
LARSEN APPLIED
EARTH SCIENCE, LLC

P.O. Box 376
Hardwick, VT 05843, U.S.A.
802.793.6236

December 21, 2015

Ms. Shannon Morrison, Wetland Ecologist
Vermont Wetlands Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522



LAES No. 11-0274
RE: Wetland permit application

Dear Shannon:

Please find enclosed an application and all supporting materials for a wetland permit on North Shore Road, Greensboro, Vermont. As you may recall from our site visit on 10/8/15, the applicants are proposing a boathouse within a wetland buffer on the shore of Caspian Lake. The proposed construction rationale, siting, materials and methods are as follows.

The applicants, the Giles, are considering purchasing the property on North Shore Road, with the foremost interest in the property being to utilize the recreational resource of the lake for boating. Their decision to purchase and develop the property will be contingent upon their ability obtain a permit to build a boathouse for sheltered and convenient storage of small craft.

A consulting regulatory ecologist, Morgan Melekos, was retained to survey the property and advise the Giles as to the environmental viability of being able to site a home and boathouse. The ecologist reported to the Giles that the Lake Caspian shoreline on this property is somewhat ill-suited for standard approaches to development because of three factors: 1) the presence of the lakeshore itself, a protected resource subject to several layers of regulatory protections, 2) the steep (3-1) slopes at the head of the beach, and 3) the presence of a Class II forested/emergent wetland that lies immediately inland of the beach-head slopes.

The ecologist advised the Giles that in order to win approval for a wetland permit for building a boathouse very near the beach the project would have to be scaled down to a minimal functional size, sited and structurally supported in a way that left the ground surface nearly undisturbed and that did not require any heavy equipment to access the site.

After several site visits with the Giles, various contractors and the regulatory ecologist, a plan was finalized that includes a balance of the Giles' basic wishes for use of the property and the least-possible environmental impact to develop the area in a way that would still accommodate their wishes to utilize the recreational values of the lake.

The proposed boathouse would be 16' by 20' and would sit about 20' inland from the beach on top of the 3-1 slope that forms the beach-head. This site is an upland area within the buffer of the wetland. Approximately 10-15 trees occupying the 16'x20' footprint would be removed, mostly immature red cedars with a few young-mature ones. The most convenient positioning of the boathouse would be at or near water-level, but this would require digging the slope out. To avoid that excavation the Giles are willing to carry their boats up the 3-1 slope.

The foundation would consist of a "floating pier" design: each footing would consist of a treated lumber box frame (2'x2') slightly recessed into the ground (5") and filled with clean 1-2" stone. Treated lumber posts would rest in the stone to support the building. This design would minimize soil disturbance related to the foundation and would not materially contact subsurface hydrology. The porous nature of the stone boxes represents limited net displacement and allows for precipitation to percolate.

Because of microtopography at the site, one back-corner footing area would need to be "shaved away", or dug out just a few inches to provide level footing. Tree stumps would be left in place.

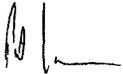
All work would be done by hand and on foot, using hand tools powered by a generator placed outside of the wetland boundary (plus 50', for fueling). Workers would lay down plywood sheets over the wetland during times of high construction foot traffic to avoid compacting the soils.

In order to provide electric service for lighting at the boathouse, the Giles propose to bury the electric feed cable from a pole in the uplands inland of the lake, across the wetland to the boathouse. The trench for the electric would be 12" deep, the minimum allowed by code. The trench would be about 60' long through the wetland in an area of only herbaceous vegetation, and would be dug by hand. Topsoil would be sequestered and replaced in the proper sequence when back-filling.

After construction, routine access to the boathouse would be via footpath through some of the higher areas of the wetland, and no boardwalk or other construction in the wetland is proposed.

Given the commitment to non-mechanized building methods and the minimizing, above-ground nature of the foundation design, it is the opinion of the ecologist that the development will have a negligible effect on the hydrology and other functional values of the wetland at the site.

Sincerely yours,



Patrick Larsen
VT Licensed Designer 504-B
Direct Phone / 802.793.6236
E-Mail / Patrick@larsengeology.com

CC: NVDA
Town of Greensboro
Michael Young, Abutter

Notified Parties

Mike Young
41 Wyman Ave.
Kittery, ME 03904

Valdine Hall, Town Clerk
Town of Greensboro
P.O. Box 119
Greensboro, VT 05841

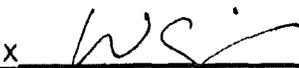
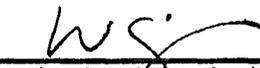
Kristen Leahy, Zoning Administrator
Town of Greensboro
P.O. Box 119
Greensboro, VT 05841

Northeast Vermont Development Association
36 Eastern Avenue
P.O. Box 630
St. Johnsbury, VT 05819

Vermont Wetland Section Wetland Application Database Form (AFFIX TO THE FRONT OF THE APPLICATION)

