INLAND WETLANDS COMMISSION
MINUTES
Regular Meeting of April 24, 2019 at 7:30 p.m.
Council Chambers, Newtown Municipal Center
3 Primrose Street, Newtown, CT

These Minutes are subject to Approval by the Inland Wetlands Commission

Present: Mike McCabe, Craig Ferris, Kendall Horch

Absent: Kristen Hammar, Sharon Salling, Suzanne Guidera, Vanessa Villamil

Staff Present: Steve Maguire, Senior Land Use Enforcement Officer

Mr. Ferris opened the meeting at 7:30 p.m.

OTHER BUSINESS

Presentation given by Mike Jastremski of Housatonic Valley Association. Please see attachments.

ADJOURNMENT

With no additional business, Mr. McCabe moved to adjourn. Ms. Horch seconded.
All in favor. The meeting of April 24, 2019 was adjourned at 7:57 pm.

Respectfully Submitted, Dawn Fried.

POOTATUCK RIVER STREAM BANK RESTORATION
NEWTOWN
FAIRFIELD COUNTY, CONNECTICUT

PROJECT DESIGN

March 27, 2019

Prepared For:
Housatonic Valley Association
150 Kent Road South
Cornwall Bridge, CT 06754

Prepared By:
Trout Scapes River Restoration LLC
280 W. Kagy Boulevard, Suite D #310
Bozeman, MT 59715

SHEET 1 of 12	COVER SHEET
SHEET 2 of 12	LOCATION MAP
SHEET 3 of 12	PROJECT PLAN VIEW
SHEET 4 of 12	PROJECT PLANTING PLAN
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SHEET 8 of 12	USGS SOILS MAP
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SHEET 11 of 12	TYPICAL DRAWINGS
SHEET 12 of 12	PRE-CONSTRUCTION PHOTOGRAPHS

TROUT SCAPES
RIVER RESTORATION LLC

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(406) 209-1357

www.troutscapes.com

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3/16/2018	Project Planting Plan
2/2/2019	OHWM/ Bank-full Added
2/20/2019	Final Design
3/27/2019	Addendum A&B Added

HOUSATONIC VALLEY ASSOC.

POOTATUCK RIVER STREAM BANK RESTORATION

Newtown
Fairfield County
Connecticut

Pootatuck River

COVER SHEET

SOURCES

1. Property Boundaries as obtained from Town of Newtown GIS website; http://maps.newtown-ct.gov, 2018.

2. 2012 Aerial Orthophotography as Obtained by University of Connecticut CT ECO; http://cteco.uconn.edu, 2018.

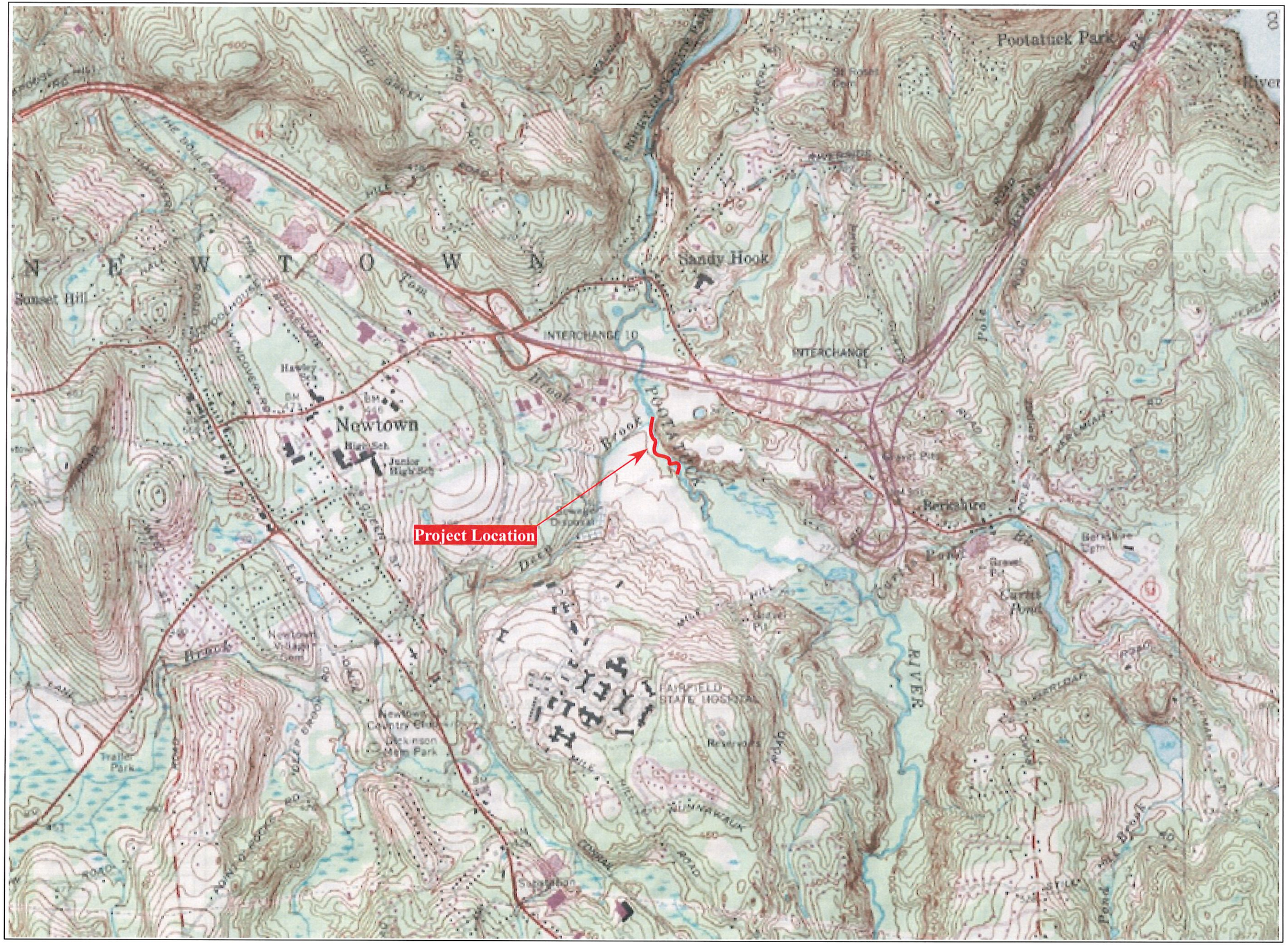
N

0 100 200 400
feet

Scale: 1" = 400'

Drawn By: EW Checked By: BC

SHEET: 1 of 12



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Newtown
Fairfield County
Connecticut

Pootatuck River

LOCATION MAP

SOURCES

1. Topographic Map as obtained from http://www.MyTopo.com; 2018.

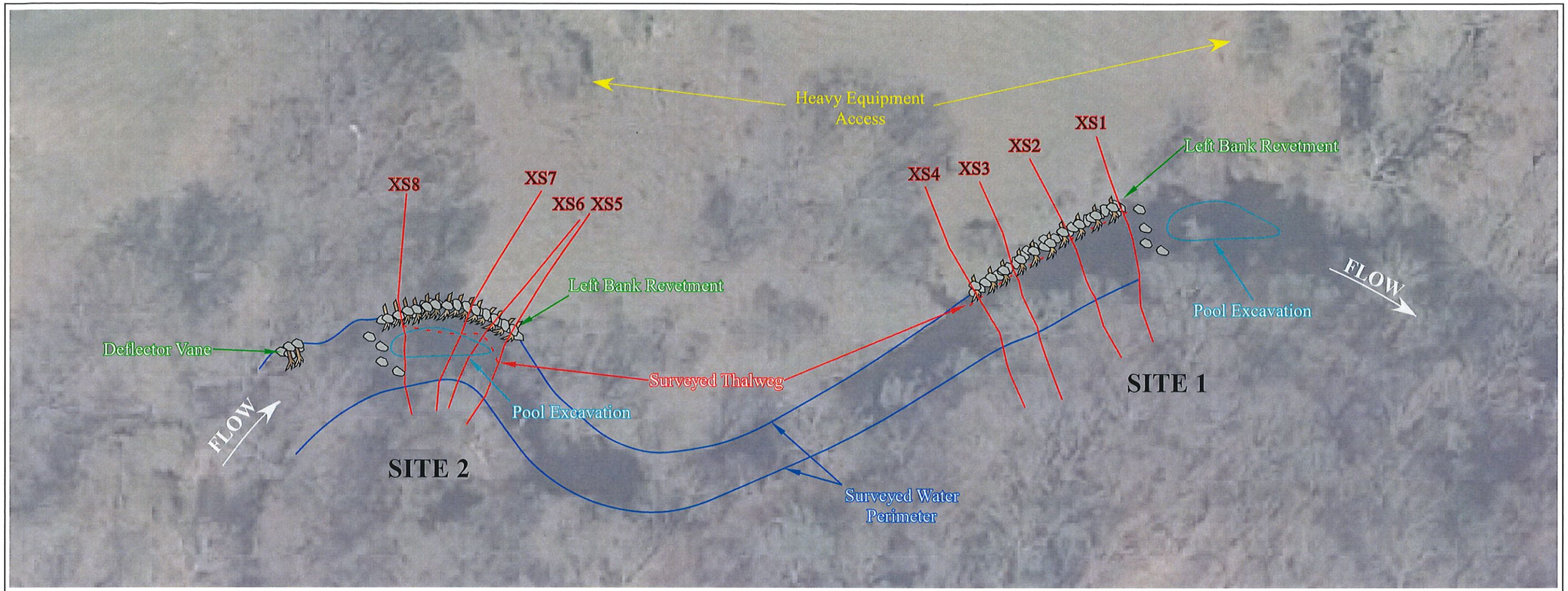
N

0 750 1500
feet

Scale: 1" = 1,500'

