



Memorandum

Date: Friday, February 28, 2020
To: Peter Britz, Environmental Planner
Org: Portsmouth Planning Department, 1 Junkins Avenue, Portsmouth, NH 03801
From: Jim Gove
Re: Banfield Road Project for Green and Company
Subject: Response to Mark West Review of January 28, 2020 and questions related to Wildlife corridors as related to the site

The review points out that the Nature Conservancy shows the site in question as part of a prioritized habitat block and wildlife corridor. The GES, Inc. reports have identified the presence of wildlife corridors on the site of which there are many both on and off the site as summarized below.

As noted by the review, GES, Inc. identified the access road to the site as potentially limiting wildlife movement along that specific corridor. What has not been recognized is that numerous wildlife corridors exist over the entire site and the lands beyond. GES, Inc. has attached a plan showing the site and the surrounding areas. The plan is named "Upland Wetland Habitat Map". The base map is an infrared aerial photo with the wetlands boundaries (outside of the site) being interpreted and the wetlands shown colored in green and the wildlife corridors have been shown as black arrows.

There are numerous wildlife corridors on and off the site. Wildlife movement is not confined to just the areas of the development, but are present around the site and in adjacent parcels. Most movement is along drainage ways, valleys, edges of wetlands, and along any streams. Wildlife also moves along man-made corridors, like railroad tracks and electric powerlines. Less movement is over the tops of hills, rock outcrops, and steep areas. The wildlife has many ways to move around the area, and move around the proposed development.

Of the numerous wildlife corridors shown, only two would be limited by the development.

- a. The first is at the wetland impact area along Banfield Road. In the West review, there was a concern that the proposed eco-passage was built with less height than recommended. The recommendation for the eco-passages is 2 feet high, with an opening of 2 feet wide. In redesigning this area, the eco-passages have been changed in the design, and are now proposed to have heights of 1.9 feet, 2.0 feet, and 2.2 feet. The openings all have a width of 5 feet which is 2.5 times larger than recommended, allowing for better wildlife passage. Where typically only one eco-passage is used, the project is proposing three eco-passages. The eco-

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passages now meet or exceed the recommended design. As discussed at the Conservation Commission meeting, these eco-passages are to help reptile and amphibian species to continue to move in the wetland. Also, the height of the access road across the wetlands is from 1.4 feet tall to 2.7 feet tall. This height of road will not be an impediment to deer, fox, coyote, raccoon, skunk, weasel, fisher, squirrel and chipmunk. There will continue to be wildlife movement through this corridor.

- b. The second is a valley between the two lobes of the development. The West review noted that the large retaining walls connecting the two development areas will permanently impact wildlife movement because the walls were up to 10 feet high and West recommended the elimination of the large retaining walls. In redesigning this area the retaining wall for the road connecting the two development areas is now reduced to 2 feet to 3.2 feet in height. This height will not be an impediment from the movement of mammals crossing along the corridor. As discussed above, deer, fox, coyote, skunk, raccoon, fisher, weasel, squirrel, or chipmunk will not find a 2-foot retaining wall an impediment to crossing through the valley between the two wetland areas. Further, the retaining wall is only on the north side of the proposed road, with the south side having no retaining wall.

These modifications clearly show that the Applicant has significantly minimized these impacts to these 2 travel corridors.

Another important point to note is that there has been discussion about the development area being the only upland on site, and that it is the only island of upland habitat in the area and is surrounded by wetlands. The Upland Wetland Habitat Map shows that this is in fact not the case. To the south, west and north of the development site are large areas of uplands. Going west from the development envelope is an uninterrupted continuous tract of upland habitat. To the south, after crossing a wetland, is another tract of upland. To the north, after crossing a wetland, is another tract of uplands.

On the site, of the 44.8 acres making up the subject property, 19.34 acres is wetlands and 25.46 acres of upland, with only 7.3 acres of upland and 0.09 acres of wetland for the crossing being used for the development area. This means that on the site, outside of the development envelope, is 18.2 acres of upland, which means approximately 40% of the 44.88 acre site will remain as undeveloped upland and approximately 83% of the 44.8 acre site will remain undeveloped overall.

In the West review, a recommendation was to provide information as to how the open space area will be managed and protected from future impact. The following is adapted from the Open Space restrictions of a condominium project in Atkinson:



The Open Space as depicted on the plans, is and shall forever be and remain subject to the following deed restrictions:

- 1) The purpose of the Open Space after completion of the proposed development depicted on the site plan is to retain the area forever in its scenic and open space conditions and to prevent any use of the Open Space that will significantly impair, or interfere with, its conservation value.
- 2) To protect and conserve the natural biological diversity of the region including exemplary natural communities, wetlands and other significant wildlife habitats on the restricted property.
- 3) It shall be maintained in perpetuity as open space.
- 4) No structure of any kind, size or shape shall be constructed on the Open Space.
- 5) Upon completion of the proposed development, no filling or excavation of soil or other alteration of topography or cutting or removal of standing trees shall be allowed, except those that present an imminent threat to person or property. In addition, trees may be removed in accordance with accepted silvacultural forest practices as outlined in the publication entitled **Good Forestry Practices in the Granite State** by the Society for the Protection of NH Forests. No disturbance of other natural features shall be allowed unless such activities are commonly necessary to maintain the existing natural environment of the open space.
- 6) There shall be no dumping or depositing of trash, debris, stumps, yard waste, hazardous fluid or materials, vehicle bodies or parts within the Open Space.

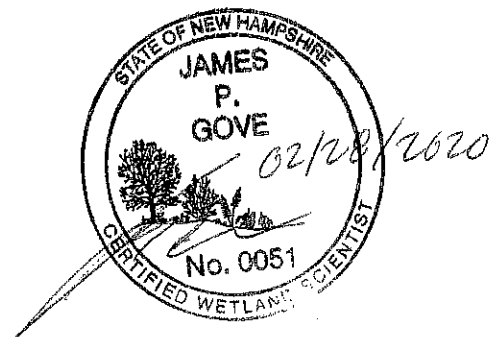
There has been discussion that there may be an alternative access to the site via an abutting parcel of land. The abutting parcel is not owned by the project and it was found not to be available to the project. In addition, the abutting property would also require a longer wetland crossing to access uplands. This is not a feasible access because it is not the least impacting alternative and is not owned by the project. Therefore, the proposed access road at the location depicted on Banfield Road is the least impacting alternative.

Copy to:

Mark West
and
NH DES Wetlands Bureau Application# 2020-0344.
Amended plans of eco-passages.

Attachments:

- 1) West Environmental Inc. letter of 01-28-2020
- 2) Upland/Wetland Habitat Plan
- 3) Eco-passage cross-section
- 4) RetroWall cross-section



Peter Britz, Environmental Planner
Portsmouth Planning Department
1 Junkins Avenue
Portsmouth, NH 03801

January 28, 2020

RE: Third Review of Banfield Road Project Green and Company Portsmouth

Dear Peter:

West Environmental, Inc. (WEI) submits this third review report of the above referenced project based on information presented by the applicant at the December 11, 2019. Some of the new information presented addressed issues raised in our report from December 10, 2019 but no formal response to the report was submitted.

2019 Wildlife Habitat Assessment

As discussed in our 12-10-19 report the revised Wildlife Habitat Assessment (WHA) provides more information on wildlife habitat and the species that likely utilize this site. We have attached the Connect the Coast Map prepared by the Nature Conservancy indicating that the Hett parcel to be developed is within a Prioritized Habitat Block. In addition, this map confirms that wildlife movement is in an east-west direction.

WEI agrees with the statement "*The greatest issue with this development is the bisecting of the site with the proposed road, limiting any existing and potential wildlife travel.*" The reports from Gove Environmental indicate that development itself and the large retaining walls in the stretch of road connecting the two development areas **will permanently impact wildlife movement on the site**. The applicant's consultants presented information regarding the retaining walls (up to 10 feet high) and the proposed 4'x4' box culvert. While we understand that this design eliminated impacts to the wetland buffers the road itself now has a greater impact to wildlife movement.

The eco-passage located at the wetland crossing was also presented at the Conservation Commission Meeting to help reptile and amphibian species continue to move through the wetland. It is proposed to be built with less height than is recommended which may reduce its effectiveness to promote passage. WEI recommended consultation with the NH Fish and Game and we have reviewed email correspondence with Kim Tuttle.

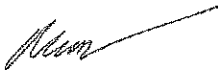
She indicated that the design was interesting and had some basic recommendations but did not endorse the design. She also referred the applicant to Sandi Houghton at her office.

It is our understanding that the hydrology and septic designs are being independently reviewed.

Recommendations:

1. The applicant's consultants should examine alternative stormwater management designs that eliminate the large retaining walls in the under-road detention option and distribute the treatment systems into smaller watersheds. Some impact in the outer 25 feet of the 100-foot wetland buffer for smaller detention/treatment systems would have less impact on wildlife. These areas could also be planted with shrub buffers on their outer slopes to minimize habitat impact. There are also areas outside the 100-foot buffers where rain gardens could be located.
2. The applicant's consultants should continue to research the eco-passages to verify that they will function with an altered design.
3. The applicant should provide information as to how the open space area will be managed and protected from future impact. This element of the project is the most important mitigation for wildlife habitat impacts and it will require signage and other permanent restrictions.

Sincerely,
West Environmental, Inc.

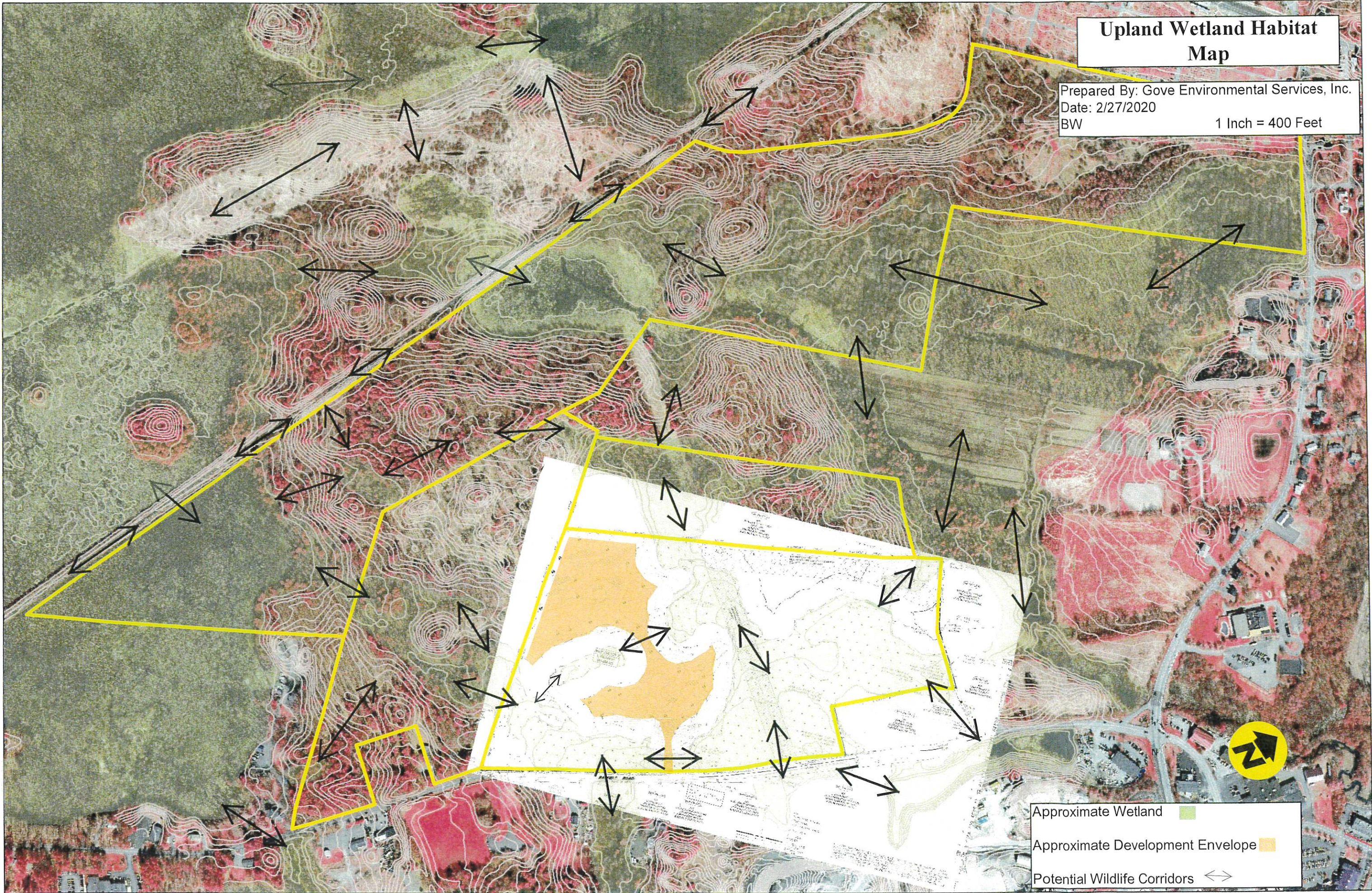


Mark C. West,
NH Certified Wetland Scientist

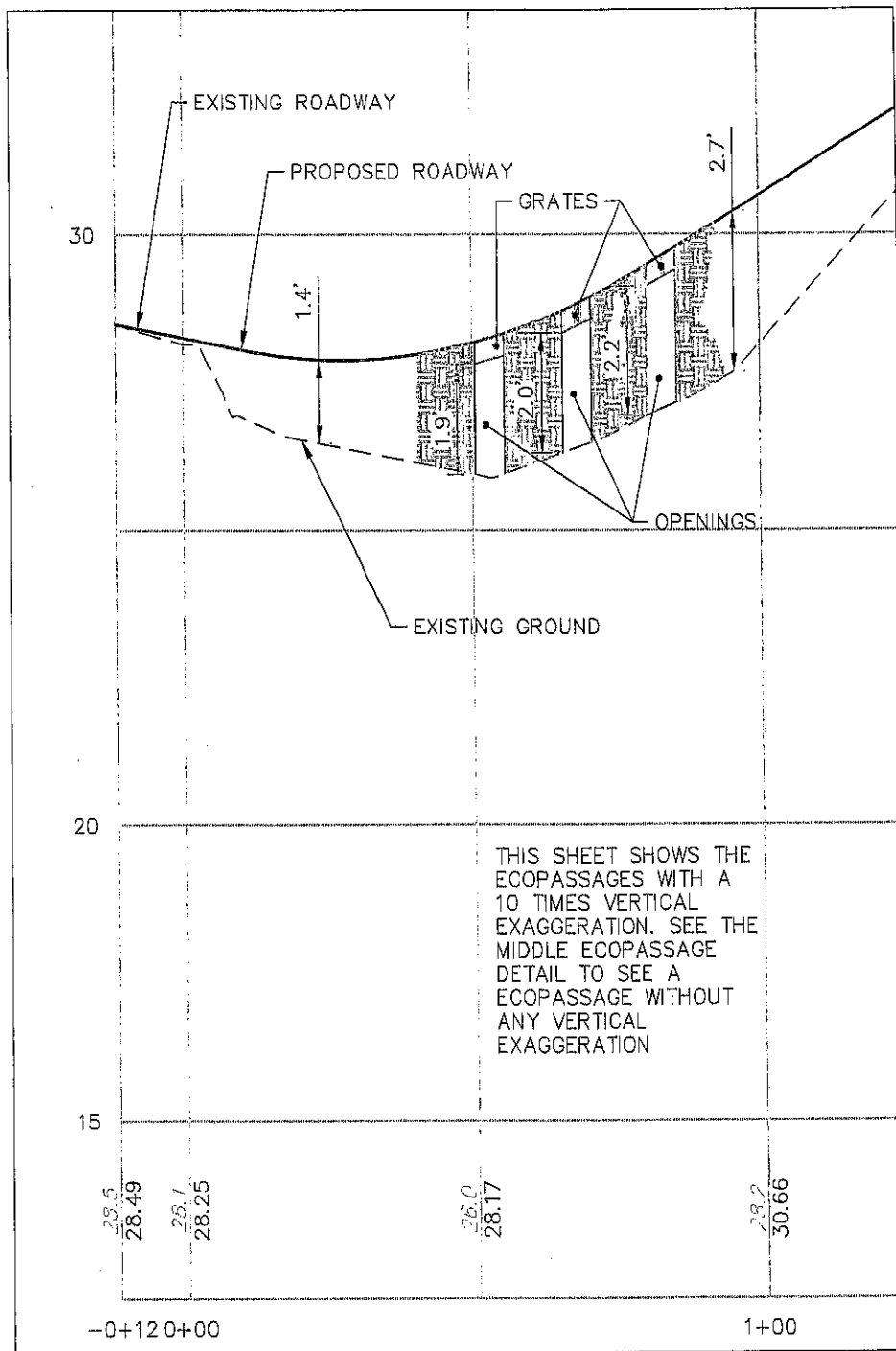
Cc: Vicky Nelson


Upland Wetland Habitat Map

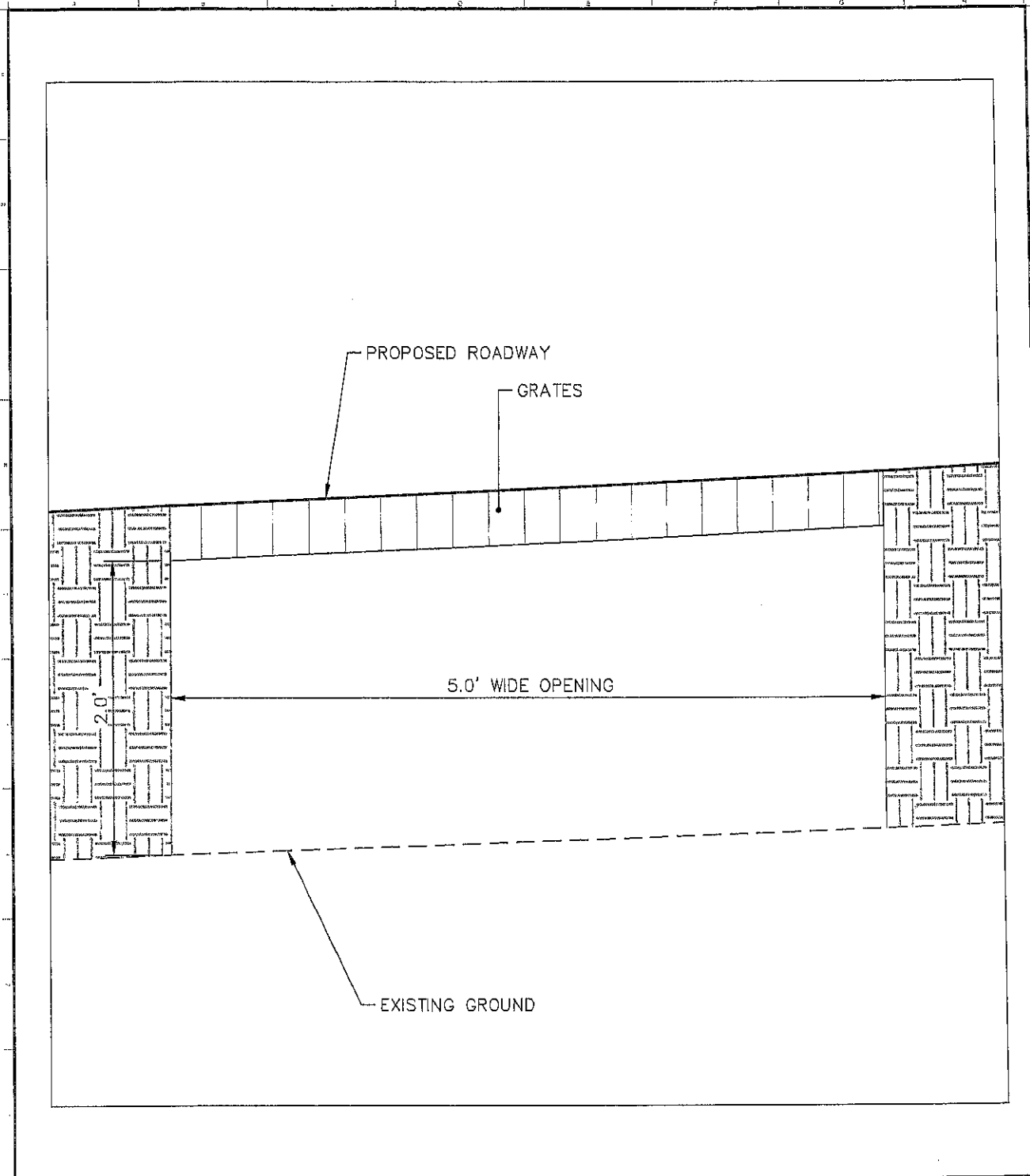
Prepared By: Gove Environmental Services, Inc.
Date: 2/27/2020
BW 1 Inch = 400 Feet




Approximate Wetland	
Approximate Development Envelope	
Potential Wildlife Corridors	

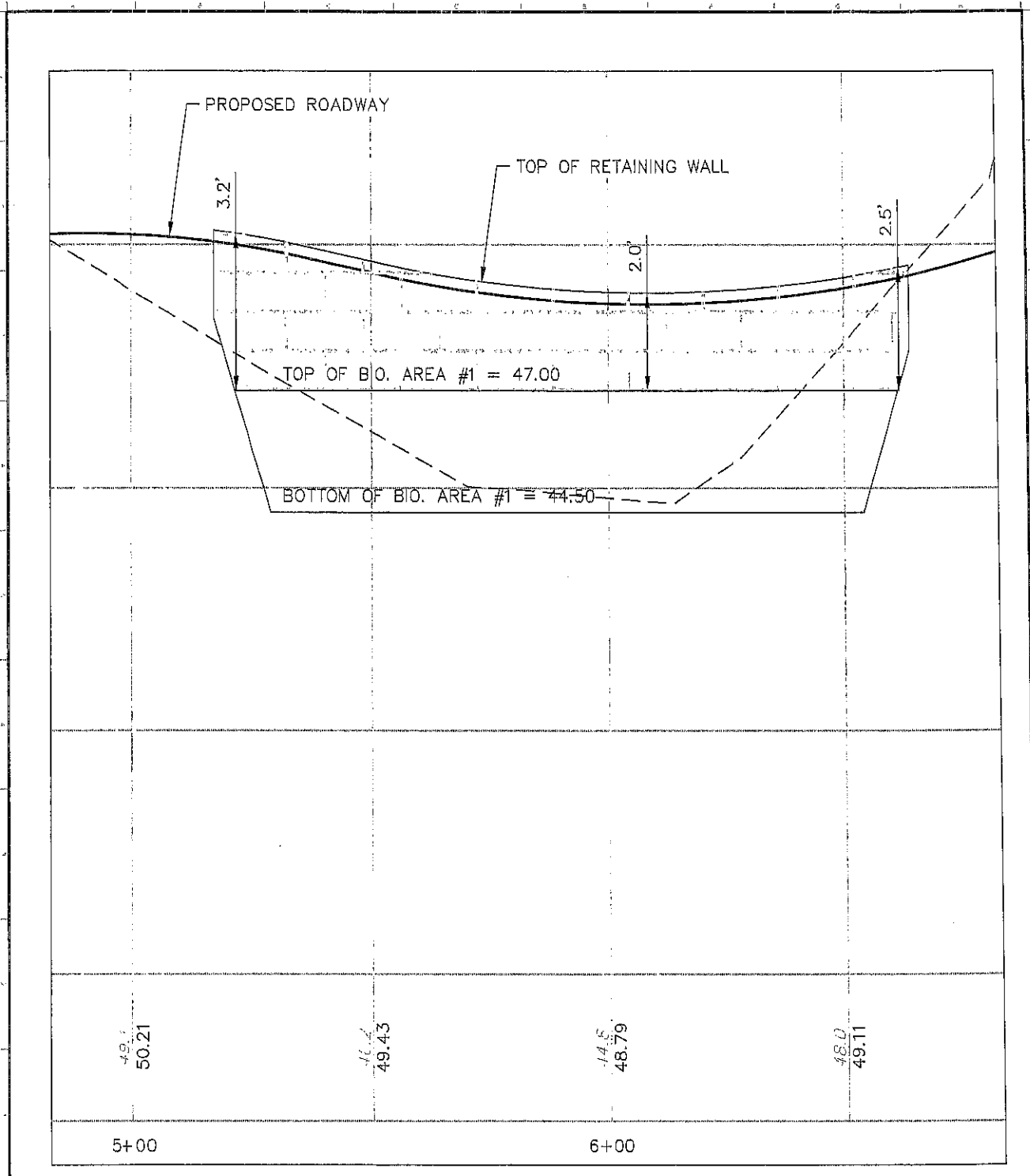



	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists		TAX MAP 256 LOT2 ECOPASSAGES PROFILE THE VILLAGE AT BANFIELD WOODS PORTSMOUTH, NEW HAMPSHIRE OWNED BY GREEN & COMPANY REAL ESTATE		
	175 Commercial Way Suite 102 Portsmouth NH 03801 Phone (603) 431-2222 Fax (603) 431-0270 www.tfm.com				
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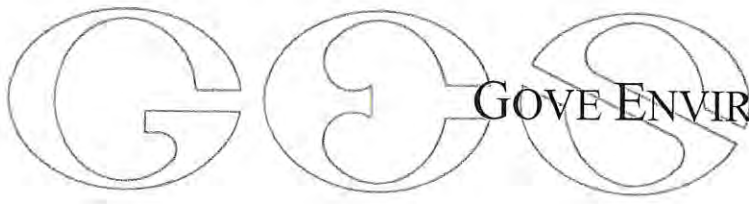


	<p>Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists</p> <p>179 Commerce Way Suite 102 Portsmouth, NH 03801 Phone (603) 431-2212 Fax (603) 431-0910 www.tfm.com</p>	<p>TAX MAP 258 LOT2 MIDDLE ECOPASSAGE PROFILE WITHOUT VERT. EXAGGERATION THE VILLAGE AT BANFIELD WOODS PORTSMOUTH, NEW HAMPSHIRE OWNED BY GREEN & COMPANY REAL ESTATE</p>																		
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	Civil Engineers Structural Engineers Landscaping 2000 Main Street Portsmouth, NH 03801 Phone: (603) 431-2222 Fax: (603) 431-0510 www.tfmnh.com		TAX MAP 256 LOT2 RETAINING WALL AREA PROFILE THE VILLAGE AT BANFIELD WOODS PORTSMOUTH, NEW HAMPSHIRE OWNED BY GREEN & COMPANY REAL ESTATE	REV.	DATE
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GOVE ENVIRONMENTAL SERVICES, INC.
AGENT

NHDES WETLANDS BUREAU
MINOR IMPACT
DREDGE & FILL APPLICATION

The Village at Banfield Woods
Banfield Road, Portsmouth, NH
February, 2020

Prepared By:

Gove Environmental Services, Inc.
8 Continental Dr Bldg 2, Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz / www.gesinc.biz

GES# 2017071

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**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: Green & Company Real Estate, ATTN Richard Green

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver to requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interests of the public or the environment. A person may also request a waiver of standard for existing dwellings over water pursuant to RSA 482-A:26, III (b). For more information, please consult the [request form](#).