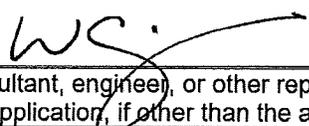
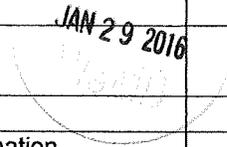
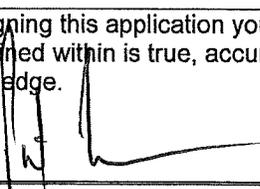
Applicant Name: Janina Finsthwait		Representative Name: Patrick Larsen	
Town where project is located: Greensboro		County: Orleans	
Project Location Description: 298 North Shore Road <i>911 Street Address or direction from nearest intersection</i>			
Project Summary: Consatruction of a 16x20' boathouse on the shore of Caspian Lake in wetland buffer. Buried electric through wetland.			
Permit Type Requested (check all that apply)			
<input type="checkbox"/> Vermont General Permit Coverage		<input type="checkbox"/> Wetland Determination	<input checked="" type="checkbox"/> Vermont Wetland Permit
Impact Calculations: Total up proposed impacts from wetland tables listed below			
Total Wetland Impact		170square feet (s.f.)	Total Buffer Zone Impact
			0square feet (s.f.)
Total Wetland Clearing (qualified linear projects only)		0square feet (s.f.)	Total Buffer Zone Clearing (qualified linear projects only)
			320square feet (s.f.)
Permit Fees: Make check payable to - State of Vermont			
Wetland Impact Fee: (\$0.75/sf)		\$127.50	Administrative Fee: \$240
Buffer Impact Fee: (\$0.25/sf)		\$80.00	Total Check Amount: \$447.50
Clearing Fee: (\$0.25/sf)		\$0.00	
Existing Land Use Type: (check all that apply)			
<input type="checkbox"/> Forestry		<input checked="" type="checkbox"/> Residential (Subdivision)	<input type="checkbox"/> Industrial/ commercial
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Transportation	<input type="checkbox"/> Parks/Rec/Trail	<input type="checkbox"/> Residential (Single Family)
			<input type="checkbox"/> Institutional
			<input checked="" type="checkbox"/> Undeveloped
Proposed Land Use Type: (check all that apply)			
<input type="checkbox"/> Forestry		<input type="checkbox"/> Residential (Subdivision)	<input type="checkbox"/> Industrial/ commercial
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Transportation	<input type="checkbox"/> Parks/Rec/Trail	<input checked="" type="checkbox"/> Residential (Single Family)
			<input type="checkbox"/> Institutional
			<input type="checkbox"/> No Change
Proposed Impact Type: (check all that apply)			
<input checked="" type="checkbox"/> Buildings	<input checked="" type="checkbox"/> Utilities	<input type="checkbox"/> Parking	<input type="checkbox"/> Septic/Well
<input type="checkbox"/> Stormwater	<input type="checkbox"/> Driveway	<input type="checkbox"/> Road	<input type="checkbox"/> Parks/Path
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Pond	<input type="checkbox"/> Lawn	<input type="checkbox"/> Dry Hydrant
<input type="checkbox"/> Beaver dam alteration	<input type="checkbox"/> Silviculture	<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Other
			<input type="checkbox"/> No Impact
Wetland 1: (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted)		Location: 44.590832, -72.324486	
Wetland Type: PFO4-Forested, NeedleWL		Size Class : 5-10 acres	
Proposed Alterations			
Wetland Alteration:		Buffer Zone Alteration:	Wetland Alteration Type (check all that apply)
Wetland Fill: 0s.f.		Temporary: 0 s.f	<input type="checkbox"/> Dredge
Temporary: 170s.f.		Permanent: : 320 s.f	<input type="checkbox"/> Drain
Permanent: : 0s.f.			<input type="checkbox"/> Cut Vegetation
			<input type="checkbox"/> Stormwater
			<input checked="" type="checkbox"/> Trench/Fill
			<input type="checkbox"/> Other
Mitigation			
Avoidance and Minimization (s.f. of wetland NOT impacted):		Wetland: s.f.	Buffer Zone s.f.
Wetland Mitigation: (s.f. Gained)			
Restoration s.f.		Enhancement s.f.	Restoration s.f.
Creation s.f.		Conservation s.f..	Enhancement s.f
			Creation s.f
			Conservation s.f
Reason for Mitigation:			
<input type="checkbox"/> Correction of Violation		<input type="checkbox"/> Mitigation to offset permit impacts	<input type="checkbox"/> Voluntary