Drawn By: EW Checked By BC:

SHEET: 2 of 12



Design Notes

Project Objective: The proposed project intends to address the current bank erosion at two left bank sites within the reach of the Pootatuck River, owned by the state of Connecticut and the town of Newtown. The two banks will be stabilized with imported boulders to prevent further erosion; additionally, rootwads will be installed into the banks to deflect high water flows away from the degrading banks. The installed root-wads will also function to improve trout habitat, which is currently minimal within this reach. A pool will be excavated at each site, adjacent to the rootwad installations to further add habitat for trout protection and feeding. Post-construction bank height will be consistent with existing elevation to encourage floodplain connectivity with the wetland marsh present west of the stream channel. All in-river work should be restricted to the period from July 1 to September 30, inclusive.

Site 1: Stabilize 85 linear feet of the left bank with imported boulders, incorporating cut trees with attached rootwads to improve fish habitat. Footer rocks will be installed 1/3 of their depth into the stream bed, excavated stream bed material will be used to fill interstitial spaces between the installed boulders. Header rocks, installed into the stream bank, above footer rocks, will not extend above bank-full elevation or create constriction within the stream channel. Finished channel width will be based on historic conditions (prior to bank erosion and aggradation along the right bank). Logs/rootwads will remain submerged during baseflow to limit deterioration. A small pool will be excavated downstream of the left bank revetments to improve trout habitat, the head of the pool will be stabilized with imported boulders configured to create helical flow and encourage sediment transport through the pool.

Materials:

a. 90, D50=30in boulders (bank stabilization, in channel)
b. 10, D50= 42in boulders (header boulders to anchor logs/rootwads)
c. 10, 12ft logs with attached rootwads, trunks approx.18 inches diameter

Site 2: Stabilize 80 linear feet of the left bank with imported boulders, incorporating cut trees with attached rootwads to improve fish habitat. Footer rocks will be installed 1/3 of their depth into the stream bed, excavated stream bed material will be used to fill interstitial spaces between the installed boulders. Header rocks, installed into the stream bank, above footer rocks, will not extend above bank-full elevation or create constriction within the stream channel. Finished channel width will be based on historic conditions (prior to bank erosion and aggradation along the right bank). Logs/rootwads will remain submerged during baseflow to limit deterioration. A small pool will be excavated adjacent to the left bank revetments to improve trout habitat, the head of the pool will be stabilized with imported boulders configured to create helical flow and encourage sediment transport through the pool.

Materials:

a. 100, D50=30in boulders (bank stabilization, footer boulders, deflector vane, in channel)
b. 15, D50= 42in boulders (header boulders to anchor logs/rootwads)
c. 15, 12ft logs with attached rootwads, trunks approx.18 inches diameter

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POOTATUCK RIVER STREAM BANK RESTORATION

Newtown
Fairfield County
Connecticut

Pootatuck River

PROJECT PLAN VIEW

SOURCES

1. 2012 Aerial Orthophotography as Obtained by University of Connecticut CT ECO; http://cteco.uconn.edu, 2018.

2. 2017 Topographic and Cross-section Survey Performed by Trout Unlimited; January 13, 2017.

N

0 25 50
feet

Scale: 1" = 50'

Drawn By: EW Checked By: BC

PLANTING NOTES:

	QTY	SIZE	LATIN NAME	COMMON NAME	SYMBOL
TREES:					
	5	4-6'	Betula populifolia	Gray Birch	
	3	2-2.5"	Quercus alba	White Oak	
	10	4-6'	Larixs laricina	Eastern Larch	
	3	2-2.5"	Platanus occidentalis	Sycamore	
SHRUBS:					
	25	2 GAL.	Cornus sericea	Red Osier Dogwood	
	50	Tubelings	Salix discolor	Pussy Willow	
	25	3-4'	Alnus incana	Speckled Alder	
	3	#10	Amelanchier canadensis	Shadblow	
PERENNIALS:					
	1.5	LBS	New England Wetmix Seed		

WEED CONTROL:

Cut and remove Invasive Plants while keeping Native Plants in-place and intact.

PLANTING DESIGN:

Prepared For: Candlewood Valley Trout Unlimited & Pootatuck Watershed Association
Date: February 22, 2018 Prepared By: D.T.H.

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Fairfield County
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PROJECT PLANTING PLAN

SOURCES

1. 2012 Aerial Orthophotography as Obtained by University of Connecticut CT ECO; http://cteco.uconn.edu, 2018.

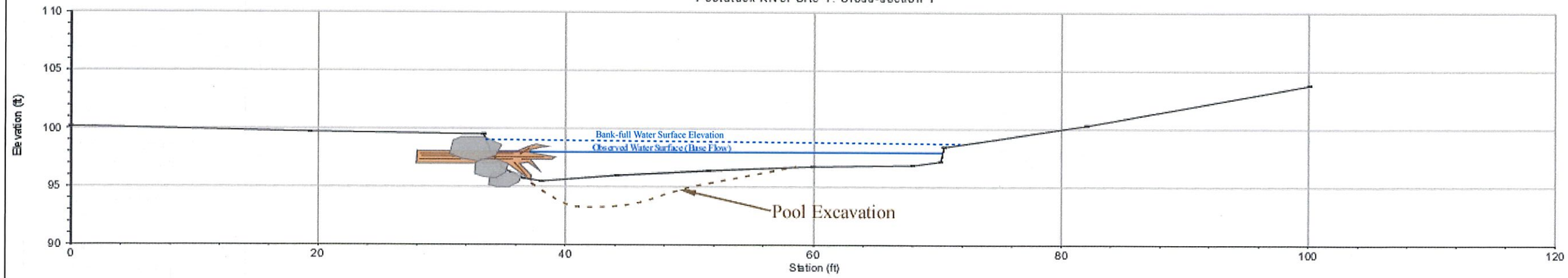
2. 2017 Topographic and Cross-section Survey Performed by Trout Unlimited; January 13, 2017.

