Pre Development
Prepared by Boundaries, LLC, Printed 1/29/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.200	61	>75% Grass cover, Good, HSG B (DA-2)
0.270	98	Paved parking, HSG B (DA-2)
8.383	55	Woods, Good, HSG B (DA-1, DA-2)
2.268	77	Woods, Good, HSG D (DA-1, DA-2)
12.120	**61**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
9.852	HSG B	DA-1, DA-2
0.000	HSG C	
2.268	HSG D	DA-1, DA-2
0.000	Other	
12.120		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.200	0.000	0.000	0.000	1.200	>75% Grass cover, Good	DA-2
0.000	0.270	0.000	0.000	0.000	0.270	Paved parking	DA-2
0.000	8.383	0.000	2.268	0.000	10.650	Woods, Good	DA-1, DA-2
0.000	**9.852**	**0.000**	**2.268**	**0.000**	**12.120**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=89,038 sf 0.00% Impervious Runoff Depth=2.87"
Flow Length=734' Tc=12.0 min CN=57 Runoff=5.57 cfs 0.490 af

Subcatchment DA-2: DA-2 Runoff Area=438,906 sf 2.68% Impervious Runoff Depth=3.31"
Flow Length=1,390' Tc=27.7 min CN=61 Runoff=20.55 cfs 2.778 af

Link CULVERT: CULVERT Inflow=20.55 cfs 2.778 af
Primary=20.55 cfs 2.778 af

Link WETLANDS: WETLANDS Inflow=5.57 cfs 0.490 af
Primary=5.57 cfs 0.490 af

Total Runoff Area = 12.120 ac Runoff Volume = 3.267 af Average Runoff Depth = 3.23"
97.77% Pervious = 11.850 ac 2.23% Impervious = 0.270 ac

Summary for Subcatchment DA-1: DA-1

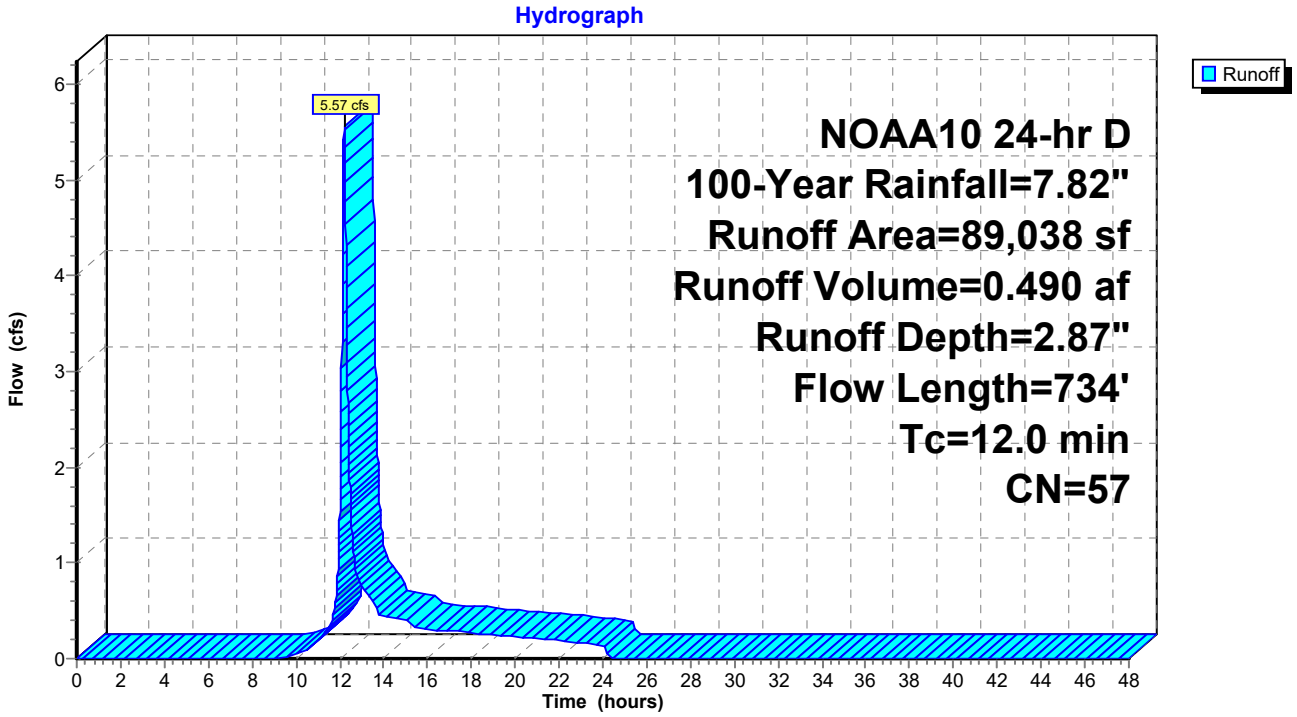
Runoff = 5.57 cfs @ 12.20 hrs, Volume= 0.490 af, Depth= 2.87"
Routed to Link WETLANDS : WETLANDS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
80,422	55	Woods, Good, HSG B
8,616	77	Woods, Good, HSG D
89,038	57	Weighted Average
89,038		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.1760	0.17		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.45"
7.0	684	0.1070	1.64		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
12.0	734	Total			

Subcatchment DA-1: DA-1



Summary for Subcatchment DA-2: DA-2

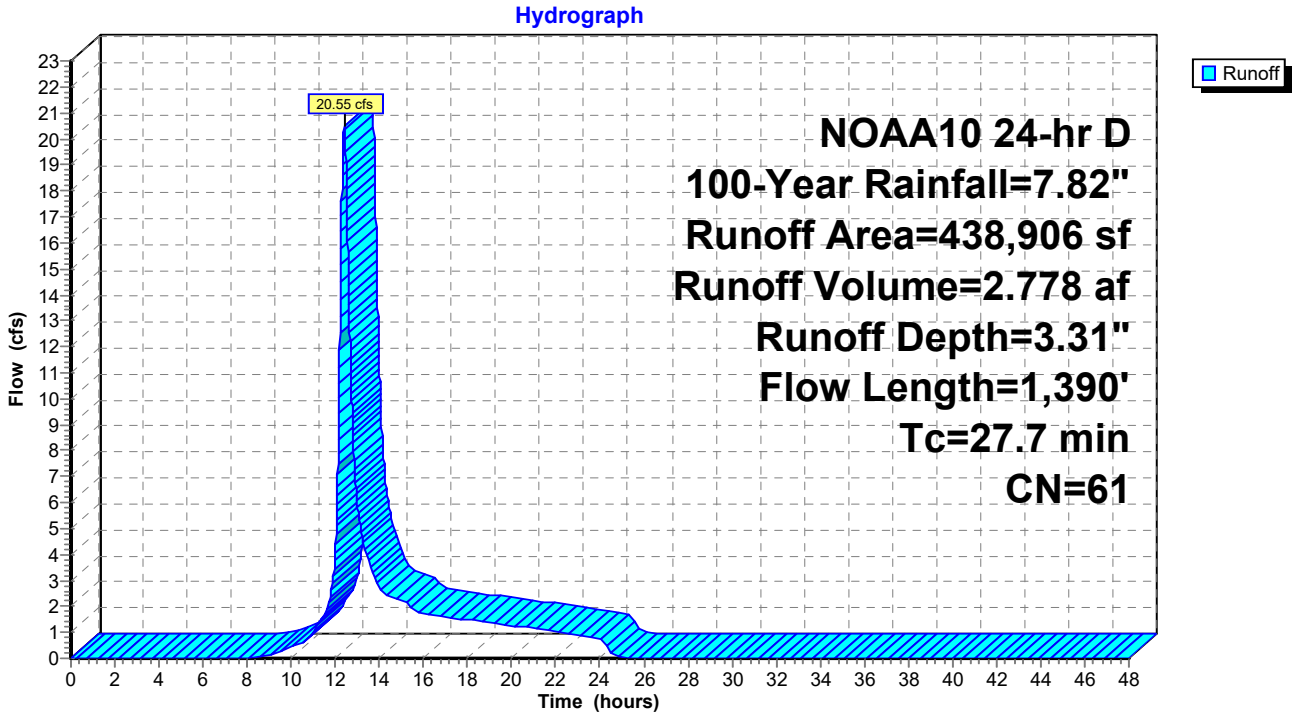
Runoff = 20.55 cfs @ 12.40 hrs, Volume= 2.778 af, Depth= 3.31"
Routed to Link CULVERT : CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
284,729	55	Woods, Good, HSG B
90,167	77	Woods, Good, HSG D
52,251	61	>75% Grass cover, Good, HSG B
11,759	98	Paved parking, HSG B
438,906	61	Weighted Average
427,147		97.32% Pervious Area
11,759		2.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.1480	0.16		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.45"
5.1	575	0.1410	1.88		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
2.5	145	0.0360	0.95		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
0.8	62	0.0350	1.31		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
4.9	273	0.0340	0.92		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
9.1	285	0.0110	0.52		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
27.7	1,390	Total			