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	Walter Giles	
1.2. Applicant Address	550 Park St., Upper Montclair, NJ 07043	
1.3. Applicant Phone Number	201-306-8980	
1.4. Applicant Email	W.Giles@beckmack.com	
1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <input checked="" type="checkbox"/>  </div> <div style="border-left: 1px solid black; padding-left: 10px;"> Date: 12/11/15 </div> </div>	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, (if other than the applicant or landowner)	
2.1. Representative Name	Morgan Melekos, Wetlands Ecologist	
2.2. Representative Address	250 Upper Harrington Hill, Walden, VT 05873	
2.3. Representative Phone Number	802-751-9211	
2.4. Applicant Email	biophile@ymail.com	
2.5. Representative Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <input checked="" type="checkbox"/>  </div> <div style="border-left: 1px solid black; padding-left: 10px;"> Date: 12/8/15 </div> </div>	
3. Landowner	Landowner must sign the application. Use this space if landowner is different from the applicant	
3.1. Landowner Name	Walter K. Giles	
3.2. Landowner Address	550 Park St. Upper Montclair NJ 07043	
3.3. Landowner Phone Number	Cell: 201-306-8980 Home: 973-744-8149	
3.4. Landowner Email	w.giles@beckmack.com	
3.5. Landowner Easement	Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section.	
3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <input checked="" type="checkbox"/>  </div> <div style="border-left: 1px solid black; padding-left: 10px;"> Date: 12/11/15 </div> </div>	
4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features. North Shore Rd. Greenboro, VT 05841 44-591281 - 72-323874	

NW Shoreline Area of CASPIAN LAKE

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	Walter Giles	
1.2. Applicant Address	Beck, Mack & Oliver LLC 360 Madison Ave. New York, NY 10017	
1.3. Applicant Phone Number	212-661-2640	
1.4. Applicant Email	w.giles@BeckMack.com;	
1.5. Applicant Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date: 1/28/16</p> <p>X </p>	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, if other than the applicant or landowner	
2.1. Representative Name	Patrick Larsen	
2.2. Representative Address	P.O. Box 376 Hardwick, VT 05843	
2.3. Representative Phone Number	802-793-6236	
2.4. Applicant Email	patrick@larsengeology.com	
2.5. Representative Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date: 1-28-16</p> <p>X </p>	
3. Landowner	Landowner must sign the application. Use this space if landowner is different from the applicant	
3.1. Landowner Name	Janina Finsthwait	
3.2. Landowner Address	14500 Fruitvale Ave. Apartment 5106 Saratoga, CA 95070	
3.3. Landowner Phone Number	203-517-9567	
3.4. Landowner Email	finsjan@gmail.com	
3.5. Landowner Easement	Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section.	
3.6. Landowner Signature (original signature required)	<p>By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.</p> <p style="text-align: right;">Date:</p> <p>X</p>	

4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features. North Shore Road, Greensboro, VT 44.591281 -72.323874		
5. Site Visit Date and Attendees	Date of visit with District Wetlands Ecologist	List people present for site visits including Ecologist, landowner, and representatives.	
	10/8/15	Shannon Morrison, VTDEC Patrick Larsen, Consultant Morgan Melokos, wetland delineator Kristina Michelson, Lawyer Laura Giles, prospective purchaser of property	
6. Wetland Classification	The wetland is a Class II wetland because (Choose one): The wetland is mapped on the VSWI map		
7. Description of Entire Wetland or Wetland Complex	Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.		
7.1. Size of Wetland Complex in Acres	Can be obtained from the Environmental Interest Locator Map for mapped wetlands 6.4 acres		
7.2. Natural Community Types Present	List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland 15% softwood forested swamp, 75% freshwater emergent marsh, 10% palustrine shrub/scrub		
7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc. first terrace above lakeshore, edge of stream		
7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds. precipitation, groundwater, floodwater Include answers to the following where appropriate:		
7.4.1. Direction of flow	For example: stream flows from north to south through the wetland complex. Cemetery Brook flows west to east into Caspian Lake		
7.4.2. Influence of hydrology on wetland complex	For example: The river provides flood water to the wetland in the spring. Flooding of Cemetery Brook and groundwater discharge		
7.4.3. Relation to the project area	Distance between the project area and any nearby surface waters. 10' to Caspian Lake		
7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil saturation. Plant community suggests seasonal flooding in 40% of wetland		
7.5. Surrounding Landuse of the Wetland Complex	For example: rural residential and forested; agricultural and undeveloped, Rural residential and forested		
7.6. Relation to Other Nearby Wetlands	Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question. Subject wetland directly influenced by abutting lake		
7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. Hayfields surround the subject wetland. Residential impacts on either side of the subject wetland		

8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.	
8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. Subject wetland is in the forested 15% of overall wetland	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Naturally vegetated, hemmed in by hayfields	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. Softwood, palustrine forest, hemlock, interrupted fern, yellow birch, white cedar, wood fern	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description Vershire-Lombard Complex, 15-35% slopes, Gley2 + Gley1 clays	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. At dry season sample date saturation at 10"	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Undisturbed mixed forest, mature	
8.6.2. Buffer vegetation	List community type and dominant plant species Hemlock, cedar, mixed hardwood/conifer, yellow birch, bracken fern, balsam fir	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description Vershire-Lombard Complex, 15-35% slopes, 0-10" 7.5YR 5/6, 100% silt loam	

9. Wetland Determination	If the application involves a wetland determination please answer the following. If not, skip to Section 10.	
9.1. Reason for Petition	Please choose one from the dropdown menu: Add a Section 4.6 presumed wetland to the VSWI map	
9.2. Previous Decisions	Please list all determinations and decisions, if any, issued by the Secretary, Panel or former Water Resources Board, pertaining to the wetland or buffer at issue:	
9.3. Narrative	Please provide any narrative to support the petition for a wetland determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions.	

