



4/28/2026

Wetland Conditional Use Permit Application

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Society for the Protection of New Hampshire Forests
400 Little Harbor Rd, Portsmouth, NH
Tax Map 203, Lot 8

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April 28th, 2026

Rick Chellman, Chair, Planning Board
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH, 03801



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Project Narrative

Wetland Conditional Use Permit
Creek Farm – Little Harbor Loop Trail Turnpike
Tax Map 203, Lot 8
400 Little Harbor Rd, Portsmouth, NH

Chair Chellman,

The Society for the Protection of New Hampshire Forests is seeking a wetland conditional use permit to conduct trail maintenance on the part of the Little Harbor Loop trail on our conservation area at Creek Farm in Portsmouth. The shoreline trail at Creek Farm was created prior to the Forest Society's ownership, likely dating back to the late 19th century as part of the historic summer estate. As the trail has grown in popularity over the recent decades, this relatively unimproved trail has seen extensive wear, and requires significant maintenance within certain sections, including the need to construct new trail features to address decades of erosion and compaction.

Within an approximately 300-foot section of the trail (see attached map for location reference), significant compaction and erosion of the trail surface has created a low-lying depression within the trail corridor. Since the trail is situated in gentle terrain, the depression tends to collect water making the trail muddy and wet, especially in springtime, winter thaws, or after large rain events. During these seasonally wet trail conditions, many hikers walk around the edges of the mud to keep their feet dry, which has widened the trail over time, and has caused damage to the trail and loss of vegetation in the wetland buffer zone.

This section of the trail is within the 100ft buffer of the tidal wetland of Sagamore Creek, and the very westerly end of the turnpike (~40sq ft) is within the 100ft buffer of inland wetlands on the property. The tidal wetland buffer on the property is a mix of upland forest, shrubs, and lawn with much of the upland shrub areas being mostly invasive species, about 8% of the buffer area. Please see attached reports from Joesph Noel, NH Certified wetland scientist. The first is a Wetland Delineation & Functional

Assessment Report prepared in 2020 for the Creek Farm waterline replacement project, and the second is an update to that report prepared by Mr. Noel in March 2026.

The Forest Society is proposing to construct 300 linear feet of turnpike through this section to address the trail problem. A “turnpike”, as outlined in the New Hampshire Best Management Practices for Trail Construction and Maintenance manual, is a constructed trail feature built by importing fill material to establish a raised, durable, and well-drained tread surface above the existing trail tread. A layer of coarse crushed drainage stone will be added first, with a layer of compacted aggregate on top, with geotextile fabric separating the layers from each other and the existing ground. The raised trail surface will be crowned and accompanied in some areas by a shallow ditch on the downhill side of the turnpike, which drains water away from the structure and into lead-off ditches at low points, which will also connect to capped stone cross-drains to facilitate dispersing water away from the trail (see example photo page 15). While many turnpikes are elevated enough above the existing ground to require the tread to be retained by timber or rocks walls, after consultation with our professional trail contractor, we have decided that we do not need to elevate the trail surface at this site high enough to require retaining. The completed turnpike will be about 4-5 feet wide. Assorted light machinery for this project will likely include a small tracked-carrier to transport material to the project site, a compact excavator or small skid steer for preparing the ground and spreading material, and a plate compactor to stabilize the new surface material. Construction will follow all applicable BMPs outlined in the *Best Management Practices For Erosion Control During Trail Maintenance and Construction Manual* (NH DNCR, 2017). Silt socks will be installed along the project perimeter between the work and the tidal wetland areas.

We have attached a USFS standard trail plan for a turnpike as an example of the structure. What we plan to build will differ from their example in a few ways, first being low enough to not require retainment on the sides, and second, the drainage ditches will be much subtler and less deep compared to those depicted in the plan, as well as only being needed on the downhill side.

In April 2026 the Portsmouth Conservation Commission recommend a version of this project for approval, totaling 270 linear feet (1,350 square feet) of turnpike. Since that recommendation we have made two changes to the project scope. First, when the proposal went before the Conservation Commission, we had planned two unconnected sections of turnpike only in the existing muddy areas, totaling 270 feet of the trail section, with a 30 foot section in the middle to remain unimproved as it was less impacted and didn't have issues with mud. After consultation with our trail contractor, we determined that it would be best to also improve the 30 foot middle section,

as there is a chance that it could become a new low point in the trail that gathers water if it remains unimproved. This section will only require the top aggregate surfacing without the addition of drainage stone, but will create a contiguous tread surface throughout this section to address future potential impacts. As a result we are proposing a total of 300 linear feet (1500 square feet) of permanent impact. Second, we determined that approximately a third of the area we plan to stockpile material during construction is within the tidal wetland buffer, amounting to 133 square feet of temporary impact on an area that is currently lawn. We will put up silt fencing on the downhill side of the stockpiles to prevent spill over, and restore the existing lawn after the approximately two-week construction period. As a result of these changes, we are proposing an additional 150 square feet of permanent impact, and 133 square feet of temporary impact over what was proposed to the Conservation Commission. I have attached both an old and revised site plan so that you can compare the changes proposed.

Wetland Conditional Use Permit Criteria for Approval

In the following section I outline how our project meets approval criteria. After meeting with the Conservation Commission in March, I prepared an additional narrative that addressed some of the specific concerns brought up by the Conservation Commission in detail. Please find that additional narrative attached.

1. The land is reasonably suited to the use, activity, or alteration.

The existing trail pre-dates the Forest Society's ownership of the property, with year-round non-motorized recreational uses including walking, snowshoeing, and skiing being popular and appropriate uses of this area. The wear currently seen on the trail is typical for a natural surface trail in this type of location and needs to be addressed to stop further resource damage.

2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity, or alteration.

To continue providing access to the scenic views and points of interest that the current trail accesses and connects, the trail must remain inside the wetland buffer. If the section of trail with the planned turnpike were relocated outside the wetland buffer, it would require impacts to the wetland buffer in currently un-impacted areas so the relocated trail could reconnect with the existing trail. Given the nature of the surrounding terrain, any trail

reroute would require being surfaced with a hardened fill material in a similar manner as the turnpike to avoid similar erosion and drainage problems in the long term. Relocating the trail would cause more significant ecological impacts within the wetland buffer than simply improving the trail in its existing location.

3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.

This project will not have any substantive adverse impacts on any wetland resources or their functional values on the property, or any other surrounding property. By creating a more erosion resistant and dry trail surface that hikers will stay on, the project will protect and enhance wetland functional values by stopping the widening of the trail and improving drainage compared to the existing trail.

4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.

This project will create very little disturbance to any existing vegetation since the existing trail corridor is wide enough for the planned structure. In one narrower area, the trail corridor may need to be expanded by 1-2 feet temporarily to accommodate construction activities, and this area is outside the vegetated buffer strip zone. The vegetation that would be removed along this narrower section of trail is primarily state-recognized invasive species such as Glossy Buckthorn, European Honeysuckle, and Oriental Bittersweet.

There are several larger trees with large roots exposed by erosion of the trail, these roots would be built over or around rather than removed, to reduce the likelihood of any impact to healthy trees.

5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.

A trail re-route is more impactful to the wetland buffer for reasons described in criteria 2. Other alternatives would be a wooden puncheon boardwalk, which would involve the construction of a substantial structure with increased use of pressure-treated wood and still require construction activity within the same existing footprint. A puncheon boardwalk would be less accessible to different users and would do less to address existing drainage issues than a turnpike. Moreover, a puncheon boardwalk would need to be entirely replaced 20-30 years, while a turnpike will last indefinitely with basic maintenance. The far shorter lifespan of the

puncheon would create future intrusions into the area to replace, and render the project economically unfeasible.

6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.

This project will not create any permanent impact outside the existing trail corridor. With hikers staying on the new trail surface, areas impacted by hikers going around wet ground should revegetate naturally.

Impervious Surfaces and Wetland Buffer Enhancement Plan / Living Shoreline Strategy

Most municipalities consider trails to be impervious surfaces, as they already lack vegetation, and soils compacted by heavy use function as impervious surfaces in many ways. Since our project stays entirely within the existing trail, it would not increase impervious surfaces within the buffer.

Moreover, through the incorporation of well-draining layers of crushed stone in the turnpike, as well as ditches that will direct runoff, the turnpike should overall improve drainage in the buffer compared to the existing trail. When combined with the project protecting vegetation and allowing natural re-vegetation of areas impacted by hikers widening the trail, we believe the project's overall benefits to the wetland buffer offset any "new" impervious surfaces from the creation of the turnpike.

For the same reason that we are not creating new impacts on the tidal wetland buffer, we determined we should not need a living shoreline strategy, in consultation with Kate Homet from the planning department, during a visit to the site.

Findings of Fact | Wetland Conditional Use Permit

City of Portsmouth Planning Board

Date: May 21, 2026

Property Address: 400 Little Harbor Road

Application #: LU-26-26

Decision: Approve Deny Approve with Conditions

Findings of Fact:

Per RSA 676:3, I: The local land use board shall issue a final written decision which either approves or disapproves an application for a local permit and make a copy of the decision available to the applicant. **The decision shall include specific written findings of fact that support the decision. Failure of the board to make specific written findings of fact supporting a disapproval shall be grounds for automatic reversal and remand by the superior court upon appeal, in accordance with the time periods set forth in RSA 677:5 or RSA 677:15, unless the court determines that there are other factors warranting the disapproval.** If the application is not approved, the board shall provide the applicant with written reasons for the disapproval. If the application is approved with conditions, the board shall include in the written decision a detailed description of all conditions necessary to obtain final approval.