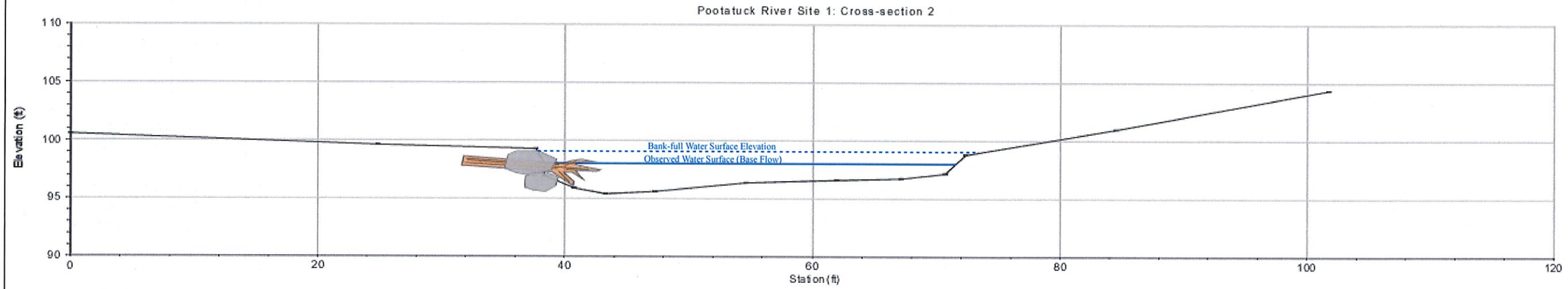
N

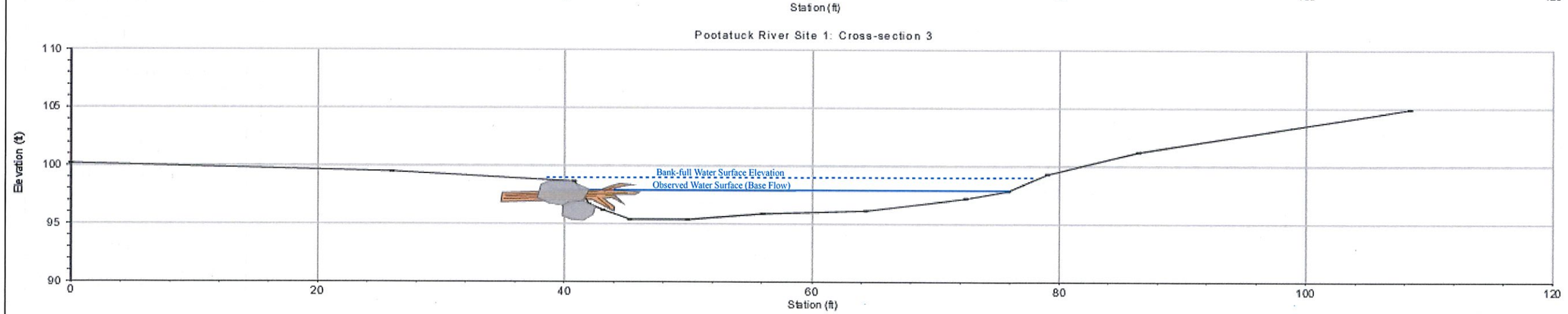
NTS

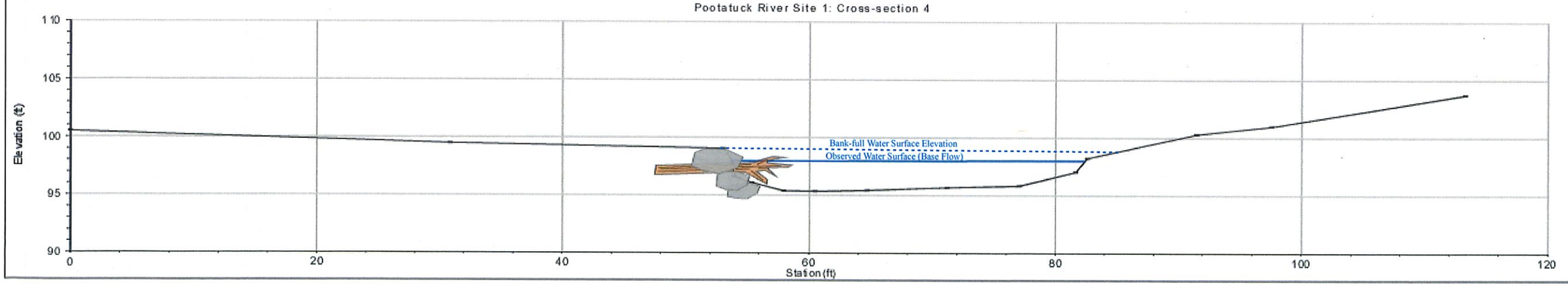
Drawn By: EW Checked By:

SHEET: 4 of 12









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Fairfield County
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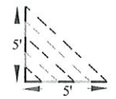
Pootatuck River

SITE 1 CROSS-SECTIONS

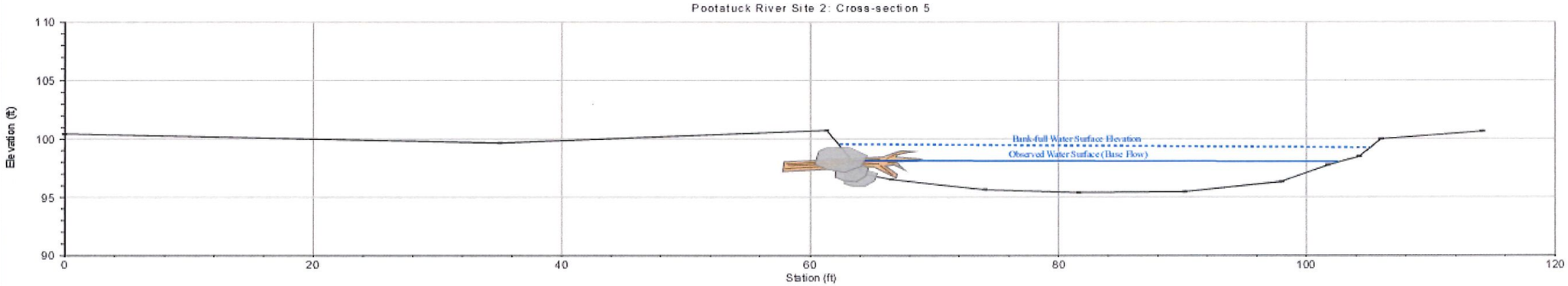
SOURCES

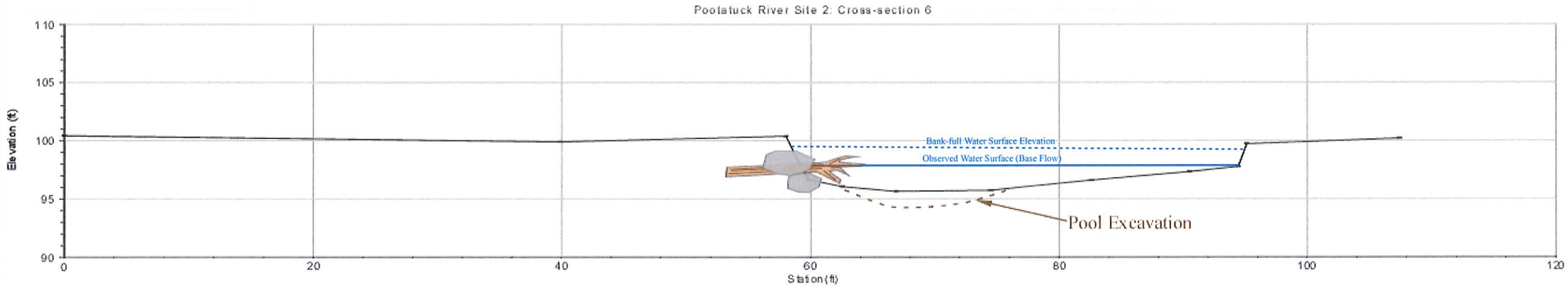
1. 2017 Topographic and Cross-section Survey Performed by Trout Unlimited; January 13, 2017.

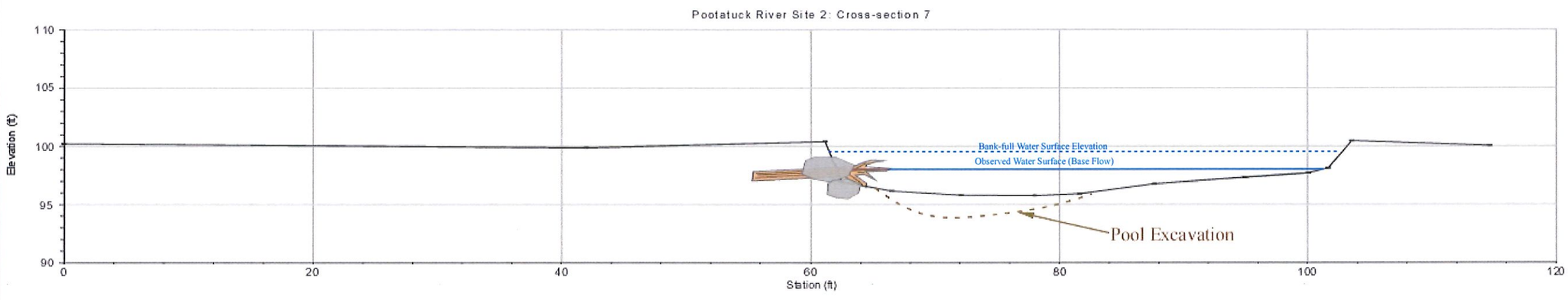
Scale:
H: 1 inch = 9 feet
V: 1 inch = 9.7 feet

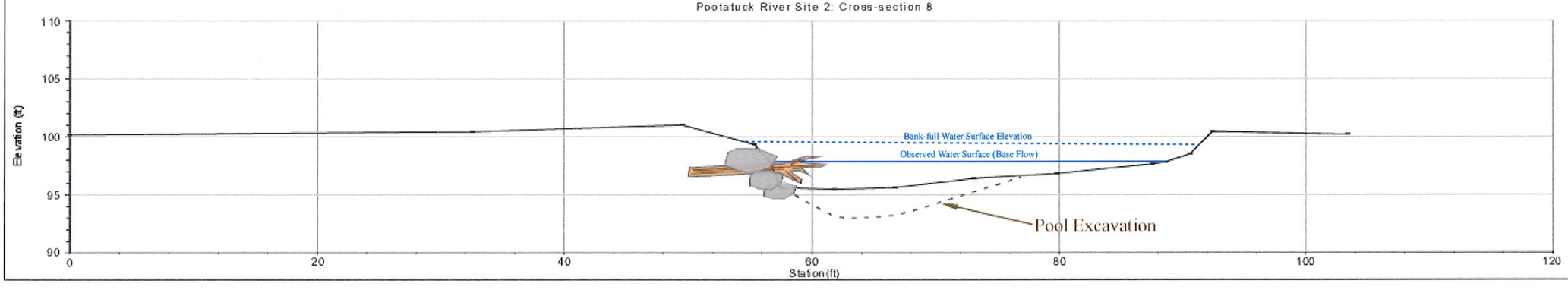


Drawn By: EW Checked By: BC









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POOTATUCK RIVER STREAM BANK RESTORATION

Newtown
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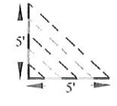
Pootatuck River

SITE 2 CROSS-SECTIONS

SOURCES

1. 2017 Topographic and Cross-section Survey Performed by Trout Unlimited; January 13, 2017.