If the application is only for a Wetland Determination only, skip to Section 13

10. Project Description		
10.1. Overall Project	Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family	

	residence. Construction of a 16x20' boathouse close to the lakeshore. To be built entirely in wetland buffer							
10.2.Project Purpose	For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system To accommodate lake recreation as a storage place for kayaks and small boats							
10.3.Acres Owned by Applicant	Acreage of subject property. 3.8							
10.4.Acres Involved in the Project	Acreage of area involved in the project. < 1/8 acre							
11. Project Details	Provide details regarding specific impacts to the wetland and buffer zone							
11.1.Specific Impacts to Wetland and Buffer Zone	List portions of the project that will specifically impact the wetland or buffer zone. Post footing for piers excavated and filled with stone. Slight grading on one corner to level the fourth footing.							
11.2.Dimension Details	Square footage of buildings, dimension of roads including fill footprint. 16'x20' boathouse. No vehicle access.							
11.3.Bridges and Culverts	Culvert circumference, length, placement and shapes, or bridge details. N/A							
11.4.Construction Sequence	Describe any details pertaining to the worked planned in the wetland and buffer in terms of sequence or phasing that is relevant Installation of erosion compaction controls, tree removal, excavation of footings, erection of structure, removal of compaction control							
11.5.Stormwater Design	List any stormwater permits obtained or applied for. Describe any stormwater and/or erosion controls proposed to prevent discharges to the wetland and buffer zone. N/A							
11.6.Permanent Demarcation of Limits of Impact	Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. N/A							
12. Wetland and Buffer Zone Impacts								
12.1.Wetland Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets. Totals <table border="1" data-bbox="560 1585 1383 1684"> <tr> <td>Wetland Fill</td> <td>0 s.f.</td> </tr> <tr> <td>Temporary Wetland Impact</td> <td>170 s.f.</td> </tr> <tr> <td>Other Permanent Wetland Impact</td> <td>0 s.f.</td> </tr> </table> Describe in detail the proposed impact. 12" deep, 6" wide trench for buried electric line to boathouse. Trench to be hand dug and native soils returned to trench	Wetland Fill	0 s.f.	Temporary Wetland Impact	170 s.f.	Other Permanent Wetland Impact	0 s.f.	
Wetland Fill	0 s.f.							
Temporary Wetland Impact	170 s.f.							
Other Permanent Wetland Impact	0 s.f.							
12.2.Buffer Zone Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.							

	<p>Totals</p> <table border="1"> <tr> <td data-bbox="558 155 1068 191">Temporary Buffer Impact</td> <td data-bbox="1068 155 1383 191">0 s.f.</td> </tr> <tr> <td data-bbox="558 191 1068 226">Permanent Buffer Impact</td> <td data-bbox="1068 191 1383 226">320 s.f.</td> </tr> </table>	Temporary Buffer Impact	0 s.f.	Permanent Buffer Impact	320 s.f.	
Temporary Buffer Impact	0 s.f.					
Permanent Buffer Impact	320 s.f.					
	<p>Describe in detail the proposed impact.</p> <p>16'x20' boathouse footprint will prohibit tree growth. 2'x2' footing excavations 16" deep soil disturbance.</p>					
<p>12.3.Cumulative Impacts</p>	<p>List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project. Other than limited tree removal, none expected.</p>					
<p>12.4.Avoidance and Minimization</p>	<p>Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.</p>					
<p>12.4.1. Avoidance</p>	<p>Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design.</p> <p>Wetland rims entire property lake front. Building site selected is upland buffer thus avoiding direct wetland impacts.</p>					
<p>12.4.2. Minimization</p>	<p>If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts</p> <p>Only appropriate site for boathouse</p>					
<p>12.4.3. Mitigation</p>	<p>If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts.</p> <p>Footings to be porous stone. All work done on foot by hand. Plywood sheets put down on access path to avoid compaction during construction</p>					
<p>12.4.4. Compensation</p>	<p>Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here.</p> <p>N/A</p>					
<p>13.Supporting materials</p>	<p>Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.</p>					
<p>13.1.Location map</p>	<p>Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum.</p> <p>Location map of North Shore Road included</p>					
<p>13.2.Site Plans</p>	<p>List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization.</p> <p>Wetland/Boathouse Plot Plan, Giles Larsen Applied Earth Science, LLC 1/27/16</p>					
<p>13.3.ACOE Delineation</p>	<p>List by author, location, and date. Required only for Individual Permits.</p>					