In order to grant Wetland Conditional Use permit approval the Planning Board shall find the application satisfies criteria set forth in the Section 10.1017.50 (Criteria for Approval) of the Zoning Ordinance.

	Zoning Ordinance Sector 10.1017.50 Criteria for Approval	Finding (Meets Criteria for Approval)	Supporting Information
1	<i>1. The land is reasonably suited to the use activity or alteration.</i>	Meets	The existing trail pre-dates the Forest Society's ownership of the property, with year-round non-motorized recreational uses including walking, snowshoeing, and skiing being popular and appropriate uses of this area. The wear currently seen on the trail is typical for a natural surface trail in this type of location and needs to be addressed to stop further resource damage.
2	<i>2. There is no alternative location outside the wetland buffer that is feasible and reasonable for the proposed use, activity or alteration.</i>	Meets	To continue providing access to the scenic views and points of interest that the current trail accesses and connects, the trail must remain inside the wetland buffer. If the section of trail with the planned turnpike were relocated outside the wetland buffer, it would require impacts to the wetland buffer in currently unimpacted areas so the relocated trail could reconnect with the existing trail. Given the nature of the surrounding terrain, any trail Page 4reroute would require being surfaced with a hardened fill material in a

	Zoning Ordinance Sector 10.1017.50 Criteria for Approval	Finding (Meets Criteria for Approval)	Supporting Information
			similar manner as the turnpike to avoid similar erosion and drainage problems in the long term. Relocating the trail would cause more significant ecological impacts within the wetland buffer than simply improving the trail in its existing location.
3	<i>3. There will be no adverse impact on the wetland functional values of the site or surrounding properties.</i>	Meets Does Not Meet	This project will not have any substantive adverse impacts on any wetland resources or their functional values on the property, or any other surrounding property. By creating a more erosion resistant and dry trail surface that hikers will stay on, the project will protect and enhance wetland functional values by stopping the widening of the trail and improving drainage compared to the existing trail.
4	<i>4. Alteration of the natural vegetative state or managed woodland will occur only to the extent necessary to achieve construction goals.</i>	Meets Does Not Meet	This project will create very little disturbance to any existing vegetation since the existing trail corridor is wide enough for the planned structure. In one narrower area, the trail corridor may need to be expanded by 1-2 feet temporarily to accommodate construction activities, and this area is outside the vegetated buffer strip zone. The vegetation that would be removed along this narrower section of trail is primarily state-recognized invasive species such as Glossy Buckthorn, European Honeysuckle, and Oriental Bittersweet. There are several larger trees with large roots exposed by erosion of the trail, these roots would be built over or around rather than removed, to reduce the likelihood of any impact to healthy trees.
5	<i>5. The proposal is the alternative with the least adverse impact to areas and environments under the jurisdiction of this section.</i>	Meets Does Not Meet	A trail re-route is more impactful to the wetland buffer for reasons described in criteria 2. Other alternatives would be a wooden puncheon boardwalk, which would involve the construction of a substantial structure with increased use of pressure-treated wood and still require construction activity within the same existing footprint. A puncheon boardwalk would be less accessible to different users and would do less to

	Zoning Ordinance Sector 10.1017.50 Criteria for Approval	Finding (Meets Criteria for Approval)	Supporting Information
			address existing drainage issues than a turnpike. Moreover, a puncheon boardwalk would need to be entirely replaced 20-30 years, while a turnpike will last indefinitely with basic maintenance. The far shorter lifespan of the Page 5 puncheon would create future intrusions into the area to replace and render the project economically unfeasible.
6	6. Any area within the vegetated buffer strip will be returned to a natural state to the extent feasible.	Meets Does Not Meet	This project will not create any permanent impact outside the existing trail corridor. With hikers staying on the new trail surface, areas impacted by hikers going around wet ground should revegetate naturally.
7	<u>Other Board Findings:</u>		



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March 25th, 2026

Samantha Collins, Chair, Conservation Commission

Rick Chellman, Chair, Planning Board

City of Portsmouth

1 Junkins Avenue

Portsmouth, NH, 03801

Project Narrative Update

Wetland Conditional Use Permit

Creek Farm – Little Harbor Loop Trail Turnpike

400 Little Harbor Rd, Portsmouth, NH

Tax Map 203, Lot 8

Chair Collins and Chair Chellman,

On behalf of the Society for the Protection of New Hampshire Forests (Forest Society), I would like to take this opportunity to provide some additional information and details regarding the wetlands conditional use permit application we have submitted for our trail improvement project at Creek Farm (400 Little Harbor Road). We appreciate the Conservation Commission taking time to review our application and provide feedback during the meeting on March 11th, 2026. The primary questions that were asked by the commission members included why we're seeking to construct a turnpike in this situation, additional design and maintenance details, accessibility considerations, and how this project fits within our larger trail and recreational plans for the property. The following narrative elaborates on the answers I gave to those questions during the March 11th meeting.

Additionally, Commission members requested additional information added to the site plan, that the delineation by reviewed and stamped by the wetland scientist who did the original delineation, copies of our filed State wetland permit, and photo examples of what a turnpike looks like. Please find those items attached, and more information in the following narrative.

Our decision to build a turnpike reflects the most appropriate and cost-effective solution to the primary maintenance problem at this site. Given that the periodically wet trail surface conditions arise from the long-term impacts of significant visitor use over time (compaction), and not due to this site having saturated wetland soils, a turnpike is the most suitable best management practice for this site. A puncheon design or boardwalk would provide no substantial benefits over turnpike construction, and given that pressure treated wood would be needed for long-term structural integrity, would introduce chemicals leached from pressure treated wood into the surrounding soil within the wetland buffer.

A turnpike will also improve drainage at the site in multiple ways that a puncheon would not. Installing the turnpike will break up existing soils that have been compacted by high foot traffic and restore more natural water infiltration. The turnpike itself is designed to facilitate effective drainage by incorporating a base layer of coarse drainage stone with geofabric for long term separation of layers, making the turnpike a functionally permeable surface – more so than existing compacted soils within the trail corridor. Finally, strategically incorporating ditches along portions of the turnpike with ancillary lead-off ditches will help relieve drainage issues in areas where compaction and erosion of the trail surface currently trap water within below-grade depressions. A puncheon, which would be built on top of the existing trail surface, would do little to restore more natural drainage to the site.

Furthermore, building puncheon style bridging would cost as much or more than a turnpike with a much shorter lifespan. A turnpike built with rock retainers is expected to have an indefinite lifespan, requiring simple yearly maintenance of drainage ditches (performed by trained volunteers), and periodic repairs to the turnpike. A puncheon built of pressure treated wood would likely need significant repairs at around 10-15 years (repair/replace decking) and need the entire structure replaced after about 25 years. Built with non pressure-treated wood, the replacement interval is even shorter, at around 10 years. As a conservation organization, we will continue to steward this trail in perpetuity, well beyond the lifespan of several puncheon bridges. We need to invest intentionally in our infrastructure improvements, and prefer not to implement a design that will cost us 4 times as much or more in the long term.

Joesph Noel, who delineated wetlands on the property in 2020 for the waterline replacement project, returned to the site on 3/20/2026 to confirm that the boundaries of the delineated wetlands have not changed, as well as flag the highest observable tide line of the tidal wetland next to the project site. Please see the attached signed and stamped letter describing his findings, as well as the revised site plan showing the location of the flagged tidal wetland boundary.

In terms of visitor accessibility, our project will substantially increase the year-round accessibility of the trail. While not designed to the specifications of an all-person accessible trail following U.S. Forest Service standards, the existing trail from the Forest Society Education Center out past the work area to the edge of Sagamore Creek is relatively accessible, with gentle grades and few obstacles along its length. Our project addresses the intermittently wet tread surface, which is the most significant obstacle to access along this section of the trail, along with several areas with roots exposed by trail erosion. Trail accessibility advocates, like Enock

Glidden of Outdoor Access Solutions, emphasize that modest changes and conscious decisions in trail design, construction or maintenance can considerably improve the accessibility of a trail for many users even where other factors (terrain, cost, etc.) prohibit building a fully accessible all persons trail. Different people living with a range of mobility disabilities are able to navigate different types of obstacles or may have access to different sorts of technological aids. Those factors mean that even incremental improvements to accessibility can still be beneficial to many people with mobility disabilities and, given that this section of trail has fewer barriers to access than many other trails, improvements to accessibility in this location go a long way.

Overall, this project substantially supports our goals of increasing public engagement on the property and providing a high-quality recreational experience for visitors. Maintaining and improving the existing Little Harbor Loop Trail is our primary trail management objective and, at this time, we do not have plans to create additional trails or relocate existing ones. Opportunities may exist in the future to further enhance accessibility along this trail system, though we currently do not have any immediate plans beyond ongoing maintenance and installing the new trail turnpike. The Forest Society has been actively working to increase public engagement at Creek Farm, including better utilizing our existing trails and increasing programming based at our onsite Education Center. In 2023, we built a new public restroom facility for visitors outside of our Education Center. Last year we also added staff to support our engagement goals, hiring a new Southeast Region Program Manager to help expand educational programming and public engagement at Creek Farm, which this year will included a series of public and private guided walks (including partnering with the Portsmouth Senior Activity Center) among other new programming. We are also continuing existing programming such as our partnerships with the Gundalow Company River Rats summer camp and the Piscataqua Youth Sailing Association. With an ever-increasing program presence at Creek Farm, upgrading this section of the trail significantly supports our programs and is necessary to protect the long-term integrity of the trail.