Scale:
H: 1 inch = 9 feet
V: 1 inch = 9.7 feet



Drawn By: EW Checked By: BC

FEMA's National Flood Hazard Layer (Official)

NFHL (click to expand)

LOMRs

Effective

LOMAs

FIRM Panels

PLSS

River Mile Markers

Cross-Sections

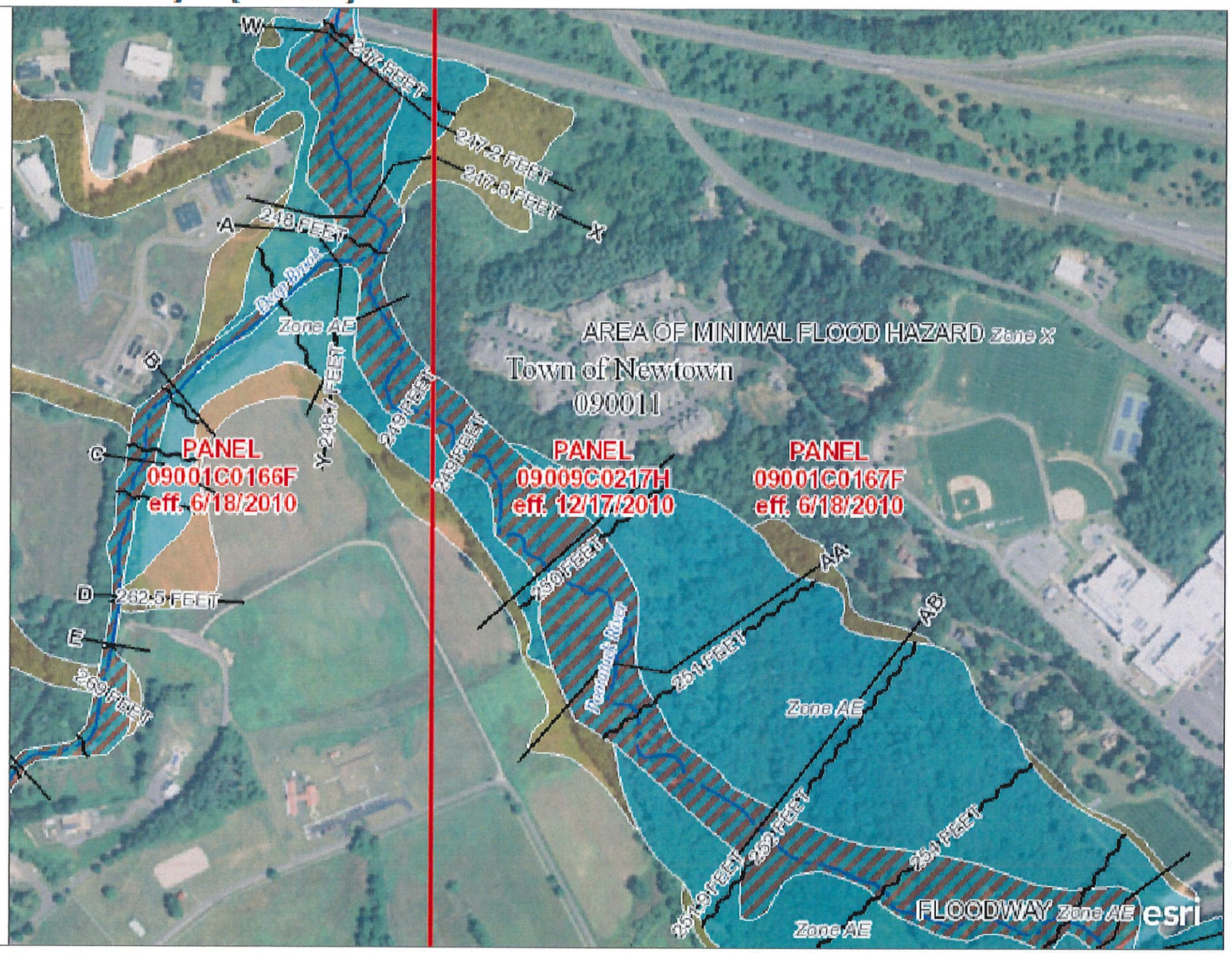
Coastal Transects

Base Flood Elevations

Profile Baselines

Transect Baselines

Limit of Moderate Wave Action



Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available: http://tinyurl.com/j4xwp5e

0.2mi

National Geospatial-Intelligence Agency (NGA); Delta State University; Esri | Print here instead: http://tinyurl.com/j4xwp5e Support: FEMAMapSpecialist@riskmapcds.com | USGS The National Map: Orthoimagery

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Connecticut

Pootatuck River

FEMA FLOOD HAZARD MAP

SOURCES

1. FEMA National Flood Hazard Map as obtained from fema.maps.arcgis.com; 2017.

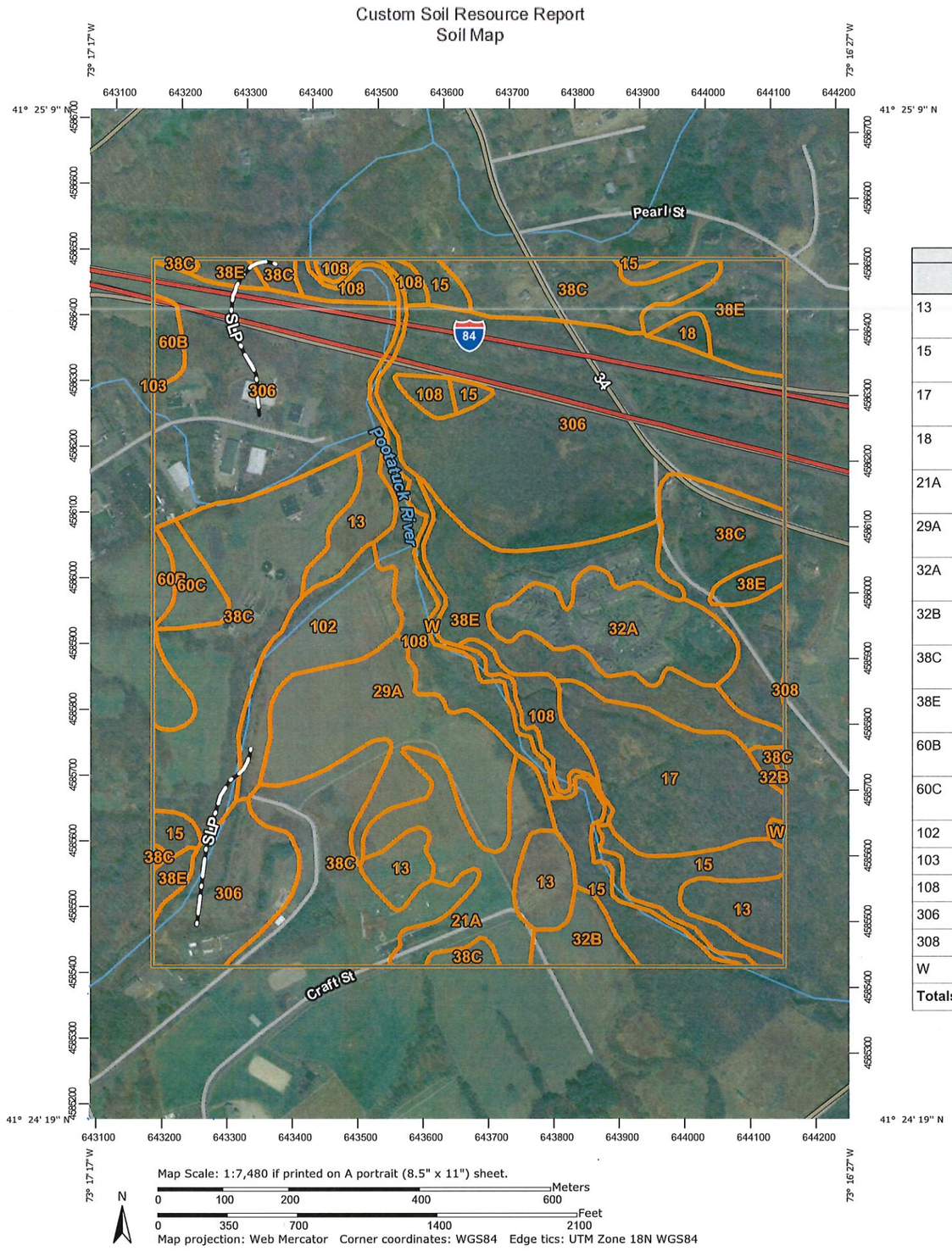
N

0 435 870
feet

Scale: 1" = 870'