Forms	Morgan Melekos, 298 North Shore Road, Greensboro VT 9/22/15					
13.4. Other Supporting Documents	Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible wetland submittal for determinations; etc. Preliminary boathouse footprint & structural elevation/Boathouse footing x-section and top view					
13.5. List of Abutters (Neighbors with land adjoining wetland or buffer zone)	Attach list of names and mailing addresses or submit as word mailing document. See cover letter					
13.5.1. Newspaper Notification	If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. ***NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper.					
14. Check Which Functions are Present in the Subject Wetland and in the Wetland Complex.	Wetland Function Summary: (if more than one wetland use supplemental wetland sheets)					
	Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex
	Flood/Storm Storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RTE Species	<input type="checkbox"/>	<input type="checkbox"/>
	Surface & Groundwater Protection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Education & Research	<input type="checkbox"/>	<input type="checkbox"/>
	Fish Habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Recreation/Economic	<input type="checkbox"/>	<input type="checkbox"/>
	Wildlife Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Open Space/Aesthetics	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Exemplary Natural Community	<input type="checkbox"/>	<input type="checkbox"/>	Erosion Control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15. Coverage under Vermont General Wetland Permit	<p>If applying for an Individual Vermont Wetland Permit or Determination, please proceed to number 16 and answer the remaining application questions.</p> <p>If applying for Coverage under the Vermont General Wetland Permit, please complete question 15.1 prior to submitting application.</p>					
15.1. VWP Vermont General Permit eligibility checklist	<p>If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application:</p> <p><input type="checkbox"/> The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit</p> <p><input type="checkbox"/> The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit</p> <p><input type="checkbox"/> The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules.</p> <p><input type="checkbox"/> The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values.</p>					

	<p><input type="checkbox"/> All impacts have been avoided and minimized to the greatest extent possible.</p> <p><input type="checkbox"/> The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat.</p> <p><input type="checkbox"/> The activity is not located in or adjacent to a vernal pool, fen, or bog.</p> <p><input type="checkbox"/> The wetland is not at or above 2,500' in elevation (headwaters wetland).</p> <p><input type="checkbox"/> The project is not located in a Class I wetland or associated buffer zone.</p> <p><input type="checkbox"/> The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.</p>	
<p>Stop here if applying for Coverage under the Vermont General Wetland Permit</p>		

<p>Complete the following Functions and Values checklist if applying for an Individual Wetland Permit and/or a Wetland Determination</p>		
<p>Functions and Values</p>	<p>For each Function and Value, first evaluate the entire wetland or wetland complex and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures.</p> <p>If more than one wetland complex is involved, use the Supplemental Wetland Forms.</p>	
<p>16. Storage for Flood Water and Storm Runoff</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Constricted outlet or no outlet and an unconstricted inlet. <input checked="" type="checkbox"/> Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration. <input checked="" type="checkbox"/> If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods. <input type="checkbox"/> Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water. <input type="checkbox"/> Hydrologic or hydraulic study indicates wetland attenuates flooding. <p>If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.</p> <p><input checked="" type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.</p>	

	<ul style="list-style-type: none"> <input type="checkbox"/> Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment). <input checked="" type="checkbox"/> Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland. <input type="checkbox"/> Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures. <input type="checkbox"/> Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. <input checked="" type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level. <ul style="list-style-type: none"> <input type="checkbox"/> History of downstream flood damage to public or private property. <input type="checkbox"/> Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function. <ul style="list-style-type: none"> <input type="checkbox"/> 1. Developed public or private property. <input checked="" type="checkbox"/> 2. Stream banks susceptible to scouring and erosion. <input checked="" type="checkbox"/> 3. Important habitat for aquatic life. <input type="checkbox"/> The wetland is large in size and naturally vegetated. <input type="checkbox"/> Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland. <ul style="list-style-type: none"> <input type="checkbox"/> 1. A large amount of impervious surface in urbanized areas. <input type="checkbox"/> 2. Relatively impervious soils. <input type="checkbox"/> 3. Steep slopes in the adjacent areas. 	
<p>16.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above Provides water storage and slows hydro periods</p>	
<p>16.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Stone footings provide minimal water displacement and accommodate percolation of precipitation</p>	
<p>17. Surface and Ground Water Protection</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <ul style="list-style-type: none"> <input type="checkbox"/> Constricted or no outlets. <input checked="" type="checkbox"/> Low water velocity through dense, persistent vegetation. <input checked="" type="checkbox"/> Hydroperiod permanently flooded or saturated. 	