SECTION 1 - CONCURRENT PROCESSING OF RELATED SHORELAND/WETLANDS PERMIT APPLICATIONS (Env-Wt 313.05)
If the applicant is not requesting concurrent processing, please proceed to Section 2.

Is the proposed project eligible for the optional concurrent processing of related shoreland/wetlands permit applications (Env-Wt 313.05(d))? If the project is not eligible, proceed to Section 2 (the files will not be processed concurrently). Yes No

By signing this form and initialing this section, the applicant is requesting concurrent processing of related shoreland/wetlands permit applications and understands that concurrently filing the applications with a request to process the applications together constitutes:

- A waiver by the applicant of the shorter time frame, if application processing timelines are different for each permit program under the 2 statutes and their implementing rules; and Initials:
- An agreement by the applicant that any request for additional information by the department under either or both statutes shall affect the review timeframe of both applications being processed together. Initials:

SECTION 2 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05)
Please use the Wetland Permit Planning Tool (WPPT) or any other database or source to assist in identifying key features such as: priority resource areas (PRA), protected species or habitat, coastal area, or designated river, or designated prime wetlands.

Step 1: A certified wetland scientist must delineate and classify all wetlands and identify the predominant resource functions of each wetland, unless the exceptions listed in Env-Wt 306.05(a)(1) are met (Env-Wt 306.05(a)(1)).

Step 2: Determine whether the subject property is or contains a PRA by answering the following questions (Env-Wt 306.05(a)(2)):

- 1. Does the property contain any documented occurrences of protected species or habitat for such species? Please use the Natural Heritage Bureau (NHB) DataCheck Tool to make this determination. Yes No
- 2. Is the property a bog? Please use the WPPT "Peatland" layer (under the PRA module) for general location of bogs or any other database or source. Yes No
- 3. Is the property a floodplain wetland contiguous to a tier 3 or higher watercourse? Please use the WPPT "Floodplain Wetlands Adjacent to Tier 3 Streams" layer (under PRA module) or any other database or source. Yes No
- 4. Is the property a designated prime wetland or a duly-established 100-foot buffer? Please use the WPPT "Prime Wetlands" layers (under PRA module) or any other database or source. Yes No
- 5. Is the property a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? Please use the WPPT "Coastal" layers module and PRA module or any other database or source. Yes No

Step 3: For projects that are subject to Env-Wt 600, please attach the Coastal Functional Assessment (Env-Wt 603.04) and Vulnerability Assessment (Env-Wt 603.05) and conduct the data screening required by Env-Wt 603.03.

Step 4: Determine whether the following apply to the subject property (Env-Wt 306.05(a)(4); RSA 482-A:3, I(d)(2)):

- 1. Is the property within a Local River Management Advisory Committee (LAC) jurisdiction?
 - If yes, please provide the following information:
 - The project is within ¼ mile of: Yes No
 - A copy of the application was sent to the LAC on Month: Day: Year: .
 - N/A (Env-Wt 311.01(e))
- 2. Is the property within or contains any areas that are subject to time of year restrictions under Env-Wt 307? Yes No

Step 5: For stream crossing projects: what is the size of the watershed (Env-Wt 306.05(a)(5))?
 N/A

Step 6: For dredge projects: is the subject property contaminated (Env-Wt 306.05(a)(6))? Yes No
 N/A

Step 7: Does the project have the potential to impact any of the following (Env-Wt 306.05(a)(7)):
 N/A

- 1. Impaired waters? Yes No
- 2. Class A waters? Yes No
- 3. Outstanding resource waters? Yes No

SECTION 3 - PROJECT DESCRIPTION (Env-Wt 311.04(i))

Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached" in the space provided below.

The applicant is proposing a condominium development with 22 single family dwelling units with an associated private roadway off of Banfield Rd. Wetland impacts associated with the proposed development amount to 2,693 SF of permanent impact and 1,135 SF of temporary impact. These impacts are kept to a single impact area that is associated with the roadway entrance to access the buildable upland areas.

SECTION 4 - PROJECT LOCATION			
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.			
ADDRESS: Banfield Rd		TOWN/CITY: Portsmouth	
TAX MAP/BLOCK/LOT/UNIT: Map 265 / Lot 2			
UNITED STATES GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: <input type="text"/>			
<input checked="" type="checkbox"/> N/A			
LATITUDE (D.ddddd): 40.04435° North (Optional)		LONGITUDE (D.ddddd): -70.78832° West (Optional)	
SECTION 5 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))			
If the applicant is a trust or a company, then the name of the trust or company should be written as the applicant's name.			
NAME: Green & Company Real Estate, ATTN Richard Green			
MAILING ADDRESS: 11 Lafayette Rd, Suite X			
TOWN/CITY: North Hampton		STATE: NH	ZIP CODE: 03868
EMAIL ADDRESS: mgreen@greenandcompany.com		FAX: <input type="text"/>	PHONE: 603-765-6515
ELECTRONIC COMMUNICATION: By initialing here: <input type="text"/> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			
SECTION 6 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))			
<input type="checkbox"/> N/A			
LAST NAME, FIRST NAME, M.I.: Walden, Brenden, M			
COMPANY NAME: Gove Environmental Services, Inc.		MAILING ADDRESS: 8 Continental Dr, Bldg 2, Unit H	
TOWN/CITY: Exeter		STATE: NH	ZIP CODE: 03833
EMAIL ADDRESS: bwalden@gesinc.biz		FAX: <input type="text"/>	PHONE: 603-418-7260
ELECTRONIC COMMUNICATION: By initialing here BW, I hereby authorize NHDES to communicate all matters relative to this application electronically.			
SECTION 7 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))			
If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.			
<input type="checkbox"/> Same as applicant			
NAME: Maud Hett Revocable Trust / Walter D Hett Trust			
MAILING ADDRESS: 334 Hudson Rd			
TOWN/CITY: Stowe		STATE: MA	ZIP CODE: 01775
EMAIL ADDRESS: <input type="text"/>		FAX: <input type="text"/>	PHONE: <input type="text"/>
ELECTRONIC COMMUNICATION: By initialing here <input type="text"/> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION 8 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3)).

Describe how the resource-specific criteria have been met (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters).

The resource area is a poorly drained forested wetland with primary vegetation consisting of red maple, iron wood, high bush blueberry and winterberry. The wetland spans nearly the entire frontage of the lot, because of this the wetland impact is necessary to gain access to the buildable upland on the property. This area of wetland was determined to have high potential as a wildlife corridor. The applicant designed the crossing with three open graded wildlife tunnels with wing walls to direct small mammals, reptiles and amphibians through the corridors to assist in maintaining the wildlife connectivity. This will have no impact on the larger mammals as the proposed height of the road will not be significant enough to hinder their ability to cross.

SECTION 9 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)). If all impacts cannot be avoided, a functional assessment is required for minor and major projects (Env-Wt 311.03(b)(10)). Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#). Please refer to the application checklist to ensure that you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable).

SECTION 10 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation pre-application meeting must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: Day: Year:

N/A - Mitigation is not required

SECTION 11 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c).

Have you submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent impacts that will remain after avoidance and minimization demonstration?

Yes No

N/A - Mitigation is not required

SECTION 12 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without required permitting).

For intermittent streams, the linear footage of impact is measured along the thread of the channel.

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA	PERMANENT		TEMPORARY	
	SF	LF	SF	LF
Forested Wetland	2693		1135	
Scrub-shrub Wetland				
Emergent Wetland				
Wet Meadow				
Intermittent Stream		/		/
Perennial Stream or River		/		/
Lake / Pond		/		/
Bank - Intermittent Stream		/		/
Bank - Perennial Stream / River		/		/
Bank/shoreline - Lake / Pond		/		/
Tidal Waters		/		/
Tidal Marsh				
Sand Dune				
Designated Prime Wetland				
Duly-established 100-foot Prime Wetland Buffer				
Undeveloped Tidal Buffer Zone (TBZ)				
Previously-developed TBZ				
Docking - Lake / Pond				
Docking - River				
Docking - Tidal Water				
Vernal Pool				
TOTAL	2693	/	1135	/

SECTION 13 - APPLICATION FEE (RSA 482-A:3, I)

MINIMUM IMPACT FEE: Flat fee of \$400

NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION: Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions)

MINOR OR MAJOR IMPACT FEE: Calculate using the table below:

Permanent and temporary (non-docking):	3828 SF	× \$0.40 =	\$ 1531.20
Seasonal docking structure:	SF	× \$2.00 =	\$
Permanent docking structure:	SF	× \$4.00 =	\$
Projects proposing shoreline structures (including docks) add \$400 =			\$
Total =			\$ 1531.20

The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 1531.20

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

SECTION 14 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

- Minimum Impact Project
 Minor Project
 Major Project

SECTION 15 - ALL APPLICABLE CONDITIONS IN Env-Wt 307 HAVE BEEN MET (Env-Wt 311.04(j); Env-Wt 313.01(a)(2)).

Check all conditions applicable to your project below. Please ensure that your plan design and access, construction sequence, and timing appropriately meet applicable conditions below:

<input checked="" type="checkbox"/> Env-Wt 307.02	US Army Corps of Engineers (USACE) Conditions	<input checked="" type="checkbox"/> Env-Wt 307.11	Filling Activity Conditions
<input checked="" type="checkbox"/> Env-Wt 307.03	Protection of Water Quality Required	<input checked="" type="checkbox"/> Env-Wt 307.12	Restoring Temporary Impacts: Site Stabilization
<input type="checkbox"/> Env-Wt 307.04	Protection of Fisheries and Breeding Areas Required	<input type="checkbox"/> Env-Wt 307.13	Property Line Setbacks
<input checked="" type="checkbox"/> Env-Wt 307.05	Protection Against Invasive Species Required	<input type="checkbox"/> Env-Wt 307.14	Rock Removal
<input type="checkbox"/> Env-Wt 307.06	Protection of Rare, Threatened or Endangered Species and Critical Habitat	<input type="checkbox"/> Env-Wt 307.15	Use of Heavy Equipment in Wetlands
<input type="checkbox"/> Env-Wt 307.07	Consistency Required with Shoreland Water Quality Protection Act	<input checked="" type="checkbox"/> Env-Wt 307.16	Adherence to Approved Plans Required
<input type="checkbox"/> Env-Wt 307.08	Protection of Designated Prime Wetlands and Duly-Established 100-Foot Buffers	<input type="checkbox"/> Env-Wt 307.17	Unpermitted Activities
<input type="checkbox"/> Env-Wt 307.09	Shoreline Structures	<input type="checkbox"/> Env-Wt 307.18	Reports
<input type="checkbox"/> Env-Wt 307.10	Dredging Activity Conditions		

Provide an explanation as to methods, timing, and manner as to how your project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)):

The proposed construction will use applicable BMP's and erosion control methods during construction to ensure that there is no adverse impact to the surrounding jurisdictional resource areas. The construction sequence will follow all applicable BMP's to ensure that there are no adverse effects to surrounding resource areas.

SECTION 16 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: <i>[Signature]</i>	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: <i>[Signature]</i>	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: <i>[Signature]</i>	<p>The signer understands that:</p> <ul style="list-style-type: none"> The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: <ol style="list-style-type: none"> Deny the application. Revoke any approval that is granted based on the information. And If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: <i>[Signature]</i>	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 17 - REQUIRED SIGNATURE (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): <i>[Signature]</i>	PRINT NAME LEGIBLY: <i>Richard W. Green</i>	DATE: <i>2/17/20</i>
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE): <i>[Signature]</i>	PRINT NAME LEGIBLY: <i>Brenden Walden</i>	DATE: <i>2/25/2020</i>

SECTION 18 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a),(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: _____	PRINT NAME LEGIBLY: _____
TOWN/CITY: _____	DATE: _____

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board. And
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

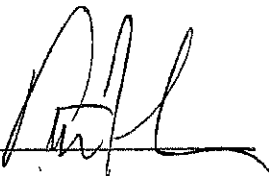
Submit the single, original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page.

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Letter of Authorization

We, The Walter D. Hett Trust, Walter D. Hett, Trustee, C/O Peter Saari, Esquire, as owner of certain real property situated in Portsmouth, NH further described as a parcel of land consisting of 44 +/- acres of land, with all improvements, which is located at 340 Banfield Road, Portsmouth, NH and also shown in Town of Portsmouth Assessor Tax Map 256, Lot 2, and as further described in the deed recorded at the Rockingham County Registry of Deeds Book 4553, Page 0432 recorded on 09/23/2005 do hereby authorize Green & Company Building and Development Corp. and its Affiliates, Agents, Assigns and Engineers to act on our behalf and to appear before the zoning board of adjustment and/or the planning board of said city/town and/or any of its boards or commissions, in our behalf for the purpose of seeking any regulatory relief that may be requested by the person we have above authorized, including variances, special exceptions, dimensional waivers, site plan approval, lot line adjustment approval and subdivision approval, hereby ratifying any actions taken by him/her/them to obtain any such relief. We authorize Green & Company Building and Development Corp. and its Affiliates, Agents, Assigns and Engineers to act in our behalf in all matters concerning the development and approval process, without limitation, for the above stated property, to include any required signatures.

We shall cooperate fully with Green & Company Building and Development Corp. and its Affiliates, Agents, Assigns and Engineers in seeking timely public approvals and for the completion of the sale contemplated herein. We agree to use our good faith efforts to provide any assistance we reasonably can to Green & Company Building and Development Corp. and its Affiliates, Agents, Assigns and Engineers throughout the development process, including but not limited to signing permit applications as needed.



Witness



Owner Walter D. Hett, Trustee
The Walter D. Hett Trust

4-30-19
Date

APPLICATION CHECKLIST

(Items identified with an asterisk (*) are required only for Minor and Major Projects)

- The completed, dated, signed and certified application (Env-Wt 311.03(b)(1)).
- Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)).
- USACE "Appendix B, New Hampshire General Permits (GPs), Required Information and Corps Secondary Impacts Checklist" and its required attachments (Env-Wt 307.02).
- The results of actions required by Env-Wt 311.01 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3)).
- Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- Explanation as to methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 – Mitigation Worksheet, unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- Any additional information specific to the type of resource as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- Project specific information required by Env-Wt 500, Env-Wt 600 (Coastal Worksheet), and Env-Wt 900 (Stream Crossing Worksheet) (Env-Wt 311.03(b)(11)).
- A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).
- Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- Dated and labeled color photographs that:
 - (1) Clearly depict:
 - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur. And
 - b. All existing shoreline structures. And
 - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- A copy of the appropriate USGS map or updated data based on LiDAR at a scale of one inch equals 24,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).
- For all coastal projects, include a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).

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- If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
 - (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest. And
 - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
- The NHB memo containing the NHB identification number and results and recommendations from NHB as well as any written follow-up communications such as additional memos or email communications with either NHB or New Hampshire Fish and Game Department (NHF&G) (Env-Wt 311.06(g)).
- A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
- For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
- If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
- For after-the-fact applications: information required by Env-Wt 311.12 (Env-Wt 311.12).
- Coastal Resource Worksheet for coastal projects as required under Env-Wt 600.
- Prime Wetlands information required under Env-Wt 700.
- Stream Crossing Worksheet required by Env-Wt 900.
- Avoidance and Minimization Written Narrative or Checklist (Env-Wt 311.07).
- * Attachment A: Minor and Major Projects (Env-Wt 311.10).
- * Functional Assessment (Env-Wt 311.10).



STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION
ATTACHMENT A: MINOR AND MAJOR PROJECTS
Water Division/Land Resources Management
Wetlands Bureau



RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

Attachment A can be used to satisfy some of the additional requirements for minor and major projects regarding avoidance and minimization, as well as functional assessment.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization.

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

WETLANDS RUN ALONG NEARLY THE ENTIRE FRONTAGE OF THE PROPERTY. THE PROPOSED POINT OF ACCESS IS THE LEAST IMPACTFUL WAY THE APPLICANT CAN ACCESS THE BUILDABLE PORTION OF THE LOT. ANY OTHER ALTERNATIVES FOR A CROSSING AT A DIFFERENT LOCATION WOULD HAVE HAD MORE SQUARE FOOTAGE OF DIRECT WETLAND IMPACT. THERE IS NO ALTERNATIVE ROUTE THAT UTILIZES ONLY UPLAND TO ACCES THE BUILDABLE AREAS.

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacea, shellfish and wildlife of significant value.

No such areas were observed on this property. All wetlands onsite are freshwater wetlands.

SECTION I.III – HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The proposed wetland crossing has three wildlife tunnels incorporated into their design. These crossings will assist in maintaining a hydrologic connection between either side of the wetland. There is no actual defined stream channel in the crossing location, so these tunnels will provide hydrologic connections as well as wildlife connectivity.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

There were no exemplary natural communities observed on this property. The proposed project is crossing the wetland adjacent to Banfield Rd at the narrowest point and avoiding all other direct wetland impacts with this project. The impact is necessary to access the buildable upland area onsite. A vernal pool survey was conducted in April 2019, and no vernal pools onsite were identified (see attached vernal pool report). NHB results did not identify any protected species or habitat onsite. NHB did identify natural communities and plant species in the area, but none on the project site. coordination with NHB is currently taking place.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The proposed project exists solely on private land and therefore will not negatively impact public navigation or recreation. The projects proposed addition of residential dwellings on this site will bring an overall net gain to the City of Portsmouth in the form of both tax revenue and local spending.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

There are no flood plain wetlands located on this site, however, the proposed project will use 3 under road stormwater treatments BMP's to manage the stormwater and runoff. These BMP's will meet AOT standards for stormwater management.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB –MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

The crossing will not impact any natural riverine system. The wetland being impacted is a typical and common red maple swamp.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

The proposed project will use 3 under road stormwater treatment BMP's that will be designed to meet AOT standards to handle the stormwater and runoff from the development. These systems will both treat the water as well as assist with the infiltration of stormwater from the development.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

N/A. No Defined stream channels are present at the wetland crossing impact area.

PART II: FUNCTIONAL ASSESSMENT	
REQUIREMENTS	Ensure that project meets requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).
FUNCTIONAL ASSESSMENT METHOD USED:	USACE Highway Methodology Supplement
NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT:	JAMES GOVE
DATE OF ASSESSMENT:	6/27/19
Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:	<input checked="" type="checkbox"/>
For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:	<input checked="" type="checkbox"/>
Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.	

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AVOIDANCE AND MINIMIZATION
WRITTEN NARRATIVE
Water Division/Land Resources Management
Wetlands Bureau



RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1),b; Env-Wt 313.01(c)

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide this narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed "Avoidance and Minimization Checklist" (NHDES-W-06-050) to the permit application.

SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))

Is the primary purpose of the proposed project to construct a water access structure?

No.

SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

Yes wetlands extend almost entirely along the road frontage of the project site.

SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))

For any project that proposes permanent impacts of more than one acre or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

The proposed wetland impacts are under 1 acre in size and there are not proposed impacts within a PRA

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values on the subject property or on other property that is reasonably available to the applicant as described in the Wetlands Best Management Practice Techniques for Avoidance and Minimization?

The applicant has proposed a wetland crossing at the narrowest point between the existing roadway and the buildable upland area. This proposed crossing has incorporated 3 eco passages with winged walls that will maintain wildlife connectivity. The wing wall design will direct the reptiles, amphibians and small mammals to the passages.

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))

How does the project conform to Env-Wt 311.10(c)? Please note that for a minimum impact project, the applicant may replace this explanation with a certification signed by a certified wetland scientist that the project is located and designed to minimize impacts to wetlands functions and values.

The applicants propose the location for the wetland crossing to access the buildable upland area at the narrowest point between the existing roadway (Banfield Rd) and the buildable upland area. By choosing this location, the applicant has reduced the direct wetland impacts to the maximum amount practicable. The applicant has also recognized that this area is potentially a wildlife corridor and has proposed to incorporate 3 wildlife ecopassages in the crossing with wing walls to help maintain the continuity of the wildlife corridor for reptiles, amphibians and small mammals.



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: COMMERCIAL, RESIDENTIAL, UNDEVELOPED LAND AND CONSERVATION LAND	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0 FT	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: James Gove CWS 051	
DATE(S) OF SITE VISIT(S): 6-27-19	DELINEATION PER ENV-WT 406 COMPLETED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CONFIRM THAT THE EVALUATION IS BASED ON:	
<input checked="" type="checkbox"/> Office and	
<input checked="" type="checkbox"/> Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):	
<input checked="" type="checkbox"/> USACE Highway Methodology.	
<input type="checkbox"/> Other scientifically supported method (enter name/ title):	
SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: Banfield A (East)	LOCATION: (LAT/ LONG) 43.04794/-70.785105

WETLAND AREA: 17 Acres	DOMINANT WETLAND SYSTEMS PRESENT: PFO1E
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 2	COWARDIN CLASS: PFO1C/PSS1C
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? Middle	IS WETLAND PART OF: <input checked="" type="checkbox"/> A wildlife corridor, or <input type="checkbox"/> A Habitat island? IS WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 3828 SF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE "The Highway Methodology Workbook Supplement". Second, indicate which functions and values are principal (Principal Function/value?" column). As described in The Highway Methodology Workbook Supplement, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NH Method	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wildlife Corridor Present
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Private land with limited access
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Intermittent streams only
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 3, 5, 6, 7, 8, 9, 13, 18	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Large, Flat, Constricted outlet
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6, 7, 13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Marine silts – Discharge Area
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 3, 4, 6, 7, 8, 9, 12	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Receives runoff from Banfield Road
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 4, 5, 7	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Not a high degree of diversity or open water present
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No viewing points, no open water present
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 2, 3, 4, 5, 7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Receives runoff from Banfield Road
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No shoreline present
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Private land with limited access
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 5, 6, 7, 8, 10, 13	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not a high degree of diversity but is a wildlife corridor

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of “vernal pool” in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- “Identifying and Documenting Vernal Pools in New Hampshire” 3rd Ed., 2016, published by NHF&G; or
- The USACE “Vernal Pool Assessment” draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

“Important Notes” are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE “Vernal Pool Assessment” form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					
8					

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: <input style="width: 100px;" type="text"/>		STREAM TYPE (ROSGEN): <input style="width: 100px;" type="text"/>		
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input type="checkbox"/> No		DOES THE STREAM SYSTEM APPEAR STABLE? <input type="checkbox"/> Yes <input type="checkbox"/> No		
OTHER KEY ON-SITE FUNCTIONS OF NOTE: <input style="width: 100px;" type="text"/>				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
2	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
3	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
4	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
5	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
6	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
7	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
8	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
9	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
10	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
11	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
12	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
13	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>
14	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input style="width: 50px;" type="text"/>

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: COMMERCIAL, RESIDENTIAL, UNDEVELOPED LAND AND CONSERVATION LAND	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0 FT	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: James Gove CWS 051	
DATE(S) OF SITE VISIT(S): 6-27-19	DELINEATION PER ENV-WT 406 COMPLETED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CONFIRM THAT THE EVALUATION IS BASED ON:	
<input checked="" type="checkbox"/> Office and	
<input checked="" type="checkbox"/> Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):	
<input checked="" type="checkbox"/> USACE Highway Methodology.	
<input type="checkbox"/> Other scientifically supported method (enter name/ title):	
SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: Banfield A (West)	LOCATION: (LAT/ LONG) 43.045244/-70.787606

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WETLAND AREA: 4 Acres	DOMINANT WETLAND SYSTEMS PRESENT: PFO1E
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PFO1C
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No if not, where does the wetland lie in the drainage basin? Upper to middle	IS WETLAND PART OF: <input checked="" type="checkbox"/> A wildlife corridor, or <input type="checkbox"/> A Habitat island? IS WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: Fill	PROPOSED WETLAND IMPACT AREA: 3828 SF

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE "The Highway Methodology Workbook Supplement". Second, indicate which functions and values are principal (Principal Function/value?" column). As described in The Highway Methodology Workbook Supplement, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NH Method	<input type="checkbox"/> Yes <input type="checkbox"/> No	Wildlife Corridor Present
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Intermittent stream
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2, 5, 6, 9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sloping, Narrow, Little ponding
5	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6, 7, 13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Marine silts- Discharge area
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 3, 4, 6, 7, 8, 9, 12	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Receives runoff from Banfield Road
8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 4, 5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Not a high degree of diversity or open water present
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No viewing points or open water present
10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 2, 4, 7, 8, 9	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Receives runoff from Banfield Road
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No Shoreline present
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Private land with limited access
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 4, 5, 7, 8, 16, 18	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not a high degree of diversity but is a wildlife corridor

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of “vernal pool” in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- “Identifying and Documenting Vernal Pools in New Hampshire” 3rd Ed., 2016, published by NHF&G; or
- The USACE “Vernal Pool Assessment” draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

“Important Notes” are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE “Vernal Pool Assessment” form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					
8					

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SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:

STREAM TYPE (ROSGEN):

HAVE FISHERIES BEEN DOCUMENTED?