As the Conservation Commission continues to review our application, I welcome you contact me via email (dsummers@forestsociety.org) with any additional questions you may have. I look forward to meeting with commission members for the site walk we have scheduled for 4/1/2026 and hope it will be a good opportunity to further explain the design details, add context, and discuss other considerations we're incorporating into our project.

Sincerely,
Dylan Summers






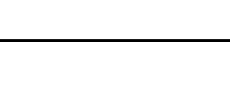




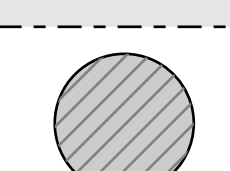


Proposed Trail Turnpike Little Harbor Loop Trail Creek Farm

City of Portsmouth
Wetlands Conditional Use Permit Site Plan

400 Little Harbor Road, Portsmouth, NH
Tax Map 203, Lot 08

Date Submitted: 2/20/2026
Revision: 3/25/2026, 4/28/2026

Legend

-  Flagged Tidal Wetland Boundary
-  Wetlands
-  25 ft Tidal Wetland Buffer
-  40 ft Vegetated Buffer Strip (No Cut)
-  100 ft Tidal Wetland Buffer
-  100 ft Freshwater Wetland Buffer
-  Little Harbor Loop Trail
-  Turnpike to be constructed
-  Erosion Control (Silt Socks or Silt Fence)
-  Downhill side ditch and lead-off ditches
-  Access Road
-  Material Stockpile
-  Shrub to be trimmed back
-  Tree near project area
-  2 foot Contour Interval
-  10 foot Index Contour Interval

Scale:
(22"x34") 1 inch = 15 feet (1:180)

Wetland Delineation Note:

The wetland boundary depicted on this plan was delineated/flagged by Joseph W. Noel, NH Certified Wetland Scientist #086 in 2019 and again on March 19, 2026 (only the portion where the trail improvements are planned was reflagged/reviewed). Some of the flags were survey located by Knight Hill Land Surveying Services, Inc. in 2019. The eastern end of the flagging does not appear to have been survey-located in 2019 but follows the same contour line as the survey-located portion. The delineation was conducted in accordance with the U.S. Army Corps of Engineers document Corps of Engineers Wetlands Delineation Manual, (1987) along with the required Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, (Version 2, January 2012) at the federal level and per NH Code of Administrative Rules Env-Wt 602.23 at the state level. See signed and stamped report dated 3/21/2026 for more information

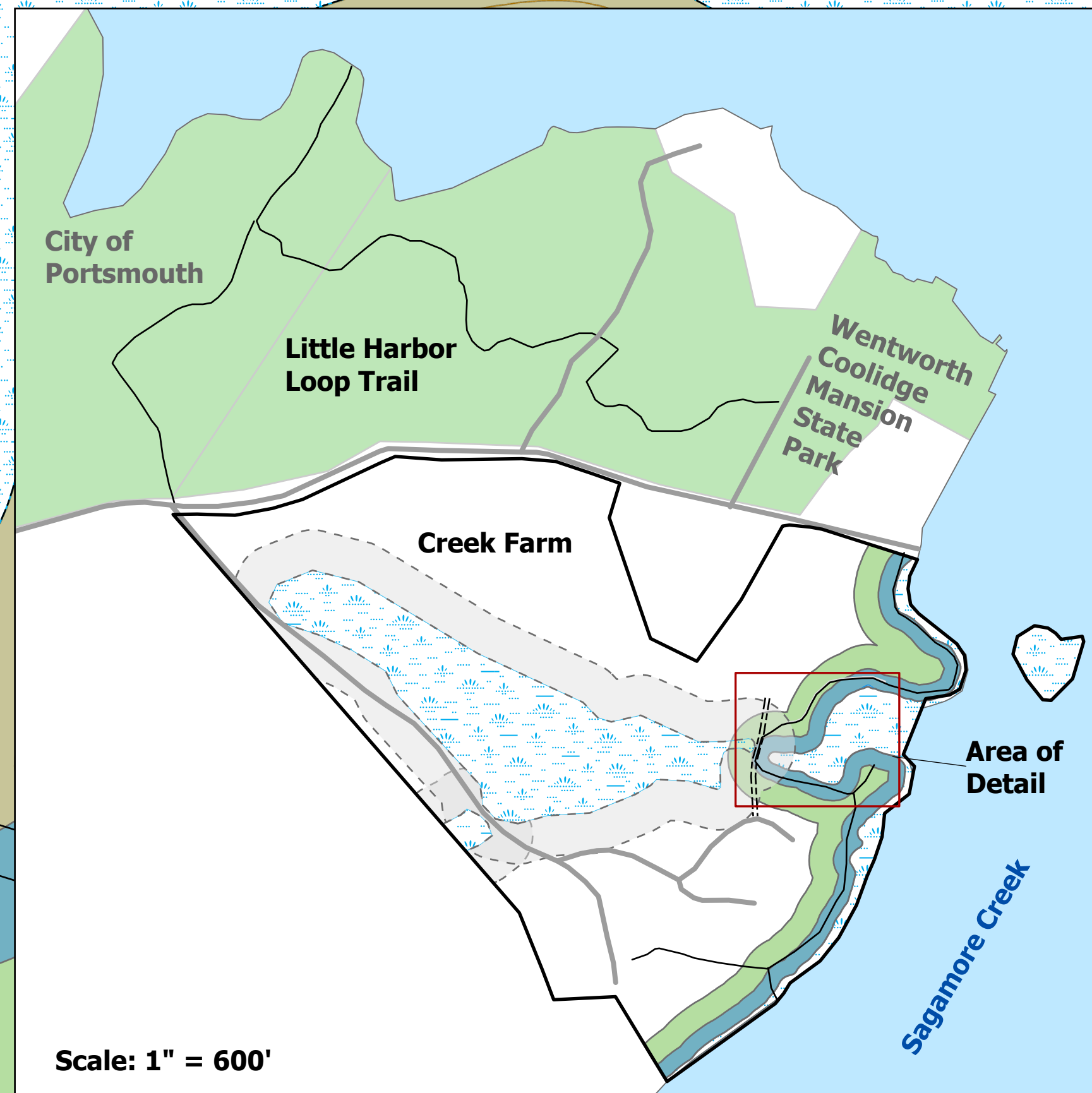
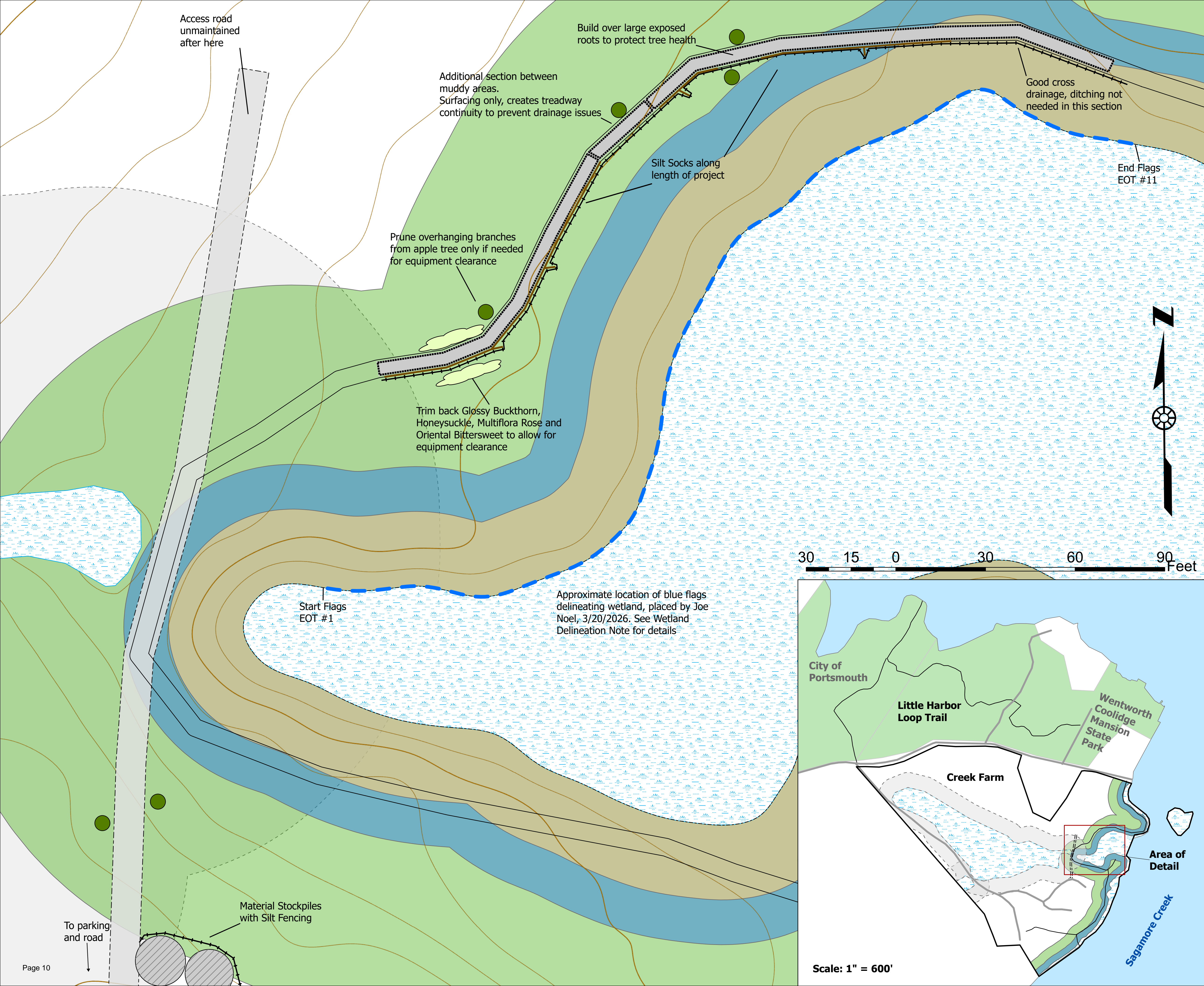
Prepared By:

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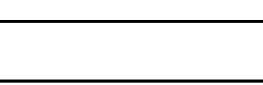

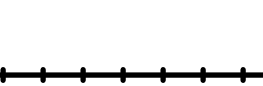






SOCIETY FOR THE
PROTECTION OF
NEW HAMPSHIRE
FORESTS



**Proposed Trail Turnpike
Little Harbor Loop Trail
Creek Farm**
City of Portsmouth
Wetlands Conditional Use Permit Site Plan
400 Little Harbor Road, Portsmouth, NH
Tax Map 203, Lot 08

Date Submitted: 2/20/2026
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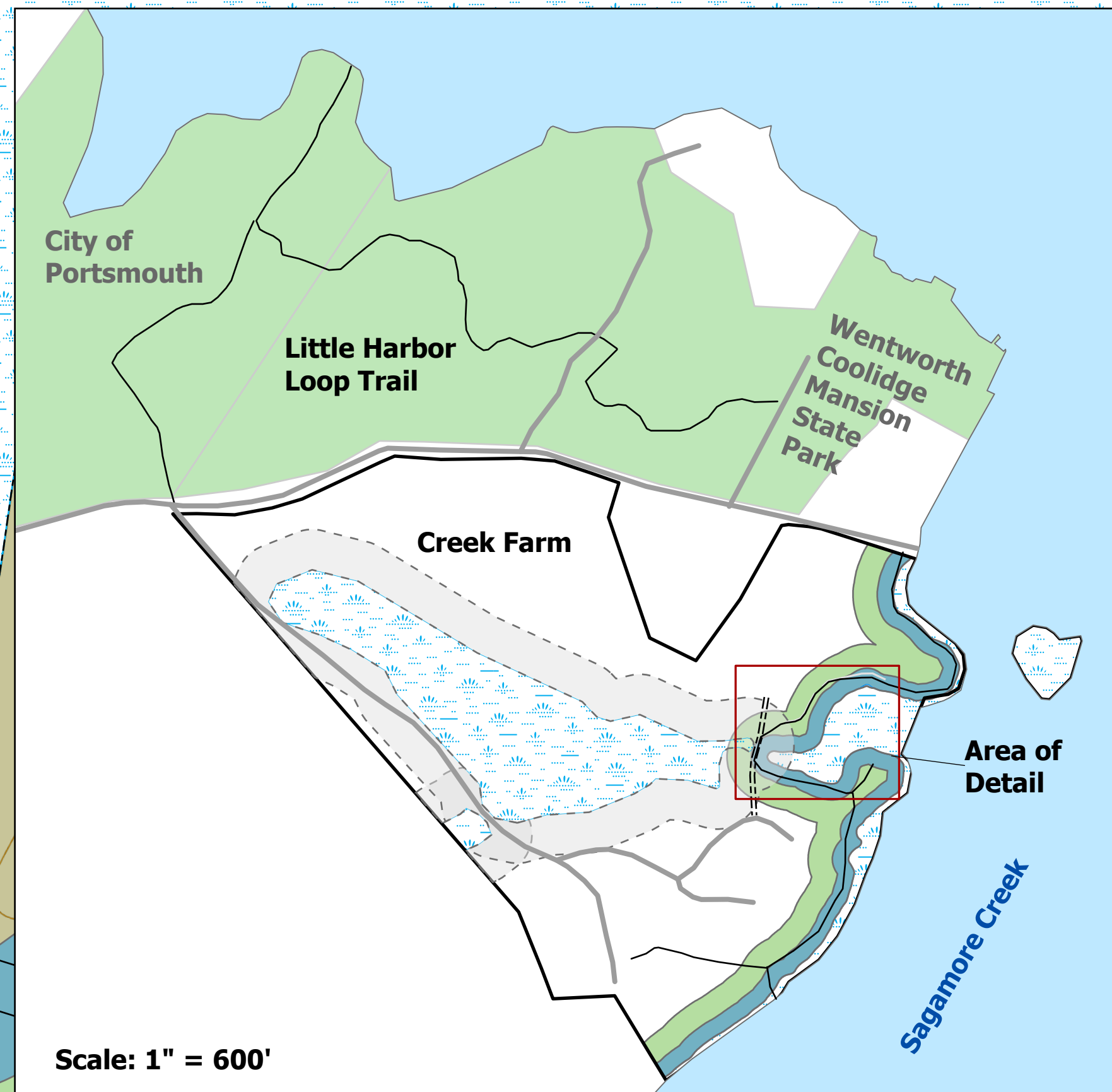
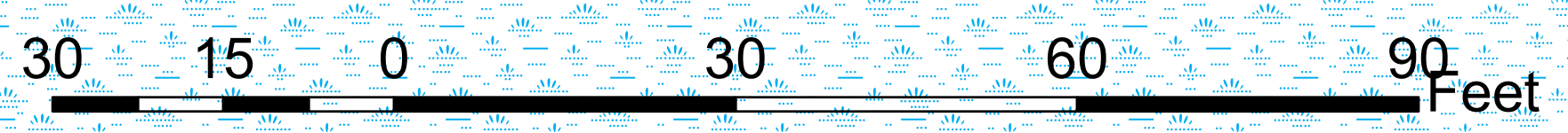
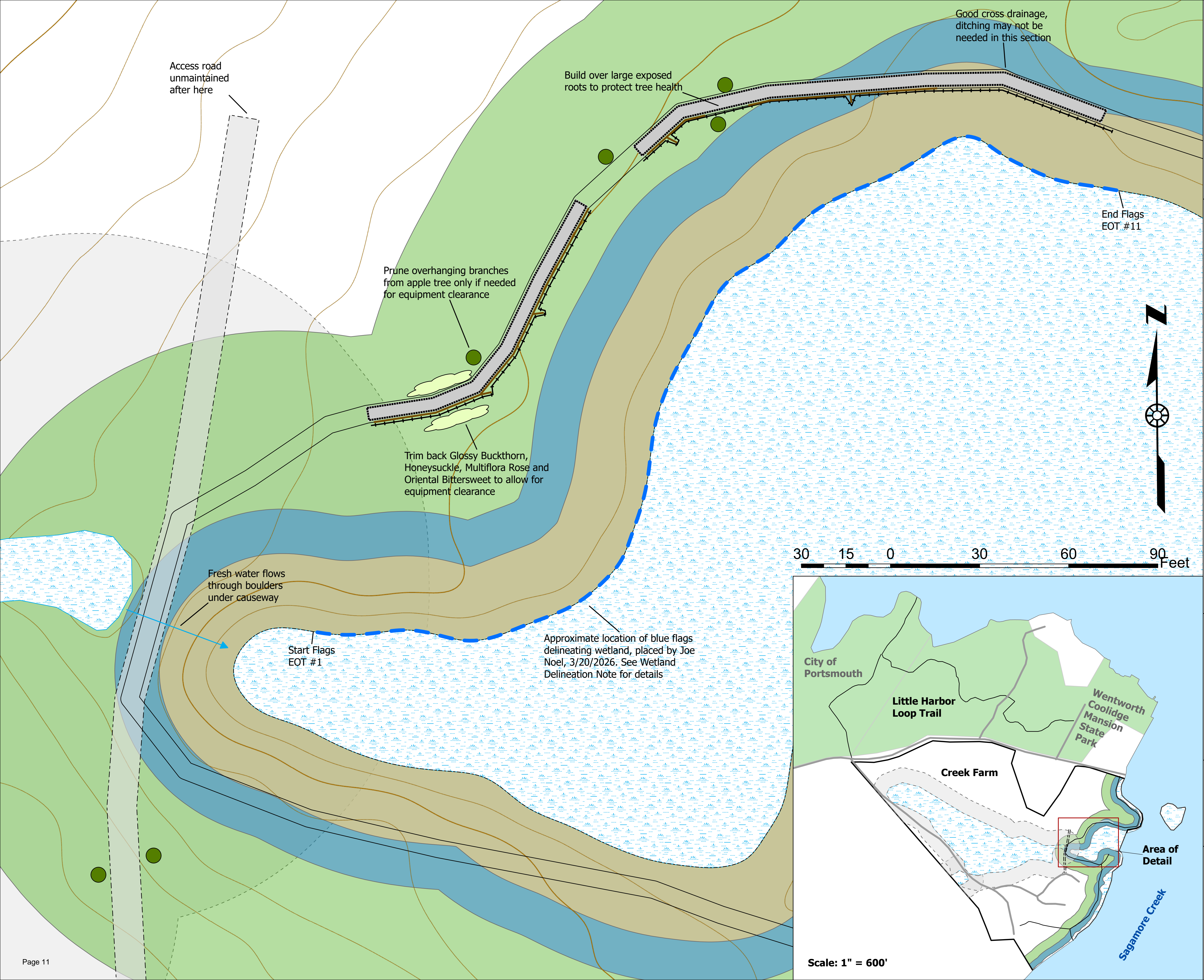
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**SOCIETY FOR THE
PROTECTION OF
NEW HAMPSHIRE
FORESTS**



Scale: 1" = 600'