Drawn By: EW Checked By: BC

SHEET: 7 of 12



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Walpole sandy loam, 0 to 3 percent slopes	11.2	4.4%
15	Scarboro muck, 0 to 3 percent slopes	12.6	4.9%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	13.2	5.1%
18	Catden and Freetown soils, 0 to 2 percent slopes	0.8	0.3%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	10.2	4.0%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	15.3	5.9%
32A	Haven and Enfield soils, 0 to 3 percent slopes	9.7	3.8%
32B	Haven and Enfield soils, 3 to 8 percent slopes	3.2	1.2%
38C	Hinckley loamy sand, 3 to 15 percent slopes	52.3	20.3%
38E	Hinckley loamy sand, 15 to 45 percent slopes	23.6	9.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	3.6	1.4%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	2.5	1.0%
102	Pootatuck fine sandy loam	7.9	3.1%
103	Rippowam fine sandy loam	0.0	0.0%
108	Saco silt loam	13.2	5.1%
306	Udorthents-Urban land complex	73.6	28.5%
308	Udorthents, smoothed	0.0	0.0%
W	Water	4.9	1.9%
Totals for Area of Interest		**257.8**	**100.0%**

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Connecticut

Pootatuck River

USGS SOILS MAP

SOURCES

1. USGS Web Soil Survey 2.0, websoilsurvey.sc.egov.usda.gov; 2017.

N

0 312 624
feet

Scale: 1" = 624'

Drawn By: EW Checked By: BC

U.S. Fish and Wildlife Service

National Wetlands Inventory

Pootatuck River

January 24, 2018

Wetlands

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

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

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

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Connecticut

Pootatuck River

NATIONAL WETLANDS INVENTORY MAP

SOURCES

1. United States Fish & Wildlife Service National Wetlands Inventory Map, www.fws.gov; 2017.

N

0 500 1000 2000
feet

Scale: 1" = 2,000'

Drawn By: EW Checked By: BC

Figure 1. Typical Rootwad Revetment
Plan View

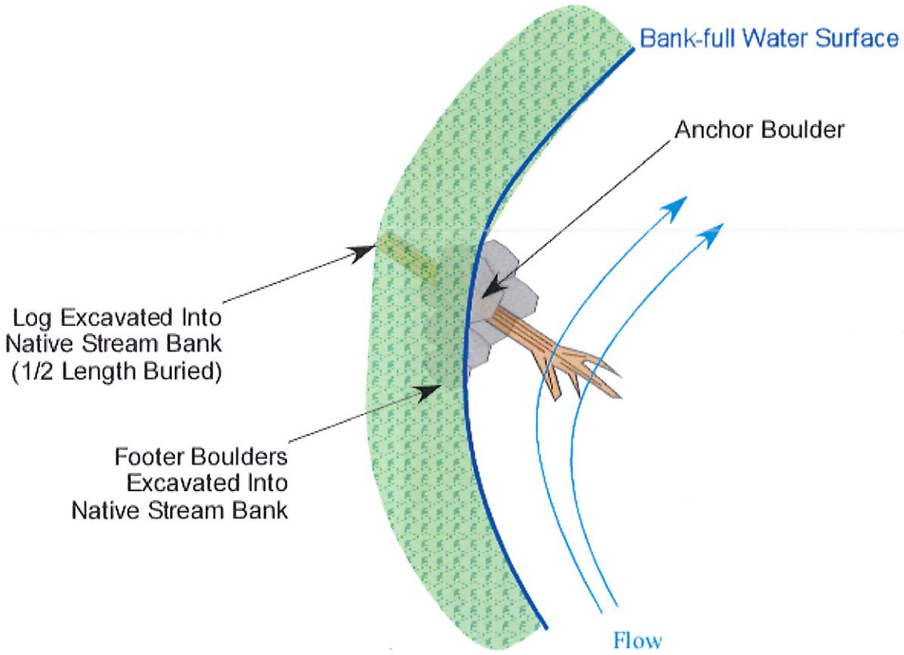
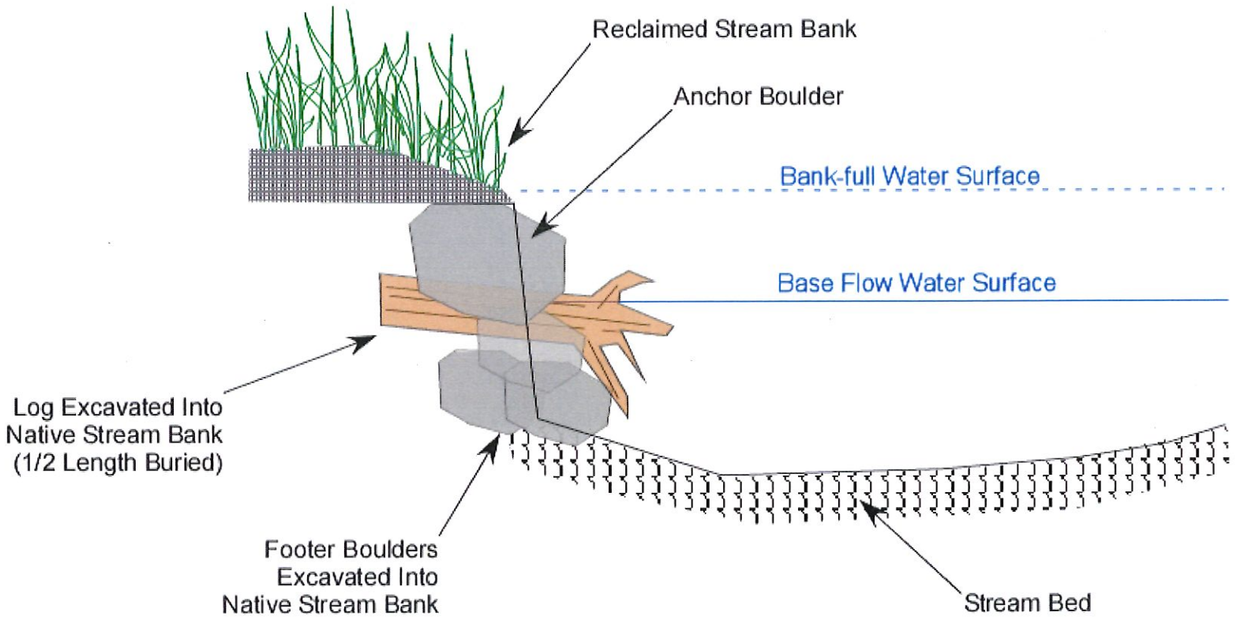