Yes No

DOES THE STREAM SYSTEM APPEAR STABLE?

Yes No

OTHER KEY ON-SITE FUNCTIONS OF NOTE:

The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
2	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
3	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
4	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
5	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
6	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
7	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
8	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
9	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
10	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
11	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
12	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
13	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>
14	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="text"/>

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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**WETLANDS FUNCTIONAL ASSESSMENT
WORKSHEET**
Water Division/Land Resource Management
Wetlands Bureau



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.


Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: COMMERCIAL, RESIDENTIAL, UNDEVELOPED LAND AND CONSERVATION LAND	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 400 FT	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: James Gove CWS 051	
DATE(S) OF SITE VISIT(S): 6-27-19	DELINEATION PER ENV-WT 406 COMPLETED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
CONFIRM THAT THE EVALUATION IS BASED ON: <input checked="" type="checkbox"/> Office and <input checked="" type="checkbox"/> Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"): <input checked="" type="checkbox"/> USACE Highway Methodology. <input type="checkbox"/> Other scientifically supported method (enter name/ title): <input type="text"/>	
SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: Banfield B	LOCATION: (LAT/ LONG) 40.04615/-70.789797

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WETLAND AREA: 0.5 ACRES	DOMINANT WETLAND SYSTEMS PRESENT: PFO1C
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1C
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No if not, where does the wetland lie in the drainage basin? 	IS WETLAND PART OF: <input checked="" type="checkbox"/> A wildlife corridor, or <input type="checkbox"/> A Habitat island? IS WETLAND HUMAN-MADE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IS WETLAND IN A 100-YEAR FLOODPLAIN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE VERNAL POOLS PRESENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
PROPOSED WETLAND IMPACT TYPE: none	PROPOSED WETLAND IMPACT AREA: 0

SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:

1. Ecological Integrity (from RSA 482-A:2, XI)
2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value)
3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat)
4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration)
5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)
6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)
7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal)
8. Production Export (Nutrient) (from USACE Highway Methodology)
9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)
10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention)
11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)
12. Uniqueness/Heritage (from USACE Highway Methodology)
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE "The Highway Methodology Workbook Supplement". Second, indicate which functions and values are principal (Principal Function/value?" column). As described in The Highway Methodology Workbook Supplement, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NH Method	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Small isolated wetland that is not a vernal pool
2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Private land with limited access
3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No stream present
4	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3, 5, 9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Small, Isolated, Limited storage
5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Isolated, seasonal runoff hydrology
6	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3, 7, 8, 9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Small and isolated
8	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Small and isolated
9	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No viewing points, no open water
10	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No sources
11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No shoreline present
12	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No NHB hits on site
13	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Private land with limited access
14	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1, 3, 4, 5, 7, 8, 18	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Limited to birds and small mammals

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of “vernal pool” in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- “Identifying and Documenting Vernal Pools in New Hampshire” 3rd Ed., 2016, published by NHF&G; or
- The USACE “Vernal Pool Assessment” draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

“Important Notes” are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE “Vernal Pool Assessment” form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					
8					

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SECTION 6 - STREAM RESOURCES SUMMARY				
DESCRIPTION OF STREAM: []		STREAM TYPE (ROSGEN): []		
HAVE FISHERIES BEEN DOCUMENTED? <input type="checkbox"/> Yes <input type="checkbox"/> No		DOES THE STREAM SYSTEM APPEAR STABLE? <input type="checkbox"/> Yes <input type="checkbox"/> No		
OTHER KEY ON-SITE FUNCTIONS OF NOTE: []				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
2	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
3	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
4	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
5	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
6	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
7	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
8	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
9	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
10	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
11	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
12	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
13	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]
14	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]	<input type="checkbox"/> Yes <input type="checkbox"/> No	[]

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- Wildlife and vegetation diversity/abundance list.
- Photograph of wetland attached.
- Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)

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**RESIDENTIAL, COMMERCIAL, AND
INDUSTRIAL DEVELOPMENT
PROJECT-SPECIFIC WORKSHEET
FOR STANDARD APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: RSA 482/ Env-Wt 524

APPLICANT LAST NAME, FIRST NAME, M.I.:

This worksheet summarizes the criteria and requirements for a Standard Permit for “Residential, Commercial, and Industrial Development”, one of the 18 specific project types in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Dredge and Fill Applications must meet the criteria and requirements listed in the Standard Dredge and Fill Application form (NHDES-W-06-012).

<p>SECTION 1 - APPLICABILITY (Env-Wt 509.02(b); Env-Wt 524.01)</p> <p>The information in this worksheet applies to residential, commercial, and industrial development projects, including associated roadways, in non-tidal wetlands.</p> <p>Do not use this worksheet if the project is located in a coastal (tidal) area.</p>
<p>SECTION 2 - APPROVAL CRITERIA FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.02)</p> <p>An application for a residential, commercial or industrial development project must meet the following criteria:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The project must meet the applicable criteria established in Env-Wt 300; <input type="checkbox"/> An off-site alternatives analysis is conducted for any project that will result in more than one acre of permanent wetland impacts; <input checked="" type="checkbox"/> The project avoids and minimizes impacts to wetlands, watercourses, and sensitive and valuable wetlands in accordance with Env-Wt 313.03; <input checked="" type="checkbox"/> The project complies with the design criteria specified in Env-Wt 524.04 and the construction criteria specified in Env-Wt 524.05; and <input type="checkbox"/> Compensatory mitigation is provided for any new residential, commercial, or industrial development in a Priority Resource Area.
<p>SECTION 3 - APPLICATION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.03)</p> <ul style="list-style-type: none"> <input type="checkbox"/> For all projects requiring subdivision approval, a plan prepared and stamped by a land surveyor licensed in the State of New Hampshire pursuant to RSA 310-A showing existing and proposed topography and the location of all proposed lot lines; <input type="checkbox"/> For all projects requiring subdivision approval, the following clearly delineated on the plan required above: the boundaries of all wetlands and surface waters and the footprint of all proposed impacts;

- For minor and major projects requiring subdivision approval, wetlands classifications clearly indicated in accordance with Env-Wt 400 on the plan required above; and
- For a project that is associated with one or more phases of a multi-phase subdivision, a project impact plan that also shows all wetlands on remaining property proposed for future phases of development.

Please note that permits for subdivisions of 4 or more lots shall not be effective until the permittee records the permit with the appropriate registry of deeds and a copy of the registered permit has been received by the department.

An application for a residential, commercial or industrial development project must include the following information:

- If the project includes components that are subject to multiple project-specific requirements in Chapter Env-Wt 500, a narrative statement and plan that describes how each project-specific component meets the requirements of the applicable part in Chapter Env-Wt 500 and how the project as a whole impacts jurisdictional areas.

The Project is for a residential condominium development. The project does not have any direct impacts to streams PRA's or to any tidal or open water areas.

SECTION 4 - DESIGN REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.04)

In addition to meeting the applicable design requirements established in Env-Wt 300, a residential, commercial, or industrial development project must be designed to meet the following criteria:

- The project complies with all applicable requirements of Env-Wt 400, Env-Wt 700, Env-Wt 800, Env-Wt 900, and other applicable project-specific criteria in Chapter Env-Wt 500;
- The project does not use wetlands or surface waters to serve as stormwater or water quality treatment to mitigate impacts;
- The project provides setbacks and water quality protection measures sufficient to protect private and public drinking water supplies, source water protection areas, and fisheries;
- The project maintains or restores hydrologic connections to maintain flows necessary to preserve adjacent wetland and riparian functions;
- The project maintains existing fishery spawning, feeding, or cover habitat and fish passage necessary to maintain fishery or habitat or populations; and
- The project maintains existing wetland-dependent wildlife habitat and its associated migratory pathways, reproductive sites, and associated wetland complex or wetland community system.

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SECTION 5 - CONSTRUCTION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 525.05)

In addition to meeting all applicable construction standards specified in Env-Wt 307 and other applicable project-specific standards in Chapter Env-Wt 500, the following requirements apply to residential, commercial, or industrial development projects:

- A construction notice shall be filed with the department at least 48 hours prior to commencing work; and
- All work shall be conducted in accordance with the approved plan.

SECTION 6 - CLASSIFICATION OF RESIDENTIAL AND COMMERCIAL OR INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.06)

Residential and commercial or industrial development projects shall be classified under Env-Wt 407 and as follows:

(a) A project shall be a minimum impact project only if:

- (1) All stream-crossing components of the project meet the requirements for minimum impact classification specified in Env-Wt 903;
- (2) All other components of the project meet the requirements for minimum impact classification specified in Env-Wt 407 and this chapter;
- (3) The project is not part of a new subdivision of 4 or more lots; and
- (4) The project does not meet the criteria listed in (d) below.

(b) A project shall be an expedited minimum impact project only if:

- (1) It is a minimum impact project to construct a new subdivision of 3 lots or less;
- (2) The applicant has attended a pre-design submission meeting with the department at least 7 days prior to application submission and included department feedback in the design plan; and
- (3) The project does not meet the criteria listed in (d) below.

(c) A project shall be a minor impact project if the project does not meet the criteria listed in (d) below and if any of the following apply:

- (1) Any single stream-crossing component of the project meets the requirements for minor impact classification specified in Env-Wt 903;
- (2) The project is part of a new subdivision of 4 or more lots;
- (3) Any single component of the project meets the requirements for minor impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500; or
- (4) No component of the project meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500.

(d) A project shall be a major impact project if:

- (1) The project exceeds the minor impact criteria;
- (2) The project requires mitigation or meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or any other associated project classification that is part of the overall project; or
- (3) The project is elevated based on an aggregation undertaken by a developer or is part of a series of developments under Env-Wt 400.

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**US Army Corps
of Engineers**®
New England District

**New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?		X
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/ . The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?	X	
2.6 What is the area of the previously filled wetlands?	0	
2.7 What is the area of the proposed fill in wetlands?	2,693 SF	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	0.3%	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index	X	

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> • PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. 		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 21?	N/A	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	N/A	
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

2.0 GENERAL INFORMATION

PREPARED BY (AGENT CONTACT): Brenden Walden

2.1 PROJECT NAME, PLANS, AND MAPS

PROJECT NAME: Banfield Road

SITE PLANS/MAPS: Existing Conditions Plan
Proposed Plan
8½"x11" USGS Quad Sheet Locus Map
8½"x11" Wildlife Action Plan
8½"x11" Aerial Imagery
11x17" Overview Plan
11x17" Wetland Impact Plan Detail
11x17" Project Site Tax Map

2.2 TECHNICAL STANDARDS

- 2.2.1 Gove Environmental Services, Inc. delineated the wetlands during the spring of 2019, utilizing the standards of the Corps of Engineers *Wetlands Delineation Manual*¹ and the NH DES Wetlands Bureau *Code of Administrative Rules*².
- 2.2.2 Wetland flags were surveyed by TFMoran, Inc.
- 2.2.3 Wetlands were classified by GES utilizing the criteria of *Classification of Wetlands and Deepwater Habitats of the United States*³.
- 2.2.4 Dominant hydric soil conditions within the wetlands were identified by GES utilizing the criteria of *Field Indicators for Identifying Hydric Soils in New England*⁴.
- 2.2.5 Dominance of wetland vegetation was assessed by GES utilizing the *National List of Plant Species That Occur in Wetlands: Northeast (Region I)*⁵.

¹ Environmental Laboratory. 2012. "Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region." Version 2.0. Technical Report ERDC/EL TR-10-12.

² NH Code Admin. R. [Wt] Ch. 100-800.

³ Cowardin, L. M., 1979. *Classification of Wetlands and Deepwater Habitats in the United States*. Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.

⁴ New England Hydric Soils Technical Committee, Version 4. April 2019. "Field Indicators for Identifying Hydric Soils in New England."

⁵ Lichvar, R.W. & Kartesz, J.T. 2009. *North American Digital Flora: National Wetland Plant List*. 2.2.1.

2.3 SITE DESCRIPTION/WETLANDS OVERVIEW

The site consists of approximately 45 acres of woodland and wetland areas. The site also has an existing maintained powerline easement bisecting the property into two pieces. The site is bordered by Banfield Road to the south and forested, unfragmented land to the north, east, and west. The wetlands onsite are primarily forested with a scrub shrub understory with an exception within the right-of-way where a majority of the vegetation is emergent persistent. Wetlands extend across almost the entire frontage of the site, because of this there are no lesser impacting alternatives to gain access to the buildable upland on site.

2.4 CONSTRUCTION SEQUENCE AND DRAINAGE PRACTICES

Construction Sequence

The placement of these structures will be done in the order as numbered below. Each sequence below will be completed before the next step in the sequence commences. No steps will be removed. The time of wetland disturbance will be limited and will be scheduled during low flow or no flow conditions.

1. At wetland crossings, the wetland buffer should be maintained to the largest extent feasible. On buffers, at wetland crossings, the wetland buffer should be maintained to the largest extent feasible. On buffers, clearing, sod disturbance, excavation, and equipment traffic should be minimized. Activities such as stacking cut logs, discharging rain water from trenches, welding pipe joints, storing pipe sections, refueling and maintaining equipment should be accomplished outside of these buffers.
2. Install appropriate sediment barrier downslope of all spoil/excavation from crossing areas prior to the install appropriate sediment barrier downslope of all spoil/excavation from crossing areas prior to the commencement of construction.
 - A. Note: the sediment barrier for the spoil crossing areas must be a minimum of 10' from the edge of wetland
3. Install water pump. If a level area is required, grade the pump area, then place a 4" layer of #57 stone or reinforced erosion control blanket.
4. During the excavation for the placement of the wetland crossing:
 - A. All water that needs to be pumped from the excavated trench area will be removed by discharge through a pumped water filter bag. See filter bag pad detail.
 - B. If the area that the bag is placed on is greater than 5% slope, then a pumped water filter bag pad will be constructed. See filter bag pad detail.
5. Excavate material for trench area. The material will then be placed in a designated area for later use. Keep wetland topsoil separate for later use.
6. Install crossing
 - A. Install eco passage footing.
 - B. Install eco passage.

C. Install conduits for utilities.

D. Backfill will then be placed around and on the footing and box culvert. Back fill and compacted in a maximum of 12" lifts. Lifts.

7. The wetland and surrounding area not being developed will be restored to original contours. All disturbed areas will be seeded and mulched.

8. The pumping of water to the water filter bag as shown in step 4 of the installation will continue during restoration procedures.

9. The spoil from crossing placement areas will be regraded, seeded and mulched.

A. The silt barrier downslope of the spoil from crossing placement areas will remain in place and maintained until permanent vegetated stabilization is achieved.

B. Permanent stabilization will be achieved when a uniform 85% vegetative cover of the entire seeded area is established.

11. Remove pumped water filter bags. The area utilized for the pumped water filter bag/pad will be regraded, seeded and mulched.

12. The pumping area as shown in installation sequence 4 will be regraded, seeded and mulched.

13. All areas that were disturbed during the construction of the wetland crossing will be returned to their original contours. Silt barriers will be placed downslope of any areas that will be regraded. The areas will be seeded and mulched as per the erosion control notes, will remain in place and maintained until permanent vegetated stabilization is achieved.

14. Upon completion of an earth disturbance activity or any stage or phase of an activity, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation.

Drainage Practices

We are proposing the use of a standard bioretention area, two 'hybrid' bioretention areas and an underground stormwater treatment and detention system to treat the stormwater from the road, as well as a portion of the drives and roofs. The remainder of the roof runoff will be treated by the buffers.

A Standard Bioretention Area in the cul-de-sac will treat the roadway around the cul-de-sac and much of the runoff from the roofs in this area. It will be filtered through the engineered soil before being released near the top edge of the buffer. Bioretention areas have an average of 90% efficiency for removing Total Suspended Solids (TSS) and 65% efficiencies in removing Total Nitrogen (TN) and Total Phosphorous (TP). It will receive additional treatment as it flows through the 100' buffer to wetland.

Two 'Hybrid' Bioretention Areas provided additional treatment to the standard system by providing an anaerobic action to aid in the breakdown of Nitrogen. These systems are located midway between the two proposed housing areas on either side of the roadway. The treated

water from these two systems is released toward the top of the wetland buffer and travel 75 to 85 feet through the wetland buffer before reaching the wetland.

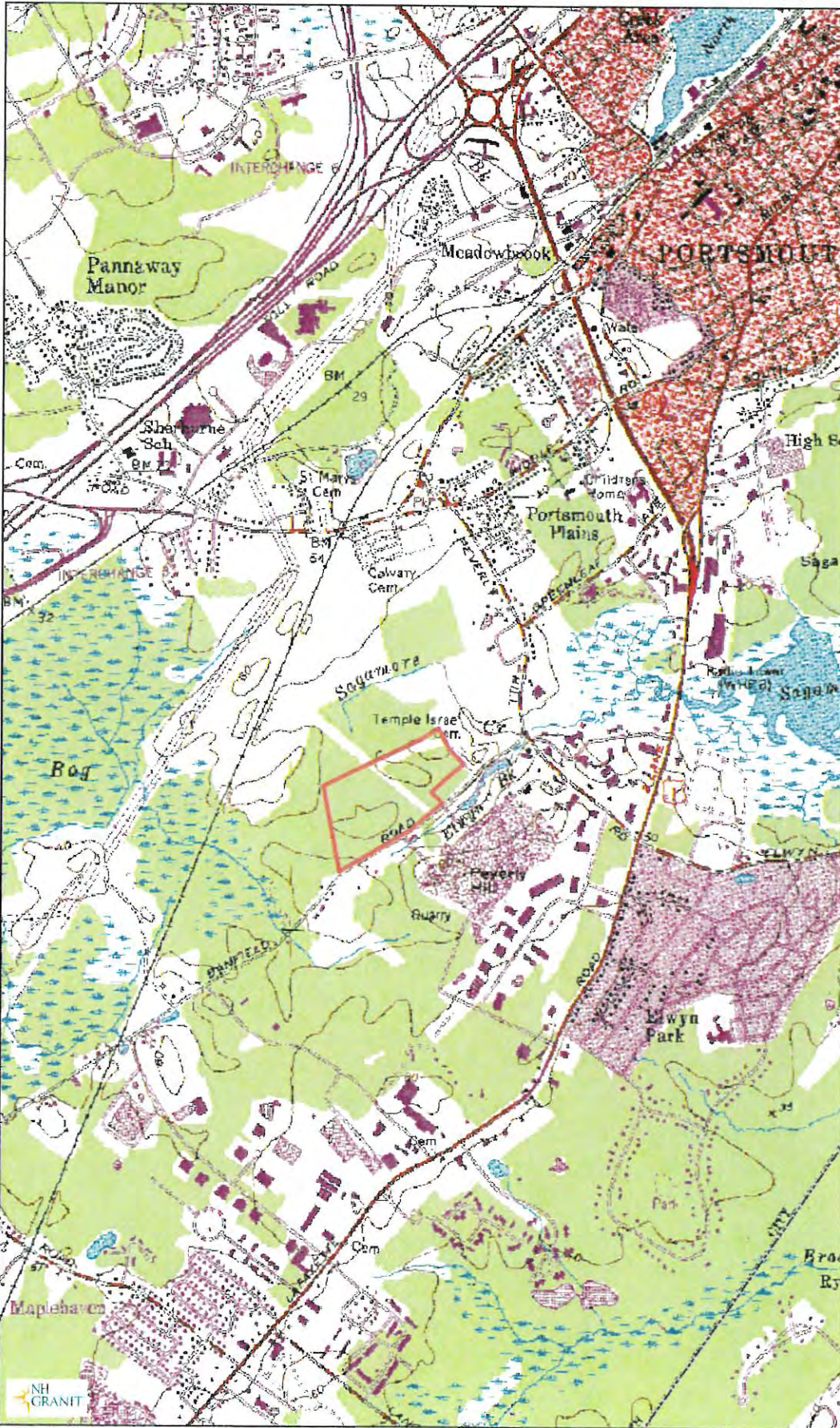
The underground stormwater system will filter and engineered soil layer and then out through an underdrain system. The system will have a similar treatment quality as the bioretention area. The treated stormwater will travel 10 to 30 feet through the wetland buffer prior to entering the wetland.

3.0 PROJECT OVERVIEW

The applicant is proposing a condominium development with 22 single family dwelling units with an associated private roadway off of Banfield Rd. Wetland impacts associated with the proposed development amount to 2,693 SF of permanent impact and 1,135 SF of temporary impact. These impacts are kept to a single impact area that is associated with the roadway entrance to access the buildable upland areas. This proposed wetland crossing will incorporate 3 wildlife eco passages with winged walls to guide reptiles, amphibians and small mammals under the crossing safely as well as maintain the existing hydrologic connection of the wetland.

1985 USGS QUAD SHEET LOCUS MAP
Scale 1:24,000

USGS



Legend

- State
- County
- City/Town

Map Scale
1: 24,000



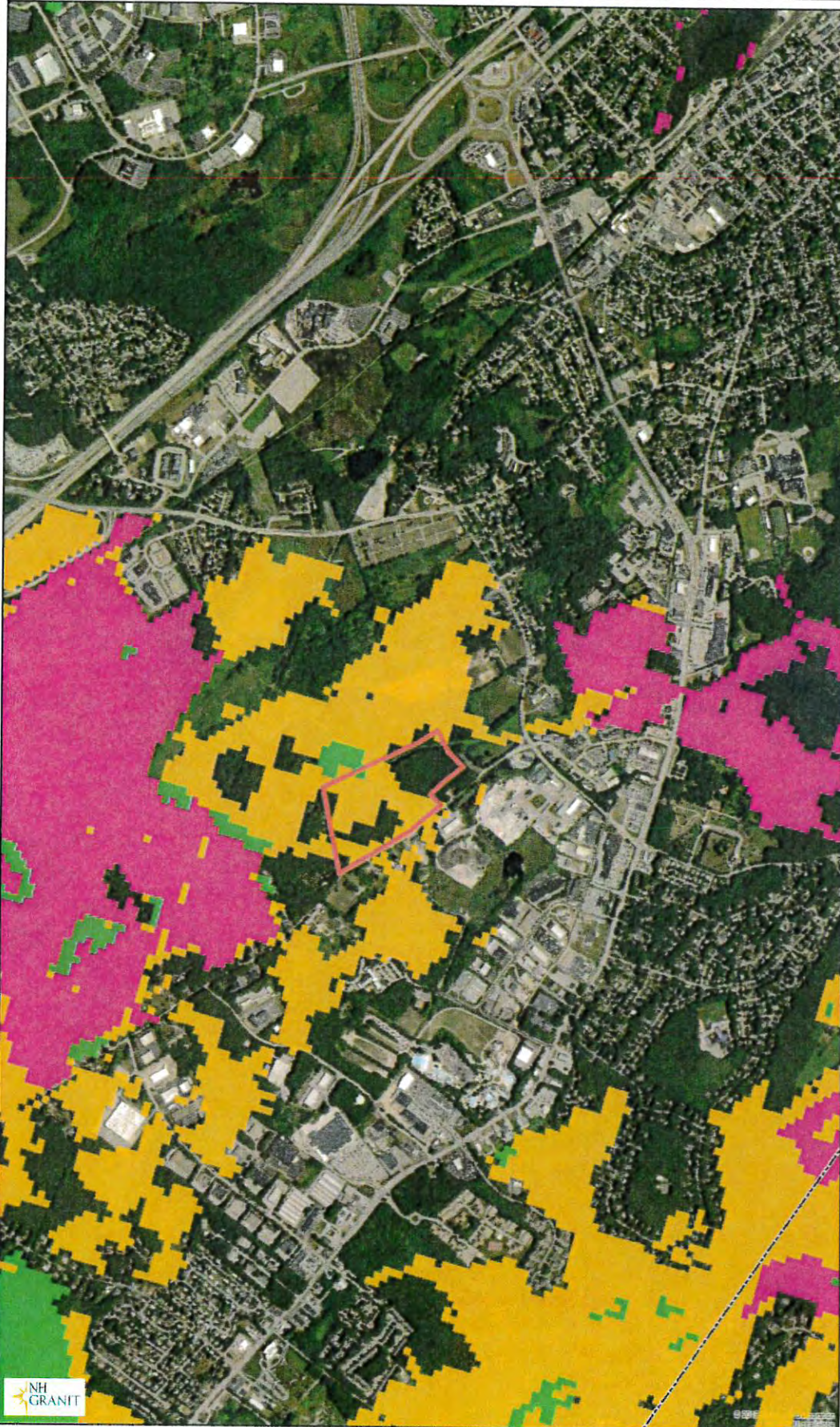
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Map Generated: 1/8/2020