Subcatchment DA-2: DA-2

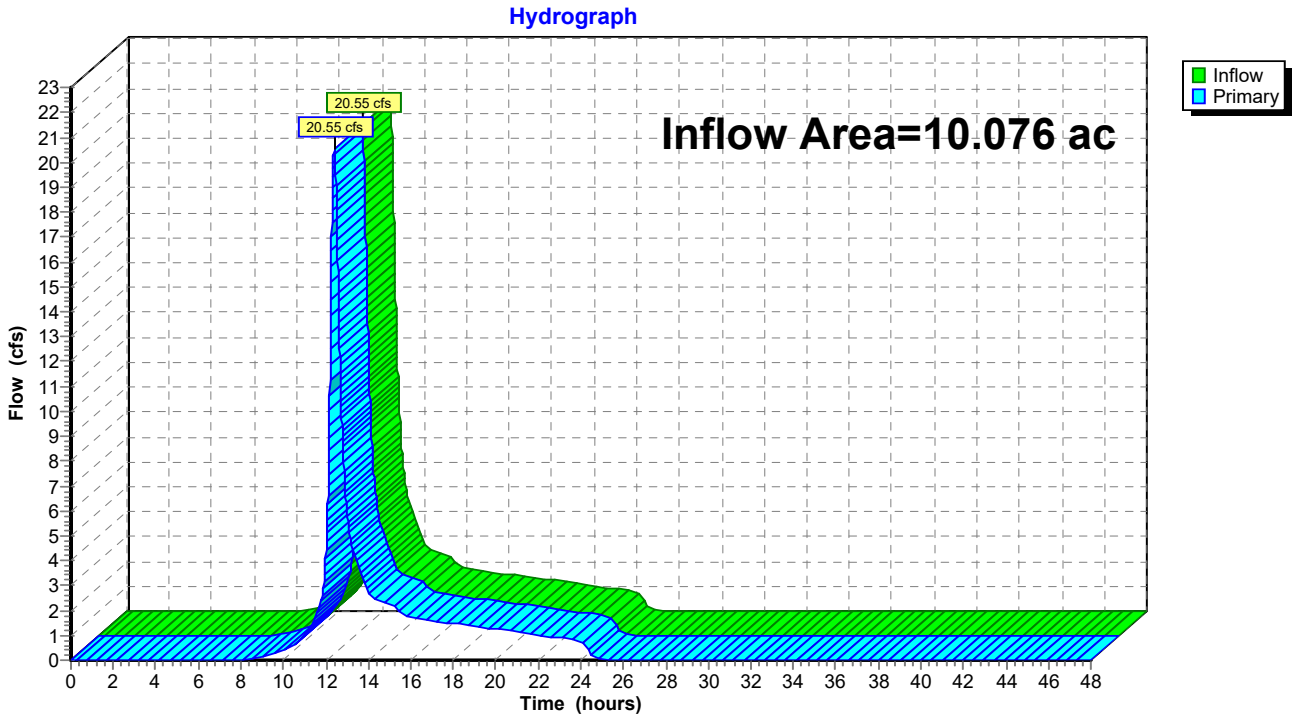


Summary for Link CULVERT: CULVERT

Inflow Area = 10.076 ac, 2.68% Impervious, Inflow Depth = 3.31" for 100-Year event
Inflow = 20.55 cfs @ 12.40 hrs, Volume= 2.778 af
Primary = 20.55 cfs @ 12.40 hrs, Volume= 2.778 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link CULVERT: CULVERT