Figure 2. Typical Rootwad Revetment
Cross-section View



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Connecticut

Pootatuck River

TYPICAL DRAWINGS

SOURCES

Drawn By: EW Checked By: BC

Figure 3. Typical Pool Excavation
Plan View

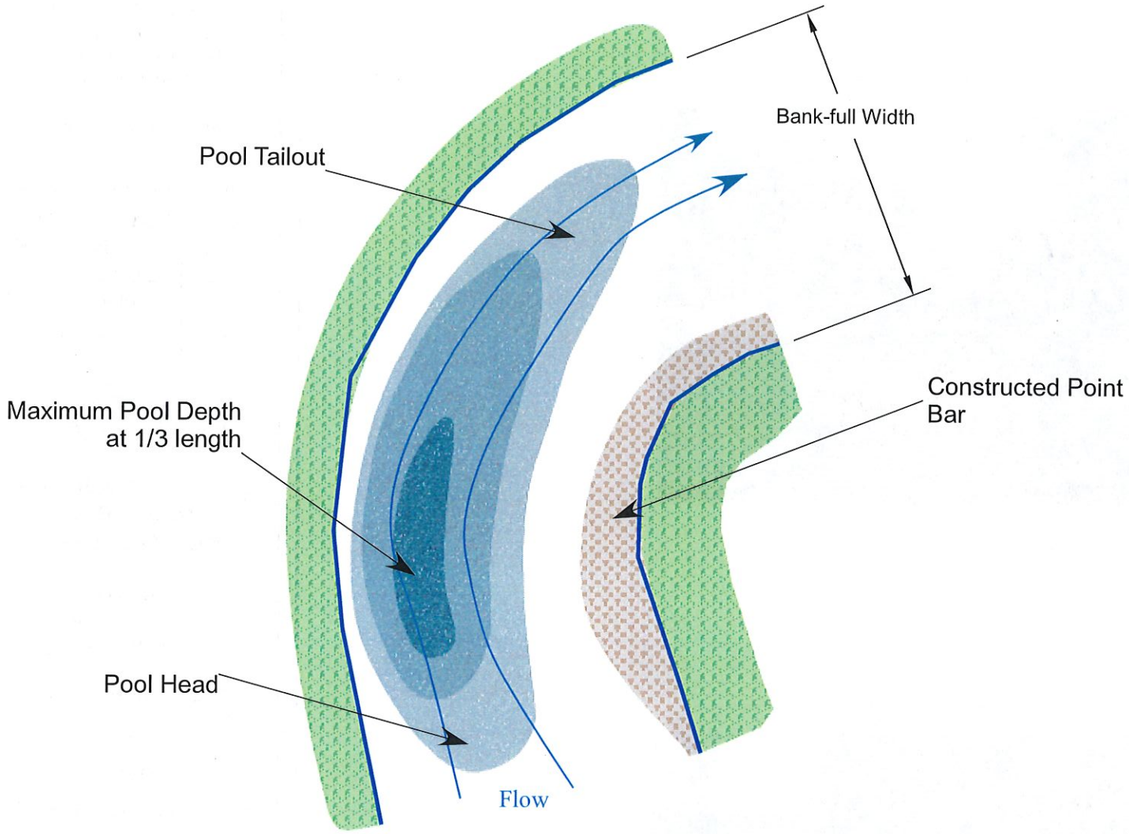
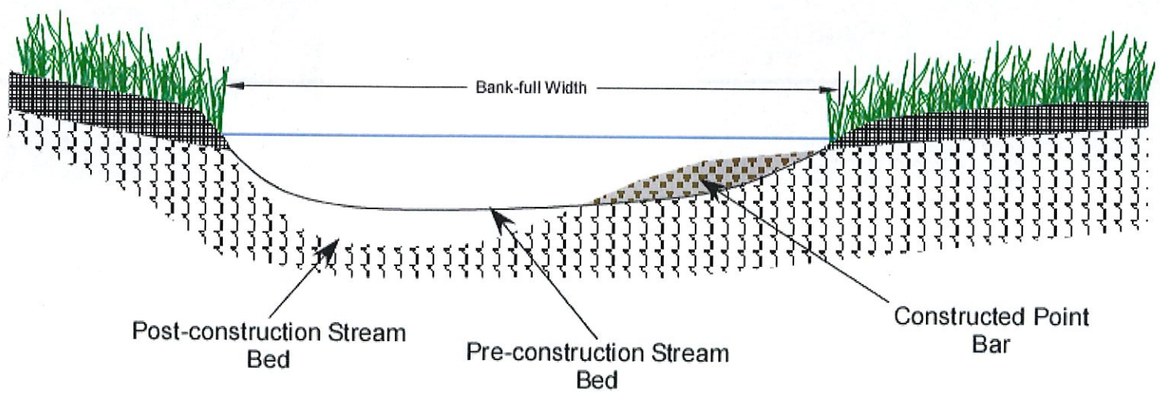


Figure 4. Typical Pool Excavation
Cross-section View



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Pootatuck River

TYPICAL DRAWINGS

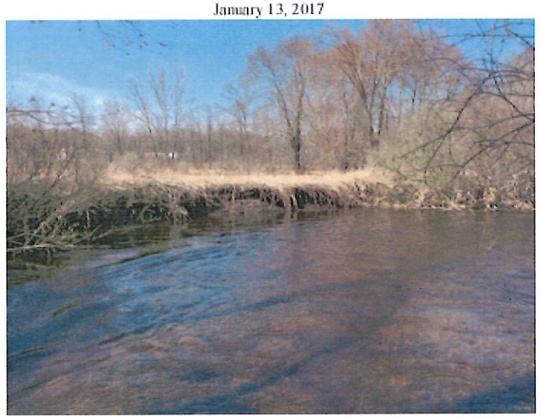
SOURCES

Drawn By: EW Checked By: BC

Site 1:Facing Downstream
January 13, 2017

Site 1:Facing Upstream
January 13, 2017

Site 2:Facing Downstream
January 13, 2017



Site 2:Facing Upstream
January 13, 2017

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PRE-CONSTRUCTION PHOTOGRAPHS

SOURCES

1. Survey photographs provided by Trout Unlimited, January 13, 2017.

Drawn By: EW Checked By: BC

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ADDENDUM A: EQUIPMENT ACCESS AND WETLAND DELINEATION

SOURCES

1. 2012 Aerial Orthophotography as Obtained by University of Connecticut CT ECO; http://cteco.uconn.edu, 2018.

2. 2017 Topographic and Cross-section Survey Performed by Trout Unlimited; January 13, 2017

3. Wetland Delineation Data Provided by Housatonic Valley Association; 2018.

N

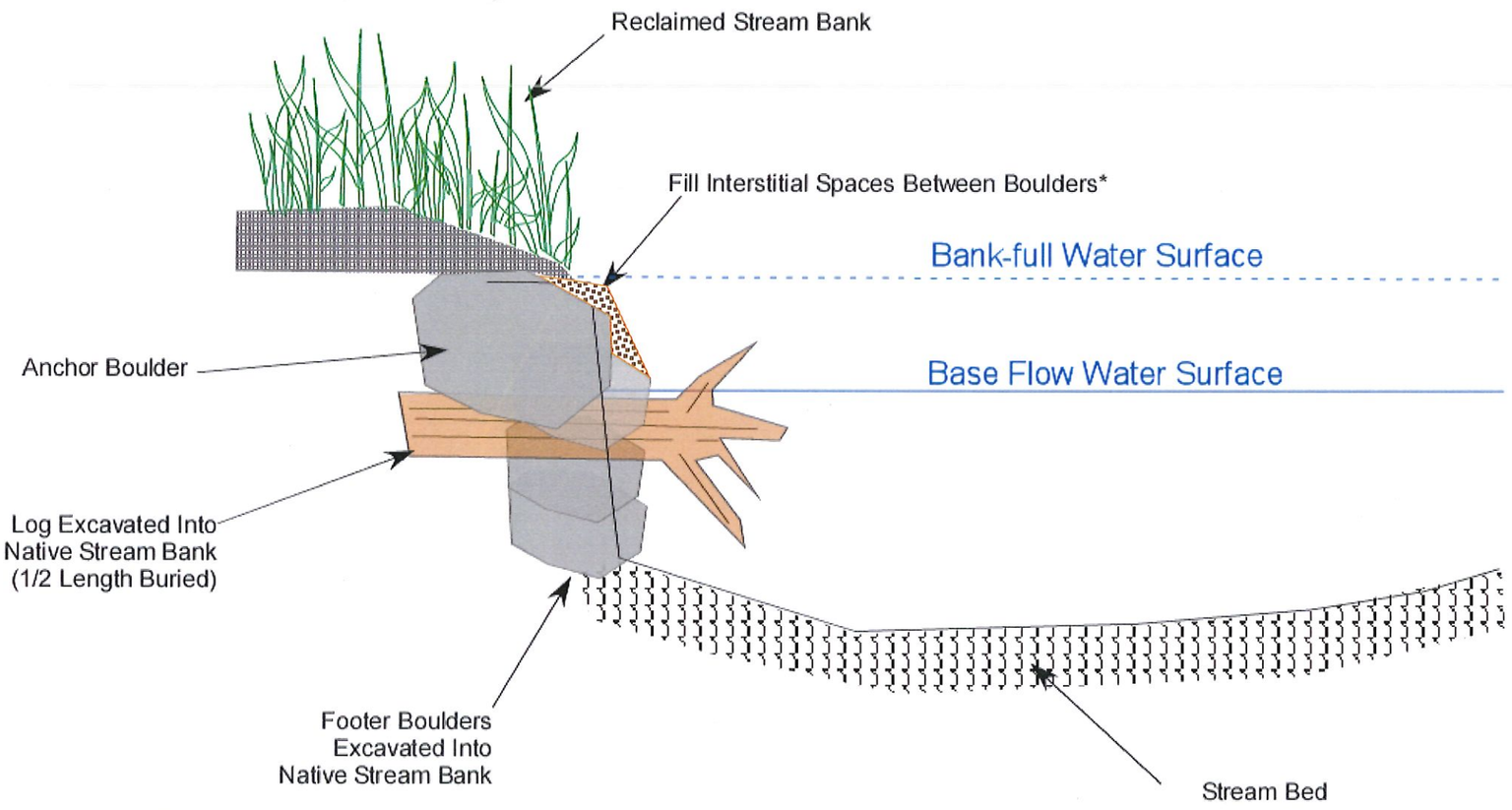
0 25 50
feet

Scale: 1" = 50'

Drawn By: EW Checked By: BC

SHEET: 1 of 1

Figure 5. Rootwad Revetment at Wood Turtle Sites of Concern
Cross-section View



* Fill interstitial spaces with excavated cobbles and/or topsoil to minimize exposed boulders for ease of travel by adult wood turtles and prevent entrapment of juveniles between boulders. Fill areas will be immediately seeded to promote stability.