Notes



**Wildlife Action Plan
Scale 1:24,000**

Wildlife Action Plan



Legend

- State
- County
- City/Town
- WAP 2015: Highest Ranked Wildlife Habitat
- Not Top Ranked
- Highest Ranked Habitat in NH
- Highest Ranked Habitat in Region
- Supporting Landscape

Map Scale

1: 24,000



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Notes



Aerial Imagery

Aerial



Legend

- Polygons
- State
- County
- City/Town

Map Scale
1 : 5,000

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Map Generated: 2/21/2020



Notes



EXISTING CONDITIONS PLAN

SOILS LEGEND:		
SSSS SYMBOL	SSSS MAP NAME	HYDROLOGIC SOIL GROUP
41	CHATFIELD-HOLLIS-ROCK OUTCROP COMPLEX	B
135	CHATFIELD VARIANT-NEWFIELDS COMPLEX	C
53B	SQUAMSCOTT FINE SANDY LOAM	C
656	RIDGEBURY FINE SANDY LOAM	C

SOILS LEGEND:		
SLOPE PHASE:	ALPHA SLOPE SYMBOL	
0-8%	B	
8-15%	C	
15-25%	D	
25%+	E	

MAP 256 LOT 3
N/F
SHIRLEY N. GARRETT REV
TRUST 2000
BARBERS LANE
PORTSMOUTH, NH 03801
RCRD BK # 4298 PG. # 2583

MAP 256 LOT 3
N/F
WALTER D. HETT TRUST
294 HUDSON ROAD
STOW, MA 01775
RCRD BK # 4553 PG. # 0436

MAP 256 LOT 1
N/F
TEMPLE OF ISRAEL
200 STATE STREET
PORTSMOUTH, NH 03801

MAP 256 LOT 2.1
N/F
TEMPLE OF ISRAEL
200 STATE STREET
PORTSMOUTH, NH 03801
RCRD BK # 3455 PG. # 1111

MAP 254 LOT 2
N/F
T. BEYAR REALTY LLC
14 LAFAYETTE ROAD-PO BOX 695
NORTH HAMPTON, NH 03842
RCRD BK # 4004 PG. # 0763

MAP 256 LOT 2
N/F
DENISE ARNOLD
251 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK # 3544 PG. # 1763

MAP 256 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK # 1745 PG. # 0152

MAP 254 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK # 1745 PG. # 0152

MAP 266 LOT 1
N/F
RICCI CONSTRUCTION CO INC
225 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK # 2527 PG. # 0322

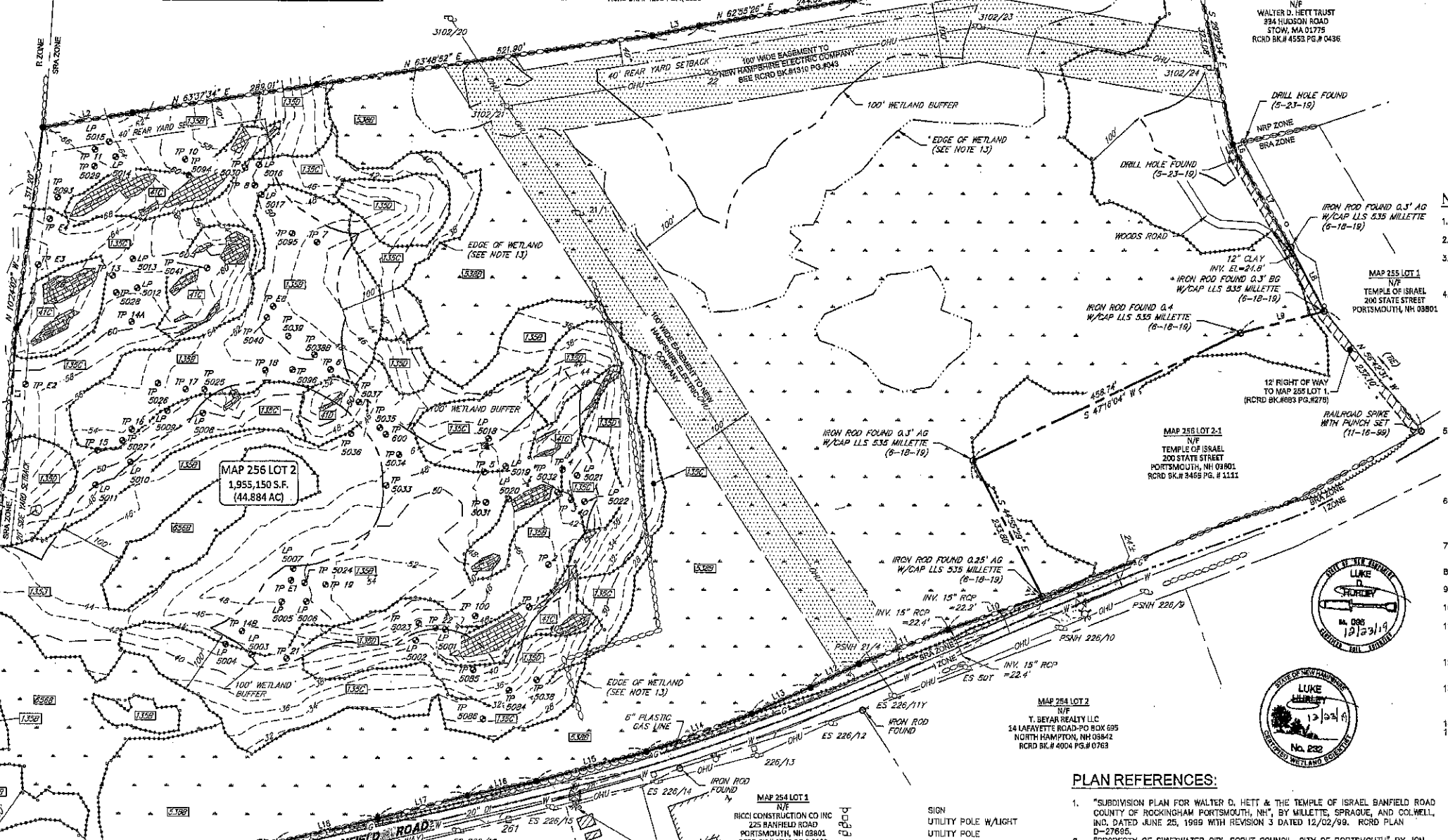
MAP 266 LOT 3
N/F
ANDREW R. & CAROL ANN CROTEAU
285 BANFIELD ROAD
PORTSMOUTH, NH 03801
RCRD BK # 1849 PG. # 356

MAP 266 LOT 5
N/F
HOPE FOR TOMORROW FOUNDATION
1 STONERIDGE DRIVE
RYE, NH 03870
RCRD BK # 5783 PG. # 602

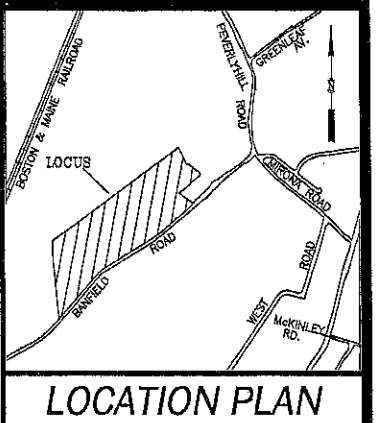


CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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LINE/BEARING	DISTANCE
L1 N 12°03'45" E	W 165.81'
L2 N 22°25'56" E	F 124.17'
L3 N 41°20'44" E	F 105.56'
L4 N 67°58'42" E	F 116.79'
L5 S 40°08'01" E	F 122.95'
L6 S 28°30'21" E	F 139.80'
L7 S 25°14'09" E	F 110.28'
L8 S 28°19'19" E	F 113.27'
L9 S 52°25'59" E	F 115.44'
L10 S 41°03'21" E	F 115.51'
L11 S 26°11'16" W	F 83.39'
L12 S 28°05'39" E	F 86.00'
L13 S 24°22'26" E	F 73.00'
L14 S 41°15'59" E	F 115.51'
L15 S 37°50'14" E	F 83.89'
L16 S 39°00'53" E	F 115.28'
L17 S 39°39'51" E	F 113.08'
L18 S 39°39'21" E	F 117.30'



NOTES:

- THE PARCEL IS LOCATED IN THE SINGLE RESIDENCE A (SRA) ZONING DISTRICT.
- THE PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 256 AS LOT 2.
- THE PARCEL IS LOCATED IN ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP), FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, PANEL 270 OF 581, MAP NUMBER 3301500270C, WITH AN EFFECTIVE DATE OF MAY 17, 2005.
- DIMENSIONAL REQUIREMENTS:**
MINIMUM LOT SIZE: 1 ACRE
BUILDING COVERAGE: 1 ACRE
CONTINUOUS STREET FRONTAGE: 150'
LOT DEPTH: 200'
MINIMUM YARD DIMENSIONS:
FRONT: 35'
SIDE: 20'
REAR: 40'
MAXIMUM STRUCTURE DIMENSIONS:
STRUCTURE HEIGHT: 35'(SLOPED ROOF) 30'(FLAT ROOF)
100'
MINIMUM OPEN SPACE: 50%
PER THE CITY OF PORTSMOUTH ZONING ORDINANCE SECTION 10.82D.
- OWNER OF RECORD:**
MAP 256 LOT 2:
WALTER D. HETT TRUST
WALTER D. HETT, TRUSTEE
334 HUDSON ROAD
STOW, MA 01775
RCRD BK # 4553 PG. # 432
- PARCEL AREA:**
MAP 256 LOT 2:
1,955,150 S.F.
(44.884 ACRES)
- THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE BOUNDARY LINES, TOPOGRAPHY AND CURRENT SITE FEATURES OF MAP 256 LOT 2.
- FIELD SURVEY COMPLETED BY TCE AND EJS IN MAY & JUNE 2019 USING A TOPCON DS103 AND A TOPCON TC-8000 DATA COLLECTOR.
- HORIZONTAL DATUM IS NAD83 (2011) PER STATIC GPS OBSERVATIONS, THE VERTICAL DATUM IS NAVD83 (GEOID12B) PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
- EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) WOULD DETERMINE.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE.
- WETLAND DELINEATION WAS COMPLETED BY CORE ENVIRONMENTAL SERVICES IN MAY, 2019 IN ACCORDANCE WITH THE 1987 ARMY CORP OF ENGINEERS WETLAND MANUAL AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, FIELD LOCATED BY TFMORAN, INC. SEE SHEET 0-02 FOR TEST PIT & LEDGE PROBE LOGS.
- SOILS NOTE:**
THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.
THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED DECEMBER 19, 2019 AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, CORE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED ON BANFIELD ROAD, PORTSMOUTH, NH.
SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH, ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPLEXES.
HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

PLAN REFERENCES:

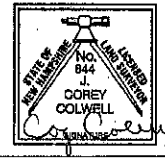
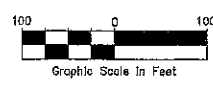
- "SUBDIVISION PLAN FOR WALTER D. HETT & THE TEMPLE OF ISRAEL BANFIELD ROAD COUNTY OF ROCKINGHAM PORTSMOUTH, NH", BY MILLETTE, SPRAQUE, AND COLWELL, INC., DATED JUNE 25, 1999 WITH REVISION 3 DATED 12/02/99. RCRD PLAN D-27605.
- "PROPERTY OF SWIFTWATER GIRL SCOUT COUNCIL, CITY OF PORTSMOUTH" BY JON MOORE DATED AUGUST 1972. RCRD PLAN D-3206

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY THOSE UNDER MY DIRECT SUPERVISION AND ARE THE RESULT OF A FIELD SURVEY CONDUCTED IN JUNE 2019. THIS SURVEY CONFORMS TO THE ACCURACY REQUIREMENTS OF AN URBAN SURVEY OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I FURTHER CERTIFY THAT THIS SURVEY IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, AND THE FIELD TRAVERSE SURVEY EXCEEDS A PRECISION OF 1:15,000.

LEGEND:

- ASSASSOR'S MAP NUMBER/LOT NUMBER
- AG ABOVE GRADE
- BS BELOW GRADE
- BK./PG. BOOK/PAGE
- EL. ELEVATION
- ES EVERSOURCE
- NRP NATURAL RESOURCE PROTECTION
- I INDUSTRIAL
- INV. INVERT
- DI DUCTILE IRON
- LP LEDGE PROBE
- N/F NOW OR FORMERLY
- PSNH PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
- R RURAL
- RCP REINFORCED CONCRETE PIPE
- RCRD ROCKINGHAM COUNTY REGISTRY OF DEEDS
- SRA SINGLE RESIDENCE A
- S.F. SQUARE FEET
- TBM TEMPORARY BENCH MARK
- TP TEST PIT
- TEST PIT/LEDGE PROBE
- MAILBOX
- QUY WIRE
- HYDRANT

- SIGN
- UTILITY POLE W/LIGHT
- UTILITY POLE
- WATER SHUTOFF VALVE
- WATER VALVE
- GAS VALVE
- BOULDER
- PROPERTY LINE
- DRAIN LINE
- EXISTING CONTOUR
- GAS LINE
- OVERHEAD UTILITY LINE
- WATER MAIN
- CHAINLINK FENCE
- STONEWALL
- TREELINE
- WETLAND SETBACK
- EDGE OF WETLAND
- SOILS LINE
- PAVEMENT
- WETLANDS
- EXPOSED LEDGE
- 100' WIDE ELECTRIC EASEMENT
- 12' RIGHT OF WAY
- LICENSED LAND SURVEYOR



12-23-19 DATE

TAX MAP 256 LOT 2
EXISTING CONDITIONS PLAN
BANFIELD ROAD
PORTSMOUTH, NEW HAMPSHIRE
COUNTY OF ROCKINGHAM
OWNED BY
THE WALTER D. HETT TRUST
PREPARED FOR
GREEN & COMPANY REAL ESTATE

SCALE: 1" = 100' (22x34)
1" = 200' (11x17)

SEPTEMBER 26, 2019

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0810
www.tfmoran.com

TFM **MSC**
A division of TFMoran, Inc.

73781-00 DR EIS PB 559
CK BMK CADFILE

S-01

SITE PLANS



MAP 256 LOT 3
 N/F
 SHIRLEY N. GARRETT REV
 TRUST 2000
 BARBERRY LANE
 PORTSMOUTH, NH 03801
 RCRD BK. # 4298 PG. # 2633

SITE DATA

OWNER OF RECORD OF MAP 256 LOT 02: HETT MAUD REVOCABLE TRUST,
 334 HUDSON ROAD, STOW, MA 01775
 DEED REFERENCE TO PARCEL IS BK 4553 PG 0432
 AREA OF PARCEL = 1,955,150± SF OR 44.88± ACRES

ZONED: SINGLE RESIDENCE A (SRA)
 EXISTING USE: N/A
 PROPOSED USE: SINGLE FAMILY CONDOMINIUM UNITS

THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A DEVELOPMENT OF 22 SINGLE FAMILY CONDOMINIUM UNITS WITH ASSOCIATED UTILITIES.

DENSITY CALCULATIONS:
 TOTAL LOT AREA: 44.88 ACRES
 WETLAND AREA: 18.97 ACRES
 STEEP SLOPES OVER 15%: 2.20 ACRES
 TOTAL DEVELOPABLE AREA: 23.71 ACRES (REMAINING LAND IS WETLANDS AND STEEP SLOPES OVER 15%)
 MAXIMUM UNITS FOR DEVELOPMENT: 22 SINGLE FAMILY HOUSES
 PROPOSED UNITS FOR OPEN SPACE PLANNED UNIT DEVELOPMENT: 22 THREE (3) BEDROOM UNITS

PARKING CALCULATIONS:
 REQUIRED: 1.3 SPACES/UNIT PLUS ONE (1) VISITOR SPACE FOR EVERY 5 DWELLING UNITS.
 TOTAL REQUIRED = 33 SPACES

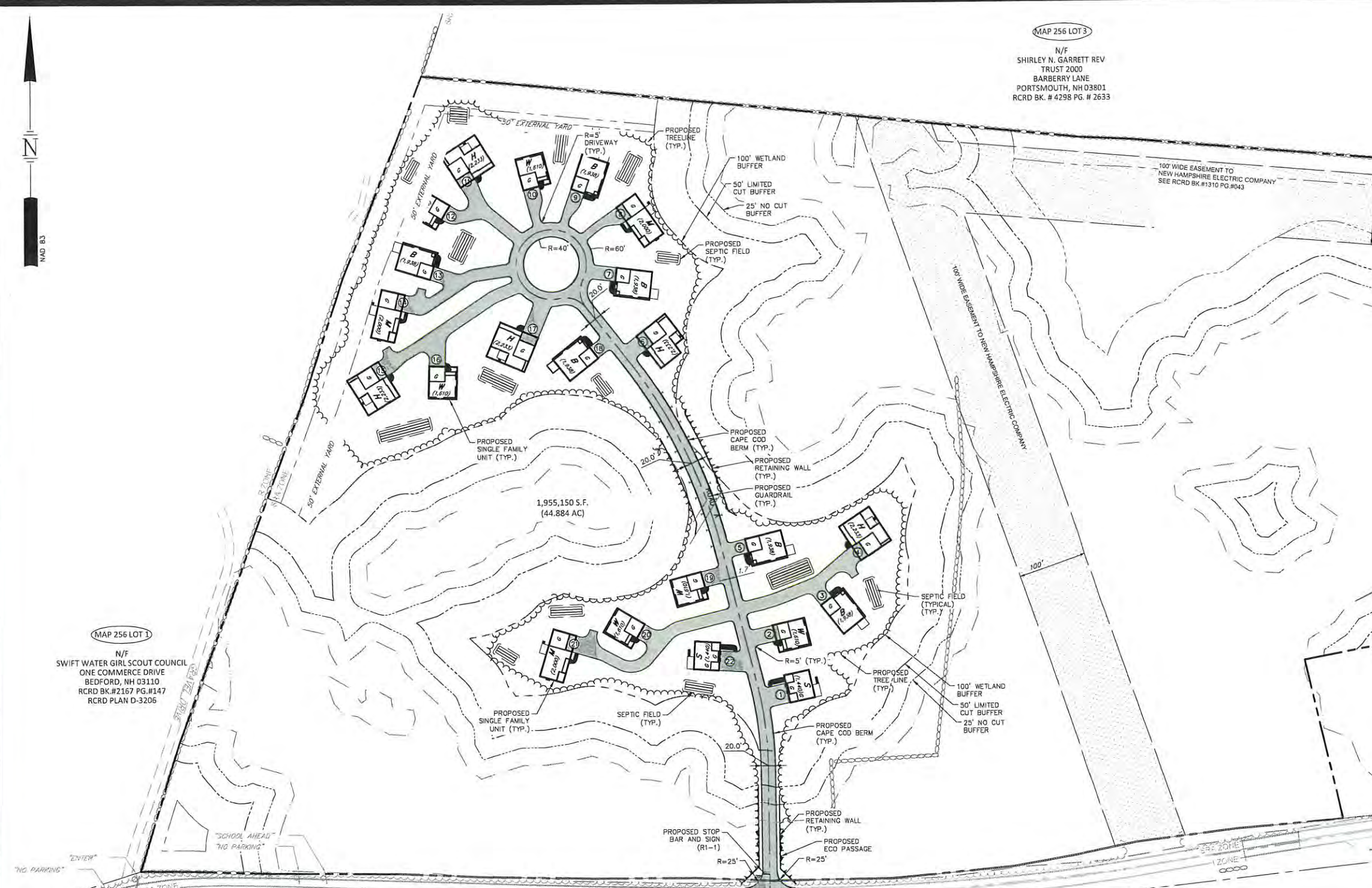
PROPOSED: 88 SPACES (2 GARAGED SPACES PER UNIT, PLUS 44 SPACES ON PRIVATE DRIVEWAYS)

EFFECTIVE IMPERVIOUS SURFACE CALCULATIONS:
 IMPERVIOUS AREA/TOTAL LOT AREA = 15,286.5 SF/1,955,150 SF = 0.0339
 TOTAL EFFECTIVE IMPERVIOUS SURFACE = 5.39%

NOTES

- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
- LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
- ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.

SIGN LEGEND					
ID	SIGN	SIZE (INCHES)		DESIGN (COLORING, TEXT SIZE, SPACING, SHAPE, RETROFLECTIVITY, ETC.)	NO. OF SIGNS
		WIDTH	HEIGHT		
R1-1		30	30	REFER TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS	1



MAP 256 LOT 1
 N/F
 SWIFT WATER GIRL SCOUT COUNCIL
 ONE COMMERCE DRIVE
 BEDFORD, NH 03110
 RCRD BK.#2167 PG.#147
 RCRD PLAN D-3206

MAP 266 LOT 5
 N/F
 HOPE FOR TOMORROW FOUNDATION
 1 STONERIDGE DRIVE
 RYE, NH 03870
 RCRD BK. # 5783 PG. # 602

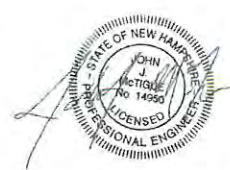
MAP 266 LOT 3
 N/F
 ANDREW R. & CAROL ANN CROTEAU
 285 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 1843 PG. # 336

MAP 266 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 2527 PG. # 0322

MAP 266 LOT 2
 N/F
 DENISE ARNOLD
 261 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 3644 PG. # 1763

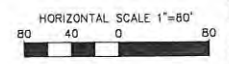
MAP 266 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 2527 PG. # 0322

MAP 254 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK.# 1743 PG.# 0192



SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
OVERALL SITE LAYOUT PLAN
THE VILLAGE AT BANFIELD WOODS
 PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 1"=160' (11"X17")
 SCALE: 1"=80' (22"X34") SEPTEMBER 25, 2019

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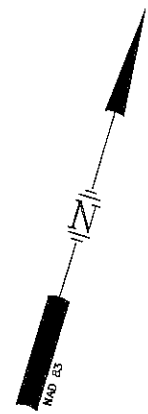
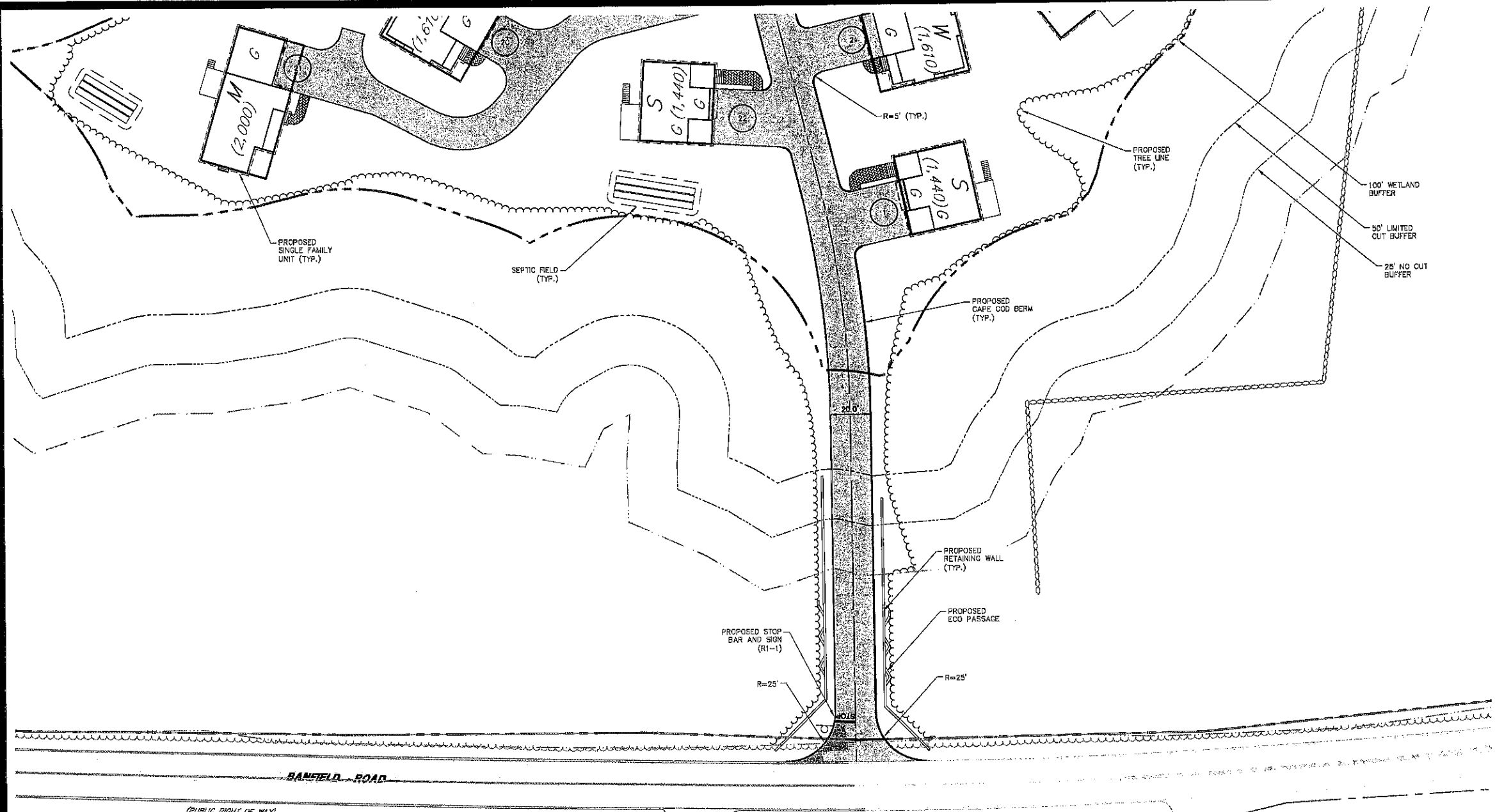
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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