Project Area Photo Exhibit 1



Taken from eastern end
of west section of
proposed turnpike,
looking west.
Visible impact on the
right side of the photo
from hikers
circumventing wet trail



Project Area Photo Exhibit 2

Taken from the middle of the eastern section of proposed turnpike, looking west
Visible impact on right side of photo of hikers avoiding wet trail

TYPE 2 - STANDARD TURNPIKE WITH FOUNDATION

TYPICAL ID	GEOTEXTILE			RETAINER*		DITCH					FOUNDATION**	COMMENTS
	TYPE	TOP	BTM	TYPE	TYPE	DIMENSIONS (INCHES)				TYPE		
						LT	RT	D	E		F	
TPF-1	G			R							FD	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03
 **FOR FOUNDATIONS SEE SECTION STD_918

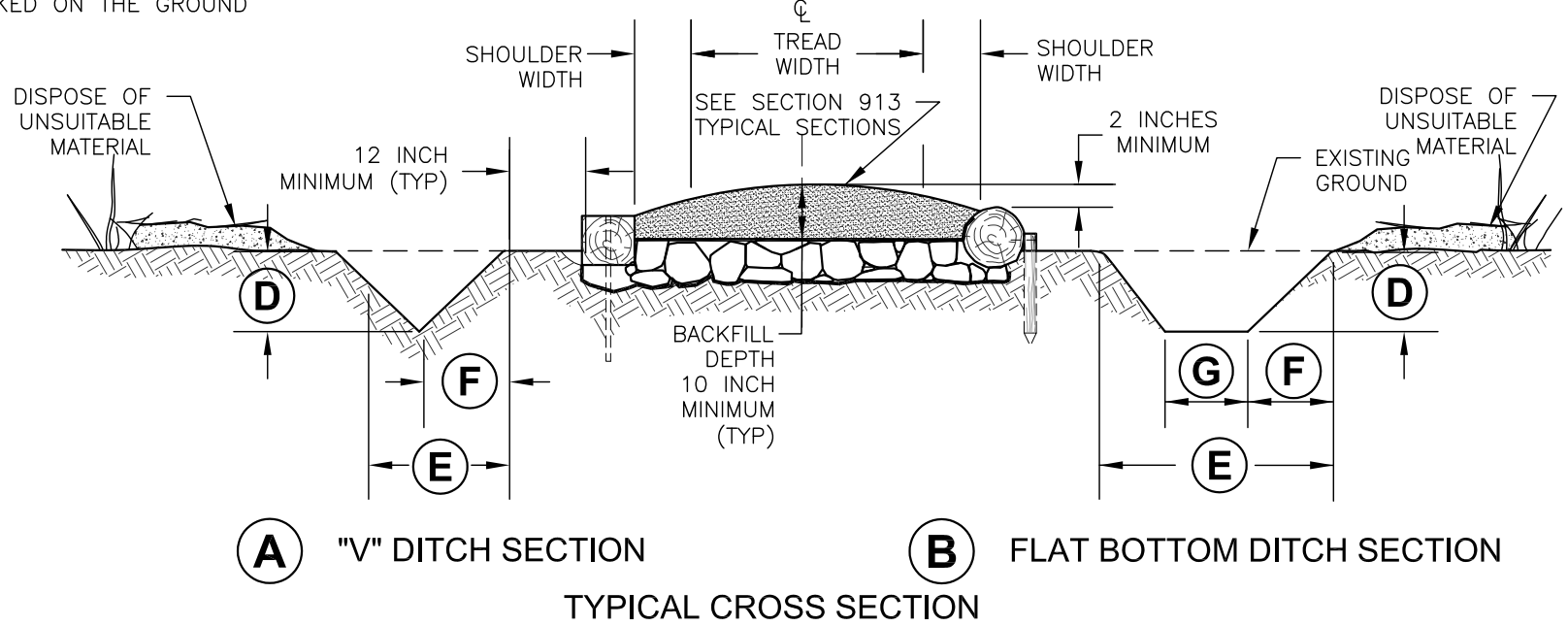
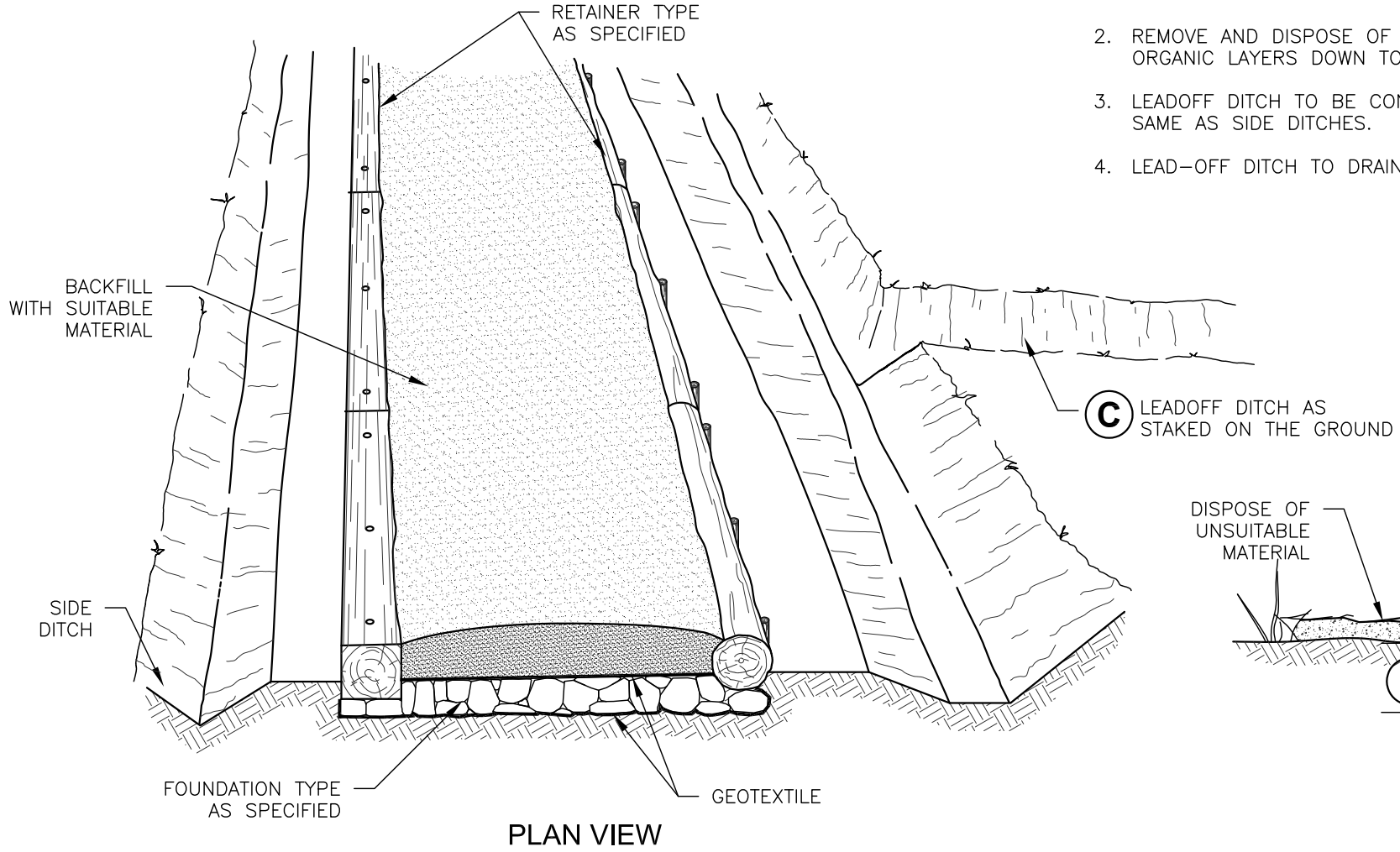
- NOTES:
1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 3. LEADOFF DITCH TO BE CONSTRUCTED THE SAME AS SIDE DITCHES.
 4. LEAD-OFF DITCH TO DRAIN TO DAYLIGHT.

GEOTEXTILE TYPE

TYPE	MATERIAL	COMMENTS
G1	NON-WOVEN	
G2	WOVEN	
G3		

IN-FILL MATERIAL TYPE

TYPE	MATERIAL	ROCK SIZE	GRADATION %	COMMENTS
FD1	AGGREGATE	1 INCH MINUS		
FD2	COARSE ROCK	4 TO 6 INCH		
FD3	HEAVY ROCK	8 INCH +		
FD4				



Example of Turnpike without sides retained



JOSEPH W. NOEL
P.O. BOX 174
SOUTH BERWICK, MAINE 03908
(207) 384-5587

CERTIFIED SOIL SCIENTIST * WETLAND SCIENTIST * LICENSED SITE EVALUATOR

March 21, 2026

Mr. Dylan Summers
Stewardship Projects Manager
Society for the Protection of New Hampshire Forests
54 Portsmouth Street
Concord, New Hampshire 03301

RE: 400 Little Harbor Road, Portsmouth, New Hampshire, JWN #95-445

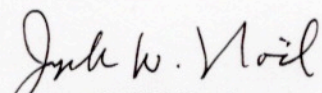
Dear Dylan:

It was a pleasure meeting you on March 19, 2026 at the above-referenced site (known as Creek Farm). You showed me the approximate limits of where the planned Little Harbour Loop trail improvements will occur. These improvements are near the adjacent coastal wetland system (i.e., tidal area). The scope of work only included this limited area where the trail system is being upgraded.