- Wetlands in depositional environments with persistent vegetation wider than 20 feet.
- Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
- Presence of seeps or springs.
- Wetland contains a high amount of microtopography that helps slow and filter surface water.
- Position in the landscape indicates the wetland is a headwaters area.
- Wetland is adjacent to surface waters.
- Wetland recharges a drinking water source.
- Water sampling indicates removal of pollutants or nutrients.
- Water sampling indicates retention of sediments or organic matter.
- Fine mineral soils and alkalinity not low.
- The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

- Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.
 - Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.
 - Presence of ditches or channels that confine water and restrict contact of water with vegetation.
 - Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.
 - Current use in the wetland results in disturbance that compromises this function.
- Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level.
 - The wetland is adjacent to a well head or source protection area, and provides ground water recharge.
 - The wetland provides flows to Class A surface waters.
 - The wetland contributes to the protection or improvement of

	<p>water quality of any impaired waters.</p> <p><input type="checkbox"/> The wetland is large in size and naturally vegetated.</p>	
<p>17.1.Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>Wetland abuts Caspian Lake and Cemetary Brook</p>	
<p>17.2.Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>Construction methods will preserve natural hydrology and water flow conditions. Boathouse is in upland buffer.</p>	
<p>18.Fish Habitat</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <p><input type="checkbox"/> Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability.</p> <p><input type="checkbox"/> Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers.</p> <p><input type="checkbox"/> Documented or professionally judged spawning habitat for northern pike.</p> <p><input type="checkbox"/> Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species.</p> <p><input checked="" type="checkbox"/> The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.</p>	
<p>18.1.Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>Subject wetland is about 250' away from Cemetary Brook but participated in the overall hydroperiod</p>	
<p>18.2.Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>Project is about 250' away from Cemetary Brook</p>	
<p>19.Wildlife Habitat</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <p><input type="checkbox"/> Provides resting, feeding staging or roosting habitat to support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands.</p> <p><input checked="" type="checkbox"/> Habitat to support one or more breeding pairs or broods of</p>	

waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer zone.

- Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees.
- Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.
- Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.
- Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
- Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.
- Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
- Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:
 - 1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
 - 2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
 - 3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.
- Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance. Good habitat for these types of species includes large

marsh systems with open water components.

- Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle, Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.
- Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.
- Meets four or more of the following conditions indicative of wildlife habitat diversity:
 - 1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;
 - 2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;
 - 3. Located adjacent to a lake, pond, river or stream;
 - 4. Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land;
 - 5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;
 - 6. One of the following:
 - i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;
 - ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;
 - iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;
- Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and
- Contains evidence that it is used by wetland dependent wildlife species.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

Check box if any of the following conditions apply that may

	<p>indicate the wetland provides this function at a <i>lower</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools and seeps are generally small in size, so this does not apply). <input checked="" type="checkbox"/> The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use. <input checked="" type="checkbox"/> The current use in the wetland results in frequent cutting, mowing or other disturbance. <input type="checkbox"/> The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species. <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland complex is large in size and high in quality. <input type="checkbox"/> The habitat has the potential to support several species based on the assessment above. <input type="checkbox"/> Wetland is associated with an important wildlife corridor. <input type="checkbox"/> The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist. 	
<p>19.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p> <p>Subject wetland is the small forested portion of the overall wetland.</p>	
<p>19.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p> <p>Small footprint of the boathouse will be the only area of tree removal, mostly immature trees</p>	
<p>20. Exemplary Wetland Natural Community</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <input type="checkbox"/> Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function. <p>The wetland is also likely to be significant if any of the following conditions are met:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department. 	

	<p><input type="checkbox"/> Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Deep peat accumulation reflecting a long history of wetland formation; <input type="checkbox"/> Forested wetlands displaying very old trees and other old growth characteristics; <input type="checkbox"/> A wetland natural community that is at the edge of the normal range for that type; <input type="checkbox"/> A wetland mosaic containing examples of several to many wetland community types; or <input type="checkbox"/> A large wetland complex containing examples of several wetland community types. <p>List species or communities of concern:</p>	
<p>20.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p>	
<p>20.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.</p>	
<p>21. Rare, Threatened, and Endangered Species Habitat</p>	<p><input type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function. <p>The wetland is also likely to be significant if any of the following apply:</p> <ul style="list-style-type: none"> <input type="checkbox"/> There is credible documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists; <input type="checkbox"/> There is credible documentation that threatened or endangered species have been present in past 10 years; <input type="checkbox"/> There is credible documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department; <input type="checkbox"/> There is credible documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank). <p>List name of species and ranking:</p>	

21.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
21.2.Statement of no adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
22.Education and Research in Natural Sciences	<input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. <input type="checkbox"/> Owned by or leased to a public entity dedicated to education or research. <input type="checkbox"/> History of use for education or research. <input checked="" type="checkbox"/> Has one or more characteristics making it valuable for education or research.	
22.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above This function is mainly around Cemetery Brook at the Lake delta. Subject wetland away from this area.	
22.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Project does not impact wetland being only in the buffer and is 250' removed from the riparian center of the wetland where functions are most dynamic	
23.Recreational Value and Economic Benefits	<input type="checkbox"/> Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. <input checked="" type="checkbox"/> Used for, or contributes to, recreational activities. <input type="checkbox"/> Provides economic benefits. <input type="checkbox"/> Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law. <input type="checkbox"/> Used for harvesting of wild foods. Comments: Provides natural treatment of waters that flow into Caspian lake.	
23.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above Provides natural treatment of waters that flow into Caspian lake.	
23.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Project will ot inhibit or divert site hydrology. Porous stone footings minimize foundation and soil disturbance	
24.Open Space and Aesthetics	<input type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. <input type="checkbox"/> Can be readily observed by the public; and <input type="checkbox"/> Possesses special or unique aesthetic qualities; or <input type="checkbox"/> Has prominence as a distinct feature in the	