TFM Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

48 Constitution Drive
 Bedford, NH 03110
 Phone (603) 472-4488
 Fax (603) 472-9747
 www.tfmoran.com

47361.00 DR RCK FB - C-04
 CK JJM CADFILE SITELAYOUT

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Dec 27, 2019 - 11:22am F:\MSDC Projects\47361 - Banfield Road - Putnam\04\17361-00 - Green & Co - Banfield Road\Design\Production Drawings\SiteLayout.dwg

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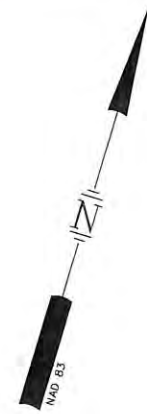
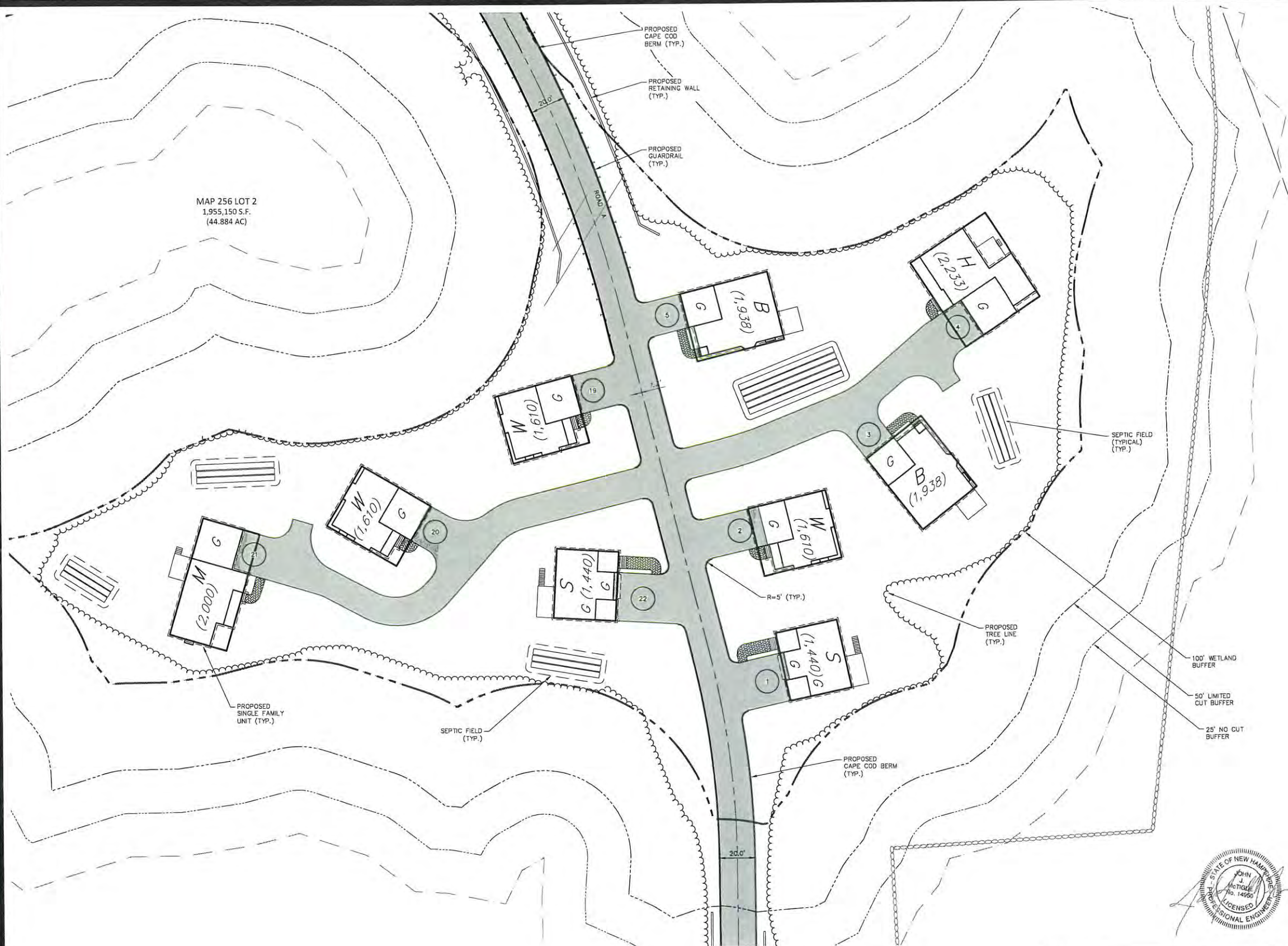
HORIZONTAL SCALE 1"=30'
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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

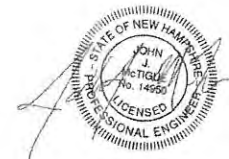
SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
SITE LAYOUT PLAN
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 1"=60' (11"X17")
 SCALE: 1"=30' (22"X34") SEPTEMBER 25, 2019

TFM	Civil Engineers	48 Constitution Drive
	Structural Engineers	Bedford, NH 03110
	Traffic Engineers	Phone (603) 472-4488
	Land Surveyors	Fax (603) 472-9747
	Landscape Architects	www.tfmoran.com
	Scientists	
47361.00	DR RCK FB	-
	CK JJM CADFILE	SITELAYOUT
		C-05

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SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
SITE LAYOUT PLAN
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 (11"x17")
SCALE: (22"x34") **SEPTEMBER 25, 2019**



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HORIZONTAL SCALE 1"=30'
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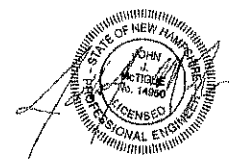
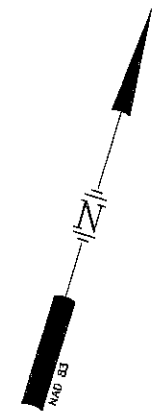
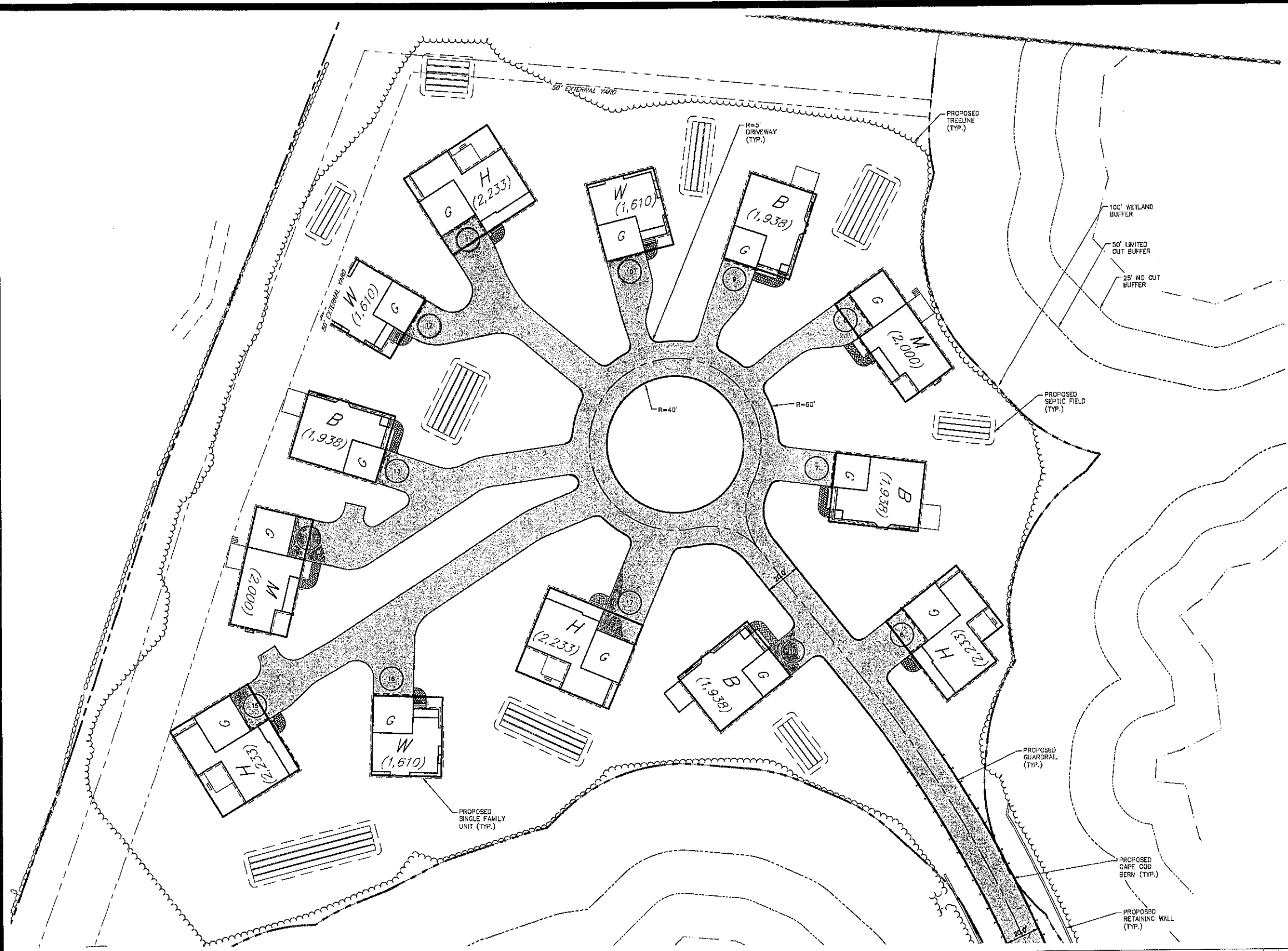
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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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	CK	JJM	CADFILE	SITELAYOUT

C-06

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SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
SITE LAYOUT PLAN
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 1"=60' (11"X17")
SCALE: 1"=30' (22"X34") **SEPTEMBER 25, 2019**

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HORIZONTAL SCALE 1"=30'
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1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

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	Scientists	

47361.00	DR	RCK	FB	
	CK	JJM	CADFILE	SITELAYOUT

C-37

WETLAND IMPACT PLAN

MAP 256 LOT 3
 N/F
 SHIRLEY N. GARRETT REV
 TRUST 2000
 BARBERRY LANE
 PORTSMOUTH, NH 03801
 RCRD BK. # 4298 PG. # 2633

- NOTES:**
1. THE PURPOSE OF THIS PLAN IS TO SHOW THE CITY OF PORTSMOUTH WETLAND IMPACTS AND WETLAND BUFFER IMPACTS ASSOCIATED WITH THE CONDOMINIUM DEVELOPMENT OF TAX MAP 256 LOT 2.
 2. FIELD SURVEY WAS COMPLETED BY TCE AND EJS IN MAY & JUNE 2019 USING A TOPCON DS103 AND A TOPCON FC-5000 DATA COLLECTOR.
 3. THE PURPOSE OF THE BUILDING FOOTPRINTS SHOWN ON THE PLAN ARE FOR ILLUSTRATIVE PURPOSES ONLY. FOOTPRINTS MAY CHANGE DURING CONSTRUCTION, BUT WILL REMAIN WITHIN REQUIRED SETBACKS. INDIVIDUAL GRADING PLAN ARE REQUIRED FOR EACH AREA OF HOMES TO BE DEVELOPED (PRIOR TO BUILDING PERMIT).
 4. DENSITY CALCULATIONS:
 TOTAL LOT AREA: 44.88 ACRES
 WETLAND AREA: 18.97 ACRES
 STEEP SLOPES OVER 15%: 2.20 ACRES
 TOTAL DEVELOPABLE AREA: 23.71 ACRES (REMAINING LAND IS WETLANDS AND STEEP SLOPES OVER 15%)
 MAXIMUM UNITS FOR DEVELOPMENT: 23 SINGLE FAMILY HOUSES
 PROPOSED UNITS FOR OPEN SPACE PLANNED UNIT DEVELOPMENT: 22 THREE (3) BEDROOM UNITS
 5. PARKING CALCULATIONS:
 REQUIRED: 1.3 SPACES/UNIT PLUS ONE (1) VISITOR SPACE FOR EVERY 5 DWELLING UNITS.
 TOTAL REQUIRED = 33 SPACES
 PROPOSED: 88 SPACES (2 GARAGED SPACES PER UNIT, PLUS 44 SPACES ON PRIVATE DRIVEWAYS)
 6. WETLANDS DELINEATION WAS COMPLETED BY GOVE ENVIRONMENTAL SERVICES IN MAY 2019 AND FIELD LOCATED BY MSC A DIVISION OF TDMORAN, INC.
 7. STEEP SLOPE AREAS ARE APPROXIMATE. TOWN REGULATIONS DEFINE SLOPES OF 15% AND GREATER TO BE NON-BUILDABLE.
 8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF PORTSMOUTH, NEW HAMPSHIRE, ROCKINGHAM COUNTY, COMMUNITY PANEL NUMBER 0270, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
 9. WETLAND IMPACTS WILL REQUIRE AN APPLICATION TO NHDES WETLANDS BUREAU AND A CONDITIONAL USE PERMIT FROM THE CITY OF PORTSMOUTH, OBTAINING THESE PERMITS WILL DEPEND ON THE WETLAND FUNCTION AND VALUES, AND SENSITIVITY OF THE PROJECT.
 10. TESTING FOR SUITABLE AREAS FOR SEPTIC SYSTEMS AND WELLS WILL BE REQUIRED TO CONFIRM THAT SERVICES CAN BE PROVIDED ON SITE, AND/OR AVAILABLE MUNICIPAL SEWER AND WATER CAPACITY WILL NEED TO BE VERIFIED DURING THE DESIGN PROCESS.
 11. SITE DEVELOPMENT MAY REQUIRE RETAINING WALLS FOR GRADE CHANGES.
 12. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.

WETLAND	WETLAND AREA	TEMPORARY WETLAND IMPACT	PERMANENT WETLAND IMPACT	BUFFER IMPACT
A	815,360 S.F.	1,135 S.F.	2,693 S.F.	10,407 S.F.
B	26,935 S.F.	0 S.F.	0 S.F.	3,983 S.F.
TOTALS	842,295 S.F.		3,828 S.F.	13,985 S.F.

LEGEND

- PERMANENT WETLAND IMPACT
- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND BUFFER IMPACT
- P- PERMANENT
- T- TEMPORARY

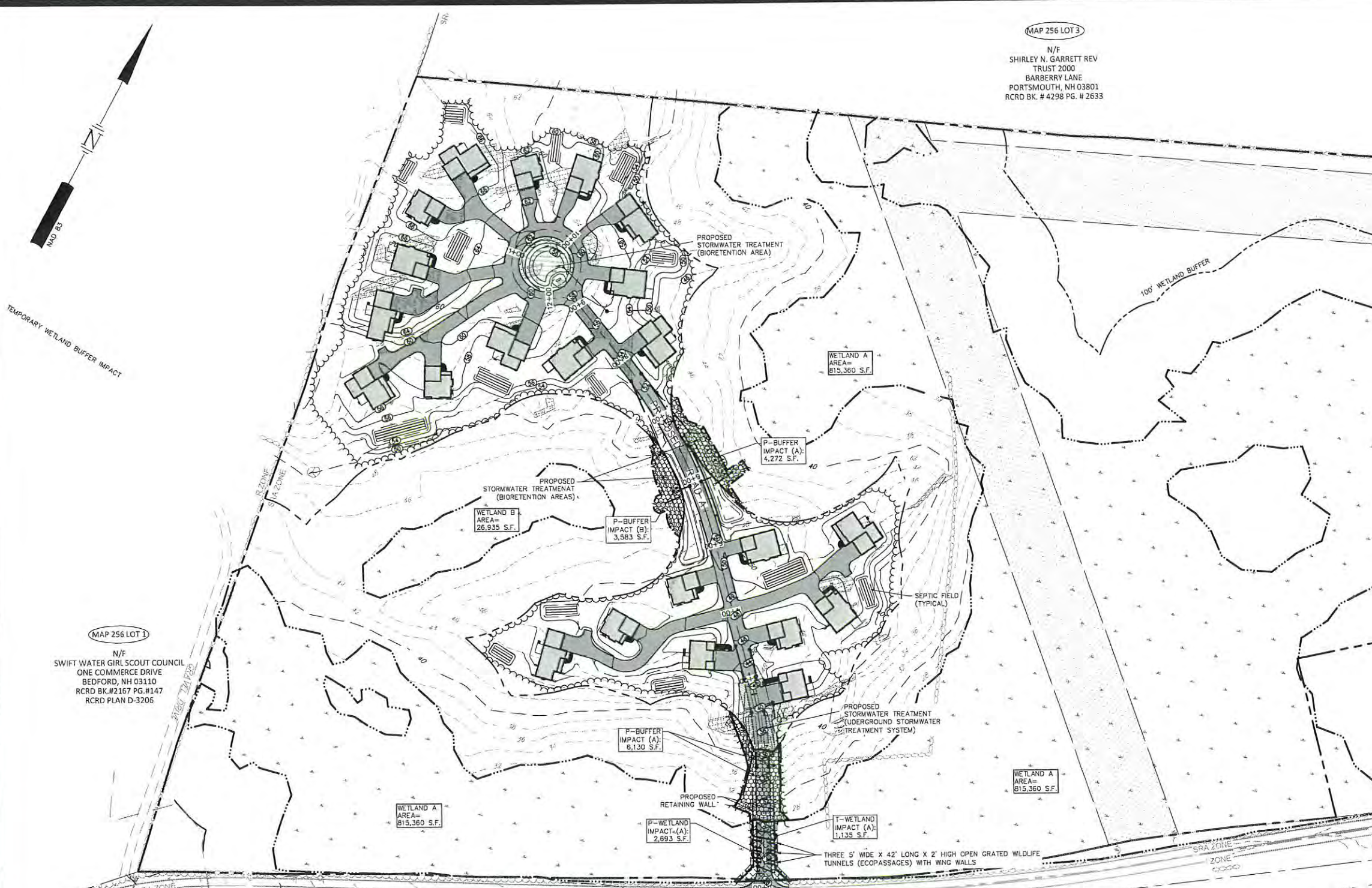
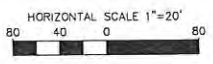
TAX MAP 256 LOT 2
WETLAND IMPACT PLAN
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 1"=160' (11"X17")
SCALE: 1"=80' (22"X34") **SEPTEMBER 25, 2019**

TFM Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

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 www.tfmoran.com

747361.00 DR RCK FB - - - -
 CK JAM CADFILE WETLAND IMPACT C-02

REV	DATE	DESCRIPTION	DR	CK
3	2/10/20	Update Plans	JJM	JJM
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/03/19	Revised Alignment Per Regulatory Comments	RCK	JJM



MAP 256 LOT 1
 N/F
 SWIFT WATER GIRL SCOUT COUNCIL
 ONE COMMERCE DRIVE
 BEDFORD, NH 03110
 RCRD BK.#2157 PG.#147
 RCRD PLAN D-3206

MAP 266 LOT 5
 N/F
 HOPE FOR TOMORROW FOUNDATION
 1 STONERIDGE DRIVE
 RYE, NH 03870
 RCRD BK. # 5783 PG. # 602

MAP 266 LOT 3
 N/F
 ANDREW R. & CAROL ANN CROTEAU
 285 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 1843 PG. # 336

MAP 266 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 2527 PG. # 0322

MAP 266 LOT 2
 N/F
 DENISE ARNOLD
 261 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 3644 PG. # 1763

MAP 266 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK. # 2527 PG. # 0322

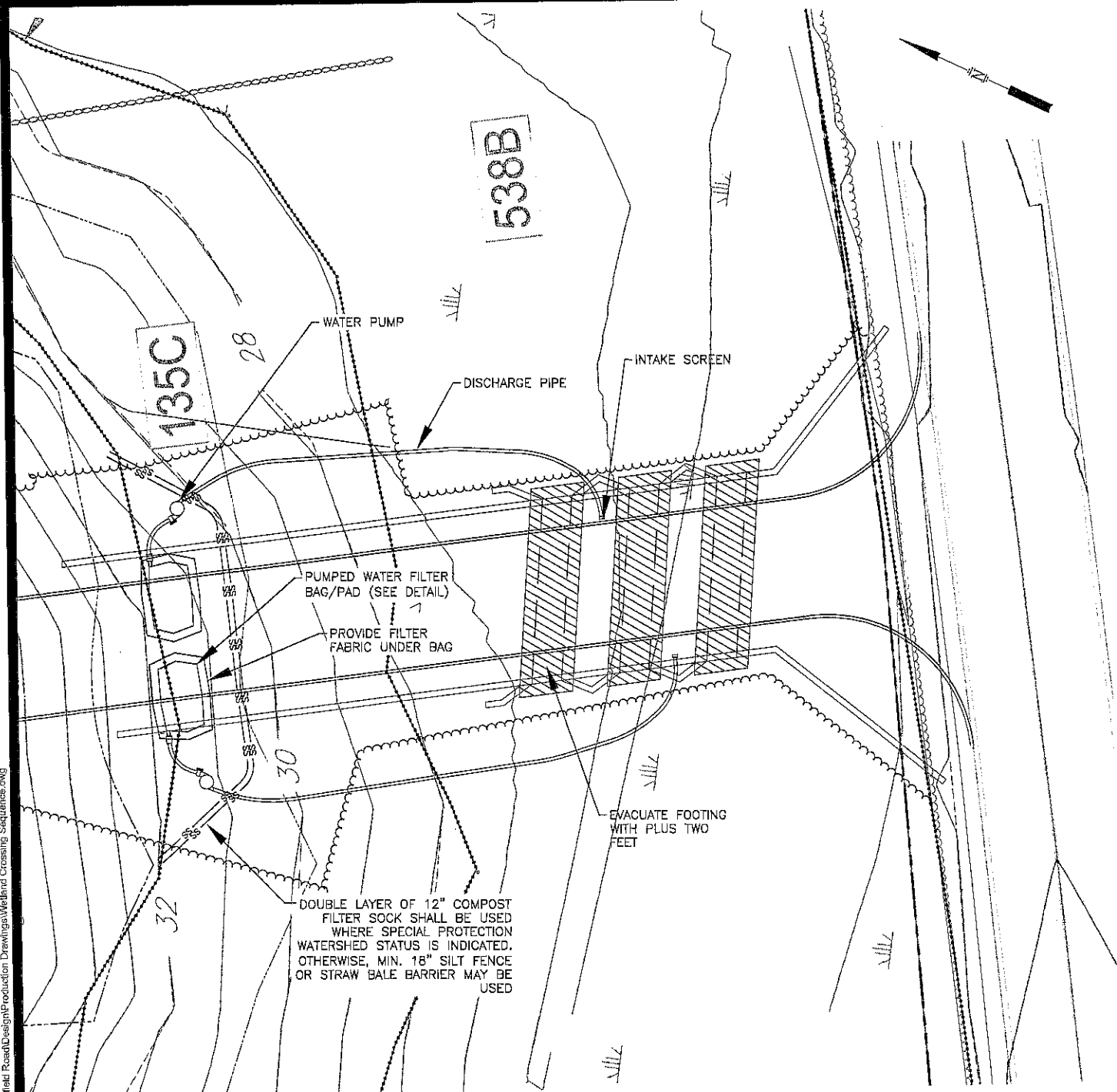
MAP 254 LOT 1
 N/F
 RICCI CONSTRUCTION CO INC
 225 BANFIELD ROAD
 PORTSMOUTH, NH 03801
 RCRD BK.# 1743 PG.# 0192

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Feb 19, 2020 - 4:44pm F:\MISC Projects\19261 - Banfield Road - Portsmouth\19261-00 - Green & Co. - Banfield Road\Design\Production Drawings\Wetland Impact.dwg

Feb 25, 2020 - 12:13pm
 F:\MSC Projects\47261 - Banfield Road - Portsmouth\47261-00 - Green & Co. - Banfield Road\Design\Production Drawings\Wetland Crossing Sequence.dwg



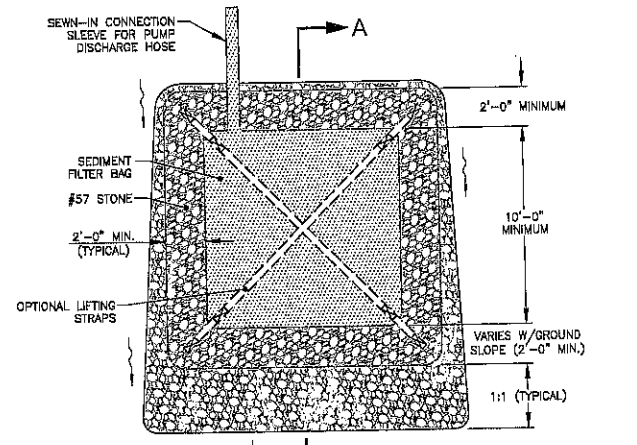
TYPICAL WETLAND CROSSING - OPEN TRENCH
 NOT TO SCALE

NOTES:

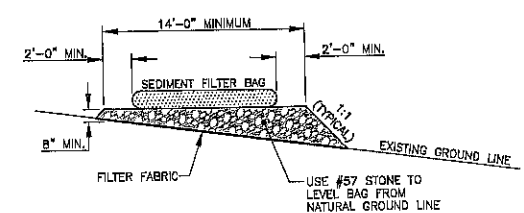
- GRUBBING SHALL NOT TAKE PLACE BEYOND THE LIMIT OF WORK AS SHOWN ON THE APPROVED PLANS.
- WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A SEDIMENT BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY WETLAND AREA.
- HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS AND EQUIPMENT REFUELING AREAS SHALL BE LOCATED AT LEAST 100' BACK FROM THE EDGE OF WETLAND.
- ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE EDGE OF WETLAND.
- ALL DISTURBED AREAS WITHIN 50' OF THE EDGE OF WETLAND SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE UNLESS OTHERWISE AUTHORIZED. APPROPRIATE WETLAND PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
- PROVIDE SECONDARY CONTAINMENT TO CAPTURE DRIPS, SPILLS, OR LEAKS OF FUEL OR OIL.