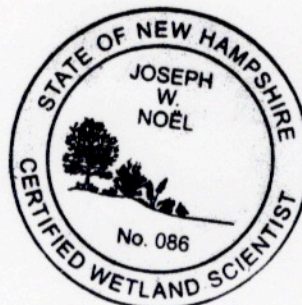
A second visit was made on March 20, 2026 and blue flagging (EOT1 – EOT11) was placed along the highest observable tide line (HOTL). The delineation was done in accordance with NH Code of Administrative Rules Env-Wt 602.23. This boundary was previously flagged by the undersigned on December 13, 2019 using blue flagging and at least a portion of this boundary was located by Knight Hill Land Surveying Services, Inc. The eastern end of the 2026 flagging (i.e., last few flags) may not have been survey-located in 2019 but do follow the same contour line). The approximate location of the EOT1 – EOT11 have been added to the sketch map that you provided for planning purposes. Four of the original 2019 flags (i.e. remaining knots) were observed during the 2026 fieldwork. It appears from the on-site that there are no detectable changes to the wetland boundary. Refer to that attached photo that shows one of the remaining blue flags on a honeysuckle shrub (*Lonicera sp.*). Also noted nearby is a patch of marsh elder (*Iva frutescens*). This shrub is also known as Jesuit's-Bark or High-Tide Bush (refer to attached photo) and its state status is Threatened. No direct impacts will occur where this patch of shrubs is located.

Please feel free to call if you have any questions or need additional information.

Sincerely,


Joseph W. Noel

NH Certified Wetland Scientist #086



PHOTOS

400 Little Harbor Road – Portsmouth, New Hampshire

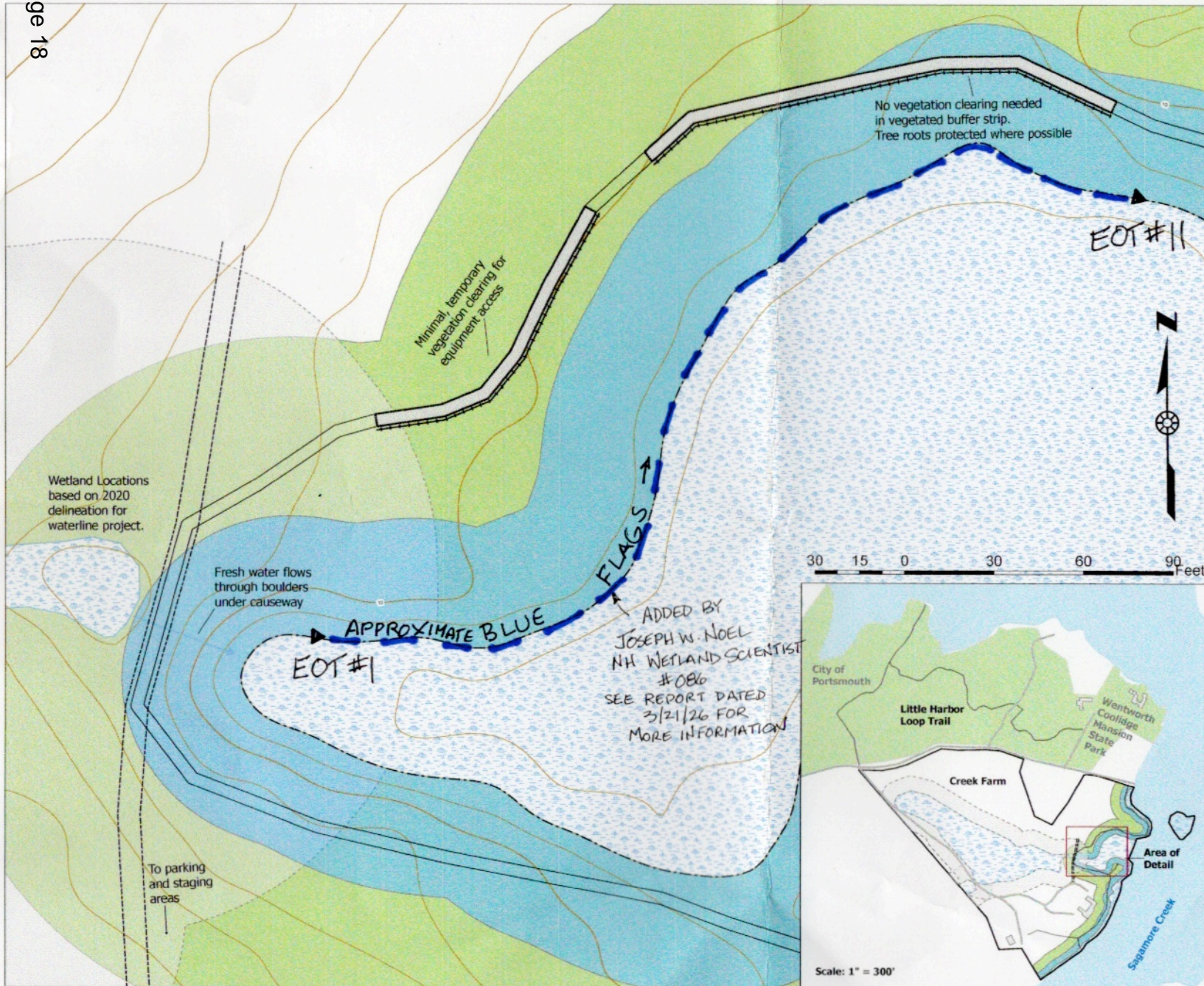
(Photos taken by Joseph W. Noel on March 20, 2026)



Remnant of blue flagging from the 2019 delineation



Photo of a patch of marsh elder (*Iva frutescens*)



Proposed Trail Turnpike Little Harbor Loop Trail Creek Farm

400 Little Harbor Road
Portsmouth, NH
Tax Map 203, Lot 08

City of Portsmouth Wetlands Conditional Use Permit Site Plan

Date Submitted: 2/20/2026

Legend

- Highest Observable Tide
- Wetlands
- 100 ft Tidal Wetland Buffer
- 40 ft Vegetated Buffer Strip
- 100 ft Freshwater Wetland Buffer
- Little Harbor Loop Trail
- Turnpike to be constructed
- Erosion Control
- Access Road
- 2 foot Contour Interval
- 10 foot Index Contour Interval

Scale:
(22" x 34") - 1" = 15'
(11" x 17") - 1" = 30'

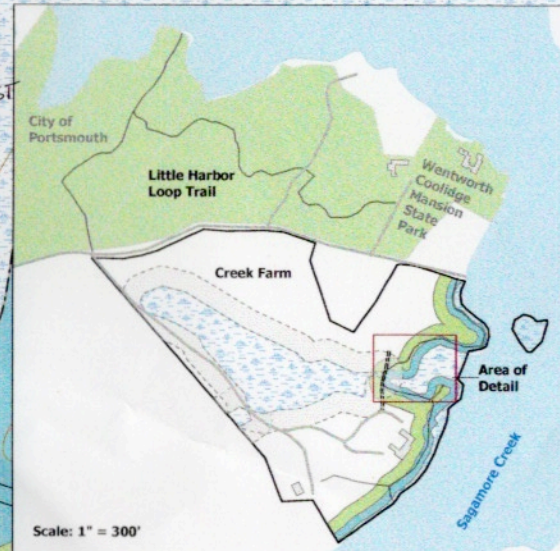
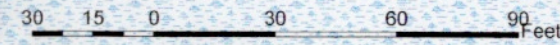
Prepared By:
Dylan Summers
Stewardship Project Manager
Society for the Protection of New Hampshire
Forests
dsommers@forestsociety.org
(603) 224-9945

Owner/Applicant:
Society for the
Protection of New
Hampshire Forests

54 Portsmouth St.
Concord, NH, 03301

(603) 224-9945

www.forestsociety.org



Scale: 1" = 300'



**WETLAND DELINEATION
&
FUNCTIONAL ASSESSMENT REPORT**

FOR

**CREEK FARM
400 LITTLE HARBOR ROAD
PORTSMOUTH, NEW HAMPSHIRE**

PREPARED FOR:

**ALTUS ENGINEERING, INC.
133 COURT STREET
PORTSMOUTH, NEW HAMPSHIRE 03801**

PREPARED BY:

**JOSEPH W. NOEL
P.O. BOX 174
SOUTH BERWICK, MAINE 03908**

**JWN# 95-445
MARCH 23, 2020**

JOSEPH W. NOEL
P.O. BOX 174
SOUTH BERWICK, MAINE 03908
(207) 384-5587

CERTIFIED SOIL SCIENTIST * WETLAND SCIENTIST * LICENSED SITE EVALUATOR

INTRODUCTION

This report replaces the Partial Wetland Delineation Report/Letter dated January 22, 2020. This report was prepared to aid in the review of the proposed municipal waterline replacement (930'+/- linear feet) for Creek Farm. The property is 30.20+/- acres and is located at 400 Little Harbor Road in Portsmouth, New Hampshire. No direct wetland impacts are planned but the proposed project will require encroaching into the 100-foot wetland buffer to relocate and replace a portion of the waterline serving the property. This Functional Assessment is for the freshwater wetland not the adjacent downstream tidal wetland associated with Sagamore Creek.

WETLAND DELINEATION

To determine the wetland boundary, the methodologies in the U.S. Army Corps of Engineers document *Corps of Engineers Wetlands Delineation Manual* (1987) along with the required *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, (Version 2.0) were used. Wetlands were identified based on soils, vegetation, and wetland hydrology. Except in special cases, all three factors (hydric soils, hydrophytic vegetation, and wetland hydrology) must be present for an area to classify as wetland. A predominance of wetland and upland vegetation was determined from visual estimates in the vegetative layers (herbaceous, shrub, sapling, and tree layers). Plant species indicator status was based on the U.S. Army Corps of Engineers publication *National Wetland Plant List* (2016).