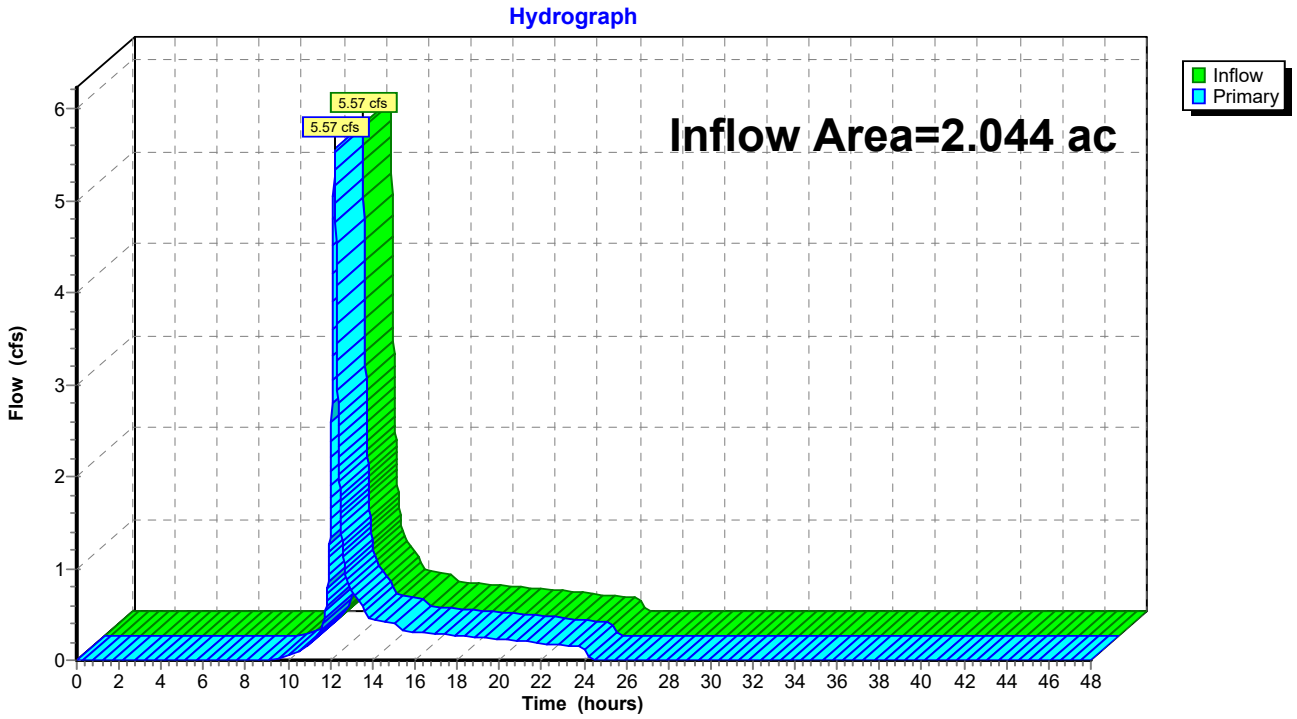


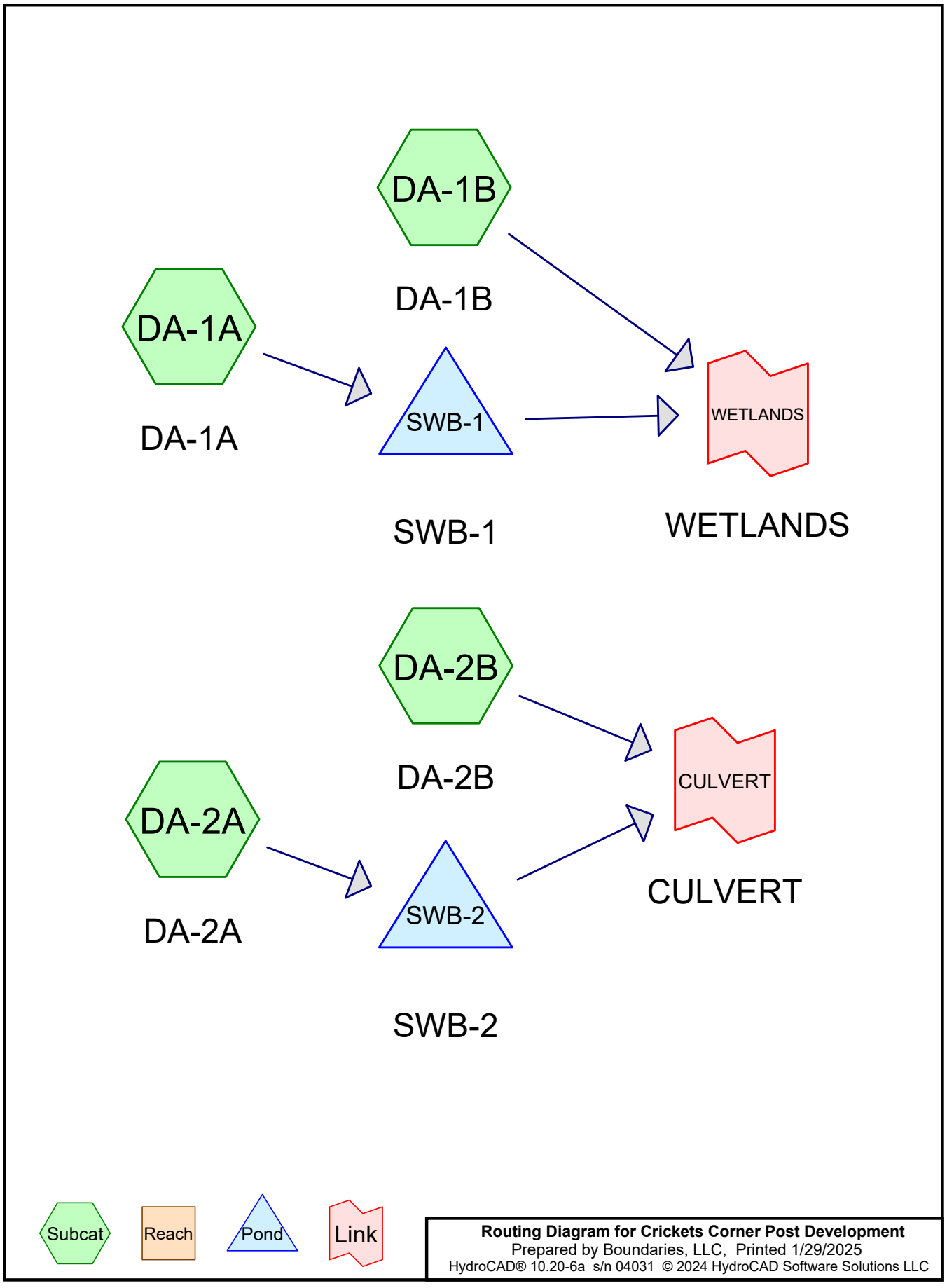
Summary for Link WETLANDS: WETLANDS

Inflow Area = 2.044 ac, 0.00% Impervious, Inflow Depth = 2.87" for 100-Year event
Inflow = 5.57 cfs @ 12.20 hrs, Volume= 0.490 af
Primary = 5.57 cfs @ 12.20 hrs, Volume= 0.490 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link WETLANDS: WETLANDS





Routing Diagram for Crickets Corner Post Development
Prepared by Boundaries, LLC, Printed 1/29/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.801	61	>75% Grass cover, Good, HSG B (DA-1A, DA-1B, DA-2A, DA-2B)
0.092	80	>75% Grass cover, Good, HSG D (DA-2A)
1.399	98	Paved parking, HSG B (DA-1A, DA-2A)
0.340	98	Water Surface, 0% imp, HSG B (DA-1A, DA-2A)
5.361	55	Woods, Good, HSG B (DA-1A, DA-1B, DA-2A, DA-2B)
2.131	77	Woods, Good, HSG D (DA-1A, DA-1B, DA-2A)
12.125	**67**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
9.902	HSG B	DA-1A, DA-1B, DA-2A, DA-2B
0.000	HSG C	
2.223	HSG D	DA-1A, DA-1B, DA-2A
0.000	Other	
12.125		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.801	0.000	0.092	0.000	2.893	>75% Grass cover, Good	DA-1A, DA-1B, DA-2A, DA-2B
0.000	1.399	0.000	0.000	0.000	1.399	Paved parking	DA-1A, DA-2A
0.000	0.340	0.000	0.000	0.000	0.340	Water Surface, 0% imp	DA-1A, DA-2A
0.000	5.361	0.000	2.131	0.000	7.492	Woods, Good	DA-1A, DA-1B, DA-2A, DA-2B
0.000	**9.902**	**0.000**	**2.223**	**0.000**	**12.125**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	DA-1A	0.00	0.00	194.0	0.0130	0.011	0.0	12.0	0.0	
2	DA-1A	0.00	0.00	62.0	0.1600	0.011	0.0	12.0	0.0	
3	DA-2A	0.00	0.00	16.0	0.0810	0.011	0.0	12.0	0.0	
4	DA-2A	0.00	0.00	21.0	0.0240	0.011	0.0	12.0	0.0	
5	DA-2A	0.00	0.00	134.0	0.0150	0.011	0.0	15.0	0.0	
6	SWB-1	159.50	158.50	33.0	0.0303	0.011	0.0	12.0	0.0	
7	SWB-2	140.95	140.30	76.0	0.0086	0.011	0.0	15.0	0.0	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1A: DA-1A Runoff Area=90,943 sf 36.54% Impervious Runoff Depth=5.22"
Flow Length=813' Tc=10.2 min CN=78 Runoff=11.18 cfs 0.909 af

Subcatchment DA-1B: DA-1B Runoff Area=31,840 sf 0.00% Impervious Runoff Depth=2.87"
Flow Length=392' Tc=8.5 min CN=57 Runoff=2.31 cfs 0.175 af

Subcatchment DA-2A: DA-2A Runoff Area=174,936 sf 15.85% Impervious Runoff Depth=4.99"
Flow Length=1,021' Tc=13.5 min CN=76 Runoff=18.21 cfs 1.671 af

Subcatchment DA-2B: DA-2B Runoff Area=230,446 sf 0.00% Impervious Runoff Depth=2.77"
Flow Length=655' Tc=26.8 min CN=56 Runoff=8.94 cfs 1.220 af

Pond SWB-1: SWB-1 Peak Elev=161.08' Storage=14,788 cf Inflow=11.18 cfs 0.909 af
Outflow=4.54 cfs 0.761 af

Pond SWB-2: SWB-2 Peak Elev=143.22' Storage=19,093 cf Inflow=18.21 cfs 1.671 af
Outflow=10.10 cfs 1.553 af

Link CULVERT: CULVERT Inflow=19.00 cfs 2.773 af
Primary=19.00 cfs 2.773 af

Link WETLANDS: WETLANDS Inflow=5.41 cfs 0.936 af
Primary=5.41 cfs 0.936 af

Total Runoff Area = 12.125 ac Runoff Volume = 3.976 af Average Runoff Depth = 3.93"
88.46% Pervious = 10.726 ac 11.54% Impervious = 1.399 ac