WETLAND CROSSING - SEQUENCE OF CONSTRUCTION

- THE PLACEMENT OF THESE STRUCTURES WILL BE DONE IN THE ORDER AS NUMBERED BELOW. EACH SEQUENCE BELOW WILL BE COMPLETED BEFORE THE NEXT STEP IN THE SEQUENCE COMMENCES. NO STEPS WILL BE REMOVED. THE TIME OF WETLAND DISTURBANCE WILL BE LIMITED AND WILL BE SCHEDULED DURING LOW FLOW OR NO FLOW CONDITIONS.
- AT WETLAND CROSSINGS, THE WETLAND BUFFER SHOULD BE MAINTAINED TO THE LARGEST EXTENT FEASIBLE ON BUFFERS. CLEARING, SOIL DISTURBANCE, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING CUT LOGS, DISCHARGING RAIN WATER FROM TRENCHES, WELDING PIPE JOINTS, STORING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF THESE BUFFERS.
 - INSTALL APPROPRIATE SEDIMENT BARRIER DOWNSLOPE OF ALL SPOIL/EXCAVATION FROM CROSSING AREAS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
 - NOTE: THE SEDIMENT BARRIER FOR THE SPOIL CROSSING AREAS MUST BE A MINIMUM OF 10' FROM THE EDGE OF WETLAND.
 - INSTALL WATER PUMP. IF A LEVEL AREA IS REQUIRED, GRADE THE PUMP AREA, THEN PLACE A 4" LAYER OF #57 STONE OR REINFORCED EROSION CONTROL BLANKET.
 - DURING THE EXCAVATION FOR THE PLACEMENT OF THE WETLAND CROSSING:
 - ALL WATER THAT NEEDS TO BE PUMPED FROM THE EXCAVATED TRENCH AREA WILL BE REMOVED BY DISCHARGE THROUGH A PUMPED WATER FILTER BAG. SEE FILTER BAG DETAIL.
 - IF THE AREA THAT THE BAG IS PLACED ON IS GREATER THAN 6% SLOPE, THEN A PUMPED WATER FILTER BAG PAD WILL BE CONSTRUCTED. SEE FILTER BAG PAD DETAIL.
 - EXCAVATE MATERIAL FOR TRENCH AREA. THE MATERIAL WILL THEN BE PLACED IN A DESIGNATED AREA FOR LATER USE. KEEP WETLAND TOPSOIL SEPARATE FOR LATER USE.
 - INSTALL CROSSING
 - INSTALL EROSION CONTROL FOOTING.
 - INSTALL EROSION CONTROL.
 - INSTALL CONDUITS FOR UTILITIES.
 - BACKFILL WILL THEN BE PLACED AROUND AND ON THE FOOTING AND BOX CULVERT. BACK FILL AND COMPACTED IN A MAXIMUM OF 12' LIFTS.
 - THE WETLAND AND SURROUNDING AREA NOT BEING DEVELOPED WILL BE RESTORED TO ORIGINAL CONTOURS. ALL DISTURBED AREAS WILL BE SEEDED AND MULCHED.
 - THE PUMPING OF WATER TO THE WATER FILTER BAG AS SHOWN IN STEP 4 OF THE INSTALLATION WILL CONTINUE DURING RESTORATION PROCEDURES.
 - THE SPOIL FROM CROSSING PLACEMENT AREAS WILL BE REGRADED, SEEDED AND MULCHED.
 - THE SILT BARRIER DOWNSLOPE OF THE SPOIL FROM CROSSING PLACEMENT AREAS WILL REMAIN IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATED STABILIZATION IS ACHIEVED.
 - PERMANENT STABILIZATION WILL BE ACHIEVED WHEN A UNIFORM 65% VEGETATIVE COVER OF THE ENTIRE SEEDED AREA IS ESTABLISHED.
 - REMOVE PUMPED WATER FILTER BAGS. THE AREA UTILIZED FOR THE PUMPED WATER FILTER BAG/PAD WILL BE REGRADED, SEEDED AND MULCHED.
 - THE PUMPING AREA AS SHOWN IN INSTALLATION SEQUENCE 4 WILL BE REGRADED, SEEDED AND MULCHED.
 - ALL AREAS THAT WERE DISTURBED DURING THE CONSTRUCTION OF THE WETLAND CROSSING WILL BE RETURNED TO THEIR ORIGINAL CONTOURS. SILT BARRIERS WILL BE PLACED DOWNSLOPE OF ANY AREAS THAT WILL BE REGRADED. THE AREAS WILL BE SEEDED AND MULCHED AS PER THE EROSION CONTROL NOTES, WILL REMAIN IN PLACE AND MAINTAINED UNTIL PERMANENT VEGETATED STABILIZATION IS ACHIEVED.
 - UPON COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION.



PLAN VIEW



SECTION A-A

SEDIMENT FILTER BAG WITH GRAVEL PAD
 NOT TO SCALE

SEDIMENT FILTER BAG GENERAL NOTES:

- CONTRACTOR SHALL EXERCISE CAUTION NOT TO BURST OR DAMAGE THE SEDIMENT FILTER BAG WHEN PUMPING.
- THE LENGTH AND WIDTH OF THE TEMPORARY SEDIMENT BAG SHOWN ON THIS DRAWING MAY VARY PER VENDOR SPECIFICATIONS. THE MINIMUM "FOOTPRINT" OF THE BAG SHALL BE 10 x 15 FEET.
- SEDIMENT FILTER BAGS SHALL BE EQUIPPED WITH A SEWN-IN SLEEVE OF SUFFICIENT SIZE TO ACCEPT A MINIMUM 4" DIAMETER PUMP DISCHARGE HOSE. THE DISCHARGE HOSE SHOULD BE EXTENDED INTO THIS SLEEVE A MINIMUM OF 6" INCHES AND BE TIGHTLY SECURED WITH A HOSE CLAMP OR OTHER SUITABLE MEANS TO PREVENT LEAKAGE. HOSE CONNECTION THROUGH A SLIT IN THE BAG WILL NOT BE ACCEPTABLE.
- THE PUMP DISCHARGE HOSE CONNECTION SLEEVE SHALL BE SECURELY TIED OFF DURING DISPOSAL OF THE SEDIMENT FILTER BAG IN ORDER TO PREVENT LEAKAGE OF COLLECTED SEDIMENTS.
- SEDIMENT FILTER BAG SHALL BE MAINTAINED AND REPLACED WHEN ONE HALF FULL OF SEDIMENT OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
WETLAND CROSSING SEQUENCE OF CONSTRUCTION
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 SCALE: NTS SEPTEMBER 25, 2019

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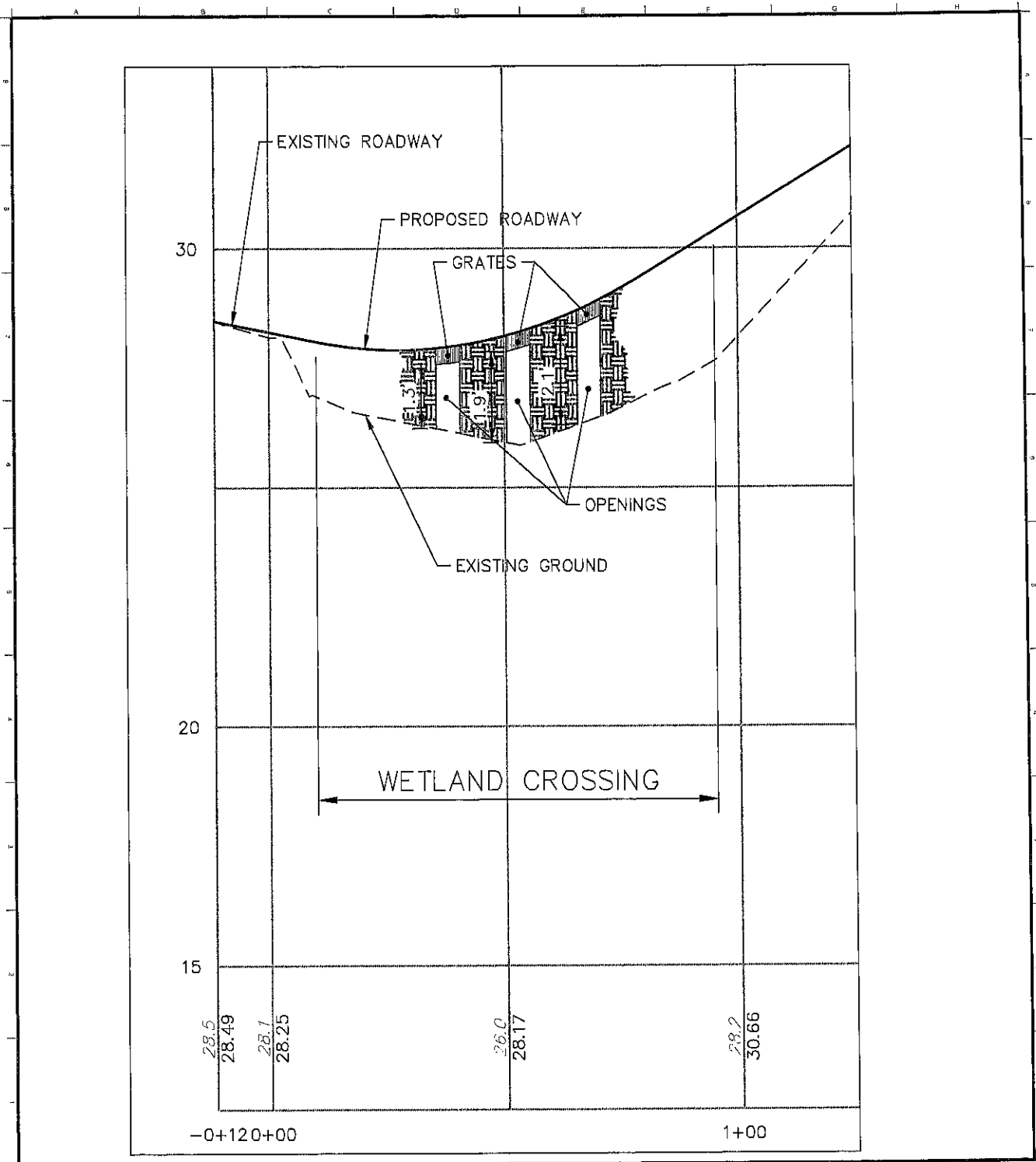



REV	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM

TFM Civil Engineers
 Structural Engineers
 Traffic Engineers
 Land Surveyors
 Landscape Architects
 Scientists

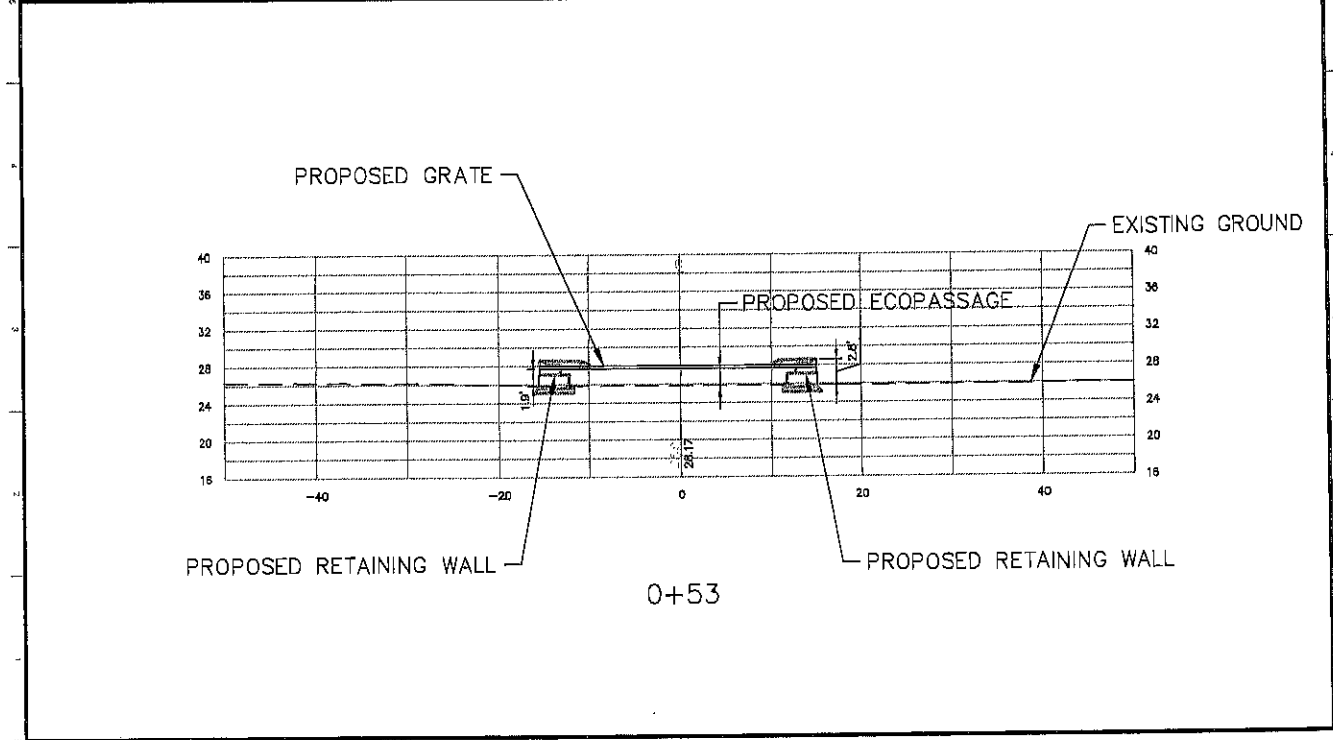
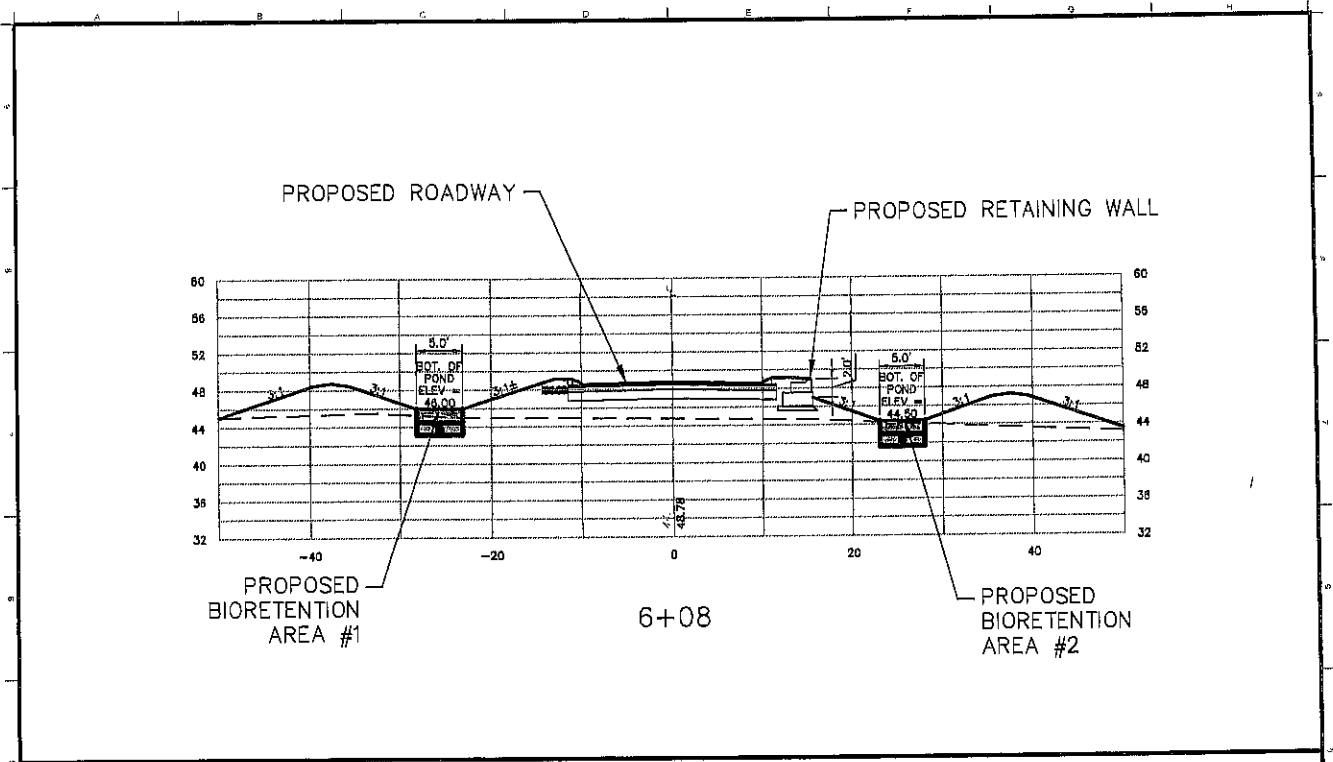
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 Fax (603) 472-9747
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47361.00 DR RCK FB - C-27
 CK JJM C/AD/FILE WETLAND CROSSING SEQUENCE



	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists		TAX MAP 256 LOT2 ECOPASSAGES PROFILE THE VILLAGE AT BANFIELD WOODS PORTSMOUTH, NEW HAMPSHIRE OWNED BY GREEN & COMPANY REAL ESTATE	REV.	DATE
	170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.TF Moran.com	47361.00		DR CK	FB CADFILE

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 Green & Co Banfield Road Design\Project\Drawings\47361_00_30.dwg

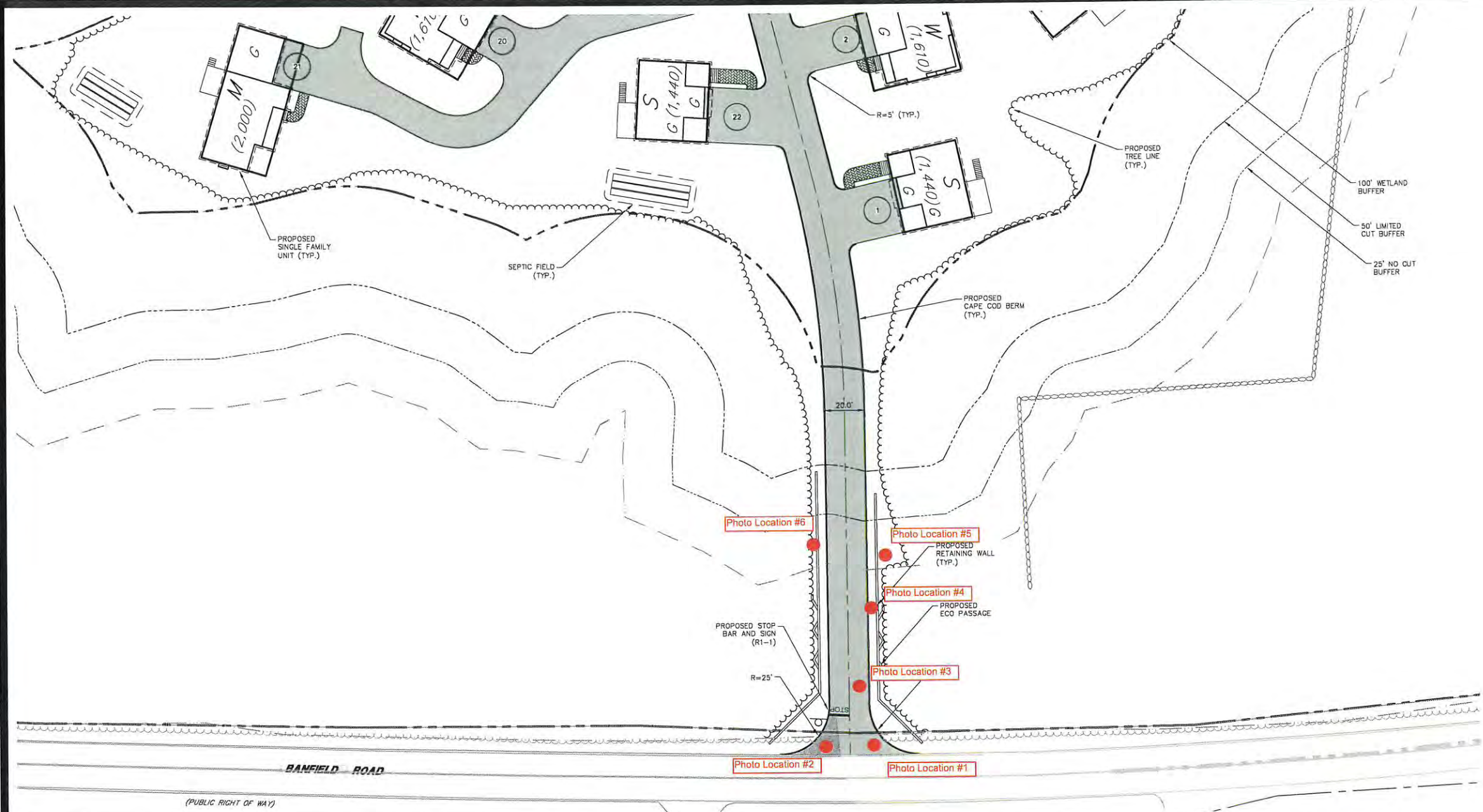


	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists		TAX MAP 256 LOT2 ECOPASSAGES & RETAINING WALL CROSS SECTION THE VILLAGE AT BANFIELD WOODS PORTSMOUTH, NEW HAMPSHIRE OWNED BY GREEN & COMPANY REAL ESTATE	<table border="1"> <tr><td>REV.</td><td>DATE</td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>	REV.	DATE																		
	REV.	DATE																						
170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.tfm.com	47361.00	DR EX	FB DATE	SCALE: 1"=20' DATE: 2/20/20	C-3																			

Feb 20 2020 7:01pm
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PHOTOLOG OF IMPACT AREAS

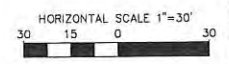
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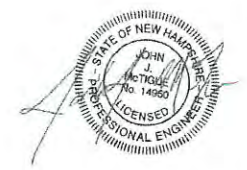
BANFIELD ROAD

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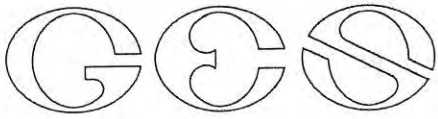


REV.	DATE	DESCRIPTION	DR	CK
2	12/27/2019	IN HOUSE REVISIONS	RCK	JJM
1	12/23/19	NO REVISIONS THIS SHEET	RCK	JJM



SITE DEVELOPMENT PLANS
 TAX MAP 256 LOT 2
SITE LAYOUT PLAN
THE VILLAGE AT BANFIELD WOODS
PORTSMOUTH, NH
 OWNED BY
WALTER D HETT TRUST
 PREPARED FOR
GREEN & COMPANY REAL ESTATE
 1"=60' (11"X17")
 SCALE: 1"=30' (22"X34") SEPTEMBER 25, 2019

TFM	Civil Engineers	48 Constitution Drive Bedford, NH 03110 Phone (603) 472-4488 Fax (603) 472-9747 www.tfmoran.com	
	Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists		
47361.00	DR RCK FB CK JJM CADFILE	SITELAYOUT	C-05



GOVE ENVIRONMENTAL SERVICES, INC.

Banfield Rd Photo Log



Photo #1: Looking North West into the site from Banfield Rd at the proposed impact area.



Photo #2: Looking to the North East into the site from Banfield Rd at the proposed impact area.

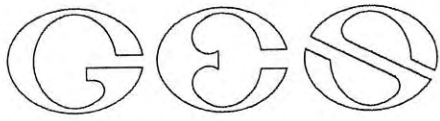


Photo #3: Looking to the South West at the proposed impact area.



Photo #4: Looking to the South East at the proposed impact area.

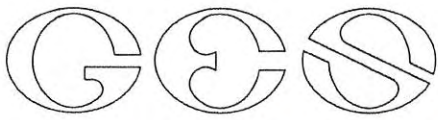


Photo #5: Looking to the South at the proposed wetland impact area.



Photo #6: Looking to the East at the proposed wetland impact area.

WILDLIFE REPORT



GOVE ENVIRONMENTAL SERVICES, INC.

WILDLIFE HABITAT ASSESSMENT
GREEN & COMPANY
BANFIELD ROAD, PORTSMOUTH
11/29/2019
Compiled by Luke Hurley

The site consists of approximately 45 acres of woodland and wetland areas. The site also has an existing maintained powerline easement bisecting the property into two pieces. The site is bordered by Banfield Road to the south and forested, unfragmented land to the north, east, and west. The site is somewhat of an island between Rote 95 to the north, Middle and Peverly Hill Roads to the east and Ocean Road to the west.