Shallow soil observations were made using a hand auger to assess the soil morphological features and to examine for wetland hydrology. Hydric soil determinations were conducted in accordance with the United States Department of Agriculture, Natural Resources Conservation Service document *Field Indicators of Hydric Soils in the United States, Version 8.1* (2017) along with the manual *Field Indicators for Identifying Hydric Soils in New England* (Version 4, April 2019).

The freshwater wetland boundary in the vicinity of the proposed waterline replacement/relocation was field delineated with sequentially numbered pink and black striped flagging on December 13, 2019. Flagged sequence A1 thru A8 delineates a portion of the freshwater wetland southwest of the former "Carriage House" now unoccupied and used for storage (not part of the wetland assessment area). Flagged sequences B1 thru B20 delineate a portion of the freshwater wetland north of Creek Farm and west of a Sagamore Creek tidal inlet (wetland assessment wetland). The freshwater and tidal wetlands are separated by a culverted trail (culvert type unknown - may be an old stone culvert or simply stone/boulder pile serving as a drainageway). The tidal boundary or HOTL was flagged with blue flagging on April 24, 2019 and extended on December 13, 2019. These flags were located by Knight Hill Land Surveying Services, Inc. and placed on the project plans.

FUNCTIONAL ASSESSMENT

The majority of the freshwater wetland being assessed is nearly level to gently sloping and dominated by a scrub-shrub plant community with forested edges and pockets of emergent vegetation. The National Wetland Inventory (NWI) database classifies the wetland as PFO1C (palustrine, forested, broad-leaved deciduous, seasonally flooded), PSS1C (palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded), and PEM1C (palustrine, emergent, persistent, seasonally flooded). The soils are poorly drained and fine textured. Project plans show no direct wetland impacts will occur. No formal vernal pool survey was conducted by the undersigned; however, the delineated wetlands near the proposed project did not appear to have the physical characteristics of a vernal pool. Refer to attached photos of the wetland systems and the trail where the waterline will be crossing.

The parcel contains an old farm/estate that contains the main house and the Creek Farm Cottage that was originally built in the 1800s. In ~1997 a conservation easement was established and in 2000 the Society For the Protection Of Forests acquired the property as a conservation area. Currently the land is being used for hiking trails, outdoor education, tree farm, bird sanctuary and wildlife refuge. The freshwater wetland drains down to Sagamore Creek through a constricted outlet (intermittent stream section and wetland swale with a portion that was dug out a long time ago to improve drainage out of the freshwater wetland system.

METHODOLOGY

Provided by Altus Engineering, Inc. for the wetland assessment was a plan with the existing condition and where the proposed waterline is being replaced/rerouted. Also reviewed by the undersigned were the following resource maps: NH Wetland Mapper map, NRCS soil survey, FEMA map, and the NWI map. The fieldwork portion of the wetland assessment was conducted on March 1, 2020 using *The Highway Methodology Workbook Supplement: Wetland Functions and Values, A Descriptive Approach* (US Army Corps of Engineers, New England Division, 1999). One completed Wetland Function-Value Evaluation Form has been included (refer to Attachments for details). There is one identified rare species or exemplary community documented on the site by the New Hampshire Natural Heritage Bureau (NHB). Marsh elder/jesuit's-bark (*Iva frutescens*) is documented but is not in the wetland being assessed. A survey was conducted by the undersigned in close proximity to the project and two additional small communities were noted on the upper banks of the downstream tidal system (located ~70' or more from the waterline project). Attached are plant and wildlife lists of the subject development area (not detailed lists of the entire property). Observations were also limited due to winter conditions. The FEMA map verified that the wetland is not within the 100 year floodplain. There are no downstream public or private wells (municipal water on-site). The USGS shows a blue line associated with the subject wetland, however, this stream appears to be dug out in some areas and more intermittent in nature in the freshwater wetland from the limited site observations (refer to stream photo in Attachment section).

The Highway Methodology utilizes list of considerations/qualifiers to assist in determining the presence and evaluating the importance of the following functions and values. The description

of each function and value comes directly from *The Highway Methodology Workbook Supplement* (1999).

- 1) Groundwater Recharge/Discharge – This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area.
- 2) Floodflow Alteration – This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters.
- 3) Fish and Shellfish Habitat (Freshwater) – This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat
- 4) Sediment/Toxicant/Pathogen Retention – This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.
- 5) Nutrient Removal/Retention/Transformation – This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels.
- 6) Production Export – This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.
- 7) Sediment/Shoreline Stabilization – This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.
- 8) Wildlife Habitat – This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge.
- 9) Recreation – This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other passive recreational activities.
- 10) Education/Scientific Value – This value considers the suitability of the wetland as a site for an "outdoor classroom" or a location for scientific study or research.
- 11) Uniqueness/Heritage – This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values.
- 12) Visual Quality/Aesthetics – This value considers the visual and aesthetic quality or usefulness of the wetland.
- 13) Endangered Species Habitat – This value considers the suitability of the wetland to support threatened or endangered species.

FUNCTION AND VALUES DISCUSSION

The wetlands will not be directly impacted by the proposed waterline. There is one principle function in the wetland system (i.e., Wildlife Habitat). This wetland is favorable for birds (migrating, nesting, etc.) along with a number of smaller mammals. Deer use was also noted in the wetland. Two other principle values were noted but had more to do with the area adjacent to or surrounding the freshwater wetland (i.e., Recreation and Education/Scientific Value). In addition, the wetland system does provide the following functions and values: Groundwater Recharge/Discharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Production Export, Uniqueness/Heritage, and Visual Quality/Aesthetics. The wetland does not

provide the following functions and values: Fish and Shellfish Habitat, Sediment/Shoreline Stabilization, or Endangered Species Habitat. The adjacent tidal wetland does provide these values and should be considered a highly valuable wetland system. No Historic Preservation database review was provided. This should be conducted due to the historic nature of the site (first settled in 1640).

The wetland buffer to be impacted is almost all along the existing trail system and through an overgrown old field that is dominated by invasive species. The water line is planned in uplands represented by invasive plant species such as: asian bittersweet (*Celastrus orbiculatus*), japanese-knotweed (*Reynoutria japonica*), european buckthorn (*Rhamnus cathartica*), european barberry (*Berberis vulgaris*), japanese barberry (*Berberis thunbergii*), glossy false buckthorn (*Frangula alnus*), rambler rose (*Rosa multiflora*), honeysuckles (*Lonicera spp.*), norway maple (*Acer platanoides*), and black locust (*Robinia pseudoacacia*). These invasive plants are listed in the *New Hampshire Guide to Upland Invasive Species* (2011) or the NH Invasive Plant Species Watch List (April 24, 2019). In addition to the aforementioned invasive plants: eastern white pine (*Pinus strobus*), northern red oak (*Quercus rubra*), quaking aspen (*Populus tremuloides*), apple (*Malus sp.*), stag-horn sumac (*Rhus typhina*), sensitive fern (*Onoclea sensibilis*), and grape (*Vitis sp.*) were also noted. The water line will pass through an existing narrow stone culverted trail where the freshwater "B" flagged series drains to the tidal creek (i.e., wetlands separated by trail). The downslope side of the trail where the waterline is crossing is essentially boulders. The upslope side of the trail is the freshwater wetland. Plant species noted on the upslope side of the trail and in close proximity to the trail in the freshwater wetland included: rambler rose, sedges, smooth arrow-wood, sedges, Japanese barberry, asian bittersweet, and buckthorn. Observations were limited due the winter conditions and area just upslope was still iced over. The trail where the waterline will be crossing between the two wetland systems is the natural constricted point of the freshwater wetland system and being adjacent to the tidal system, this crossing was most likely established here back in the late 1800's.

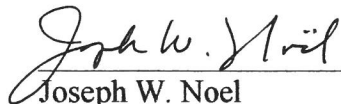
The upland soils are shallow to moderately deep to bedrock (i.e., ranging from 10 to 40 inches deep) with textures ranging from fine sandy loam to loamy sand. The hydric soils within the freshwater wetlands are primarily fine textured (i.e., very fine sandy loam or finer).

By using the existing gravel path to cross between the wetland system (where existing line is) and rerouting the balance of the waterline through upland that are further away from the tidal system than the existing waterline, there will be no permanent impacts to the wetland buffer or the wetland systems from the new waterline. This will also be further away from the marsh elder communities.

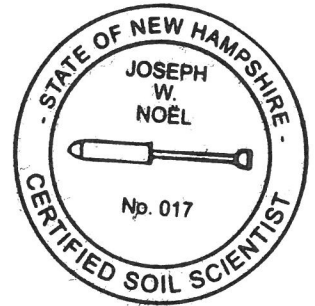
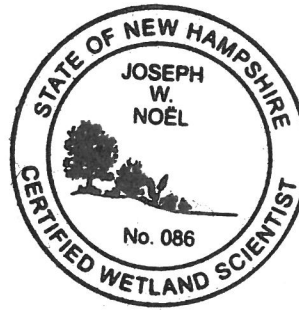
Selective thinning of the vegetation will also occur within the 100-foot buffer. By removing the invasive species, etc. a more natural plant community/buffer could regenerate here. Proper removal of the invasive species should be conducted to prevent further spread. Contractors should be familiar with proper removal of these plants (e.g., *New Hampshire Guide to Upland Invasive Species* publication is one guide that provides proper removal of invasive species). Soil disturbance will be limited to the waterline corridor, this will not impact the wetlands function and values. This should enhance the wetland buffer.