Summary for Subcatchment DA-1A: DA-1A

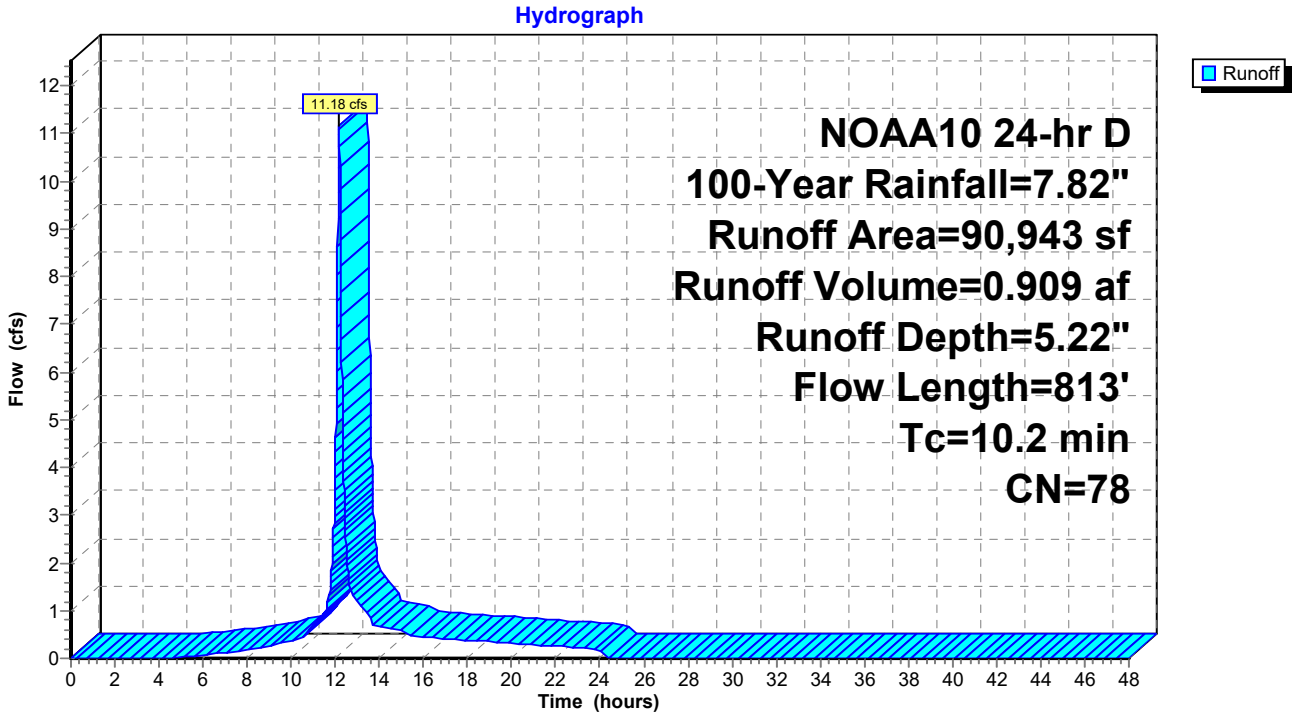
Runoff = 11.18 cfs @ 12.18 hrs, Volume= 0.909 af, Depth= 5.22"
Routed to Pond SWB-1 : SWB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
9,337	55	Woods, Good, HSG B
4,940	77	Woods, Good, HSG D
36,540	61	>75% Grass cover, Good, HSG B
33,233	98	Paved parking, HSG B
6,893	98	Water Surface, 0% imp, HSG B
90,943	78	Weighted Average
57,710		63.46% Pervious Area
33,233		36.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.1760	0.17		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.45"
3.0	305	0.1140	1.69		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
1.7	202	0.0770	1.94		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
0.5	194	0.0130	6.11	4.80	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.0	62	0.1600	21.44	16.84	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
10.2	813	Total			

Subcatchment DA-1A: DA-1A



Summary for Subcatchment DA-1B: DA-1B

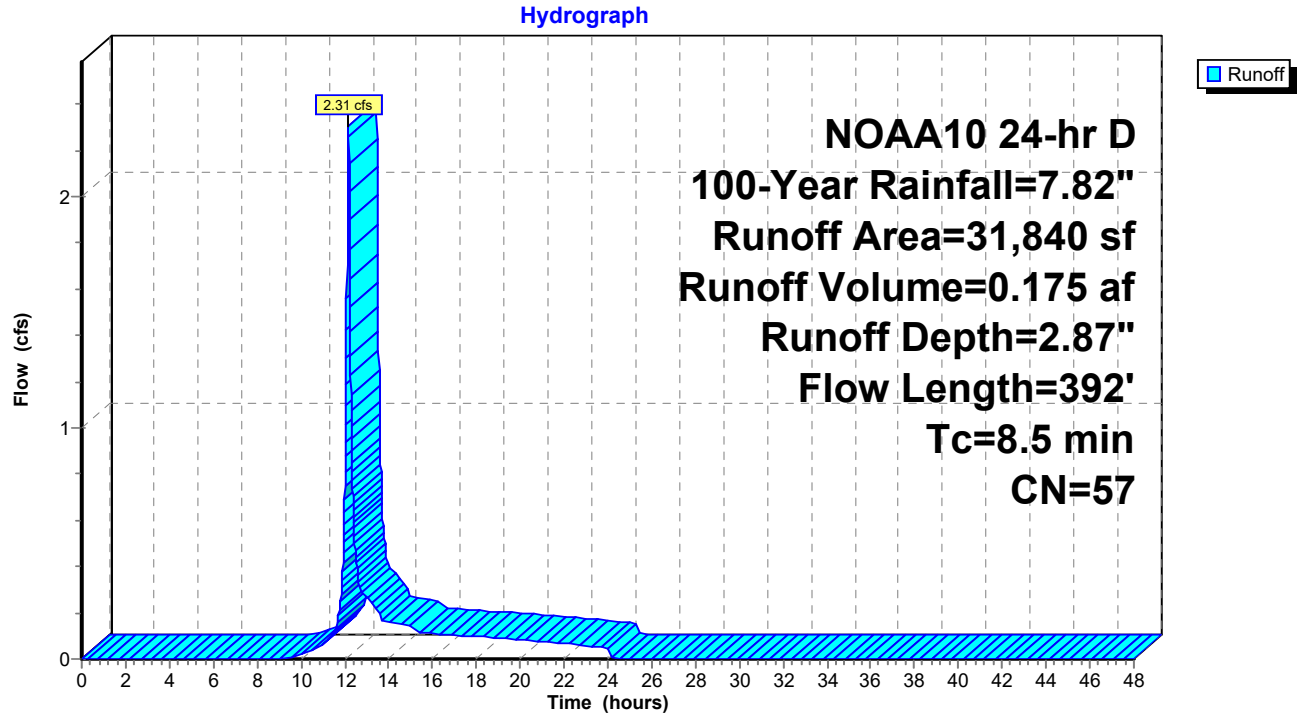
Runoff = 2.31 cfs @ 12.16 hrs, Volume= 0.175 af, Depth= 2.87"
Routed to Link WETLANDS : WETLANDS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
24,680	55	Woods, Good, HSG B
773	77	Woods, Good, HSG D
6,387	61	>75% Grass cover, Good, HSG B
31,840	57	Weighted Average
31,840		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.1360	0.15		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.45"
1.9	187	0.1080	1.64		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
0.7	105	0.1120	2.34		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.1660	2.04		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
8.5	392	Total			

Subcatchment DA-1B: DA-1B



Summary for Subcatchment DA-2A: DA-2A

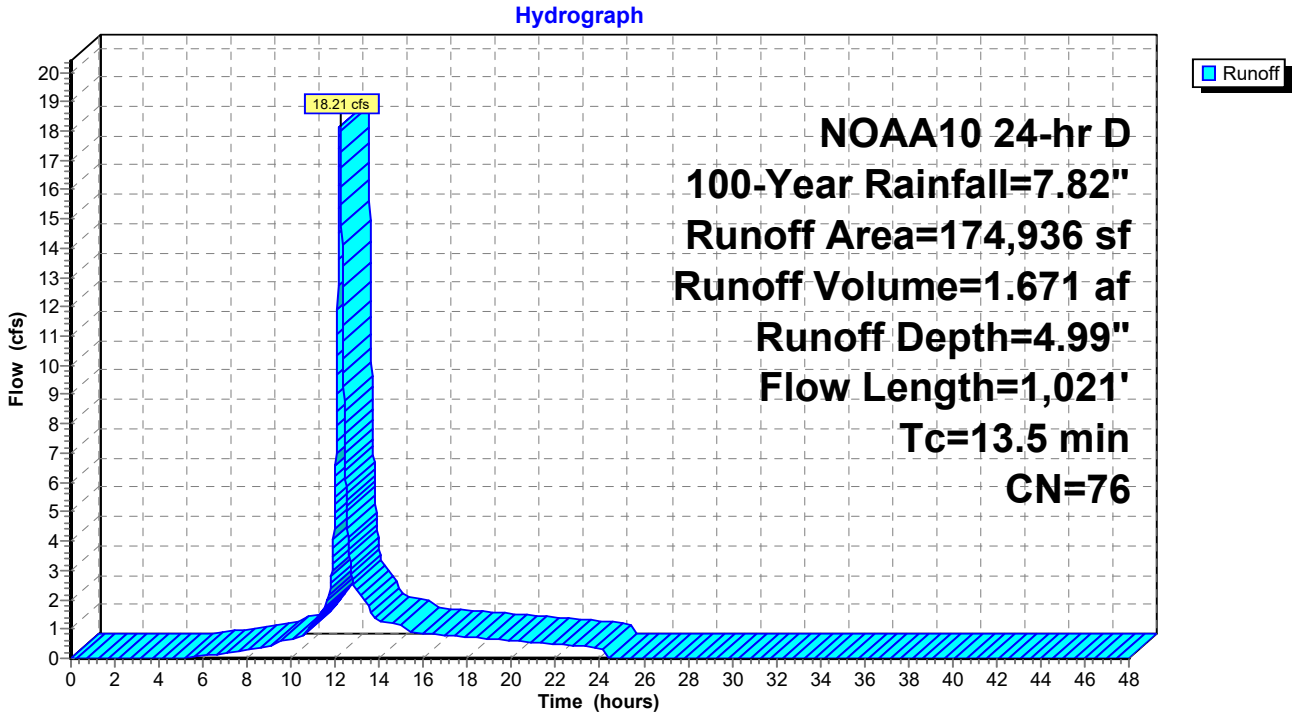
Runoff = 18.21 cfs @ 12.21 hrs, Volume= 1.671 af, Depth= 4.99"
Routed to Pond SWB-2 : SWB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
13,621	55	Woods, Good, HSG B
87,108	77	Woods, Good, HSG D
34,537	61	>75% Grass cover, Good, HSG B
4,029	80	>75% Grass cover, Good, HSG D
27,720	98	Paved parking, HSG B
7,921	98	Water Surface, 0% imp, HSG B
174,936	76	Weighted Average
147,216		84.15% Pervious Area
27,720		15.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.1480	0.16		**Sheet Flow, Sheet Woods** Woods: Light underbrush n= 0.400 P2= 3.45"
5.1	577	0.1400	1.87		**Shallow Concentrated Flow, Shallow Woodland** Woodland Kv= 5.0 fps
2.8	223	0.0350	1.31		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
0.0	16	0.0810	15.26	11.98	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.0	21	0.0240	8.31	6.52	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.3	134	0.0150	7.62	9.35	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
13.5	1,021	Total			