Upland Areas

Field analysis of this community type reveals a dominance of mixed-age red maple (*Acer rubrum*), sugar maple (*Acer sacharum*), yellow birch (*Betula allegheniensis*), white pine (*Pinus strobus*), and American beech (*Fagus grandifolia*), along with red oak (*Quercus rubra*) and eastern white pine (*Tsuga canadensis*) comprising the overstory of this natural community. Species in the canopy range in size from pole-size to mature trees. Small inclusions within this site are dominated by white pine in the tree layer

The shrub layer includes low bush blueberry (*Vaccinium angustifolium*) as well as regenerating canopy species. Analysis of herbaceous species reveals the presence of wintergreen (*Gaultheria procumbens*), partridgeberry (*Mitchella repens*), clubmoss (*Lycopodium spp.*), and bracken fern (*Pteridium aquilinum*), as well as several bryophytes and grasses.

There is very little variation in this natural community type throughout the wooded area of the parcel. This is similarly found in the other surrounding woodlands.

This natural community is common in southern New Hampshire.

Wetland Areas

There are two wetland areas on the site. Wetland A (both A-east and A-west) is located on the south and eastern portion of the lot. This wetland continues north to the powerlines. It is a combination of forested (PFO1E) and scrub shrub (PSS1E) vegetation. The wetland is dominated by red maple, Eastern Hemlock, American elm, and yellow birch in the tree layer, highbush blueberry, winterberry, sweet pepper bush, gray dogwood, and speckled alder in the shrub layer and cinnamon, sensitive, and royal fern, swamp dewberry, *Sphagnum* moss, and a variety of sedges and rushes in the herbaceous layer.

8 Continental Dr Unit H, Exeter, NH 03833-7507
Ph (603) 778 0644 / Fax (603) 778 0654
www.gesinc.biz
info@gesinc.biz

On April 25, 2019, GES conducted a site walk to view the two on site potential vernal pool areas that lay west of the powerline. The two areas did not have any vernal pool activity and did not appear to have enough water to support a vernal pool hydroperiod. No off-site areas were checked for vernal pool activity.

The smaller wetland on site, noted on the plans as "B", is a forested wetland shrub wetland (PFOE1) with highbush blueberry, winterberry, gray dogwood, and speckled alder in the shrub layer and cinnamon, sensitive, and royal fern, swamp dewberry, and *Sphagnum* moss in the herbaceous layer. The tree layer is primarily red maple with a few white pines.

No prime wetlands are found on site. Results from the New Hampshire Natural Heritage Bureau indicates no known occurrences of rare, threatened, or endangered species, or natural communities on site. The results, which are attached, show two natural communities and two plant species in the large wetland area to the west, but not directly on site.

As part of the assessment several hours were spent on site to observe signs and calls for wildlife that might be present on site or that had recently used the site for travel. Those noted on site are listed below. Overall, the site had little notable, direct observation of wildlife usage. The survey was performed on July 15 and temperatures were high. While the primary wildlife survey was conducted on this day multiple visits to the site have been conducted, through wetland delineations, vernal pool surveys, soil mapping and test pits. The habitat assessment for direct wildlife usage was not based on one single day of field work. Though the survey started in the morning, the temperature rose quickly, and this often results in wildlife seeking shelter from the mid-day heat and therefore they lessen their activity. Noted species are common throughout this area of the state. There was noted deer activity sporadically throughout the site, but no main corridors were observed. As the site is relatively flat with gentle slopes, large wildlife such as deer were not confined to ridges or lowlands for travel. Older evidence of presence was observed, such as scat was dried out and digging areas also appeared to be older.

Several areas of large rock out crops were present on site. However, no direct use by wildlife was observed. As prominent ledge knobs, they lacked significant areas of open "cave-like" places for larger mammals such as, fox, coyote or porcupine. These rock outcrops can often be a place for small mammals (such as chipmunks, mice, and squirrels) to den and retreat from predators. The stone walls lining the parcel are also a potential source of habitat for these mentioned species.

We have projected possible wildlife corridors on site. A map indicating these areas is attached. It will depict predicted corridors for small mammals, large mammals, as well as amphibious and reptilian species.

Observed Species:

Birds

Black-capped chickadee

Downy woodpecker

Tufted titmouse



Red breasted nuthatch
Turkey

Mammal
White-tailed deer (old)

Potential Wildlife Usage

The potential for various species of wildlife to occur onsite is subjective and is not always the best way to assess the value of a site. A parcel like this one, within a larger undeveloped block of land, has a high potential for use by wildlife, based on the cover types, wetland areas on and adjacent to the site, undeveloped corridors to travel to and from areas of denning and foraging and the presence of food sources from those of primary producers through plants, to primary and secondary consumers of insects and small mammals, reptiles and amphibians and deer, to tertiary and quaternary consumers through various weasel, canine and birds of prey species.

The deeper areas of the forest have the potential for less common avian species, of thrush, vireos and warblers, which are considered neo-tropical migrants and use this region of the state and country for spring and summer nesting and fly south for the winter. The wetland areas on the site are used in the same manner, as many of the shrub species within the wetlands are flower and subsequently fruit and seed bearing, that attract pollinating insects as food sources, and fruits/seeds to be eaten as many species of finches, warblers, vireos, thrushes, grackles are passing through during migration. Common year-round species, like those noted above, as well as robins, goldfinches, cardinals, many species of small to larger woodpeckers, blue jays, grey catbird, mockingbird, as well as winter species of finches and juncos summering in the north and winter in this area. These areas can also be used by hawk and owl species with adequate areas for nesting and hunting. The presence of significant hard mast trees and numerous acorn production could also be used by turkey.

The site in general has the potential for use by numerous mammal species from mice, moles and shrews, to skunks, opossum, racoon, to fox and coyote and deer.

With this, the potential for a site to have a significant and diverse wildlife population, does not always mean that it will. Much like the ideal habitat for a vernal pool, may not have any breeding activity, though it seems like it should. While the site is located within a larger overall area of over 950 acres, travel to and from the parcel is limited to the area on the south west side. Heavy development to the north and east, with I-95 to the north west significantly limit travel in and out of this parcel. The area to the southwest has the crossing limitation of Ocean Road, but in the greater geographic area, is the least obstructed area for wildlife movement towards and away from the site.

Impacts to wildlife is always a threat with any development and this project is no different. The greatest issue with this development is the bisecting of the site with the proposed road, limiting any existing and potential wildlife travel. While the site itself is approximately 45 acers, only the area to the west of the power lines is slated for development. That still leaves over 900 acres of undeveloped land in the area and approximately half of the 45-acre site intact. The development



has taken into consideration the connectivity of the site from the east to the west and has incorporated an open box culvert, outside of the wetlands, to facilitate the movement of small species that may not be as apt to go around and over the proposed road. Ample area will still be available to the north of the proposed development for wildlife to move from the west to the east. Wetland impacts are a small fraction of the overall wetland area on site and would not be expected to have impacts on those wetland dependent species, with the maintaining of the 100-foot buffer.



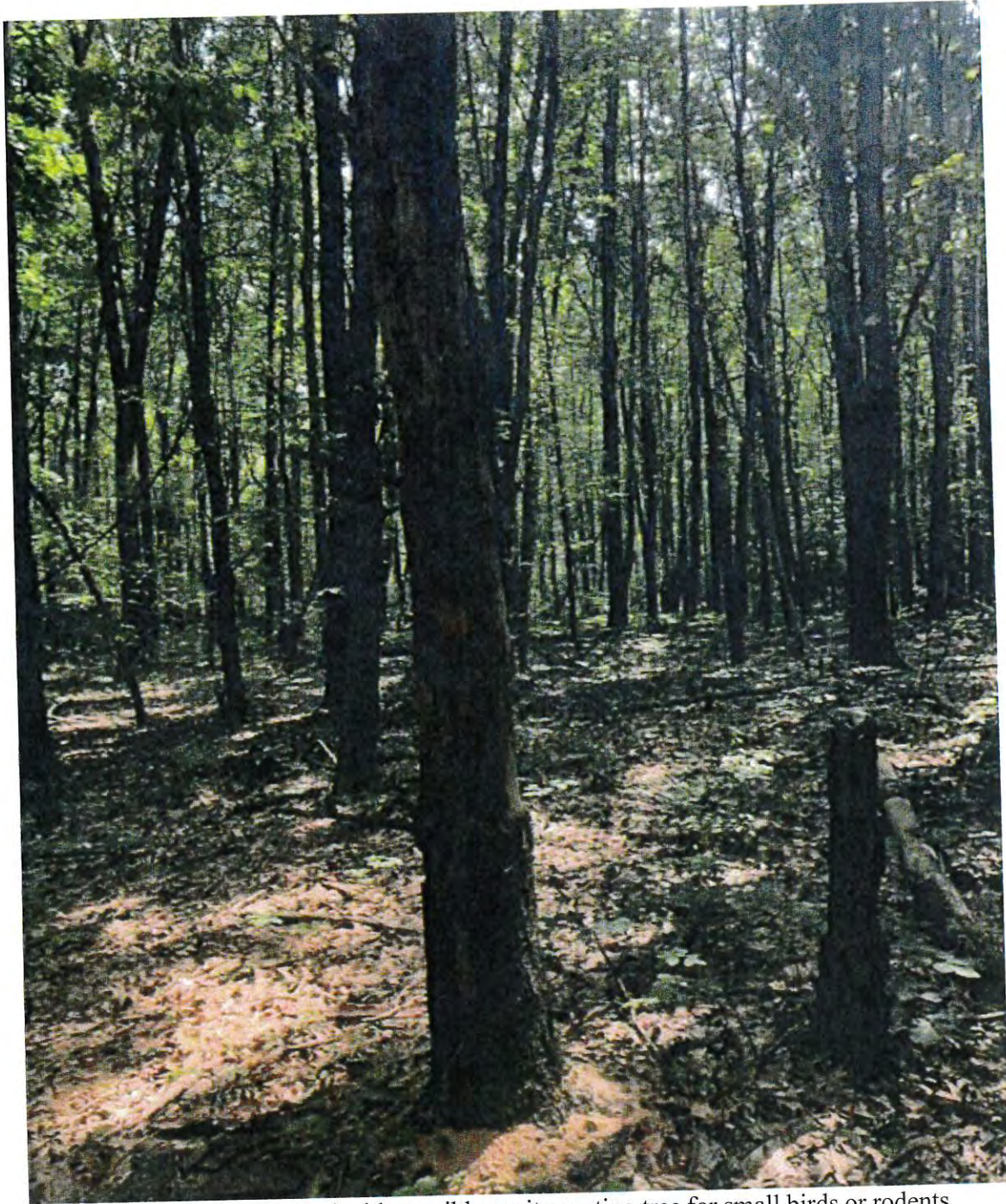
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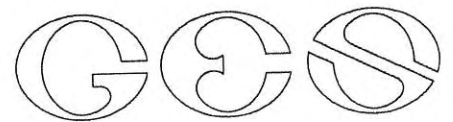


1. Representative view of the central upland area on site. Note stonewall in background.



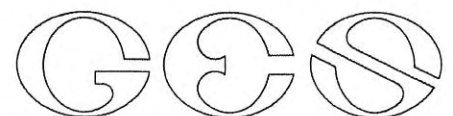


2. Additional view of upland with possible cavity nesting tree for small birds or rodents.





3. Large rock outcrop on site. One of the many located throughout the property.





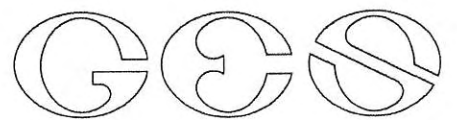
4. Cavity nesting tree for small rodents or birds.



5. Older deer droppings.

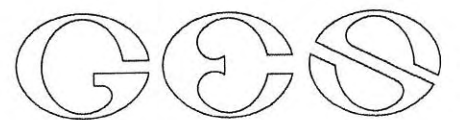


6. Wood frog



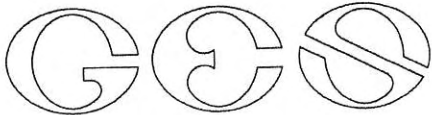


7. Mushroom with chewing on side. Most likely from a mouse or chipmunk.





8. Possible small rodent burrow.

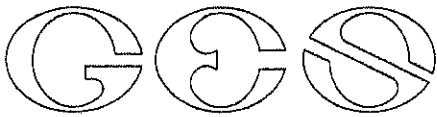




9. Additional photo of older deer droppings



VERNAL POOL DOCUMENTATION



GOVE ENVIRONMENTAL SERVICES, INC.

2019 VERNAL POOL ASSESSMENT

Banfield Rd
Portsmouth, NH

1.0 INTRODUCTION

Gove Environmental Services, Inc. (GES) presents this Vernal Pool Monitoring Report for approximately 45 acres of land located off of Banfield Rd in Portsmouth, NH. The analysis contained in this report is based on the field assessment conducted during the 2019 breeding season

It addresses:

- Amphibian and other obligate species activity; and
- Existing conditions in the upland envelope surrounding the pool.

All field data collection and analysis for this report was conducted by GES.

Location and Site Description

The site is primarily comprised of undisturbed, open, mature forest dominated by oaks, pines, and maples. Areas of the property adjacent to or within wetland areas have a dominant scrub shrub understory comprised of highbush blueberry, winterberry, speckled alder and iron wood. The site has a large wetland complex which nearly surrounds the two defined upland lobes to the west. The terrain of the site is very distinct as there are prominent ledge outcrops in several areas on the site. The site has two utility right-of-ways which divide the property almost evenly into two blocks of land.

Regulations

NH Department of Environmental Services defines vernal pools, under Env- Wt 101.99 as a surface water or wetland, including an area intentionally created for purposes of compensatory mitigation, which provides breeding habitat for amphibians and invertebrates that have adapted to the unique environments provided by such pools and which:

(a) Is not the result of on-going anthropogenic activities that are not intended to provide compensatory mitigation, including but not limited to:

- (1) Gravel pit operations in a pit that has been mined at least every other year; and
- (2) Logging and agricultural operations conducted in accordance with all applicable New Hampshire statutes and rules; and

(b) Typically has the following characteristics:

- (1) Cycles annually from flooded to dry conditions, although the hydroperiod, size, and shape of the pool might vary from year to year;
- (2) Forms in a shallow depression or basin;
- (3) Has no permanently flowing outlet;
- (4) Holds water for at least 2 continuous months following spring ice-out;
- (5) Lacks a viable fish population; and

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info@gesinc.biz

(6) Supports one or more primary vernal pool indicators, or 3 or more secondary vernal pool indicators.

2.0 METHODOLOGY

The assessment is based on the on-site review of areas that were previously observed as having potential for vernal pool habitat. Characteristics observed include: depth of the pool, the presence or lack of defined outlet or flow, and overall suitability of habitat for the amphibians to lay their eggs and for those eggs to persist.

Egg mass counts are conducted in these areas by slowly wading the pools while wearing polarized glasses for a better view through the water. Egg mass species identification was made using the professional experience of the biologist in conjunction with the publication *Vernal Pools: Natural History and Conservation*.¹ During surveys, adult amphibians and other vernal pool indicator species were noted. Other factors, which contribute to the significance of the pool, were also recorded including ponding depth, canopy cover, the character of the surrounding upland, and the presence of predator species. The following section provides a brief description of the pools assessed on site.

3.0 VERNAL POOL DESCRIPTIONS & DISCUSSION

In June of 2017, a preliminary site walk was done at the request of the client to perform an overall review of both previously flagged wetlands and newly flagged areas. During this preliminary site assessment four areas were observed as having potential vernal pool characteristics, however, due to the site walk taking place in June, it was not the appropriate time to perform a vernal pool assessment.

On April 25th 2019 GES conducted a reassessment of the potential vernal pools. Due to the location of the proposed development the vernal pool survey only focused on the assessment of potential vernal pools #1-3. During the assessment potential vernal pool area #3 was determined to be off property and thus was not further assessed. Potential vernal pool areas 1&2 were assessed using the aforementioned methodology and are described below.

Area #1:

This potential vernal pool area is located in the front of the site to the east and exists within a scrub shrub wetland that is bordered by Banfield Rd. as well as the utility right of way on property. The area primarily drains slowly from the west to the east along Banfield Rd. and settles out in an area of the utility right of way which then drains the water to the opposite side of Banfield Rd off site. During the assessment no adults wood frogs or spotted salamanders were observed. The area did have some standing water about 3-4 inches in the deepest areas. It is because of this observed lack of inundation the area was ruled out as having a suitable hydroperiod to be characterized as a viable vernal pool. No primary or secondary indicators were observed within this area.

¹ Colburn, Elizabeth A., Ph.D. *Vernal Pools: Natural History and Conservation*. Blacksburg, VA: McDonald and Woodward Publishing Company, 2004.



Area #2:

This potential vernal pool area is to the north of assessed potential vernal pool area #1. This area is within the contiguous wetland system that exists on the property and like Area 1 is within a large scrub shrub area bordered by the utility right of way. During the assessment no adult wood frogs or spotted salamanders were observed in the area. This area had similar inundation to area #1 with only a few inches of standing water at most. As the description of the first area addressed, this lack of inundation the area was ruled out as having a suitable hydroperiod to be characterized as a viable vernal pool. No primary or secondary indicators were observed within this area.



Photo Log
Representative photos taken in the fall of 2019.



Photo #1: Looking to the east at Potential Vernal Pool Area #1.



Photo #2: Looking at the base of the scrub-shrub vegetation noting there are no signs of persistent variable water depth that would support viable vernal pool habitat.



Photo #3: Looking at potential vernal pool area #2.



Photo #2: Looking at the base of the scrub-shrub vegetation noting there are no signs of persistent variable water depth that would support viable vernal pool habitat.

Vernal Pool Location Map



Appendix I
New Hampshire Natural Heritage Bureau Inquiry

CONFIDENTIAL – NH Dept. of Environmental Services review

NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER



Memo

To: Luke Hurley, Gove Environmental Services, Inc.
8 Continental Drive
Exeter, NH 03833

From: Amy Lamb, NH Natural Heritage Bureau

Date: 6/17/2019 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB19-1807

Location: Tax Maps: 256-2

Town: Portsmouth

Description: This project is planned to be a 22 unit open space residential facility.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please send NHB a plan set showing proposed wetland impacts, stormwater structures, building and parking infrastructure, and "open space" areas.

Natural Community

Description	State ¹	Federal	Notes
Drainage marsh - shrub swamp system	--	--	Threats to this community include changes to the wetland's hydrology either through damming or increasing drainage. Significant increases in nutrients and pollutants from stormwater runoff could also have a deleterious effect on the wetland.

Red maple - sensitive fern swamp

These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff.

Plant species

Plant species	State ¹	Federal	Notes
great bur-reed (<i>Sparganium eurycarpum</i>)	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
tufted yellow-loosestrife (<i>Lysimachia thyrsiflora</i>)*	T	--	As a resident of peatlands, this species is susceptible to any changes to the wetland's hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbances.

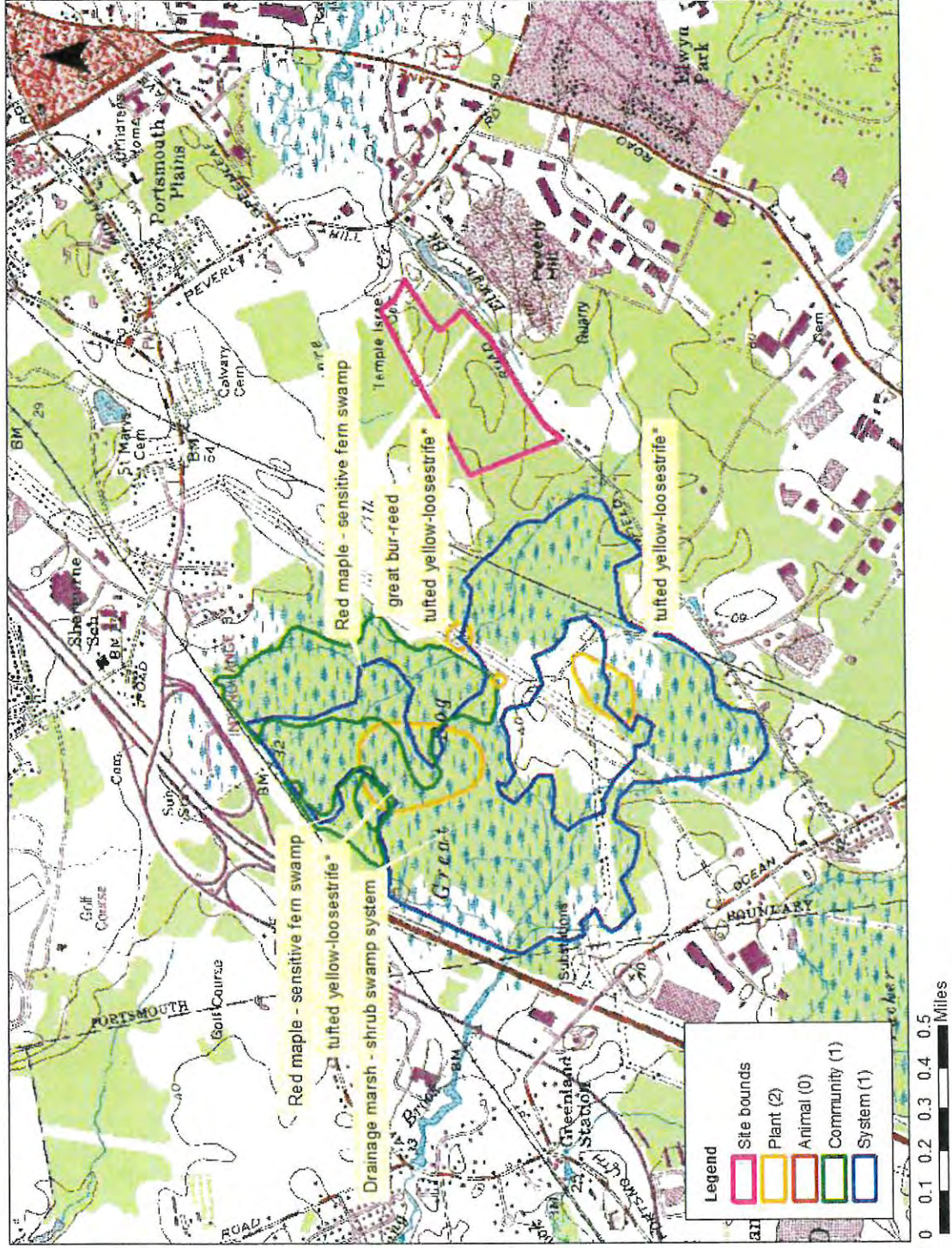
¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB19-1807



New Hampshire Natural Heritage Bureau - System Record

Drainage marsh - shrub swamp system

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Demonstrably widespread, abundant, and secure

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: Despite the compromised condition and context ranks, this is an exemplary system because it is a very large, diverse emergent marsh system with coastal plain affinities.

Detailed Description: 2009: Emergent marsh, seepage marsh, meadow marsh, and shrub thicket communities cover most of Great Bog, a broad, coastal plain basin with very poorly drained marine sediment soil and moderate to deep mucky peat soils (over marine sediments). Sedges and/or cattails dominate the marsh communities, which occupy most of the treeless or sparsely wooded areas of the larger wetland. Shrub thickets are also common but occupy a minority of the system. These various communities cover large areas individually, but also occur together in more complex, fine-scaled mosaics in places. Herbaceous seepage marsh and cattail marsh are apparently the most extensive communities. Herbaceous seepage marshes, described from earlier visits and dominated by *Carex lacustris* (lake sedge), occupy large areas in the western part of Great Bog on Maybid silt loam soil, and possibly occur elsewhere. *Typha latifolia* (common cattail) dominate the cattail marshes in most areas on deeper mucks, but some are dominated by *Typha angustifolia* (narrow-leaved cattail), including the south-central portion of the wetland (south of the upland island in the middle of the wetland). *Carex stricta* (tussock sedge) dominates areas of **tall graminoid meadow marsh** and **mixed tall graminoid - scrub-shrub marsh**, along with various other sedges, grasses, forbs, and medium-height to tall shrubs. Shrub thickets include **alder - dogwood - arrowwood alluvial thicket** and **highbush blueberry - winterberry shrub thicket**. *Ilex verticillata* (winterberry), *Vaccinium corymbosum* (highbush blueberry), *Clethra alnifolia* (sweet pepperbush), *Alnus incana* ssp. *rugosa* (speckled alder) are abundant. *Lyonia ligustrina* (male berry) and *Toxicodendron vernix* (poison sumac) are occasional. Small to large colonies of *Phragmites australis* (common reed) occupy portions of the wetland, including the eastern lobe adjacent to Banefield Rd., which was sprayed with herbicide in September 2009. The marsh and shrub communities extend to the upland margin around most of the periphery, but transition to various swamp communities along the northeast side and discontinuously elsewhere.

General Area: 2009: Great Bog is set in low-relief coastal terrain, surrounded by both dry and mesic Appalachian oak - hickory forests, as well as swamps along subtle drainages that feed into the wetland. A complex mosaic of parent materials in the surrounding landscape include shallow ablation till, outwash sediments, and silt and clay soils of marine origin. Upland forests and swamps occur on the largely undeveloped northeast side. Roads, parking lots, and other residential and industrial development are common close to the wetland in other border areas. Invasive exotic shrubs are common in the upland areas immediately adjacent to the wetland, including vast forest thickets of *Frangula alnus* (alder-buckthorn) on the upland island in the central part of the wetland, through which the powerline corridor runs. These are perhaps the most extensive, old, and impenetrable thickets of alder-buckthorn this surveyor has seen, covering dozens of acres. Eighty percent or more cover of alder-buckthorn was common, with very little or no other vegetation in the understory. Other portions of this upland island were more open old fields with remnant orchard trees. Numerous other invasives are present, including *Rosa multiflora* (multiflora rose), *Berberis thunbergii* (Japanese barberry), and *Celastrus orbiculatus* (Asian bittersweet).