Wildlife Habitat is the function that will be temporarily impacted by the proposed development. White-tailed deer rubs were noted but wildlife observations were very limited due to the time of

year and several groups of people walking their leashed dogs on the trail system. The impacts to the wildlife will be temporary during the construction of the waterline. The wildlife will return after the construction is completed. Kim Tuttle of the NHB also noted concerns about a nearby bat hibernacula and voluntary recommendations provided Ms. Tuttle in her email dated March 6, 2020 should be followed. If Best Management Practices are strictly adhered to along with the other design features to limit impacts (e.g., SiltSoxx will be installed around the project limits), there should be no secondary impacts to the wetlands or direct impacts to the wetland buffers. This will also be the case with the highly valuable tidal wetland that is downstream. Refer to Altus Engineering, Inc. plans for details on erosion control, etc. Please note, the NH Wetland Functional Assessment worksheet was referred to but is not part of this report. All pertinent information discussed in the worksheet is included in the narrative report or the attached Corps Wetland Function-Value Form.



Joseph W. Noel
New Hampshire Certified Soil Scientist #017
New Hampshire Certified Wetland Scientist #086



ATTACHMENTS

PHOTOS

Creek Farm - 400 Little Harbor Road - Portsmouth, New Hampshire

(Photos taken by Joseph W. Noel on March 1, 2020)



Walkway Where Waterline Crosses Between Wetlands



From The Walkway Looking At The Freshwater Wetland

PHOTOS

Creek Farm – 400 Little Harbor Road – Portsmouth, New Hampshire
(Photos taken by Joseph W. Noel on March 1, 2020)



From Walkway Looking At the Tidal Wetland



Overview Of Wetland Assessment Wetland (Forested Example)

PHOTOS

Creek Farm – 400 Little Harbor Road – Portsmouth, New Hampshire

(Photos taken by Joseph W. Noel on March 1, 2020)



Overview Of Wetland Assessment Wetland (Scrub-Shrub Example)



Overview Of Wetland Assessment Wetland (Emergent Example)

PHOTOS

Creek Farm – 400 Little Harbor Road – Portsmouth, New Hampshire

(Photos taken by Joseph W. Noel on March 1, 2020)



Intermittent Stream Segment Leaving Wetland System Upslope From Walkway



Jesuit's-bark (*Iva frutescens*) – Also Known As Marsh Elder Or High-tide Bush Community

Wetland Function-Value Evaluation Form (freshwater wetland only – not downstream tidal wetland)

Total area of wetland 5.2+/- Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No
 Adjacent land use Residential Homes Distance to nearest roadway or other development <100 feet
 Dominant wetland system present PSS1 Contiguous undeveloped buffer zone present No
 Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____
 How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list) yes attached
 PFO Swale

Wetland I.D. Unnamed freshwater wetland
 Latitude 43.059 Longitude 70.741
 Prepared by: JWN NHCWS #086 Date 3/23/2020
 Wetland Impacts: amount subject to change (no direct impacts)
 Type N/A Amount N/A
 Evaluation based on: Office – Yes Field – Yes
 Corps manual wetland delineation
 Completed? Yes

Function/Value	Suitability		Rationale (Reference #)	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	X		6,(7), 9, 10	No	Fine-textured soils limit this function, discharge via intermittent stream/wetland swale only near outlet may contribute to limited groundwater recharge. Wetlands near project (waterline crossing) drain to Sagamore Creek Tidal wetland.
Floodflow Alteration	X		3, (6), (7), 9, 15 (18)	No	Subject wetland provides limited flood storage from surrounding uplands, Intermittent stream/wetland swale drains to Sagamore Creek via a bedrock natural constricted outlet. Limited floodplain storage near waterline
Fish and Shellfish Habitat (Freshwater)		X	1	No	This function does not appear to apply to the freshwater wetland system. Just downstream of the evaluation area is a special aquatic site. Freshwater wetland has negligible surface water.
Sediment/Toxicant Retention	X		4, 7, 8, 9, (10), 13, 14, 16	No	Wetland structure (basin) can trap sediment. Contains constricted outlet. Some dense vegetation. Limited opportunity exists to trap sediments from overland flow from adjacent parking areas.
Nutrient Removal	X		3, 7, 8, 9, 11, 12, 13, 14	No	Minor potential for nutrient uptake exist, lack of persistent deep open water, little dense vegetation except in limited areas
Production Export	X		1, 2, 4, 5, (7), 12	No	Seeds, fruits, berries, etc., are present intermittent stream provides mode of transportation
Sediment/Shoreline Stabilization		X	2, 7, (9), 12, 15	No	Intermittent stream/wetland swale outlets to Sagamore Creek. No erosive forces in freshwater wetland.
Wildlife Habitat	X		3, (4), 5, 7, 8, 11, (13),(15), 16, 17, 18, 19, (21)	Yes	Favorable for birds (migrating, nesting, insect source, etc.), small mammals, etc. Limited wildlife observations due to winter conditions. Adjacent forested uplands and tidal system increase this function.
Recreation	X		1, (4), 5, 7, 8, 10, 11, 12	Yes*	* = not in freshwater wetland itself but existing trail system provides opportunity for hiking, birdwatching, etc.. Access to available parking.
Educational/Scientific Value	X		(1), 3, (4), 5, 6, 8, 9, 10, 13, 15, 16	Yes*	* = not in freshwater wetland. Lacks unusual wetland plant community in freshwater wetland, parking is available, handicap accessible. Downstream tidal wetland has threathend plant. Trail system with some limited views of freshwater wetland.
Uniqueness/Heritage	X		4, 5, 7, 8, 9, 10, 12, (13), (15), 19, (20)	No	Freshwater wetland is not unique. Database search should be conducted for historic features – part of old farm estate dating back to 1887 & first settled in 1640. Downstream is man-made tidal pool.
Visual Quality/Aesthetics	X		1, 3, 4, 5, 7, 8, (9), 10	No	Freshwater wetland is not visually distinct – parking available – trail access provided - Sagamore Creek (adjacent is high quality)
Endangered Species Habitat		X	(1)	No	No trees will be cut for the proposed waterline. NHIB and NHFG reviewed proposed project – no expected impacts to sensitive wildlife or the Marsh Elder plant communities (noted during wetland assessment) A review should be conducted with the Federal Wildlife Service (IPAC) (not provided for the wetland assessment).
Ecological Integrity (Required For NH Permits)		X	N/A	No	Old farmland (not natural area), invasive plant species noted in the area, trail system/road in wetland buffer, parking areas, man-made tidal pool, ditch out just upstream from the walkway – alter the natural communities

Sagamore Creek tidal/marine system (very valuable wetland system) is downstream of the walkway (i.e., where waterline will cross). The tidal system is not part of this wetland assessment but pertinent comments will be included. The watershed is ~35 acres and the freshwater wetland being assessed is ~5.2 acres per NH Wetland Mapper.

Plant List

Alder-leaf buckthorn
Allegheny blackberry
American bittersweet
Apple
Asian bittersweet
Barberry
Black cherry
Black locust
Bluejoint
Bristly dewberry
Broad-leaf cat-tail
Burning bush
Common winterberry
Cottongrass bulrush
Eastern marsh fern
Eastern poison ivy
Eastern white pine
European barberry
European buckthorn
Fringed sedge
Glossy False Buckthorn
Grape
Honeysuckle
Horsetail
Japanese barberry
Japanese-knotweed
Jesuit's-bark
Lamp rush
Maleberry
New England American-aster
New York fern
Northern bayberry
Northern bracken fern
Northern red oak
Norway maple
Pointed broom sedge
Possumhaw
Purple loosestrife
Quaking aspen
Rambler rose
Red maple
Royal fern
Sedges
Sensitive fern

Rhamnus alnifolia
Rubus allegheniensis
Celastrus scandens
Malus sp.
Celastrus orbiculatus
Berberis sp.
Prunus serotina
Robinia pseudoacacia
Calamagrostis canadensis
Rubus hispidus
Typha latifolia
Euonymus alatus
Ilex verticillata
Scirpus cyperinus
Thelypteris palustris
Toxicodendron radicans
Pinus strobus
Berberis vulgaris
Rhamnus cathartica
Carex crinita
Frangula alnus
Vitis sp.
Lonicera spp.
Equisetum sp.
Berberis thunbergii
Reynoutria japonica
Iva frutescens
Juncus effusus
Lyonia ligustrina
Symphotrichum novae-angliae
Parathelypteris noveboracensis
Morella pensylvanica
Pteridium aquilinum
Quercus rubra
Acer platanoides
Carex scoparia
Viburnum nudum
Lythrum salicaria
Populus tremuloides
Rosa multiflora
Acer rubrum
Osmunda spectabilis
Carex spp.
Onoclea sensibilis

Shag-bark hickory
Silky dogwood
Smooth arrow-wood
Speckled alder
Stag-horn sumac
Steeplebush
White meadowsweet
Willowherb

Carya ovata
Cornus amomum
Viburnum recognitum
Alnus incana
Rhus typhina
Spiraea tomentosa
Spiraea alba
Epilobium sp.

Wildlife List

American crow	<i>Corvus brachyrhynchos</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Blue jay	<i>Cyanocitta cristata</i>
Cardinal	<i>Cardinalis cardinalis</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Eastern chipmunk	<i>Tamias striatus</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Nuthatch	<i>Sitta sp.</i>
White-tailed deer	<i>Odocoileus virginianus</i>

** A complete wildlife survey was not conducted. Observations from visual sightings, scat, and tracks.