	<p style="text-align: center;">surrounding landscape;</p> <p><input type="checkbox"/> Has been identified as important open space in a municipal, regional or state plan.</p> <p>Comments: Wetland is narrow and low-profile, not a major aspect of the viewshed.</p>	
<p>24.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above Subject wetland is in a closed forested section, though contributes to aesthetics in general sense</p>	
<p>24.2. Statement of no undue adverse impact</p>	<p>Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Project leaves wetland intact, removed few trees and does not change the character of the area</p>	
<p>25. Erosion Control through Binding and Stabilizing the Soil</p>	<p><input checked="" type="checkbox"/> Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.</p> <p><input checked="" type="checkbox"/> Erosive forces such as wave or current energy are present and any of the following are present as well:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. <input checked="" type="checkbox"/> Good interspersion of persistent emergent vegetation and water along course of water flow. <input checked="" type="checkbox"/> Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. <p>What type of erosive forces are present:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Lake fetch and waves <input type="checkbox"/> High current velocities: <input type="checkbox"/> Water level influenced by upstream impoundment <p>If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.</p> <p><input type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.</p> <ul style="list-style-type: none"> <input type="checkbox"/> The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force. <p><input checked="" type="checkbox"/> Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The stream contains high sinuosity. <input type="checkbox"/> Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor. 	
<p>25.1. Subject Wetland</p>	<p>Please explain how the subject wetland contributes to the function listed above</p>	

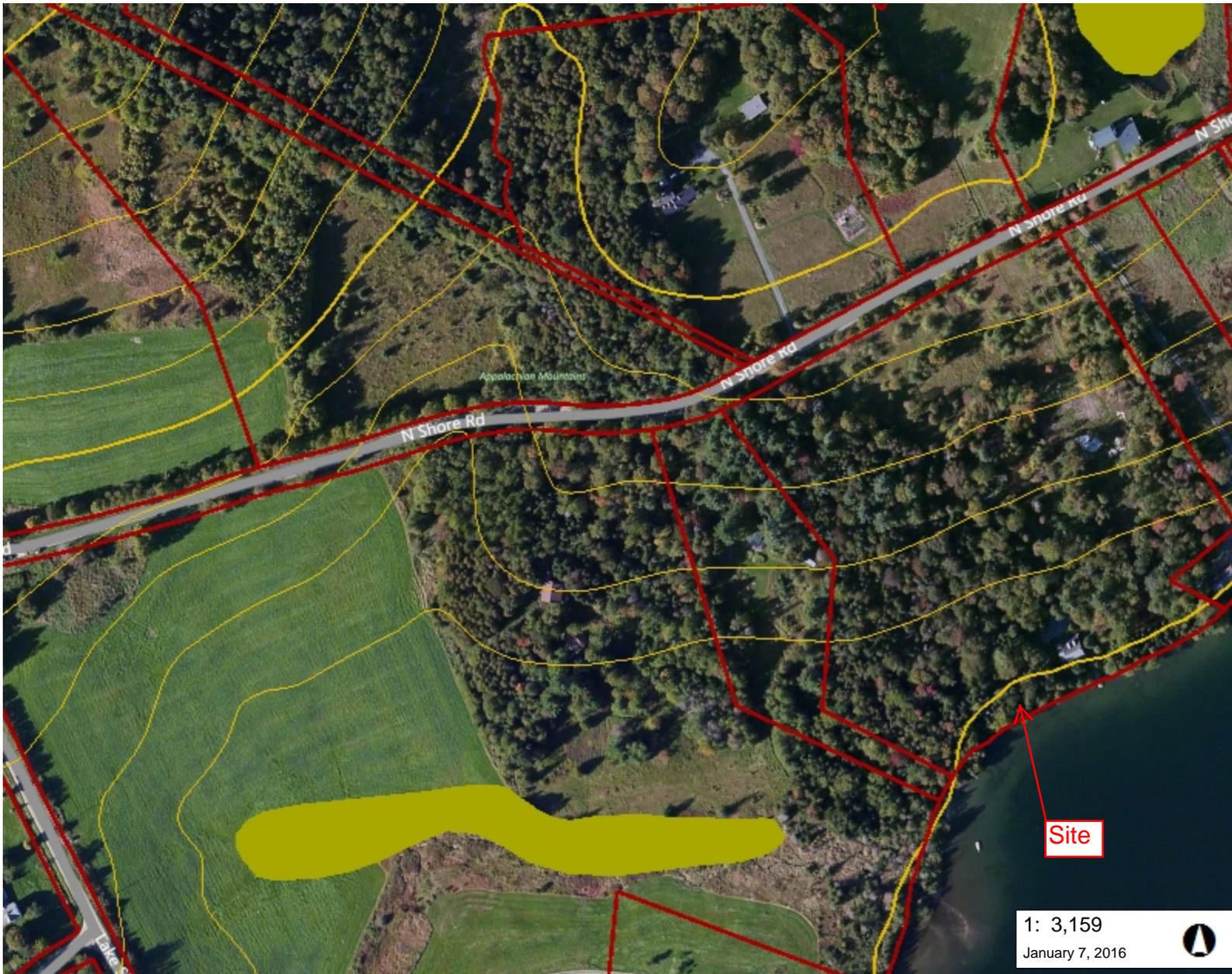
	Subject wetland is away from stream and shore area.	
25.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Project is >200' from stream, is set back from shoreline.	