TROUT SCAPES
RIVER RESTORATION, LLC

280 West Kagy Blvd
Suite D #310
Bozeman, MT 59715
(406) 209-1357

www.troutscapes.com

2/1/2018	First Draft Project Design
3/16/2018	Project Planting Plan
2/2/2019	OHWM/ Bank-full Added
2/20/2019	Final Design
3/27/2019	Addendum A&B Added

HOUSATONIC VALLEY ASSOC.

POOTATUCK RIVER STREAM BANK RESTORATION

Newtown
Fairfield County
Connecticut

Pootatuck River

ADDENDUM B: BANK REVETMENT DETAIL

SOURCES

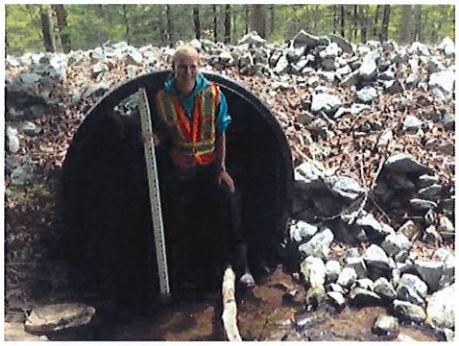
Drawn By: EW Checked By: BC

SHEET: 1 of 1

Planning for Flood Resilient and Fish-Friendly Road-Stream Crossings

Project Fact Sheet 04/2019

Summary: The Housatonic River watershed spans 3 states, 83 towns, and 1,948 square miles. Within the watershed, there are thousands of points where roadways, driveways, and trails cross rivers and streams. In these locations the road is carried by structures collectively referred to as **road-stream crossings** (i.e., culverts and bridges).



Initial results of an ongoing study conducted by the Housatonic Valley Association (HVA) indicate that approximately 56% of the non-bridge road-stream crossings evaluated to date in the Housatonic watershed are considered moderate or worse **barriers to fish and wildlife movement** (*n* = 976). Furthermore, modeling by project partners at the University of Connecticut indicates that approximately 18% of non-bridge structures evaluated fail (i.e., water over the road) in a 25-year recurrence interval flood or less (*n*=594). Given the sheer number of problem structures, a strategic approach to **restoring habitat connectivity** and **reducing flood risk** at road-stream crossings is necessary.

Barrier Evaluation	Number of Culverts	Percentage
Severe barrier	225	23%
Significant barrier	97	10%
Moderate barrier	225	23%
Minor barrier	337	35%
Insignificant barrier	92	9%
No barrier (full passage)	0	0%

Recurrence of Interval Failure	Number of Culverts	Percentage
2-Year	14	2%
5-Year	10	2%
10-Year	23	4%
25-Year	61	10%
50-Year	45	8%
100-Year	50	8%
200-Year	57	10%
Passing	334	56%

In 2015, HVA began a pilot project to develop road-stream management plans in seven towns in Northwest CT (Canaan, Colebrook, Cornwall, Kent, Norfolk, Salisbury, and Sharon; see map). This process will be replicated in five additional watershed towns by January 2019 and five towns in the Berkshire region of Massachusetts by 2020. The primary objectives of this work are to help communities identify **highest priority replacement projects** based on conservation value, flood risk and maintenance need, encourage adoption of culvert design Best Management Practices, and create a new tool for securing financing for replacement projects.

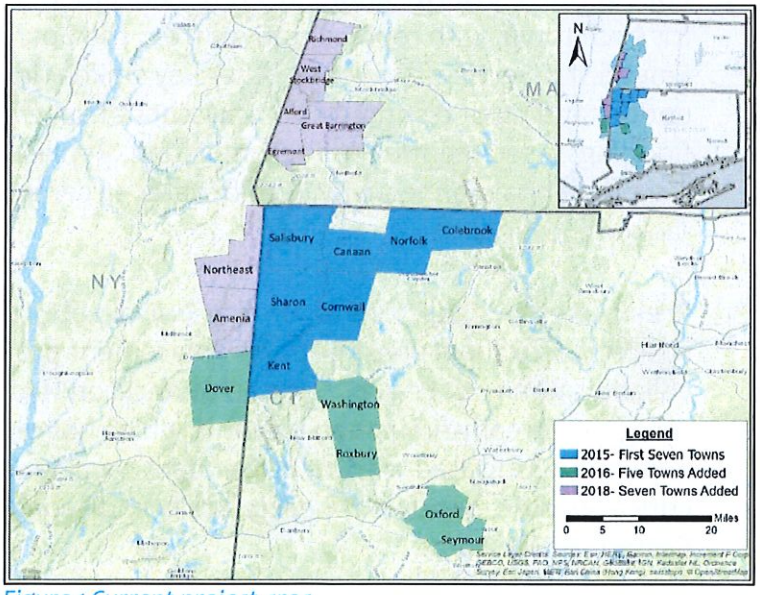


Figure 1 Current project area

After data collection and analysis, HVA works with the towns and a Project Engineer to develop preliminary designs and implementation strategies for high-priority replacements and to integrate assessment results into local highway infrastructure and hazard mitigation planning. Even more important than the construction of a flagship replacement project in each town is the opportunity to show local highway managers and decision makers that the same **best management practices** that restore fish and wildlife passage also reduce flood risk and long-term maintenance costs. The impacts of climate change (i.e., more frequent extreme precipitation events, rising temperatures) will increase the risk of culvert failures, as well as increase stressors to native fish and wildlife populations. Replacing problem culverts with structures that conserve natural stream processes is a single solution that can increase the climate resiliency of both the built and natural environment.

The HVA Road-Stream Crossing Management Planning Process:

1) **Assessments of all road-stream crossings within selected towns:** Assessments for fish and wildlife passage (stream habitat continuity) are conducted using the North Atlantic Aquatic Connectivity Collaborative (NAACC) protocol. Data collected in the field is uploaded to a regional online database which produces a "passability score" and barrier evaluation, ranking the site's ability to pass fish and wildlife and ranging from 0 (complete/ severe barrier) to 1 (no barrier, full passage).

2) **Flood Risk Analysis:** All closed-bottom structures (culverts) within each town are assessed for flood resiliency, through a collaboration with UConn Department of Civil and Environmental Engineering (UCONN), using a hydraulic capacity model that predicts failure (water overtopping the road) at various flood frequencies (2-, 10-, 25-, 50-, 100-, 200-year recurrence intervals). Flows for this analysis were derived from the Coupled Routing and Excess Storage (CREST) 3.0 hydrologic model developed by UCONN.

3) **Road-Stream Crossing Inventory documents:** Town-wide inventory documents are developed for partner municipalities, containing maps, photos, all data collected in the field, and barrier status for each crossing, as well as the results of UCONN's flood-risk analysis.

4) **Collaborative prioritization:** Inventory documents are used to guide prioritization workshops for each town, with representatives from the Board of Selectmen, Public Works and Emergency Services as well as other key stakeholders. These meetings allow for a better understanding of distinct flood-risk issues at specific sites in each town, such as frequent flooding or sediment/debris accumulation. Replacement projects that will reduce flood risk, restore habitat connectivity in cold-water streams, and address town maintenance needs are ranked the highest.

5) **Preliminary designs (where funding is available):** Conceptual designs and implementation strategies for the highest priority replacement project in each town are developed in collaboration with Project Engineer, Princeton Hydro LLC. Replacement projects are designed using the Stream Simulation method, which not only preserves safe roadways and minimizes expenses associated with more frequent repair and replacement, but also serve to reconnect critical wildlife corridors for ecologically and economically important native species like Eastern Brook Trout.

6) **Road-Stream Crossing Management Plans:** All of the above information, along with conclusions and management recommendations, is assembled as a Road-Stream Crossing Management Plan document for each partner town. These documents are suitable for official municipal adoption as an annex to local Natural Hazard Mitigation plans.

Benefits of the Town-Scale Approach:

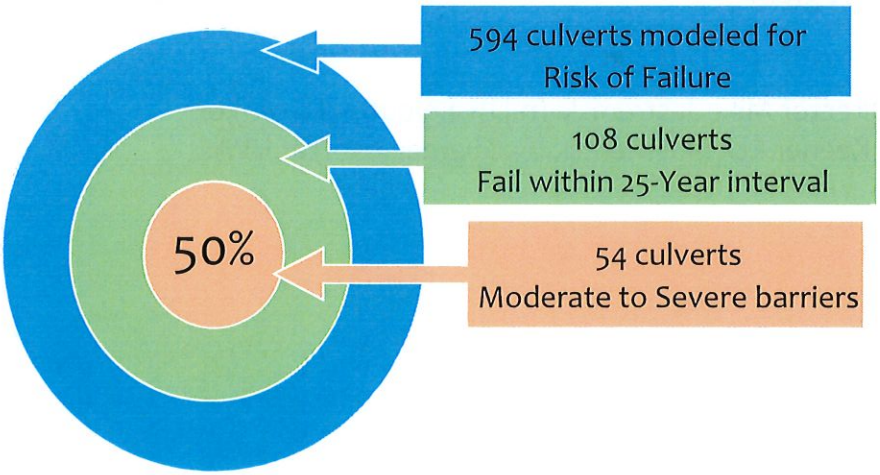
- Encourages adoption of BMPs like Stream Simulation Design
  - Provides opportunities to show that BMPs lead to more resilient, less expensive structures as well as restore habitat
  - Given the large number of problem structures, a fundamental change in management philosophy is necessary

- Provides the Management Plan as a resource that can help Towns take advantage of every opportunity to replace problem structures:
  - Grant-seeking
    - Proposals for structures prioritized as part of a planning process will be more competitive
  - Capital planning
    - Plan can help make the case to elected officials and the public that priority structures should be included
  - Wake of the flood
    - Plan can help make the case to FEMA and other relief agencies that structures should be upsized and designed to conserve stream process

- Allows for the incorporation of local knowledge:
  - Town Highway, EMS and other staff and officials generally understand where their flooding issues are
  - This can reinforce and/or inform modeling results

Project Status and Results to Date:

As of March 2019, HVA is finalizing the Road-Stream Management Plans for the first twelve towns. Initial project results indicate an overlap in local knowledge and UCONN's flood risk model results. Of all the crossings that were both ranked by town officials (as problem culverts) and modeled for flood risk by UCONN, 49% failed within a 50-year flood interval or less ($n = 70$). Furthermore, results on the intersection of culvert barrier status and flood risk indicate that 50% of all culverts that fail at the 25-year flood interval or less are also considered moderate or worse barriers to fish and wildlife movement (see figure). Based on these results, HVA is making a concerted effort to show highway managers that there is significant overlap between flood risk and habitat issues, and that the same Best Management Practices can



address both issues. Ultimately, these Road-Stream Management Plans will be tools the Town can use take advantage of every opportunity to reduce flood risk and improve stream habitat connectivity at road-stream crossings, including capital planning and regular maintenance, grant programs, and recovery operations in the wake of the next flood.

Partner Towns:
Phase I: Canaan, Colebrook, Cornwall, Kent, Norfolk, Salisbury, Sharon
Phase II: Dover (NY), Oxford, Roxbury, Seymour, Washington
Phase III (MA, NY): Alford, Amenia (NY), Egremont, Great Barrington, Northeast (NY), Richmond, West Stockbridge

Project Partners:
Towns, UCONN Civil and Environmental Engineering Department, Princeton Hydro LLC, CTDEEP-Inland Fisheries, Trout Unlimited, Aton Forest, North Atlantic Aquatic Connectivity Collaborative, Farmington River Watershed Association

Figure 2 Before (top) and after (bottom) photo of a culvert replacement project on Churchill Brook in Pittsfield, MA. The bottom structures is an-bottomed culvert that was designed with the natural stream channel in mind.

Funders:
Housatonic River Natural Resource Damages Fund; National Fish and Wildlife Foundation's New England Forests and Rivers Fund; Patagonia World Trout Initiative; Farmington River Coordinating Committee; Connecticut Institute for Resilience and Climate Adaptation; Northwest Connecticut Community Foundation; Connecticut Community Foundation; New York State Climate Smart Communities Grant Program

For More Information:
Call or e-mail Watershed Conservation Director Mike Jastremski (mj.hva@outlook.com) or Conservation Projects Manager Lindsay Keener-Eck (lkeenereck.hva@gmail.com) at HVA:

HVA
PO Box 28
Cornwall Bridge, CT 06754
(860) 672-6678
www.hvatoday.org

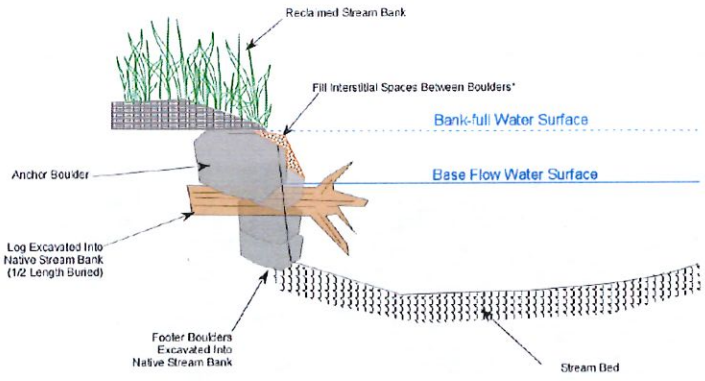
Pootatuck River Stream Restoration

Project Fact Sheet 04/2019

Summary: This project is meant to improve in-stream habitat for wild trout (including native Eastern Brook Trout) within the Class 1 Wild Trout Management Area (WTMA) of Deep Brook and the Pootatuck River. It will also provide a local example of stream habitat restoration techniques, especially the addition of large wood. Work will occur at two sites along the left bank of the Pootatuck River just upstream of its confluence with Deep Brook, on property owned by the CT Department of Agriculture and the Town of Newtown. Removal of riparian vegetation in this area combined with large floods has resulted in lateral migration of the stream channel into CT Department of Agriculture property. Our river restoration design/build consultant TroutScapes River Restoration LLC has developed a restoration plan that features strategically placed boulders and rootwads. These structures will be placed to deflect high flows away from degrading banks and into the stream channel. The rootwads will also improve instream aquatic habitat, which is currently minimal within this reach. A pool will be excavated at each site adjacent to the rootwad installations to further add habitat for trout protection and feeding. Post-construction bank height will be consistent with existing elevation to maintain floodplain connectivity. Invasive species will be removed and native trees and shrubs restored along the project reach. Please see attached plan set for more information.

Project location: Just upstream of the Deep Brook/Pootatuck River confluence off of Old Farm Road

Project background: In the summer of 2016, the Pootatuck Watershed Association (PWA) retained a consultant to conduct a habitat assessment throughout the Class 1 WTMA of Deep Brook and the Pootatuck River, and use that information to identify and prioritize trout habitat restoration projects. PWA also received funding to develop a demonstration restoration project at a high-priority site identified by the habitat assessment. This work was meant to complement an ongoing effort by CT DEEP Division of Inland Fisheries (CTDEEP-IF) to reintroduce native Eastern Brook Trout to the Deep Brook/Pootatuck River WTMA. Brook Trout were released in the WTMA in the fall of 2016. Using protocols developed by the Vermont Rivers Program, stream reaches in the project area were assessed and characterized for their geomorphic stability and habitat quality. The results of the assessment were then used to prioritize stream reaches for trout habitat restoration potential. The location of the proposed "Pootatuck River Stream



Rootwad structure detail.

Restoration" along reaches M001 and M002 was flagged as a high priority for restoration based on the results of the Phase 2 Rapid Habitat Assessment conducted, and was chosen for the demonstration project site. PWA has retained Housatonic Valley Association (HVA) to manage the permitting and implementation of this project.

Current status and anticipated timeline:
Based on conversations with CT-DEEP, we expect to commence/complete construction activities during September 2019.

This project requires the following permits and permissions:

1. *CT-DEEP (401 Water Quality Certification):* Our application for this permit has been submitted and review is nearly complete. We anticipate approval by 5/31/2019, with the condition that we limit construction activities to September 1- September 30 to avoid impacts to fish and wood turtles, which are thought to be present on the site.

2. *US Army Corps of Engineers (CT General Permit 10, Aquatic Habitat Restoration, Establishment and Enhancement Activities):* Our application for this permit has been submitted and review is nearly complete. Permit will be issued once we have secured our WQC from CT-DEEP.

3. *CT Department of Agriculture (Temporary access agreement):* We anticipate this agreement being finalized by 5/31/2019.

Project Partners:
Pootatuck Watershed Association (PWA); Candlewood Valley Trout Unlimited; Town of Newtown; CT-DEEP Inland Fisheries Division

Funders:
Anonymous gift to PWA; HVA membership

For More Information:
Call or e-mail Watershed Conservation Director Mike Jastremski (mj.hva@outlook.com)

HVA
PO Box 28
Cornwall Bridge, CT 06754
(860) 672-6678
www.hvatoday.org