General Comments:
Management
Comments:

Location

CONFIDENTIAL – NH Dept. of Environmental Services review

Survey Site Name: Great Bog
Managed By: Portsmouth I, City of

County: Rockingham
Town(s): Portsmouth
Size: 349.3 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Accessed site from railroad tracks that cross Banefield Rd.

Dates documented

First reported: 2009-09-29

Last reported: 2009-09-29

New Hampshire Natural Heritage Bureau - Community Record

Red maple - sensitive fern swamp

Legal Status

Federal: Not listed
State: Not listed

Conservation Status

Global: Not ranked (need more information)
State: Rare or uncommon

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank: This is a fairly mature and very large example in a compromised landscape context. This part of Great Bog is less influenced by hydrologic alterations than portions nearer the outlet to the west.

Detailed Description: 2002: Two seepage swamp associations were observed at the north end of the seepage swamp system. Area 1 occurs further east (ie along border of development to the east) and has a denser *Acer rubrum* (red maple) cover (60-70%) and a sparse shrub layer. It is dominated by *Carex stricta* (tussock sedge; 35%), *Calamagrostis canadensis* (blue-joint; 15-20%), and *Onoclea sensibilis* (sensitive fern), with lesser quantities of *Carex lacustris* (lake sedge) and *Toxicodendron radicans* (climbing poison ivy). Area 2 is a classic red maple/lake sedge seepage swamp, with all the species of Area 1 present in lower abundance, less dense red maple (40%), a dominant layer of *Carex lacustris* (lake sedge; 60%) and sensitive fern (5%), and a denser shrub layer consisting mostly of *Vaccinium corymbosum* (highbush blueberry; 30%) and *Ilex verticillata* (winterberry; 5%). *Ulmus americana* (American elm) is occasional in the subcanopy. 1989: *Acer rubrum* (red maple) dominates. Understory dominants include *Carex stricta* (tussock sedge), *Alnus serrulata* (smooth alder), *Onoclea sensibilis* (sensitive fern), *Symplocarpus foetidus* (skunk cabbage), *Lysimachia thyrsiflora* (tufted loosestrife) also occurs here.

General Area: 2002: The seepage swamp is the dominant community in eastern portion of Great Bog, and bounded to the west by the large seepage marsh, to the north by railroad tracks, to the south by powerlines and upland. While surrounded by development, Great Bog is so large that it is actually one of the largest and least developed tracts of land in Portsmouth.

General Comments: 1989: Further field work needed.

Management

Comments:

Location

Survey Site Name: Great Bog
Managed By: Griffin

County: Rockingham

Town(s): Portsmouth

Size: 100.0 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Great Bog. North and west of powerline right-of-way. Best approach to portion of site visited in 2002 (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Rte. 33 and I-95. Park in vicinity of Rte. 33 crossing of railroad tracks, at industrial complex on Griffen Rd to south of Rte. 33 (closest but dense shrub border along RR track) or at RR bridge by Greenland and Borthwick Streets just north of Rte. 33 (easiest). Proceed southwest on RR tracks. The seepage swamp is located to the south just past the industrial complex (0.25 miles from Rte. 33); the seepage marsh is found further along past the seepage swamp (open area with few trees ca. 0.45 miles from Rte. 33); and the swamp white oak swamp is found where trees pick up again south of the RR tracks closer to the highway crossing (0.7 miles from Rte. 33).

Dates documented

CONFIDENTIAL – NH Dept. of Environmental Services review

First reported: 1989-05-30

Last reported: 2002-09-27

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

great bur-reed (*Sparganium eurycarpum*)**Legal Status**

Federal: Not listed
 State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Poor quality, condition and/or landscape context ('D' on a scale of A-D).
 Comments on Rank: Small population size.

Detailed Description: 2010: At least 2 stems, with fruit/flowers.

General Area: 2010: Edge of a partially shaded (red maple?) swamp. Skunk cabbage (*Symplocarpus foetidus*) present along with some buttercup or crowfoot (*Ranunculus* sp.) species and a sedge (*Carex* sp.) with large fruits (0.5 inches diameter, 2 inches long).

General Comments:

Management

Comments:

Location

Survey Site Name: Great Bog
 Managed By: Portsmouth I, City of

County: Rockingham

Town(s): Portsmouth

Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: From Rte. 33 in Greenland, go SE on Ocean Road crossing I-95. The next left is Buckminster Way which has a short spur driveway that is blocked off with posts and a chain. Park here; a trail leads NE through woods to a large open upland area crisscrossed by power lines. The spot in question is right near the edge of a wetland and is fairly easy to access from the upland area (43.04553N, 70.80095W). Note that this spot may be difficult to access if water levels are high.

Dates documented

First reported: 2010-06-21

Last reported: 2010-06-21

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

tufted yellow-loosestrife (*Lysimachia thyrsiflora*)**Legal Status**

Federal: Not listed
 State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank: New Hampshire's best population.

Detailed Description: 2010: Searched for but not found.
2004: Searched for but not found.
2002:
 Searched for but not found.
1989: Thousands of budding plants.
1983: 2 small
 populations, 11-50 individuals. Specimen collected.

General Area: 1989: SNE seepage marsh. Also in red maple swamp. With *Carex rostrata* (beaked sedge),
Acer rubrum (red maple), *Typha latifolia* (common cat-tail), and *Osmunda cinnamomea*
 (cinnamon fern). 1983: Where a powerline crosses a branch of a brook.

General Comments: 1989: Occurs in 2 areas of seepage marsh.
 Management 2004: Lots of exotic species present.

Comments:

Location

Survey Site Name: Great Bog
 Managed By: Griffin

County: Rockingham
 Town(s): Portsmouth
 Size: 45.8 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Great Bog. South and east of crook in powerline right-of-way.
1989: Areas 2 and 3: Park at
 railroad crossing of Banfield Road. Access via dirt road heading NW from Banfield Road about 0.2
 miles north of the railroad (much of this road was flooded to 18 inches).
1983: Area 1: Great
 Bog. At crossing of branch of Pickering Brook and the electric line (brook crossing of utility line and
 service lane).

Dates documented

First reported: 1983-06-16 Last reported: 1989-05-30

COORDINATION WITH
NATURAL HERITAGE BUREAU

From: [Brenden Walden](#)
To: [Lamb, Amy](#)
Subject: RE: NHB19-1807
Date: Friday, February 21, 2020 2:50:00 PM
Attachments: [Wetland Impact.pdf](#)
[Drainage Practices.docx](#)

Good afternoon Amy,
Sorry there has been radio silence on this, the project started to undergo some design changes with respect to the stormwater management. I have attached the drainage verbiage as well as an updated plan that will show the incorporation of two bio retention areas.

I am getting the dredge and fill completed for submission early next week. Ill have in the submission that we are still ongoing in coordination. But ill also have a hard copy of the dredge and fill for you if you if you would like it!

If you have any questions or comments please let me know.
Thank you and have a great weekend!

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

From: Lamb, Amy <Amy.Lamb@dncr.nh.gov>
Sent: Friday, January 24, 2020 2:40 PM
To: Brenden Walden <bwalden@gesinc.biz>
Subject: RE: NHB19-1807

Hi Brendan,

I apologize for the slow reply and thank you for the reminder.

I only have a couple questions about the Stormtech System #1 near the project entrance. The third to last sentence in the paragraph describing this system says, "More than Stormwater from here filters through a engineered soil layer (filtering layer) before it is collected but underdrain below the system." I was just wondering if there was a partial sentence that was accidentally omitted, after the "More than...".

I also noticed that with this system, you stated that the treated stormwater flows into the wetlands instead of across the 100' wetland buffer; is that accurate? How much of an area does this system occupy, and for how large of an area does it provide treatment?

Lastly, what is the capacity of the system? Is the whole system contained within the 100 x 25 x 2.3' footprint of the stone layers (5,750 cubic feet minus the volume of stone)? What happens during times of high flow?

It might be helpful if you sent a cross-sectional sketch of the system from plan drawings.

Thanks very much,
Amy

Amy Lamb
Ecological Information Specialist
(603) 271-2834
amy.lamb@dncr.nh.gov

NH Natural Heritage Bureau
DNCR - Forests & Lands
172 Pembroke Rd
Concord, NH 03301

From: Brenden Walden <bwalden@gesinc.biz>
Sent: Friday, January 24, 2020 1:22 PM
To: Lamb, Amy <Amy.Lamb@dncr.nh.gov>
Subject: RE: NHB19-1807

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Good afternoon Amy,
Just following up to see if you have any comments or concerns for this project or if you need any additional information?
Thank you.

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

From: Brenden Walden
Sent: Wednesday, January 8, 2020 12:03 PM

To: Lamb, Amy <Amy.Lamb@dncr.nh.gov>

Subject: RE: NHB19-1807

Good afternoon Amy,

Sorry for the super delayed response but please see the description of the proposed under road drainage.

We are proposing 3 stormwater treatment BMP's for the Banfield Road Project. Starting from the entrance:

Stormtech System #1. (Filter Treatment)

This system begins approximately 200' from the entrance. Stormwater is collected in roadway catch basins and directed into Stormtech chambers (SC-310) for detention. The first row of chambers are isolator rows which provide pretreatment for the water entering the system. The chambers are embedded in a layer of stone, 100 feet long x 25 feet wide x 2.3' high. This will detain stormwater and release it a slow rate. More than Stormwater from here filters through an engineered soil layer (filtering layer) before it is collected but underdrain below the system. The stormwater flow is controlled by orifices that slowly release the stormwater at lower flows. The treated stormwater then flows into the wetlands.

Stormtech System #2. (Infiltration Treatment)

This system is between the two groups of houses. Stormwater is collected in roadway catch basins and directed into Stormtech chambers (SC-740) for detention. The first row of chambers are isolator rows which provide pretreatment for the water entering the system. The chambers are embedded in a layer of stone, 110 feet long x 25 feet wide x 3.5' high. This will detain stormwater and release it a slow rate. Approximately one-and-a-half times the required Water Quality Volume (WQV) is held in the system where it is infiltrated into the ground. During heavier storms, storm water outflow is controlled by orifices that slowly release the stormwater at lower flows. The treated stormwater then flows across the 100' buffer into the wetlands.

Bioretention System #1 (Filter Treatment)

This system is located in the cul-de-sac. Due to the depth of the Estimated Seasonal High Water Table (ESHWET) and the Location of the Ledge, this system is not infiltrating stormwater into the ground. Stormwater is collected along the roadway gutter, pretreated by a forebay prior to entering a ponding area above it to detain the stormwater. The stormwater will filter through an engineered soil layer (filtering layer) before it is collected but underdrain below the system. The stormwater flow is controlled by orifices that slowly release the stormwater at lower flows. The treated stormwater then flows across the 100' buffer into the wetlands.

If you have any other questions please let me know!

Thank you!

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

From: Lamb, Amy <Amy.Lamb@dncr.nh.gov>
Sent: Monday, November 25, 2019 11:00 AM
To: Brenden Walden <bwalden@gesinc.biz>
Subject: RE: NHB19-1807

Hi Brendan,

Can you please provide some more details about the proposed drainage that you mentioned in your first email?

Amy Lamb
Ecological Information Specialist
(603) 271-2834
amy.lamb@dncr.nh.gov

NH Natural Heritage Bureau
DNCR - Forests & Lands
172 Pembroke Rd
Concord, NH 03301

From: Brenden Walden <bwalden@gesinc.biz>
Sent: Monday, November 25, 2019 9:55 AM
To: Lamb, Amy <Amy.Lamb@dncr.nh.gov>
Subject: RE: NHB19-1807

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Good Morning Amy,
Just following up on the below email to see if you have any questions comments or concerns?
Thank you.

Brenden Walden
Business Manager & Wetland Scientist

Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

From: Brenden Walden
Sent: Wednesday, November 13, 2019 4:29 PM
To: Lamb, Amy <Amy.Lamb@dncr.nh.gov>
Subject: NHB19-1807

Good Afternoon Amy,
Attached are the existing conditions, proposed development on Banfield rd. in Portsmouth as well as the associated NHB.
The wetland impacts on site will be 2,693 SF for a crossing to gain access to the buildable upland area.
All drainage for proposed project will be managed under the road.
If you have any comments or concerns please let me know.

Thank you.

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

COORDINATION WITH
NH FISH AND GAME

From: [Tuttle, Kim](#)
To: [Brenden Walden](#)
Subject: RE: NHB19-1807 Portsmouth Banfield Rd.
Date: Monday, January 6, 2020 3:28:06 PM

Brenden,

I just wanted to let you know that my comments below are not an endorsement or a complete review by the NHFG Nongame and Endangered Wildlife Program for this particular proposal. They are simply some basic recommendations for similar types of projects proposed in very sensitive habitats.

Thanks,

Kim Tuttle
Wildlife Biologist
NH Fish and Game
11 Hazen Drive
Concord, NH 03301
603-271-6544

From: Tuttle, Kim <Kim.Tuttle@wildlife.nh.gov>
Sent: Monday, December 23, 2019 11:08 AM
To: 'Brenden Walden' <>
Subject: RE: NHB19-1807 Portsmouth Banfield Rd.

Hello Brendan,

The 3 grated Eco- passages look very interesting. It is important there is a natural substrate in the bottom vs. crushed rock. The wing walls will help guide amphibians to the crossings. It may be even more useful to provide guiding walls if the greatest amphibian passage movement lanes can be determined. I can send more information of wildlife crossings a little later. Sandi Houghton in our office has more information that she can dig up.

In general, for these types of jobs in very sensitive habitat, restrict road salt usage as road salt eventually ends up in the surface waters and groundwater. Also, minimize the amount of lawn associated with each unit. Require natural lawn care to avoid adverse impacts to amphibians and other wildlife from chemical insecticides, fertilizers, herbicides, and fungicides.

Avoid the use of welded plastic or 'biodegradable plastic' netting or thread (e.g. polypropylene) in erosion control matting. There are numerous documented cases of snakes, turtles, waterfowl and other wildlife being trapped and killed in erosion control matting with synthetic netting and thread. The use of erosion control berm, white Filtrexx Degradable Woven Silt Sock, or several 'wildlife friendly' options such as woven organic material (e.g. coco or jute matting such as North American

Green SC150BN or equivalent) are readily available.

No catch basins in conjunction with straight granite curbing as these are a source of entrapment and exposure of turtles to collection and vehicle collision - Cape Cod asphalt or sloped granite okay. We also recommend that sumps in catch basins placed in grassed or graveled areas be removed and the culverts daylighted so entrapped wildlife has an opportunity to escape. Preferably, there would be no catch basins placed in grassed or graveled areas adjacent to undeveloped areas- open grassed swales could be used instead. We recommend that sumps in outlet pipes in stormwater detention basin outlets be removed if any were spec'd. Outlet control structures in stormwater detention ponds, if any, should not be placed adjacent to the side slopes but rather as far away as possible to deter wildlife crawling onto them and falling through the grate openings.

Regards,

Kim Tuttle
Wildlife Biologist
NH Fish and Game
11 Hazen Drive
Concord, NH 03301
603-271-6544

From: Brenden Walden
Sent: Thursday, December 19, 2019 4:04 PM
To: Tuttle, Kim
Subject: RE: NHB19-1807

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Sorry I forgot one other attachment!

From: Brenden Walden
Sent: Thursday, December 19, 2019 4:02 PM
To: Tuttle, Kim
Subject: NHB19-1807

Good afternoon Kim,
We are working with our client on a project on Banfield Road in Portsmouth, the client would like to use about half of the 45 acre property for a residential development with the only area of wetland impact being associated with the proposed roadway to gain access to the buildable upland (proposed 1,135 SF direct wetland impact). The project would construct a condominium development with 22 units in the buildable upland area. The town of Portsmouth has a 100 ft wetland setback from all

wetlands on this site as stated by their ordinance, which, our applicant has worked with to keep all septic and proposed buildings outside of this boundary. The roadway impacts this 100 ft buffer at two locations, one associated with the wetland crossing and the second at a pinch point between an isolated wetland in the middle of the property, and a wetland system adjacent to it. The client has proposed to incorporate under roadway wildlife crossings in these two areas to assist in retaining some of the connectivity for the wildlife upon completion of the project. The town did not approve of having any drainage areas within the towns buffer so the client has had to design under road stormwater treatment areas which raises the road in some areas. To our knowledge right now the client does not have any specific restrictions being placed on the other half of the property other than it will be 'open space' that being said they do not have any intentions to develop or pursue development to the right of the utility right of way.

The NHB didn't come back with any wildlife related hits (we are coordinating with Amy Lamb on the Plant species listed currently) but we would like your input as to whether you have any comments concerns or suggestions for this project!

Please let me know if you have any questions or need any additional information!

Thank you.

Brenden Walden
Business Manager & Wetland Scientist
Gove Environmental Services, Inc.
8 Continental Dr. Bldg 2, Unit H
Exeter, NH, 03833
Office: 603-418-7260 / Cell: 207-710-7863

Appendix II
New Hampshire Department of Historic Resources Inquiry

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

DHR Use Only	
R&C #	_____
Log In Date	___/___/___
Response Date	___/___/___
Sent Date	___/___/___

Request for Project Review by the New Hampshire Division of Historical Resources

- This is a new submittal
 This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION
Project Title The Village at Banfield Woods
Project Location Banfield Rd
City/Town Portsmouth Tax Map 256 Lot # 2
NH State Plane - Feet Geographic Coordinates: Easting 1219736 Northing 200533 (See RPR Instructions and R&C FAQs for guidance.)
Lead Federal Agency and Contact (if applicable) ACOE (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # AOT
State Agency and Contact (if applicable) NH DES Permit Type and Permit or Job Reference # Dredge and Fill
APPLICANT INFORMATION
Applicant Name Green and Company Real Estate
Mailing Address 11 Lafayette Rd, Suite X Phone Number 603-765-6515
City North Hampton State NH Zip 03868 Email mgreen@greenandcompany.com
CONTACT PERSON TO RECEIVE RESPONSE
Name/Company Brenden Walden / Gove Environmental Services, Inc.
Mailing Address 8 Continental Dr, Bldg 2, Unit H Phone Number 6037780644
City Exeter State NH Zip 03833 Email bwalden@gesinc.biz

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- Attach the Project Mapping *using EMMIT or relevant portion of a 7.5' USGS Map.* (See RPR Instructions and R&C FAQs for guidance.)
- Attach a detailed narrative description of the proposed project.
- Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (*Informative photo captions are requested.*)
- A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (*Blank table forms are available on the DHR website.*)
EMMIT or in-house records search conducted on 1/08/2020.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? Yes No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- Photographs of *each* resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? Yes No
If yes, submit all of the following information:

- Description of current and previous land use and disturbances.
- Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

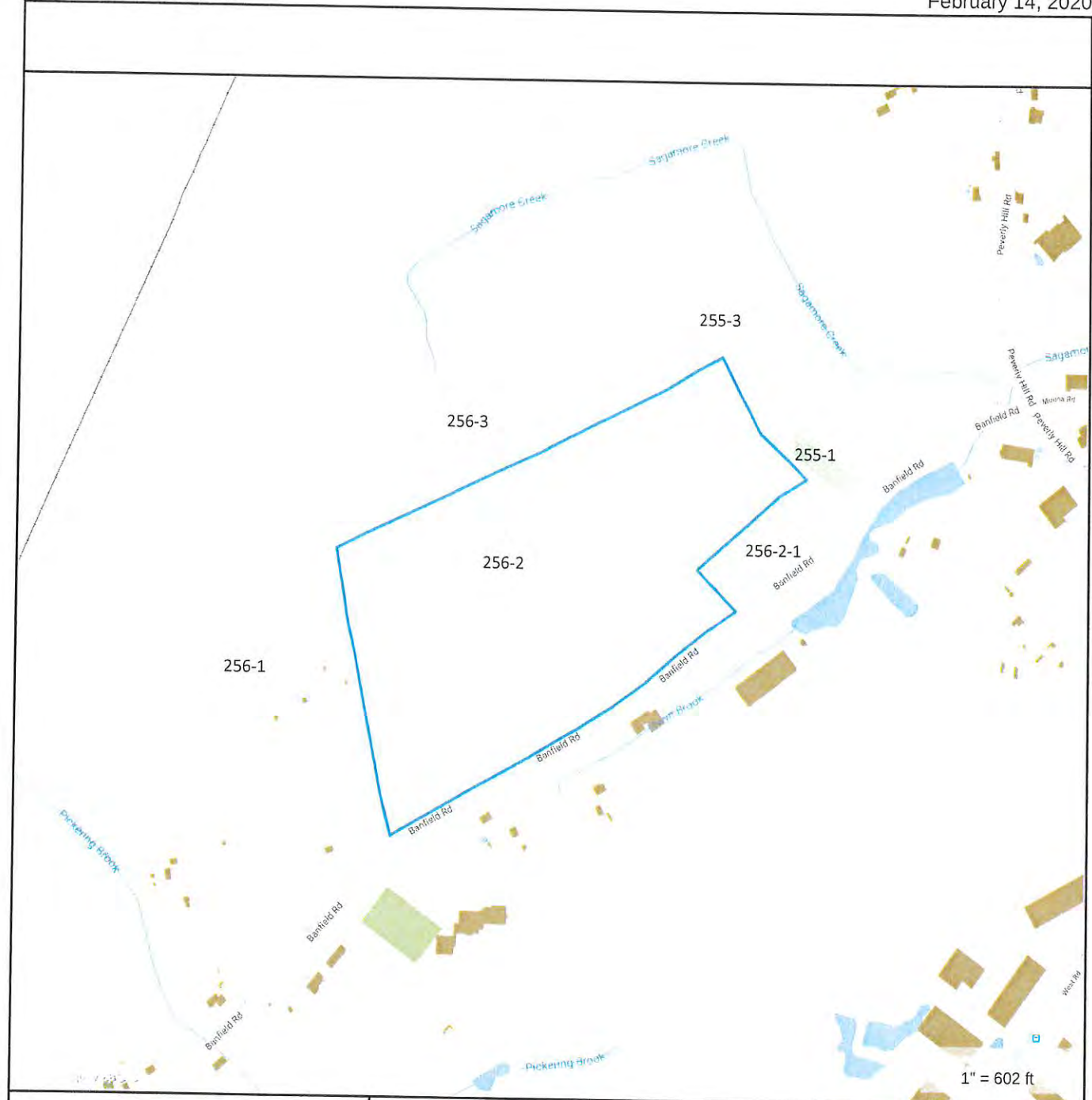
- Insufficient information to initiate review.** Additional information is needed in order to complete review.
- No Potential to cause Effects No Historic Properties Affected No Adverse Effect Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: _____ Date: _____

Appendix III
Tax Map, List of Abutters, Abutter Notification Letter, and Certified Mail Receipts



Property Information

Property ID 0256-0002-0000
Location BANFIELD RD
Owner HETT MAUD REVOCABLE TR



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019
Data updated 7/17/2019

Owner
Map 256 Lot 2
Walter D. Hett Trust / Maud Hett Revocable Trust
334 Hudson Rd, Stowe, MA, 01775

Map: 256 Lot: 1
SWIFT WATER GIRL SCOUT COUNCIL
ONE COMMERCE DR, BEDFORD, NH 03110

Map: 256 Lot 3
Shirley N Garrett Revocable Trust 2000
11 Barberry Lane, Portsmouth, NH, 03801

Map 255 Lot 3
Walter D. Hett Trust / Maud Hett Revocable Trust
334 Hudson Rd, Stowe, MA, 01775

Map 255 Lot 1
Temple of Israel
200 State Street, Portsmouth, NH, 03801

Map 256 Lot 2-1
Temple Of Israel
200 State Street, Portsmouth, NH, 03801

February 21, 2020

«Name»
«Street»
«TownStateZip»

Re: Proposed Site Development
Subject: NH Department of Environmental Services Wetlands Bureau
Dredge & Fill Application

Dear Abutter:

The purpose of this letter is to inform you that Green and Company Real Estate, of North Hampton, NH is applying to the NH Department of Environmental Services Wetlands Bureau, which requires this notice for a dredge and fill permit to impact areas under its jurisdiction. The project is for 2,693 SF of direct wetland impact and 1,135 SF of temporary wetland impact. The impacts to the jurisdictional area are for the construction of a roadway to gain access to the buildable upland area on the site. The project is proposed on Tax map 256 Lots 2 on Banfield Rd, Portsmouth, NH.

A copy of the application, including plans, will be made available for your review at the town offices and at the NH Department of Environmental Services Wetlands Bureau, 29 Hazen Drive in Concord.

If you have any questions that we might be able to answer, please do not hesitate to contact our office.

Sincerely,

Brenden Walden
GES, Inc.

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Map 256 Lot 2
 Temple Of Israel
 200 State Street
 Portsmouth, NH, 03801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Map 255 Lot 1
 Temple of Israel
 200 State Street
 Portsmouth, NH, 03801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Map: 256 Lot 3
 Shirley N Garrett Revocable Trust 2000
 11 Barberry Lane
 Portsmouth, NH, 03801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Map 255 Lot 3
 Walter D. Hett Trust / Maud Hett
 Revocable Trust
 334 Hudson Rd
 Stowe, MA, 01775

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Map: 256 Lot: 1
 Swift Water Girl Scout Council
 One Commerce Drive
 Bedford, NH 03110

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions