RoR 58

Stormwater Management Report

Holley Place

11 Holley Street
Salisbury, CT

PREPARED FOR

Town of Salisbury

27 Main Street
Salisbury, CT 06068

April 2021

benesch

TABLE OF CONTENTS

SECTION 1 - INTRODUCTION

The property is situated at 11 Holley Street in Salisbury, Connecticut. It is bordered by Holley Street to the east, Millerton Road (CT State Route 44) to the north and small commercial properties to the south and west. It consists of approximately 0.31 acres and currently consists of grass and a paved parking area. The project proposes one (1) multi-family residential building with an open parking area underneath the building at grade level . In addition to the buildings, the project proposes to renovate the bituminous parking area, and includes landscape areas, utilities, and other associated amenities.

The project was designed per requirements of the Town of Salisbury Zoning Regulations Section 602 Stormwater Management Plan Requirements. The stormwater management system was specifically designed to meet the following standards and requirements:

- Standard 1 - Prevent flooding on or off the property.
- Standard 2 - Minimize pollutant loads in stormwater runoff into inland wetlands, surface and subsurface water.
- Standard 3 - Maintain the hydrology of existing sub-watersheds.

- Standard 4 - Prohibit direct channeling of untreated surface water runoff into adjacent ground or surface water.

SECTION 2 – HYDROLOGY

The intent of the hydrologic analysis is to determine rates of runoff for maximum storm frequencies of two, ten, 25, and 100-year intervals under existing and proposed conditions for the designated offsite discharge points. The reduction of peak flow runoff for design storms meets Standards 1 and 3.

Methodology

The analysis to determine peak flows generated from the site was prepared using TR-55 procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs. HydroCAD software was utilized to perform hydrologic computations. As specified in the LID Manual, Rainfall Frequency Estimates for precipitation frequency, based on data from the weather station in West Hartford (Station 06-9162), were utilized to generate the flows. The following 24-hour, precipitation estimates were utilized:

2-Year	3.30 inches
10-Year	5.30 inches
25-Year	6.54 inches
100-Year	8.46 inches

Existing Conditions

Topography slopes from the northwest corner of the site to two (2) on-site catch basins located on the southern portion of the site. The downgradient catch basin then discharges stormwater to the municipal system located in Holley Street. Existing conditions were modelled as 94% impervious, based on the historical use of this site as an existing building and paved parking lot. We have included historic documentation indicating the site was almost 100% impervious as Appendix A.

Existing Watershed Data (Existing Conditions Cover Characteristics and Existing Watershed Area Map) have been included as Appendix B.

Proposed Conditions

The catchment characteristics under proposed conditions are very similar to the conditions under existing conditions except the increased landscaping resulted in a slightly lower site imperviousness, and associated curve number.

Proposed Watershed Data (Proposed Conditions Cover Characteristics and Proposed Watershed Area Map) have been included as Appendix C.

Peak Flow Comparison

Peak flows at the off-site analysis points are as follows:

Watershed	Storm Event (Type III)	Discharge Existing (cfs)	Discharge Proposed (cfs)
To Catch Basin	2-Year	0.98	0.94
	10-Year	1.60	1.57
	25-Year	1.98	1.95
	100-Year	2.56	2.54

It can be seen that peak flow will be reduced under proposed conditions for all design storms. The entirety of site flow is captured and conveyed via drainage infrastructure (catch basins and piping) and discharged to the municipal system and there meets Standard 4.

SECTION 3 – STORMWATER QUALITY

The project has been designed to address both short-term and long-term stormwater quality. Short term (during construction) treatment has been provided in the form of erosion control measures and long-term (post construction) treatment has been provided through the use of a hydrodynamic separator.

Short Term Erosion Control

The proposed erosion and sedimentation controls consider the specific characteristics of the site and the anticipated construction activities and have been designed in accordance with the 2002 CT DEEP Guidelines for Soil Erosion and Sediment Control.

Construction Entrances

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Erosion Control Barriers

Prior to any construction activity, hay bales, silt fence, or combination hay bale/silt fence barriers will be placed at the downgradient limits of construction. These barriers will be inspected once every seven calendar days and within 24 hours after every rainfall generating a discharge and replaced as necessary. Collected silt will be removed when one-half the barrier height is reached.

Temporary Filter Inserts

Temporary Filter Inserts will be placed in each existing catch basin and yard drains prior to the start of construction, and in each new catch basin or yard drain during construction. These devices will be removed upon final site stabilization. Filter inserts will be inspected once every seven (7) calendar days and within 24 hours after every rainfall generating a discharge. Replacement of the inserts will be as often as necessary to maintain function of the drainage structure and prevent excessive ponding due to clogged fabric. Ripped or otherwise damaged inserts will be replaced immediately.

Stockpile Management

The topsoil stockpiles which will be idle for at least 30 days will be stabilized with temporary seed and mulch no later than 7 days from the last use. Small stockpiles may be covered with impervious tarps or erosion control matting in lieu of seeding and mulching.

A geotextile silt fence or hay bale barrier will be installed around the stockpile area approximately 10 feet from the proposed toe of the slope.

Long Term Stormwater Quality

The project was designed with guidance and direction from the CT DEEP 2004 Connecticut Stormwater Quality Manual (2004 Manual).

The design intent of the 2004 Connecticut Stormwater Quality Manual is to provide a "stormwater treatment train," where stormwater quality is achieved through a series of treatment measures. Harmful pollutants, such as sediment, pathogens, organic material, hydrocarbons, metals, synthetic organic chemicals and deicing compounds, are carried by the low-flow storms. Many of these pollutants are associated with vehicular exhaust, engine leaks and deicing, therefore key areas of on-site treatment include parking lots and access drives. Additionally, rooftops are a concern as a result of atmospheric ambient accumulation. Since pollutants typically attach themselves to solid particles, treatment practices are designed to remove suspended solids.

The treatment train for this site includes:

- Parking lot sweeping
- Catch basins with sumps
- Hydrodynamic separator

In order to provide for treatment of the water quality volume, a hydrodynamic separator has been incorporated into the drainage infrastructure. Since there is no location on site that is suitable for above ground biofiltration, the separator has been placed just downgradient of the catch basins, so that all site flow will be treated by the structure. The required Water Quality Volume (WQV) is 925 cf, which translates to a required Water Quality Flow (WQF) of 0.28 cfs. A hydrodynamic separator designed to treat this flow has been specified and is Hydroworks HG 4i. This unit is specifically designed with a grate inlet and is able to also accommodate one (1) inlet pipe. It will therefore replace the existing catch basin on the southeast corner of the site. The hydrodynamic separator meets Standard 2 of the town stormwater requriements.

Computations for WQV and WQF can be viewed in Appendix D.

No Groundwater Volume is required for NRCS Group D soils and the site is classified as NRCS Soil 306 – Udorthents. Udorthents are typically classified on previously developed sites and are considered to be Hydrologic Soil Group D.

APPENDIX A

HISTORICAL USE MAPPING

B. M. BELCHER
548 FIFTH AVENUE
NEW YORK, N.Y. 10036

December 20, 1967

Board of Selectmen
Town of Salisbury
Connecticut

Attention: Mr. William Barnett

Gentlemen:

Enclosed is my Mother's check in the amount of $15,000.00 representing the first part of her donation to the Town of Salisbury toward the purchase of the Holly Block.

The donor and her family have long been convinced that one of the greatest physical assets of the Township of Salisbury is the quiet, charming, early Eighteenth Century image of our villages. We believe that a sound economic future for our township will be enhanced by restoration and new construction in keeping with that image.

With this conviction in mind, the donor is happy to make a gift to the Town of Salisbury for the purchase of the property known as the Holly Block of $35,000.00, of which the enclosed $15,000.00 is paid now and $20,000 will be paid in 1968, providing that:

1. The Town of Salisbury agrees that the present structure will be entirely removed within nine months of acquiring title.

2. The Town of Salisbury agrees that if building construction is not started on the property within a year after acquiring title thereto, the site will be cleared, graded and landscaped for a Town park, or attractively landscaped for a parking area, and will be maintained in a neat and attractive fashion.

3. The Town of Salisbury agrees that if any buildings are ever erected on the cleared land, such buildings shall have exterior design in keeping with the Federal or early Eighteenth Century image of our villages.

The Town of Salisbury further agrees that the exterior design for such buildings shall be designed by a registered architect and be subject to the approval of the majority of the Selectmen of the Town of Salisbury.

We will appreciate your acknowledgment of this letter to the writer, including acceptance of the foregoing numbered provisions.

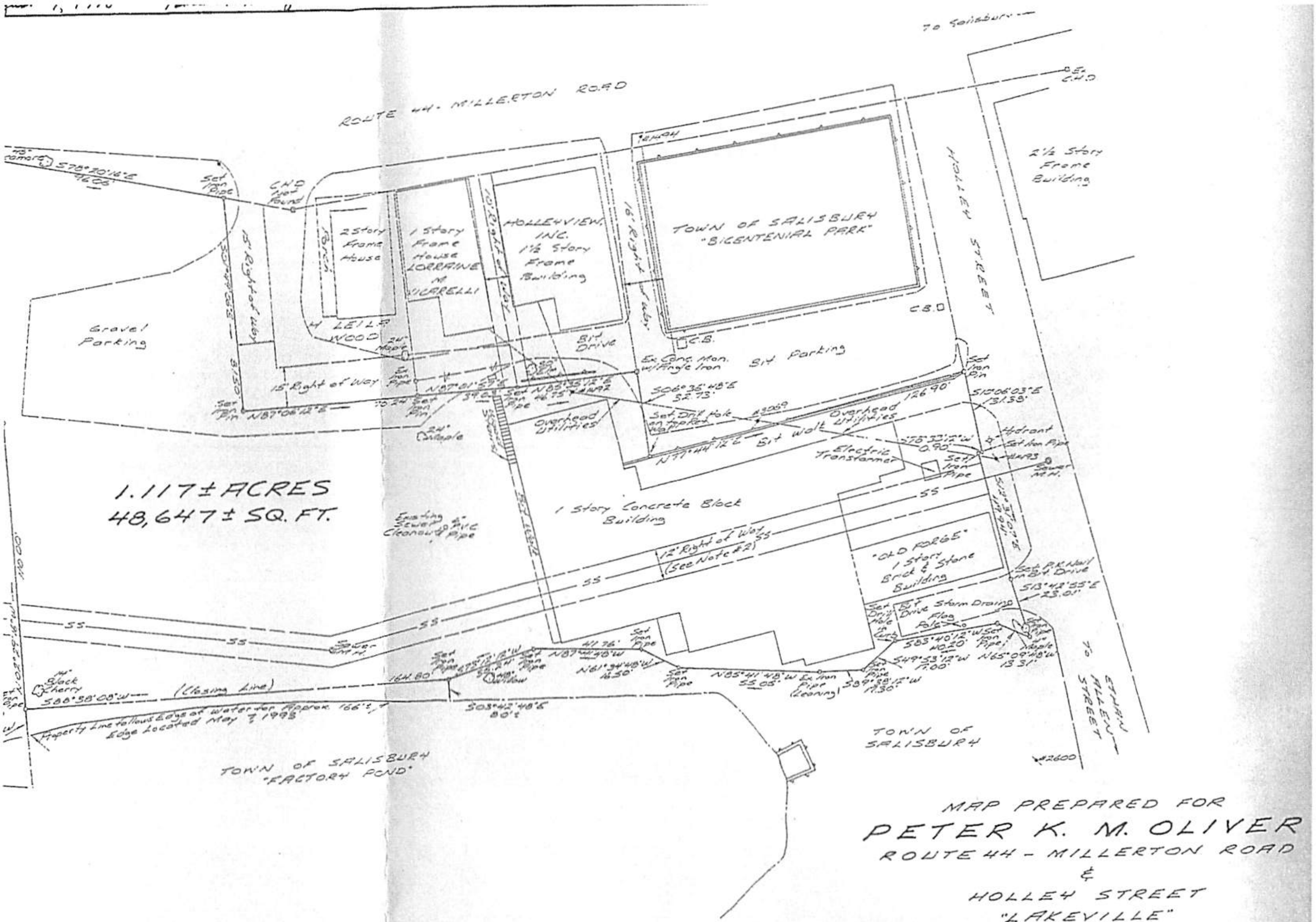
In addition, we would appreciate your usual cooperation in limiting unnecessary publicity in connection with this gift.

Very truly yours,

B. M. Brown

BMB:MEH

Assessor Map	NAME	Donated By:	Map (s)	Deed & Recorded Date	Town Meeting Date	Comments:
45-1	**Bicentennial Park (aka Holley Block and Furnace Village Park), 0.26 ac ?**	Ella Moore Belcher gift to purchase Holley Block ~~Fiorello C. Segalla ?~~ 01/08/1968	2103	94/290-293, 01/08/1968	12/28/1967, p 178-179	12/28/1967 p 178-179 Town Mtg: "I. RESOLVED, That the Town accept the gift to it toward the purchase of the so-called Holley Block property on Main Street in Lakeville, Connecticut and the demolition of the building thereon,..." "The provisions and conditions which are contained in a letter of December 20, 1967 from the donor's agent... ...are as follows" Relevant details include: "2...if a building is not constructed within one year after acquiring title, the site will be cleared, graded and landscaped for a Town park, or properly landscaped for a parking area, and will be maintained in a neat and attractive fashion." "3. The Town of Salisbury agrees that if any buildings are ever erected on the cleared land, such building shall have exterior design in keeping with the Federal or early Eighteenth Century image of our villages...." "BE IT FURTHER RESOLVED,... II. The Town hereby records its sincere appreciation for the generosity of the donor in making possible this improvement to the physical assets of the Township of Salisbury as a quiet, charming, early Eighteenth Century image of our villages." Deed 94/290-292 (recorded 01/08/1968): parcel of Fiorello C. Segalla "with building known as "The Holley Block" and the building known as "The Meat Market,..." transferred to the Town of Salisbury. At park a stone plaque at parks states "Bicentennial Park, Dedicated July 4, 1976" There is an additional memorial stone plaque that states "Montgomery Lodge # 13, A.F.& A.M, Bicentennial 1983 – 1983" *Letter dated 12/20/1967 from B. M. Belcher referencing gift from Ella Moore Belcher; Also 3/26/1970 memo noting that a "...more restrained and simple planting was decided upon." NAME: Was earlier called Furnace Village Park and later Holley Block; now Bicentennial Park. **1847 Furnace Village is renamed Lakeville, reflecting the change from iron forges to water-powered industry.** **1968 The Holley Block is razed and today's Bicentennial Park created on the site.**



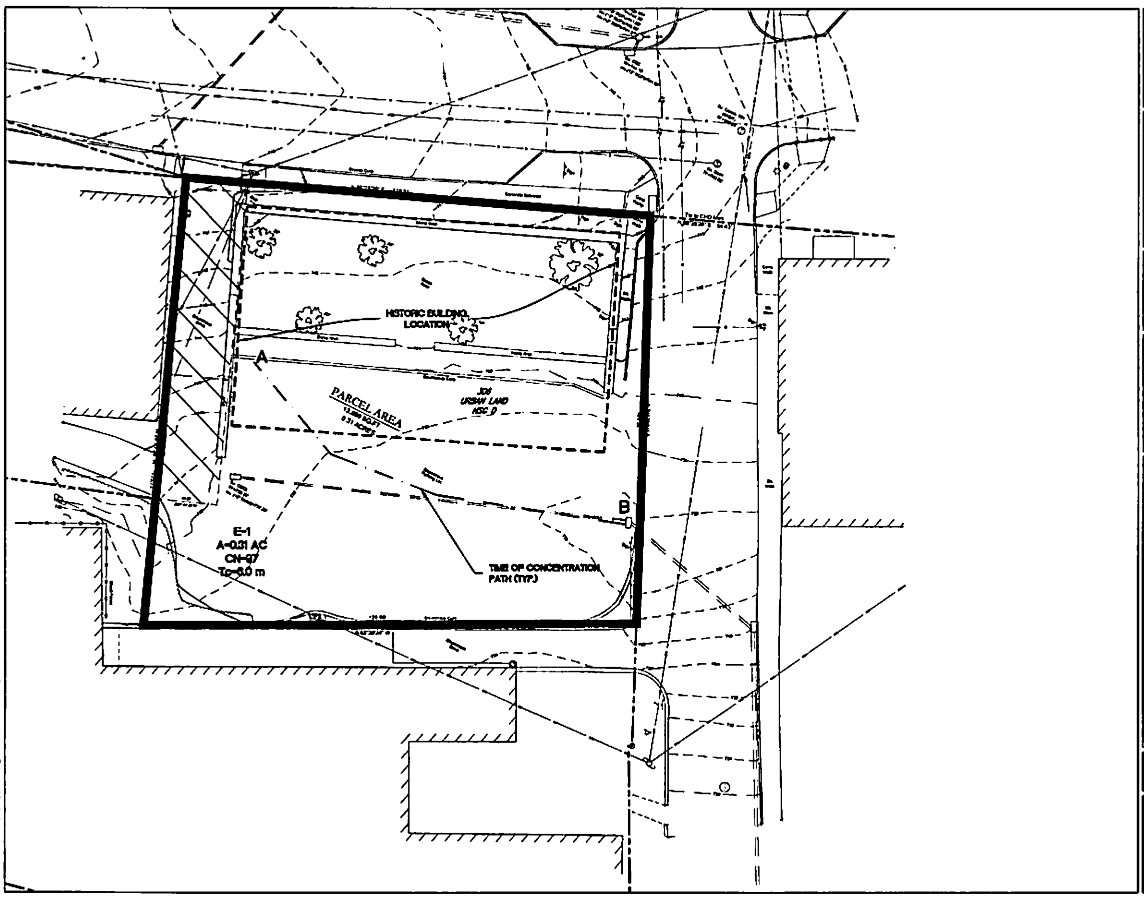
MAP PREPARED FOR
PETER K. M. OLIVER
ROUTE 44 - MILLERTON ROAD
&
HOLLEY STREET
"LAKEVILLE"
SALISBURY, CONNECTICUT
SCALE 1" = 20' MAY 25, 1993

Notes
1) Highway lines as shown on Holley Street are approximate and are subject to the establishment of the highway layout by the Board of Selectmen of the Town of Salisbury.
2) Refer to Vol. 46 Pg. 54, 1916 Eugene L. Peabody to the Lakeville Fire District establishing a 12 foot Sewer Right of Way ...
... by C.H. Nickerson & Sons

I hereby declare that this map is substantially correct. This map and survey were prepared in accordance with the standards of a Class A-2 survey as defined in the "Recommended Standards for Surveys and Maps in the State of Connecticut ..."

APPENDIX B

EXISTING WATERSHED DATA



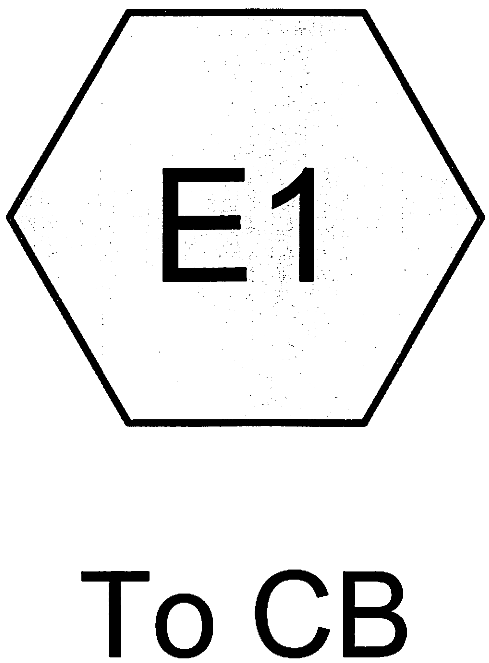
QA+M architecture
135 Scott Swamp Road
Farmington, CT 06032

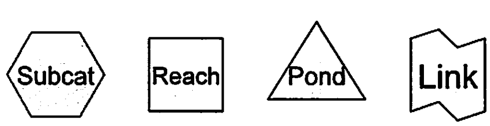
benesch

HOLLEY PLACE

11 HOLLEY STREET
SALISBURY, CT
Project #: 6342

EXISTING WATERSHED AREA MAP





Routing Diagram for 2018-04-23 EWAM
Prepared by Microsoft, Printed 4/6/2021

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.020	84	50-75% Grass cover, Fair, HSG D (E1)
0.290	98	Paved parking, HSG D (E1)
0.310	**97**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.310	HSG D	E1
0.000	Other	
0.310		**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	0.000	0.000	0.020	0.000	0.020	50-75% Grass cover, Fair	E1
0.000	0.000	0.000	0.290	0.000	0.290	Paved parking	E1
0.000	**0.000**	**0.000**	**0.310**	**0.000**	**0.310**	**TOTAL AREA**	

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+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To CB Runoff Area=0.310 ac 93.55% Impervious Runoff Depth>2.95"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=97 Runoff=0.98 cfs 0.076 af

Total Runoff Area = 0.310 ac Runoff Volume = 0.076 af Average Runoff Depth = 2.95"
6.45% Pervious = 0.020 ac 93.55% Impervious = 0.290 ac

Summary for Subcatchment E1: To CB

Runoff = 0.98 cfs @ 12.08 hrs, Volume= 0.076 af, Depth> 2.95"

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 2 Year Rainfall=3.30"

Area (ac)	CN	Description
0.290	98	Paved parking, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.310	97	Weighted Average
0.020		6.45% Pervious Area
0.290		93.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

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+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To CB Runoff Area=0.310 ac 93.55% Impervious Runoff Depth>4.94"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=97 Runoff=1.60 cfs 0.128 af

Total Runoff Area = 0.310 ac Runoff Volume = 0.128 af Average Runoff Depth = 4.94"
6.45% Pervious = 0.020 ac 93.55% Impervious = 0.290 ac

Summary for Subcatchment E1: To CB

Runoff = 1.60 cfs @ 12.08 hrs, Volume= 0.128 af, Depth> 4.94"

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 10 Year Rainfall=5.30"

Area (ac)	CN	Description
0.290	98	Paved parking, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.310	97	Weighted Average
0.020		6.45% Pervious Area
0.290		93.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

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+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To CB Runoff Area=0.310 ac 93.55% Impervious Runoff Depth>6.18"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=97 Runoff=1.98 cfs 0.160 af

Total Runoff Area = 0.310 ac Runoff Volume = 0.160 af Average Runoff Depth = 6.18"
6.45% Pervious = 0.020 ac 93.55% Impervious = 0.290 ac

Summary for Subcatchment E1: To CB

Runoff = 1.98 cfs @ 12.08 hrs, Volume= 0.160 af, Depth> 6.18"

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 25 Year Rainfall=6.54"

Area (ac)	CN	Description
0.290	98	Paved parking, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.310	97	Weighted Average
0.020		6.45% Pervious Area
0.290		93.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

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+Trans method - Pond routing by Stor-Ind method

SubcatchmentE1: To CB Runoff Area=0.310 ac 93.55% Impervious Runoff Depth>8.09"
Flow Length=100' Slope=0.0200 '/' Tc=6.0 min CN=97 Runoff=2.56 cfs 0.209 af

Total Runoff Area = 0.310 ac Runoff Volume = 0.209 af Average Runoff Depth = 8.09"
6.45% Pervious = 0.020 ac 93.55% Impervious = 0.290 ac

Summary for Subcatchment E1: To CB

Runoff = 2.56 cfs @ 12.08 hrs, Volume= 0.209 af, Depth> 8.09"

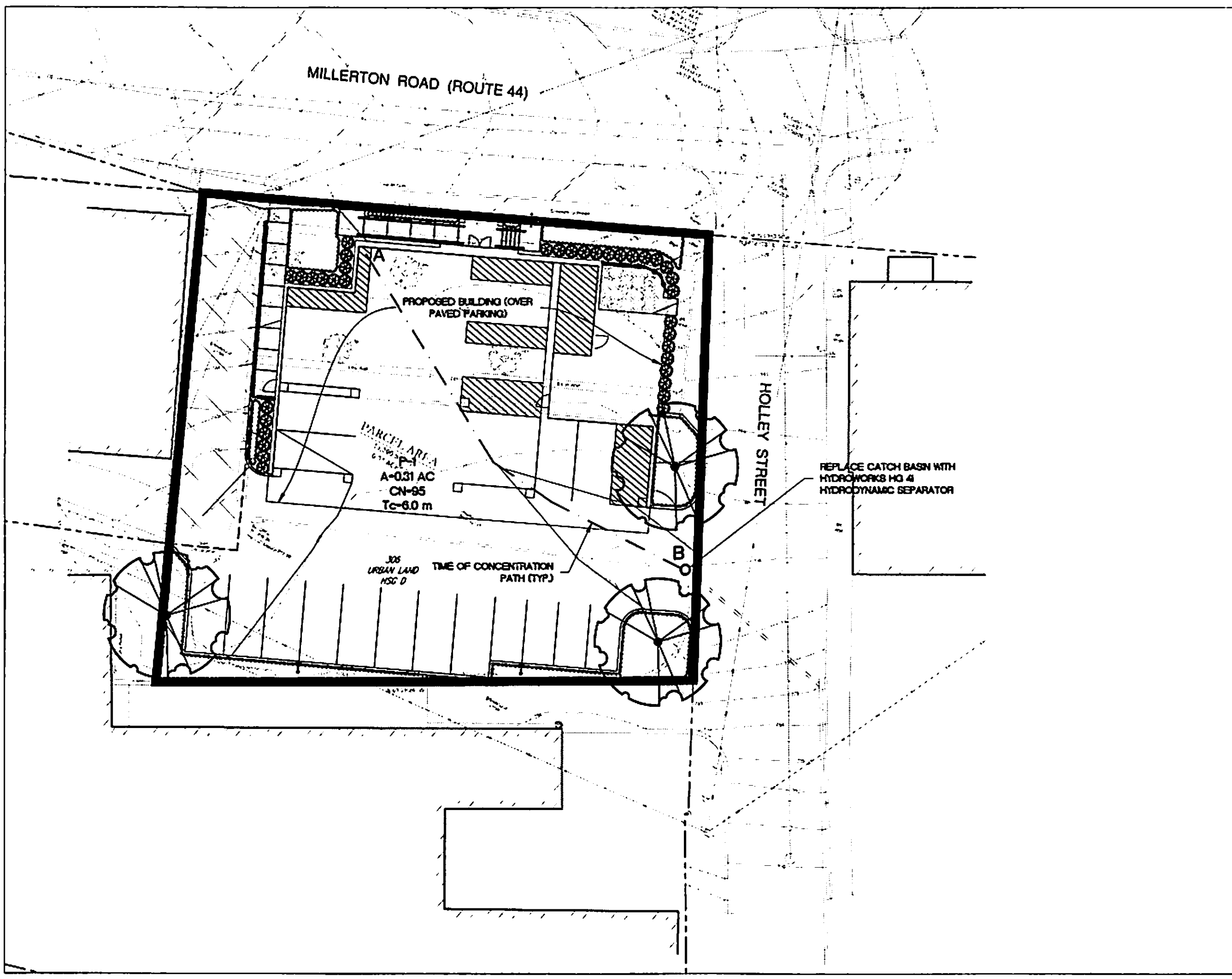
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100 Year Rainfall=8.46"

Area (ac)	CN	Description
0.290	98	Paved parking, HSG D
0.020	84	50-75% Grass cover, Fair, HSG D
0.310	97	Weighted Average
0.020		6.45% Pervious Area
0.290		93.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

APPENDIX C

PROPOSED WATERSHED DATA



QA+M architecture
QuisenberryArcariMalik
195 Scott Swamp Road
Farmington, CT 06032
qamarch.com

to design

Prepared by

benesch

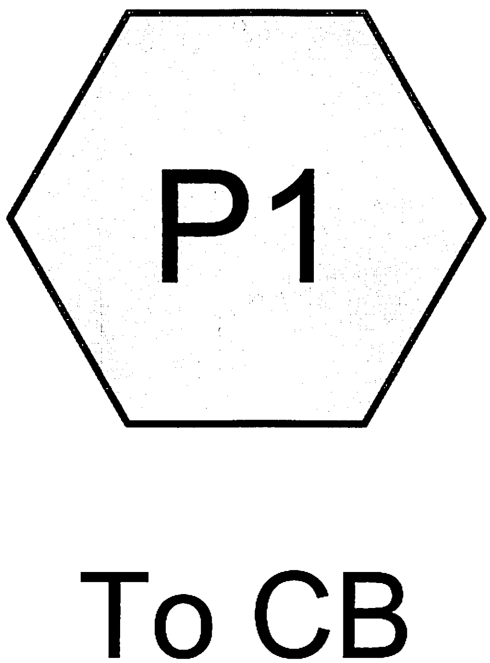
HOLLEY PLACE

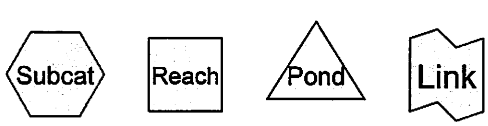
11 HOLLEY STREET
SALISBURY, CT
Project # 6342

Revisions

Issue Dates

PROPOSED WATERSHED AREA MAP





Routing Diagram for 2021-04-06 PWAM
Prepared by Microsoft, Printed 4/6/2021
HydroCAD® 10.00-22 s/n 07864 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.044	80	>75% Grass cover, Good, HSG D (P1)
0.266	98	Paved parking, HSG D (P1)
0.310	**95**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.310	HSG D	P1
0.000	Other	
0.310		**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	0.000	0.000	0.044	0.000	0.044	>75% Grass cover, Good	P1
0.000	0.000	0.000	0.266	0.000	0.266	Paved parking	P1
0.000	**0.000**	**0.000**	**0.310**	**0.000**	**0.310**	**TOTAL AREA**	

Summary for Subcatchment P1: To CB

Runoff = 0.94 cfs @ 12.08 hrs, Volume= 0.071 af, Depth> 2.74"

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 2 Year Rainfall=3.30"

Area (ac)	CN	Description
0.266	98	Paved parking, HSG D
0.044	80	>75% Grass cover, Good, HSG D
0.310	95	Weighted Average
0.044		14.19% Pervious Area
0.266		85.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

Summary for Subcatchment P1: To CB

Runoff = 1.57 cfs @ 12.08 hrs, Volume= 0.122 af, Depth> 4.71"

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 10 Year Rainfall=5.30"

Area (ac)	CN	Description
0.266	98	Paved parking, HSG D
0.044	80	>75% Grass cover, Good, HSG D
0.310	95	Weighted Average
0.044		14.19% Pervious Area
0.266		85.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

Summary for Subcatchment P1: To CB

Runoff = 1.95 cfs @ 12.08 hrs, Volume= 0.154 af, Depth> 5.94"

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 25 Year Rainfall=6.54"

Area (ac)	CN	Description
0.266	98	Paved parking, HSG D
0.044	80	>75% Grass cover, Good, HSG D
0.310	95	Weighted Average
0.044		14.19% Pervious Area
0.266		85.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

Summary for Subcatchment P1: To CB

Runoff = 2.54 cfs @ 12.08 hrs, Volume= 0.203 af, Depth> 7.85"

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=8.46"

Area (ac)	CN	Description
0.266	98	Paved parking, HSG D
0.044	80	>75% Grass cover, Good, HSG D
0.310	95	Weighted Average
0.044		14.19% Pervious Area
0.266		85.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.35		**Sheet Flow, AB** Smooth surfaces n= 0.011 P2= 3.07"
4.8					**Direct Entry, Add to Meet Min**
6.0	100	Total			

APPENDIX D

WATER QUALITY VOLUME COMPUTATIONS

Water Quality Volume Holley Place Project # 70695.00									
Watershed	Watershed Description	Hydrologic Soil Type & Areas (ac)		Total Area (ac)	Total Impervious (ac)	% Imperviousness	Volumetric Runoff Coefficient (R)	WQV (ac-ft, apply 1")	Required WQV (cf)
		D					R = 0.05 + 0.009*(I)	WQV = (1")*(R)*(A)/12	
		Impervious	Pervious						
P-1	Entire Site	0.27	0.04	0.31	0.266	86%	0.82	0.021	925
Total =				0.31				0.02	925

Water Quality Flow Computations

Watershed	WQV Applied Impervious Area (ac-ft)	Total Drainage Area (ac)	Total Drainage Area (mi²)	Watershed Runoff Depth (Q, in)	P (1" for water quality storm, in)	NRCS Runoff Curve Number, (Equation CT WQ)	Ia, (in, Table 4-1, TR-55)	Ia/P	Tc, (hr)	Peak unit discharge, qu, (csm/in, Exhibit 4-III, TR-55)	Total WQF (cfs)
P-1	0.02	0.31	0.00	0.81	1.00	98	0.04	0.04	0.10	700.00	0.28
Total =											0.28

Hydroworks

Hydroworks Sizing Summary

Holley Place, Salisbury Connecticut

04-07-2021

Recommended Size: HG 4i

A Hydroguard HG 4i is recommended to provide 80 % annual TSS removal based on a drainage area of .31 (ac) with an imperviousness of 86 % and Norfolk 2 Sw, Connecticut rainfall for the NJDEP particle size distribution.

The recommended Hydroguard HG 4i treats 99 % of the annual runoff and provides 89 % annual TSS removal for the Norfolk 2 Sw rainfall records and NJDEP particle size distribution.

The Hydroguard has a headloss coefficient (K) of 1.6. The given peak flow of 1.57 (ft3/s) is less than the full pipe flow of 3.56 (ft3/s) indicating free flow in the pipe during the peak flow assuming no tailwater condition. Partial pipe flow was assumed For the headloss calculations. The critical depth is greater than the normal depth For the peak flow and 12 (in) pipe diameter and 1 % slope given. Critical depth was assumed For the headloss calculations. The headloss was calculated to be 4 (in) based on a flow depth of 6 (in) .

This summary report provides the main parameters that were used for sizing. These parameters are shown on the summary tables and graphs provided in this report.

If you have any questions regarding this sizing summary please do not hesitate to contact Hydroworks at 888-290-7900 or email us at support@hydroworks.com.

TSS Removal Sizing Summary

Hydroworks Hydrodynamic Separator Sizing Program - Hydroguard

File Product Units View Help

General | Dimensions | Rainfall | Site | TSS PSD | TSS Loading | Quantity Storage | By-Pass | Custom | CAD | Other

Site Parameters

Area (ac): .31

Imperviousness (%): 86

Units

☑ U.S.

☐ Metric

Rainfall Station

Norfolk 2 Sw — Connecticut

1984 to 1997 — Rainfall Timestep = 15 min.

Project Title (2 lines): Holley Place, Salisbury Connecticut

Inlet Pipe

Diam. (in): 12 Slope (%): 1

Peak Design Flow (ft3/s): 1.57

○ Stokes ○ Cheng ○ Lab Results-Linear ● Lab Results-Exponential

Annual TSS Removal Results

Model #	Qlow (ft3/s)	Qtot (ft3/s)	Flow Capture (%)	TSS Removal (%)
HG 4	.8	1.6	99 %	89 %
HG 5	1	1.6	99 %	92 %
HG 6	1.2	1.6	99 %	94 %
HG 7	1.5	1.6	100 %	95 %
HG 8	1.6	1.6	100 %	96 %
HG 9	1.6	1.6	100 %	97 %
HG 10	1.6	1.6	100 %	98 %
HG 12	1.6	1.6	100 %	99 %

Particle Size Distribution

Size (um)	%	SG
2	5	2.65
5	5	2.65
8	10	2.65
20	15	2.65
50	10	2.65
75	5	2.65
100	10	2.65
150	15	2.65
250	15	2.65
500	5	2.65

Note: Results vary significantly based on particle size distribution

Simulate

TSS Particle Size Distribution

Hydroworks Hydrodynamic Separator Sizing Program - Hydroguard

File Product Units View Help

General | Dimensions | Rainfall | Site | TSS PSD | TSS Loading | Quantity Storage | By-Pass | Custom | CAD | Other

TSS Particle Size Distribution

Size (um)	%	SG
2	5	2.65
5	5	2.65
8	10	2.65
20	15	2.65
50	10	2.65
75	5	2.65
100	10	2.65
150	15	2.65
250	15	2.65
500	5	2.65
1000	5	2.65

Notes:

1. To change data just click a cell and type in the new value(s)
2. To add a row just go to the bottom of the table and start typing.
3. To delete a row, select the row by clicking on the first pointer column, then press delete
4. To sort the table click on one of the column headings

TSS Distributions

● NJDEP

○ OK110

○ Toronto

○ Ontario (1994)

○ Calgary Forebay

○ F95 Sand

○ NURP (1983)

○ Kitchener

○ User Defined

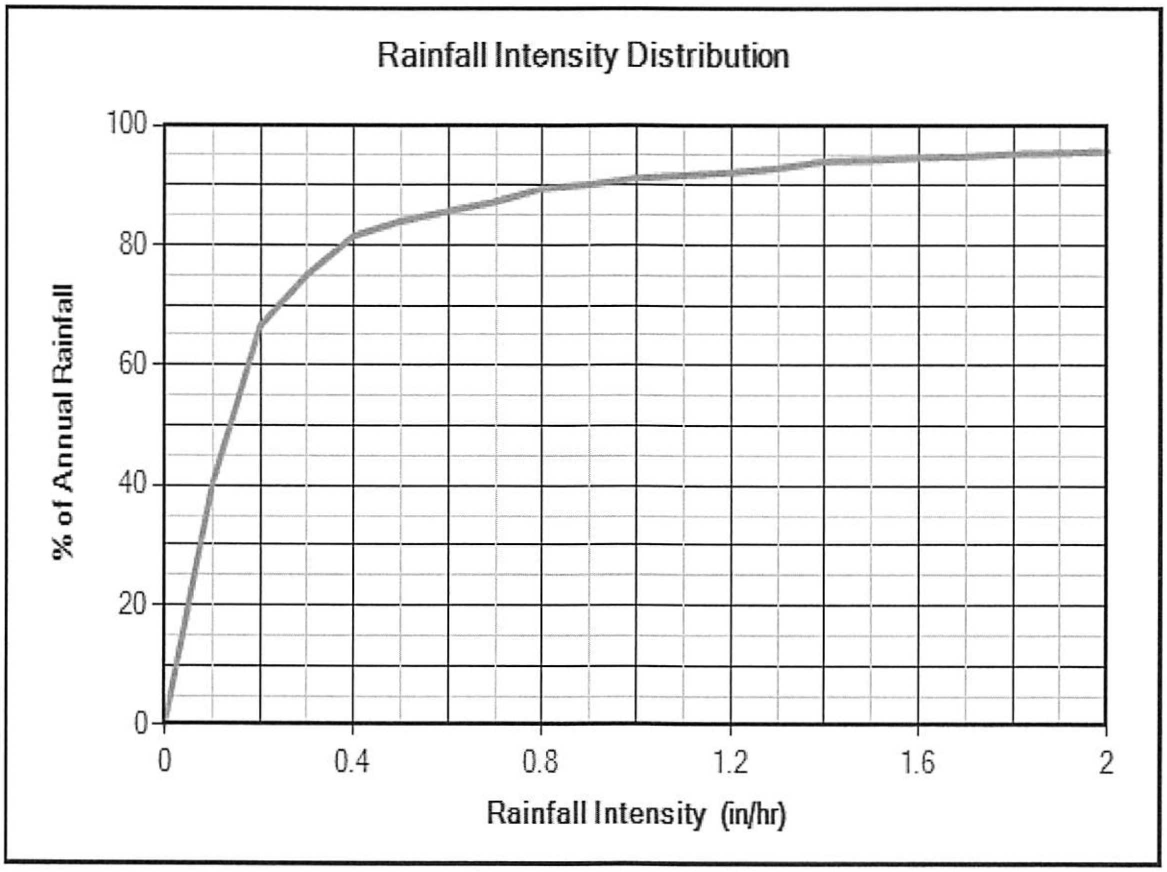
Clear

TSS Removal Required (%): 80

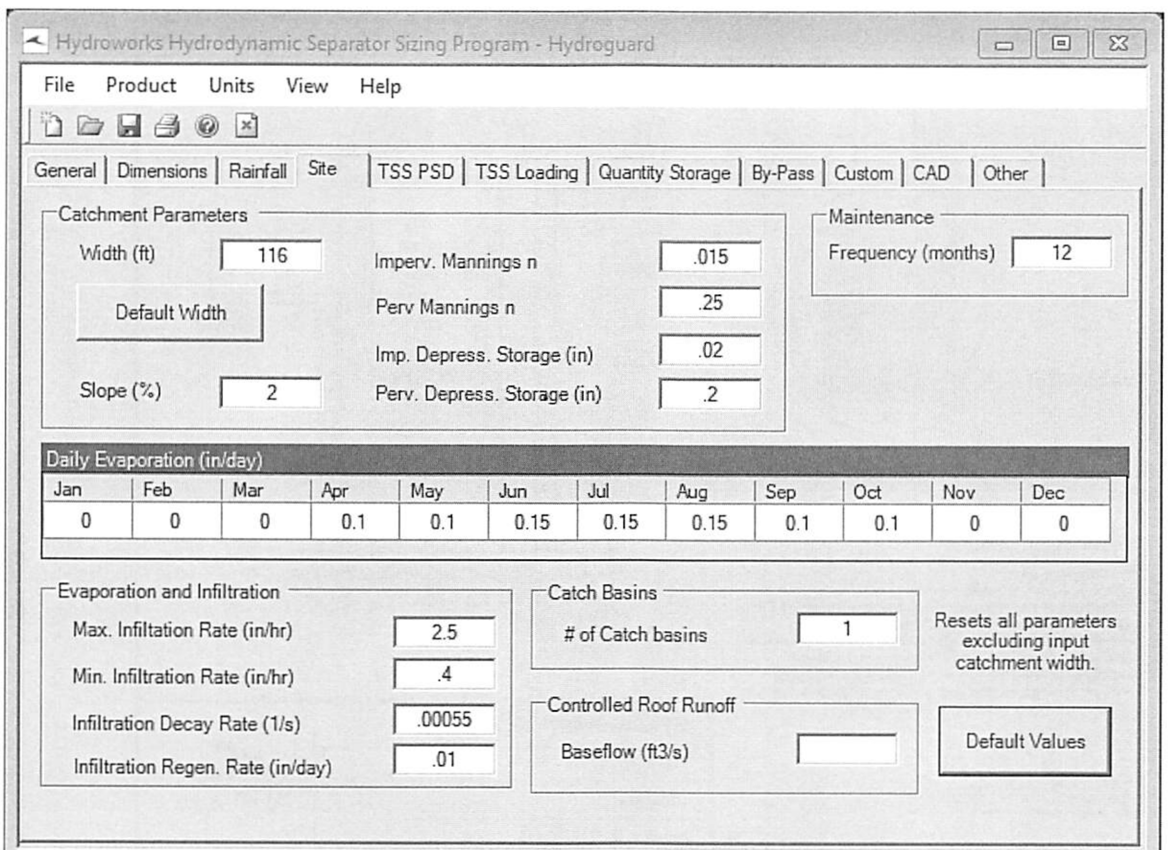
Water Temp (F): 68

You must select a particle size distribution for TSS to simulate TSS removal

Rainfall Station - Norfolk 2 Sw, Connecticut(1984 to 1997)



Site Physical Characteristics



Dimensions And Capacities

Hydroworks Hydrodynamic Separator Sizing Program - Hydroguard

File | Product | Units | View | Help

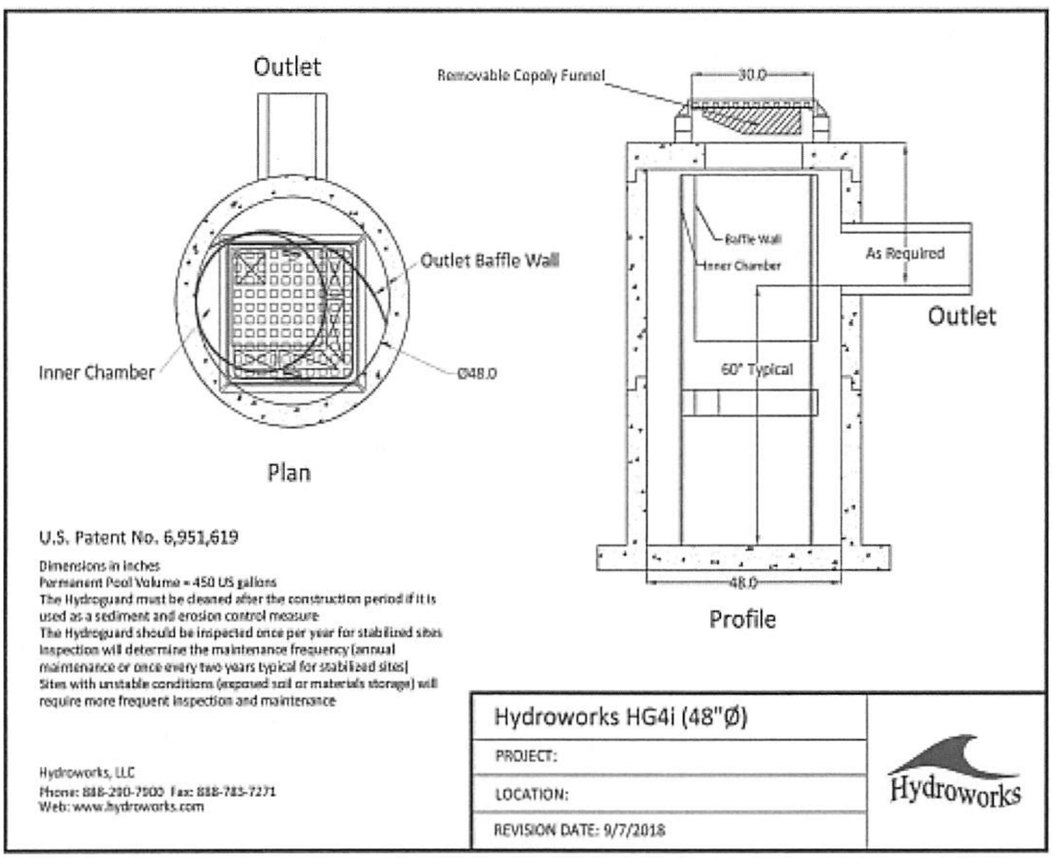
General | Dimensions | Rainfall | Site | TSS PSD | TSS Loading | Quantity Storage | By-Pass | Custom | CAD | Other

Dimensions and Capacities

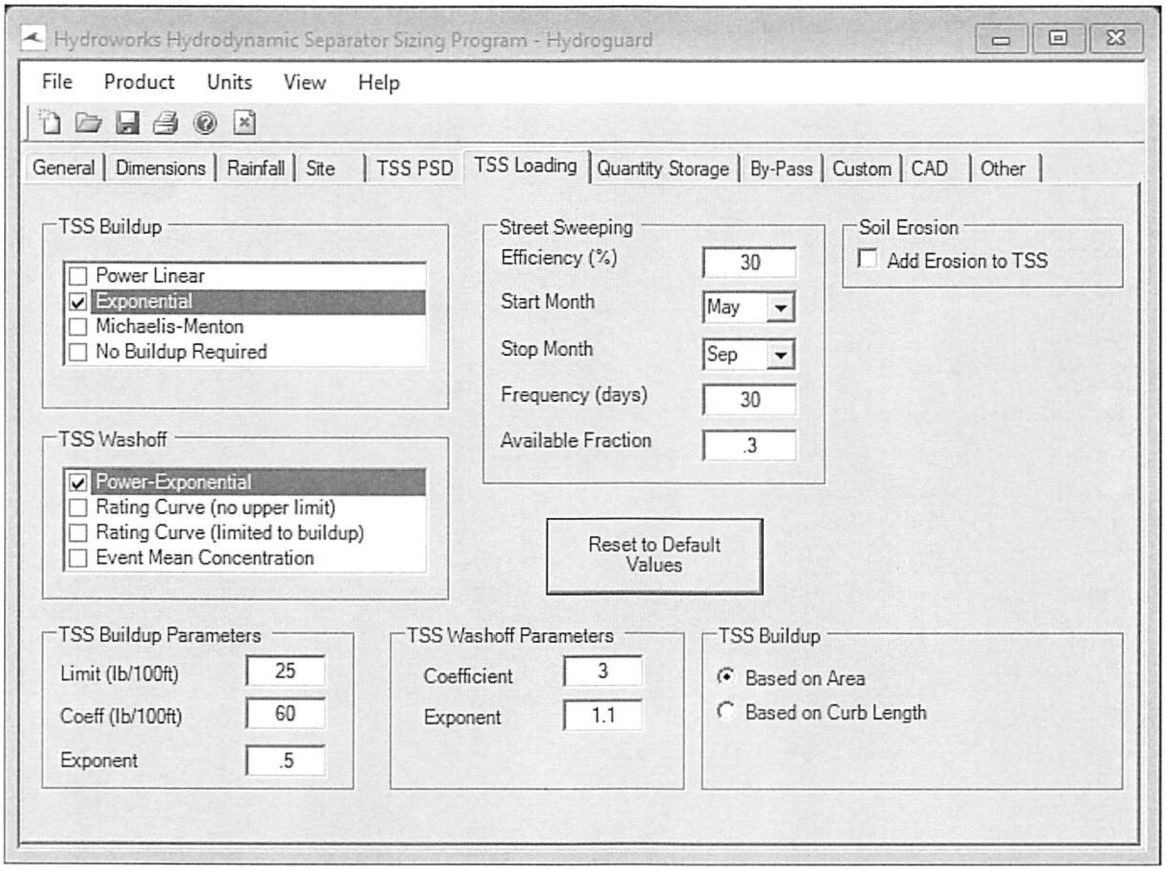
Model	Diam. (ft)	Depth (ft)	Float. Vol. (gal)	Sediment Vol. (ft3)	Total Vol. (gal)
HG 4	4	5	73	36	470
HG 5	5	5.5	134	62	808
HG 6	6	6	220	99	1269
HG 7	7	6.5	337	148	1871
HG 8	8	7	489	209	2632
HG 9	9	8	711	313	3807
HG 10	10	9	955	452	5288
HG 12	12	11	1760	811	9306

Depth = Depth from outlet invert to inside bottom of tank

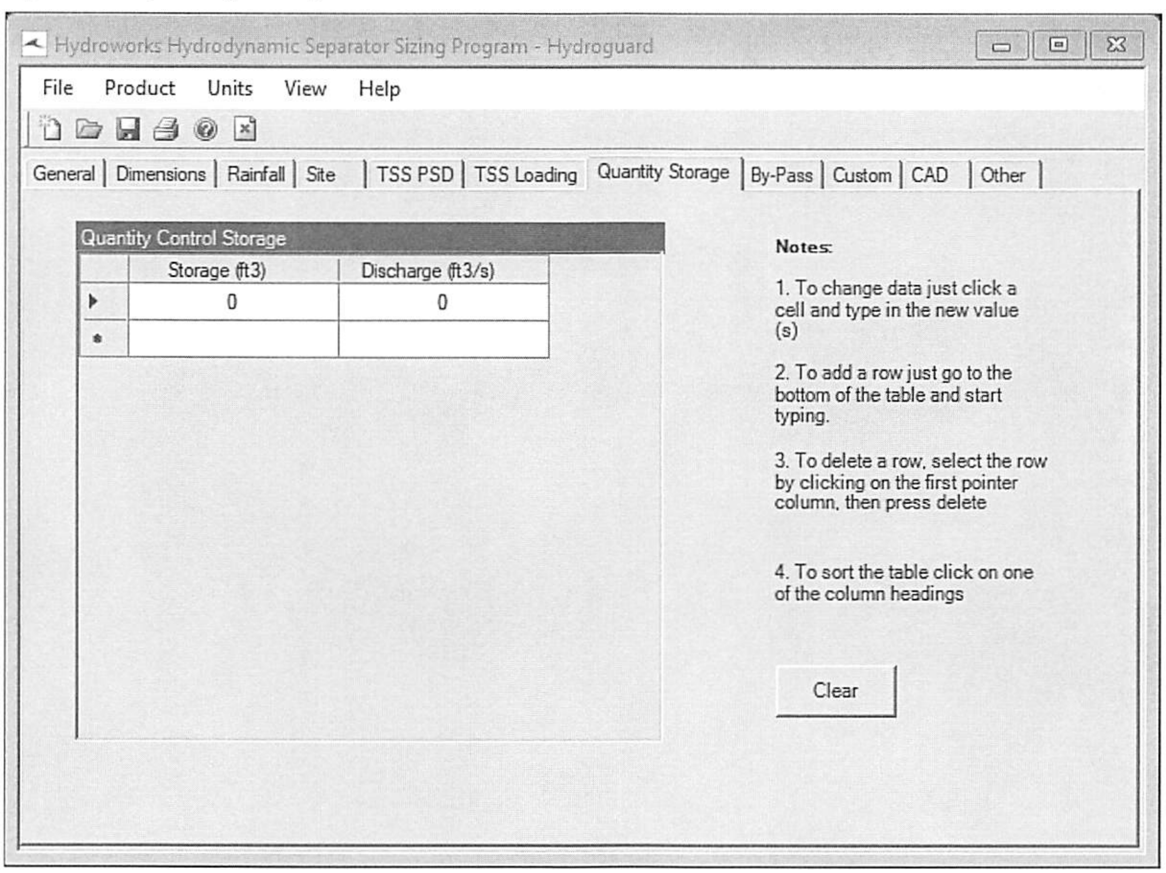
Generic HG 4i CAD Drawing



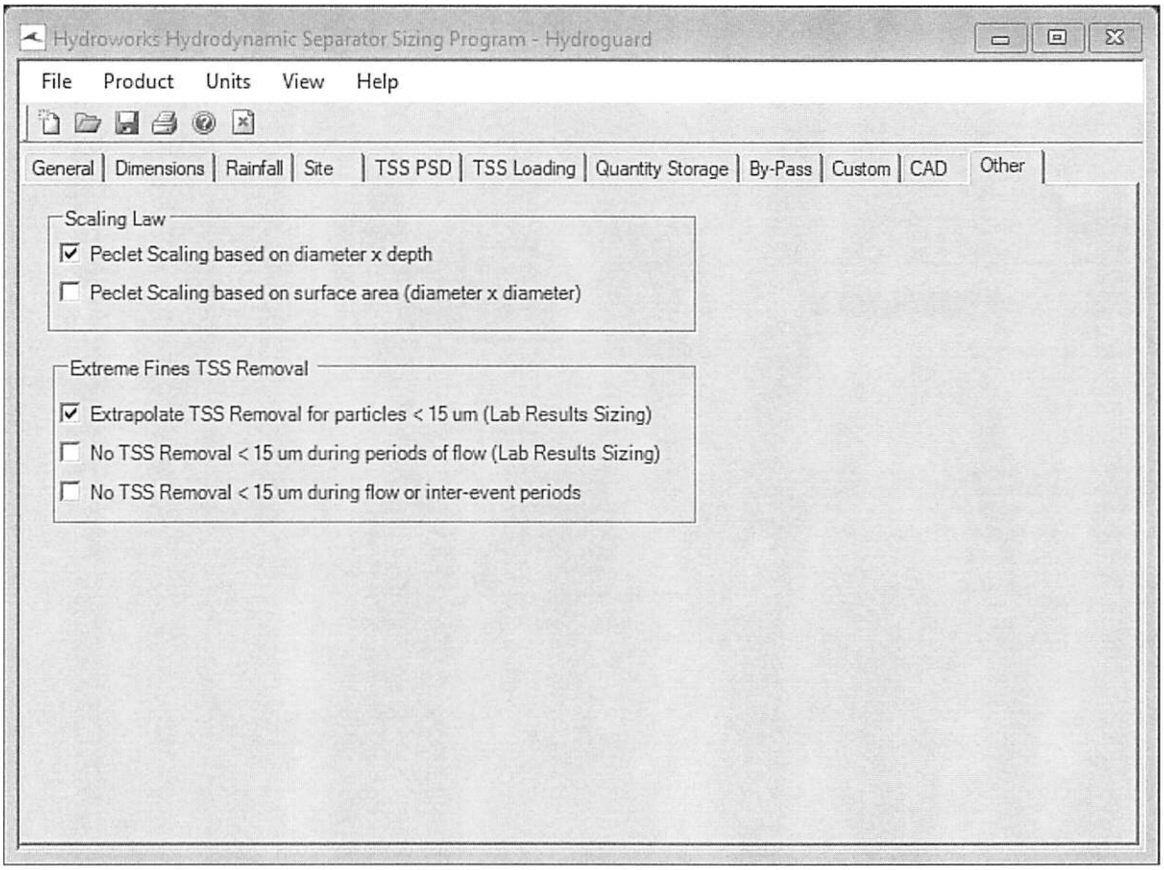
TSS Buildup And Washoff



Upstream Quantity Storage



Other Parameters



Hydroworks Sizing Program - Version 4.9

APPENDIX E

NATURAL RESOURCES CONSERVATION SERVICE

SOIL MAPPING

USDA 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

Holley Street

April 6, 2021

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

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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.

Soil Map


73° 26' 32" W
73° 26' 27" W
41° 57' 50" N
41° 57' 48" N
629080
629090
629100
629110
629120
629130
629140
629150
629160
629170
629180
80C
44
306
Holley St
Factory Brook
Soil Map may not be valid at this scale.
Map Scale: 1:473 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 5 10 20 30
Feet
0 20 40 80 120
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
Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Aug 23, 2018—Sep 17, 2019

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
80C	Bernardston silt loam, 8 to 15 percent slopes	0.0	0.5%
306	Udorthents-Urban land complex	0.8	99.5%
Totals for Area of Interest		**0.8**	**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

80C—Bernardston silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9lr0
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 40 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Bernardston

Setting

Landform: Hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from phyllite and/or schist

Typical profile

Ap - 0 to 8 inches: silt loam
Bw1 - 8 to 14 inches: channery silt loam
Bw2 - 14 to 24 inches: channery silt loam
BC - 24 to 26 inches: channery silt loam
Cd - 26 to 60 inches: channery silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 30 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 high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 26 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Lanesboro

Percent of map unit: 5 percent
Landform: Hills

Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Drumlins, hills, till plains
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Fullam

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Woodbridge

Percent of map unit: 2 percent
Landform: Drumlins, hills
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Brayton

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

Unnamed, less sloping

Percent of map unit: 1 percent
Hydric soil rating: No

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Drift

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 54 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

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

Minor Components

Unnamed, undisturbed soils

Percent of map unit: 8 percent
Hydric soil rating: No

Udorthents, wet substratum

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

References

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