Subcatchment DA-2A: DA-2A



Summary for Subcatchment DA-2B: DA-2B

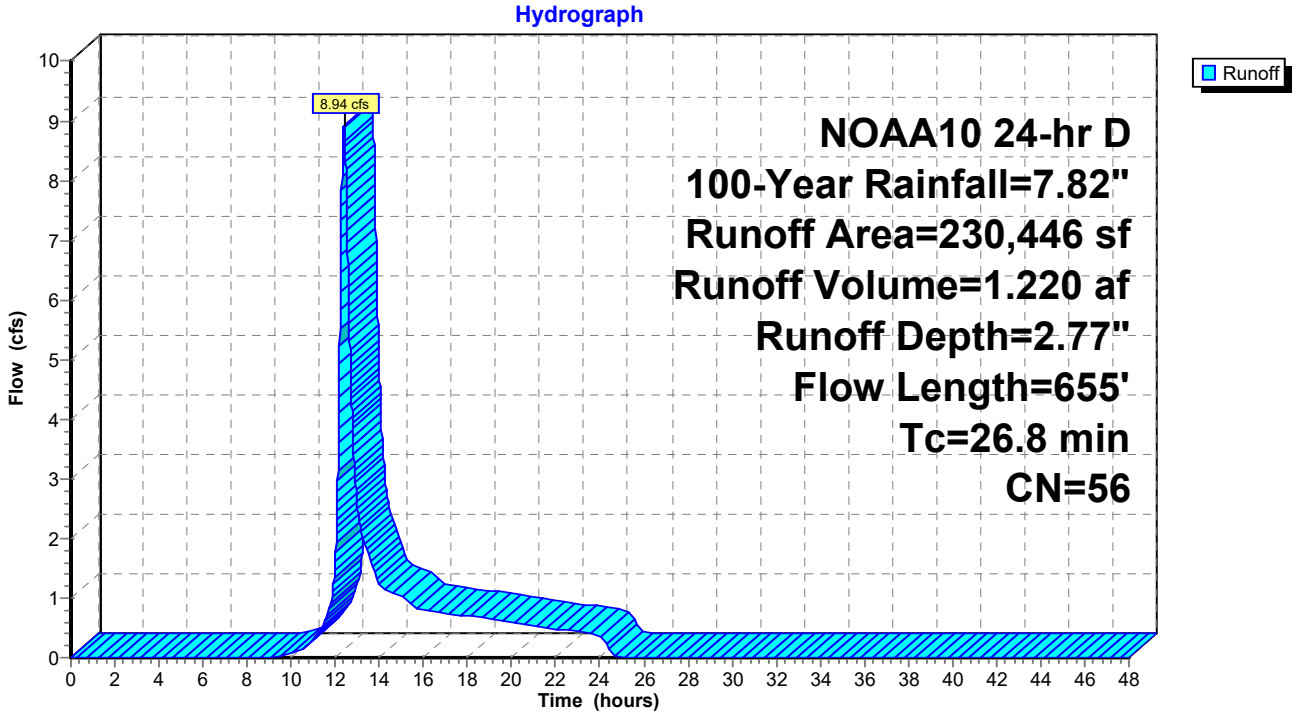
Runoff = 8.94 cfs @ 12.39 hrs, Volume= 1.220 af, Depth= 2.77"
Routed to Link CULVERT : CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=7.82"

Area (sf)	CN	Description
185,901	55	Woods, Good, HSG B
44,545	61	>75% Grass cover, Good, HSG B
230,446	56	Weighted Average
230,446		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0020	0.06		**Sheet Flow, Sheet Grass** Grass: Short n= 0.150 P2= 3.45"
0.7	50	0.0280	1.17		**Shallow Concentrated Flow, Shallow Grass** Short Grass Pasture Kv= 7.0 fps
12.5	555	0.0220	0.74		**Shallow Concentrated Flow, Shallow Woods** Woodland Kv= 5.0 fps
26.8	655	Total			

Subcatchment DA-2B: DA-2B



Summary for Pond SWB-1: SWB-1

Inflow Area = 2.088 ac, 36.54% Impervious, Inflow Depth = 5.22" for 100-Year event
Inflow = 11.18 cfs @ 12.18 hrs, Volume= 0.909 af
Outflow = 4.54 cfs @ 12.34 hrs, Volume= 0.761 af, Atten= 59%, Lag= 10.0 min
Primary = 4.54 cfs @ 12.34 hrs, Volume= 0.761 af
Routed to Link WETLANDS : WETLANDS

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 161.08' @ 12.34 hrs Surf.Area= 10,214 sf Storage= 14,788 cf

Plug-Flow detention time= 175.8 min calculated for 0.761 af (84% of inflow)
Center-of-Mass det. time= 97.2 min (930.6 - 833.4)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	1,046 cf	**Forebay (Prismatic)**Listed below (Recalc)
#2	158.00'	3,143 cf	**Lower Basin (Prismatic)**Listed below (Recalc)
#3	159.00'	16,486 cf	**Upper Basin (Prismatic)**Listed below (Recalc)
		20,674 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
156.00	67	0	0
158.00	411	478	478
159.00	724	568	1,046

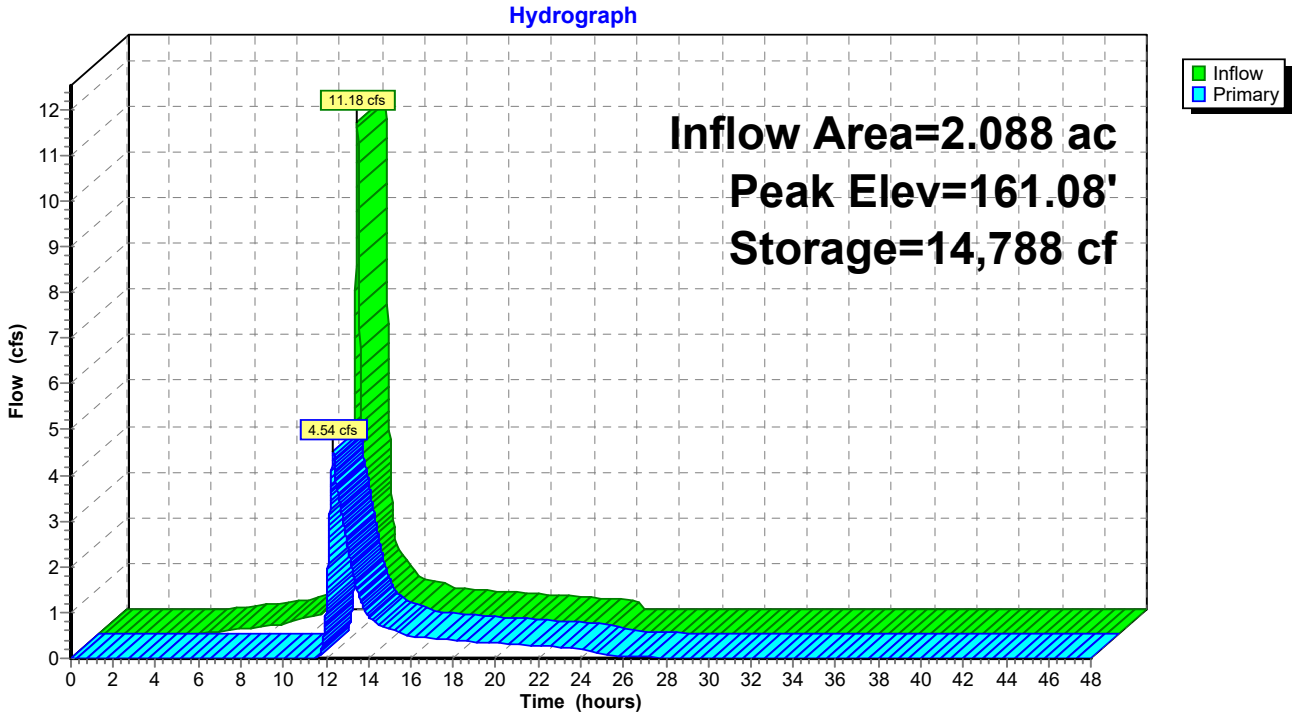
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.00	2,808	0	0
159.00	3,477	3,143	3,143

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.00	4,201	0	0
160.00	5,026	4,614	4,614
162.00	6,846	11,872	16,486

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	**10.0' long x 8.0' breadth Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	159.50'	**12.0" Round Culvert** L= 33.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 159.50' / 158.50' S= 0.0303 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=4.53 cfs @ 12.34 hrs HW=161.08' TW=0.00' (Dynamic Tailwater)
1=Spillway (Weir Controls 0.60 cfs @ 0.71 fps)
2=Culvert (Inlet Controls 3.94 cfs @ 5.01 fps)

Pond SWB-1: SWB-1



Summary for Pond SWB-2: SWB-2

Inflow Area = 4.016 ac, 15.85% Impervious, Inflow Depth = 4.99" for 100-Year event
Inflow = 18.21 cfs @ 12.21 hrs, Volume= 1.671 af
Outflow = 10.10 cfs @ 12.36 hrs, Volume= 1.553 af, Atten= 45%, Lag= 9.0 min
Primary = 10.10 cfs @ 12.36 hrs, Volume= 1.553 af
Routed to Link CULVERT : CULVERT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 143.22' @ 12.36 hrs Surf.Area= 12,422 sf Storage= 19,093 cf

Plug-Flow detention time= 101.1 min calculated for 1.552 af (93% of inflow)
Center-of-Mass det. time= 62.8 min (905.5 - 842.7)

Volume	Invert	Avail.Storage	Storage Description
#1	138.00'	1,687 cf	**Forebay (Prismatic)**Listed below (Recalc)
#2	140.00'	3,668 cf	**Lower Basin (Prismatic)**Listed below (Recalc)
#3	141.00'	19,665 cf	**Upper Basin (Prismatic)**Listed below (Recalc)
		25,020 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
138.00	131	0	0
140.00	661	792	792
141.00	1,129	895	1,687

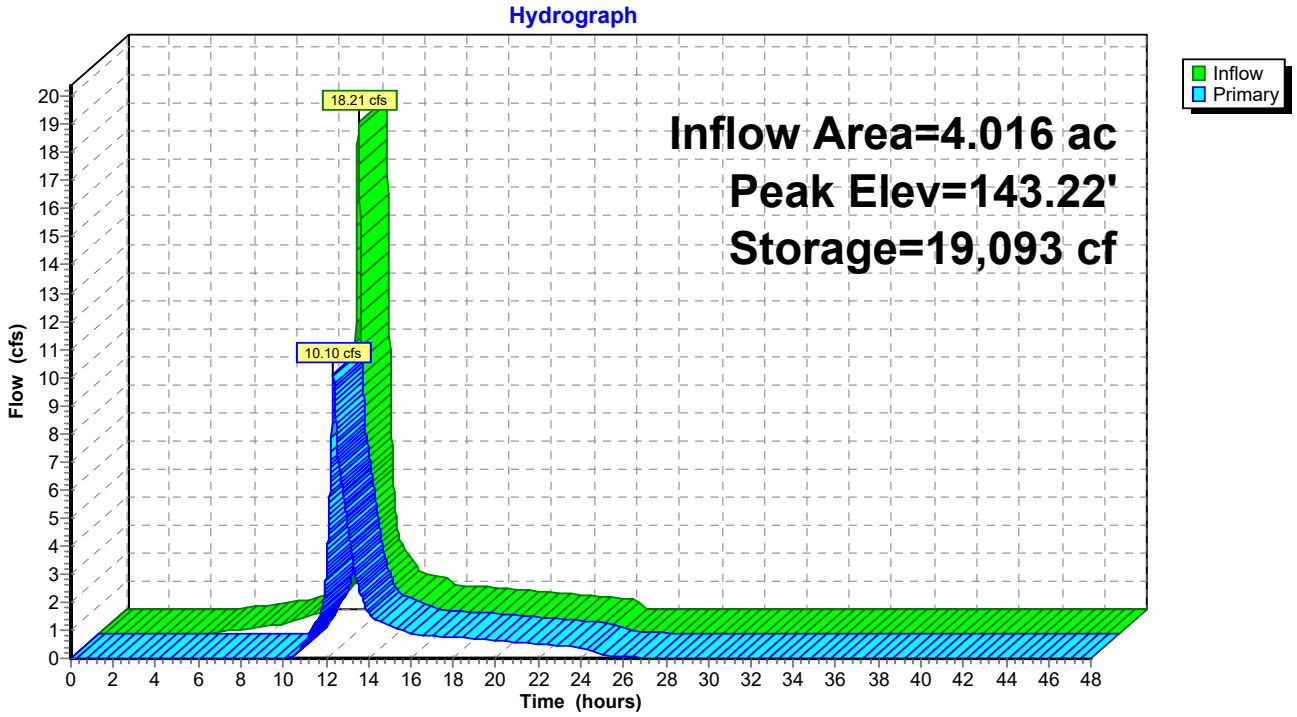
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
140.00	3,272	0	0
141.00	4,064	3,668	3,668

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	5,192	0	0
142.00	6,063	5,628	5,628
144.00	7,974	14,037	19,665

Device	Routing	Invert	Outlet Devices
#1	Primary	143.00'	**10.0' long x 8.0' breadth Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	140.95'	**15.0" Round Culvert** L= 76.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 140.95' / 140.30' S= 0.0086 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=10.10 cfs @ 12.36 hrs HW=143.22' TW=0.00' (Dynamic Tailwater)
1=Spillway (Weir Controls 2.52 cfs @ 1.15 fps)
2=Culvert (Inlet Controls 7.58 cfs @ 6.18 fps)

Pond SWB-2: SWB-2

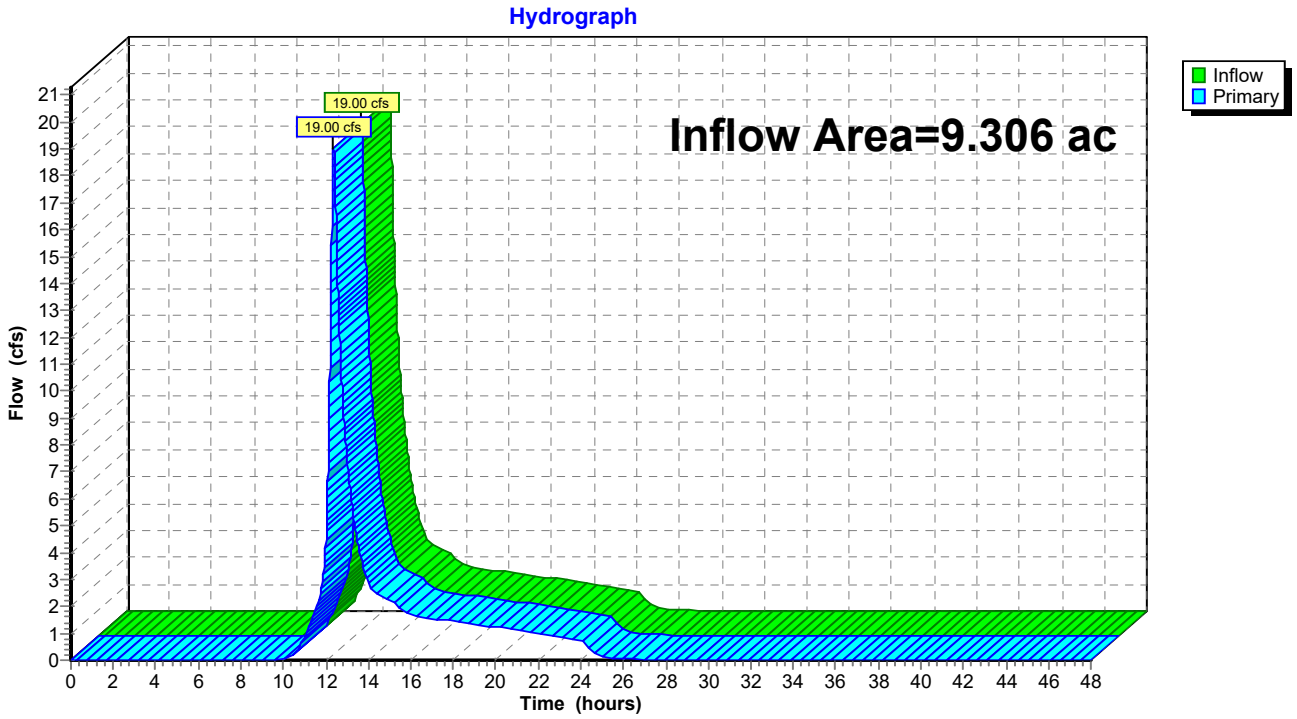


Summary for Link CULVERT: CULVERT

Inflow Area = 9.306 ac, 6.84% Impervious, Inflow Depth = 3.58" for 100-Year event
Inflow = 19.00 cfs @ 12.37 hrs, Volume= 2.773 af
Primary = 19.00 cfs @ 12.37 hrs, Volume= 2.773 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link CULVERT: CULVERT

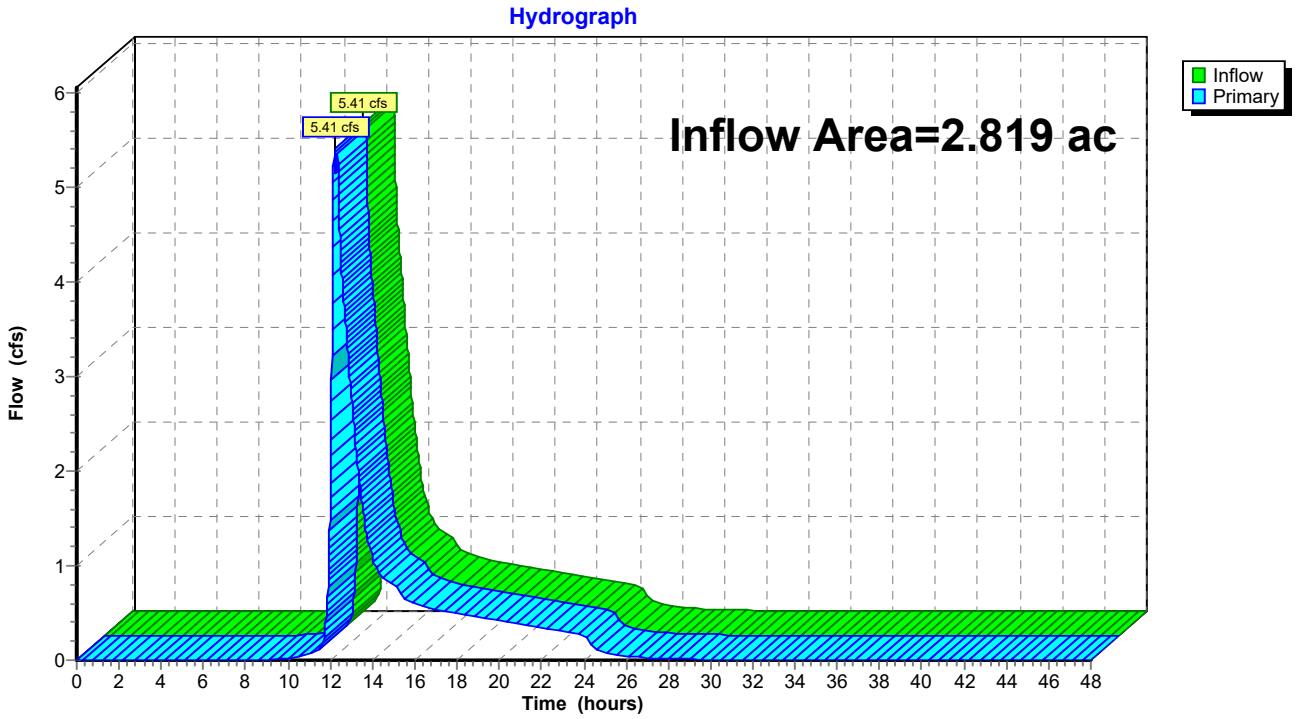


Summary for Link WETLANDS: WETLANDS

Inflow Area = 2.819 ac, 27.07% Impervious, Inflow Depth > 3.99" for 100-Year event
Inflow = 5.41 cfs @ 12.19 hrs, Volume= 0.936 af
Primary = 5.41 cfs @ 12.19 hrs, Volume= 0.936 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link WETLANDS: WETLANDS



Appendix C
Supporting Calculations

WATER QUALITY VOLUME

DA-1

Coverage	Area (SF)	Area (Acres)
Impervious	33,233	0.763
Grassland	42,927	0.985
Wooded	39,730	0.912
Water Surface	6,893	0.158
Total	122,783	2.819

Percent Impervious (I)	27.066	%
Volumetric Runoff Coefficient (R)	0.294	
Water Quality Volume (WQV)	**3,905**	**Cubic Feet**
Sediment Forebay Required Storage	**976**	**Cubic Feet**

DA-2

Coverage	Area (SF)	Area (Acres)
Impervious	27,720	0.636
Grassland	83,111	1.908
Wooded	286,630	6.580
Water Surface	7,921	0.182
Total	405,382	9.306

Percent Impervious (I)	6.838	%
Volumetric Runoff Coefficient (R)	0.112	
Water Quality Volume (WQV)	**4,899**	**Cubic Feet**
Sediment Forebay Required Storage	**1,225**	**Cubic Feet**

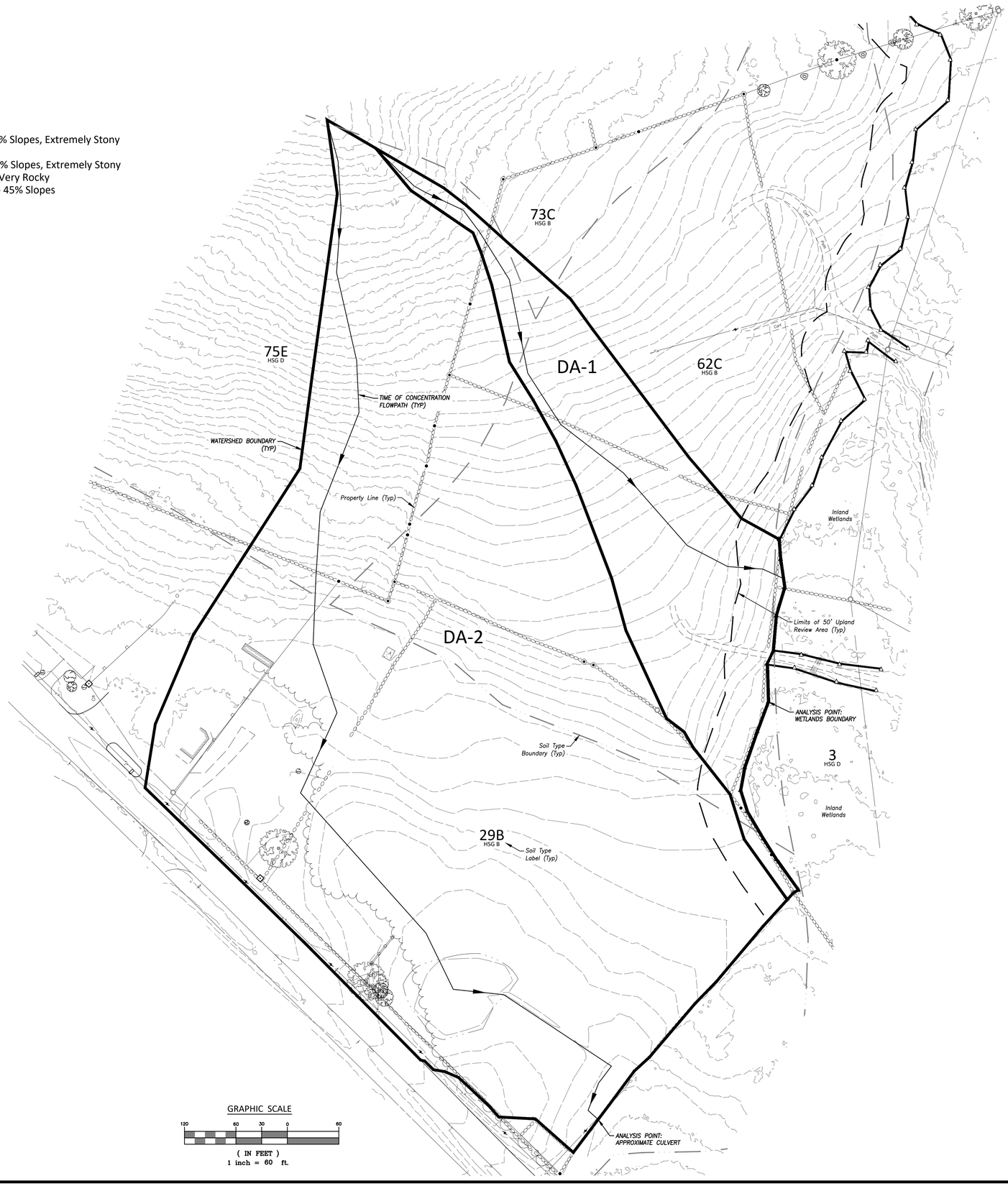
Appendix D
Watershed Maps

WATERSHED DATA

Sub Watershed	Area
DA-1	2.044 Acres
DA-2	10.076 Acres

SOILS LEGEND

3	Ridgebury, Leicester, and Whitman Soils, 0 - 8% Slopes, Extremely Stony
29B	Agawam Fine Sandy Loam, 3 - 8% Slopes
62C	Canton and Charlton Fine Sandy Loams, 3 - 15% Slopes, Extremely Stony
73C	Charlton - Chatfield Complex, 0 - 15% Slopes, Very Rocky
73E	Hollis - Chatfield - Rock Outcrop Complex, 15 - 45% Slopes



GRAPHIC SCALE

120 60 30 0 60

(IN FEET)
1 inch = 60 ft.

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BOUNDARIES
Boundaries LLC
179 Pachaug River Drive, Gilman, CT 06351
T 860.376.2006 | www.boundariesllc.net

H+H ENGINEERING ASSOCIATES
232 Greenmanville Ave.
Suite 201
Mystic, CT 06355
860-460-8608
www.hhengineering.com

Appendix D
"Pre-Development Conditions Watersheds"
Prepared For
Cricket's Corner, LLC
1645 Route 85 - Montville, Connecticut

SCALE: 1" = 60'
DATE: February 2025
JOB I.D. NO. 24-3432
Revisions

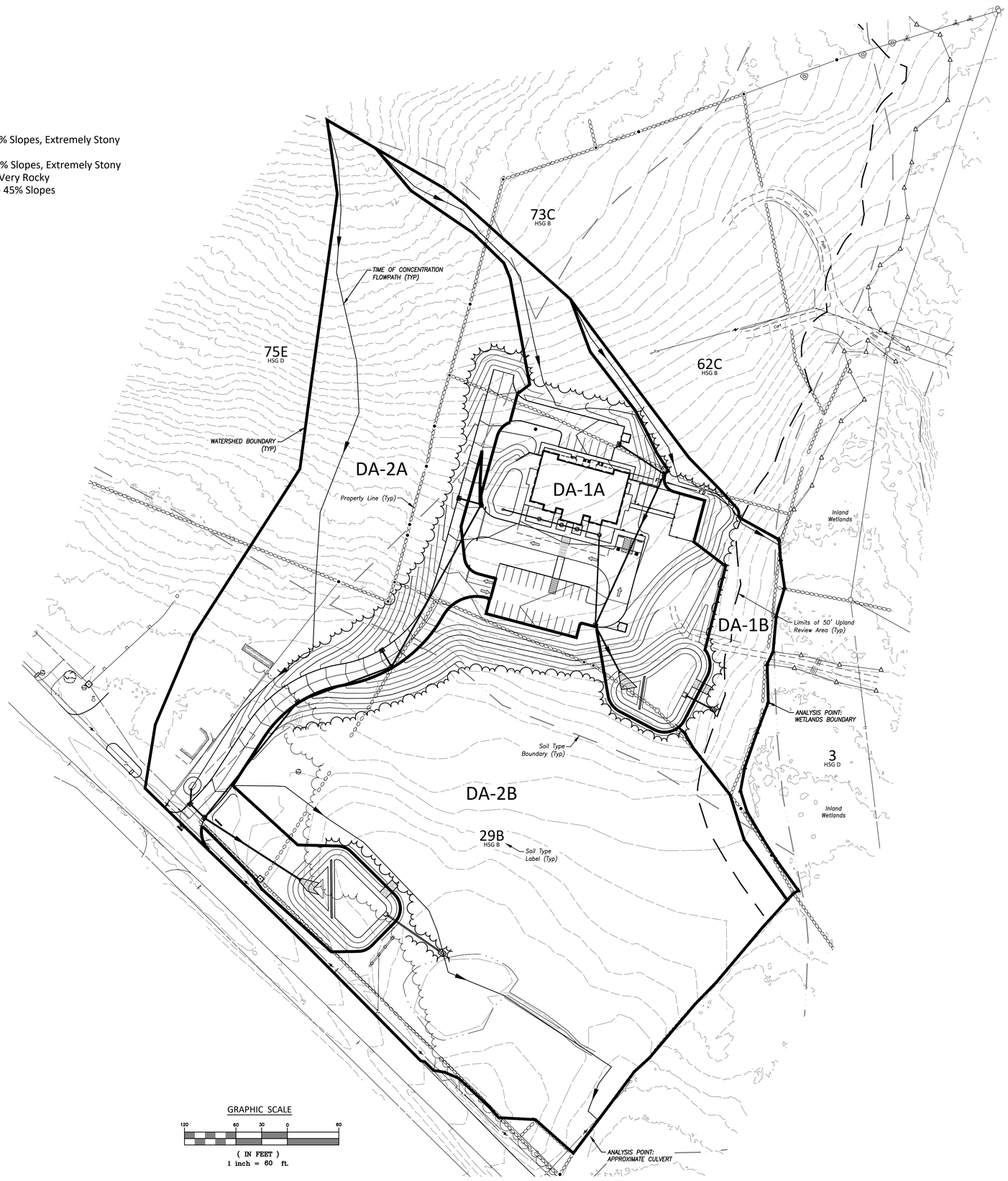
SHEET NO.
1
1

WATERSHED DATA

Sub Watershed	Area
DA-1A	2.088 Acres
DA-1B	0.731 Acres
DA-2A	4.016 Acres
DA-2B	5.290 Acres

SOILS LEGEND

3	Ridgebury, Leicester, and Whitman Soils, 0 - 8% Slopes, Extremely Stony
29B	Agawam Fine Sandy Loam, 3 - 8% Slopes
62C	Canton and Charlton Fine Sandy Loams, 3 - 15% Slopes, Extremely Stony
73C	Charlton - Chatfield Complex, 0 - 15% Slopes, Very Rocky
73E	Hollis - Chatfield - Rock Outcrop Complex, 15 - 45% Slopes



GRAPHIC SCALE

120 60 30 0 60

(IN FEET)
1 inch = 60 ft.

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BOUNDARIES
Boundaries LLC
179 Pachaug River Drive, Gilman, CT 06351
T 860.376.2006 | www.boundariesllc.net

H+H ENGINEERING ASSOCIATES
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Suite 201
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860-460-8608
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Appendix D
"Post-Development Conditions Watersheds"
Prepared For
Cricket's Corner, LLC
1645 Route 85 - Montville, Connecticut

SCALE: 1" = 60'
DATE: February 2025
JOB I.D. NO. 24-3432
Revisions

SHEET NO.
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