All Applications Should be Mailed To:

**Vermont Wetlands Program
 Watershed Management Division
 One National Life Drive, Main 2
 Montpelier, VT 05620-3522**

Staff To Complete

Wetland Project Number:			
Wetland Project Name:		DEC ID#:	
Date Application Received:			
Request for Information Date:		Information Received Date:	
Request for Information Date:		Information Received Date:	
Date Application Complete:		Distribution Complete Date:	
Notice Begin Date:		Notice End Date:	
Final Action Date:		Public Meeting Date:	
Check#	Check Amount	Date Check Received	
Check#	Check Amount	Date Check Received	



LEGEND

- Wetlands - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
- Parcels (where available)
- Town Boundary

1: 3,159
January 7, 2016

NOTES

Map created using ANR's Natural Resources Atlas



WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 263 Ft. 1cm = 32 Meters
© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Giles / 298 North Shore Rd. City/County: Greensboro, Orleans Sampling Date: 9/22/15
 Applicant/Owner: Giles, Walter + Laura State: VT Sampling Point: 1A ?FO
 Investigator(s): Morgan Melekos Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 1-8 Lat: 44.592489 Long: -72.319780 Datum: NAD83
 Soil Map Unit Name: Buckland very fine sandy loam, 8-15% slopes, ^{very stony} NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? NO Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <p style="text-align: center; font-size: 1.2em; font-family: cursive;">Wetland Conditions Present</p>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: <p style="text-align: center; font-size: 1.2em; font-family: cursive;">Wetland hydrology present</p>	

VEGETATION – Use scientific names of plants.

Sampling Point: 1A

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Tsuga canadensis</i>	40	Y	FACW
2. <i>Thuja occidentalis</i>	35	Y	FACW
3. <i>Betula alleghaniensis</i>	10	N	FAC
4.			
5.			
6.			
7.			

85 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Thuja occidentalis</i>	20	Y	FACW
2. <i>Betula alleghaniensis</i>	10	Y	FAC
3.			
4.			
5.			
6.			
7.			

30 = Total Cover

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Desmodium illinoense</i>	40	Y	FAC
2. <i>Dryopteris intermedia</i>	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

70 = Total Cover

Woody Vine Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			

0 = Total Cover

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 6 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland vegetation present

SOIL

Sampling Point: 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-3	10YR 2/1	100					clayey loam	
3-10	Gley 2.4/10B	75	2.5y 4/4	25	C	M	clay	
10-18	Gley 1.4/10Y	85	7.5yR 4/6	15	D	M	sandy clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None
 Depth (inches): N/A

Hydric Soil Present? Yes No

Remarks:

Wetland soils present

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Giles / 298 North Shore Rd. City/County: Greensboro, Orleans Sampling Date: 9/22/15
 Applicant/Owner: Giles, Walter & Laura State: VT Sampling Point: 7B
 Investigator(s): Morgan Melikos Section, Township, Range: N/A
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex
 Slope (%): 3-8 Lat: 44.593702 Long: -72.319122 Datum: NAD83
 Soil Map Unit Name: Buckland very fine sandy loam, 8-15% slopes, 100' ^{Stone} NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? (N) Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (N) (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <div style="text-align: center; font-size: 1.2em; font-family: cursive;"> Wetland conditions not present </div>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: <div style="text-align: center; font-size: 1.2em; font-family: cursive;"> Wetland hydrology not present </div>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Tsuga canadensis</i>	70	Y	FACU
2. <i>Betula Alleghaniensis</i>	20	Y	FAC
3. <i>Thuja occidentalis</i>	10	N	FACW
4.			
5.			
6.			
7.			

100 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			

0 = Total Cover

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Dryopteris intermedia</i>	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

20 = Total Cover

Woody Vine Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			

0 = Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- Rapid Test for Hydrophytic Vegetation
 - Dominance Test is >50%
 - Prevalence Index is ≤3.0¹
 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

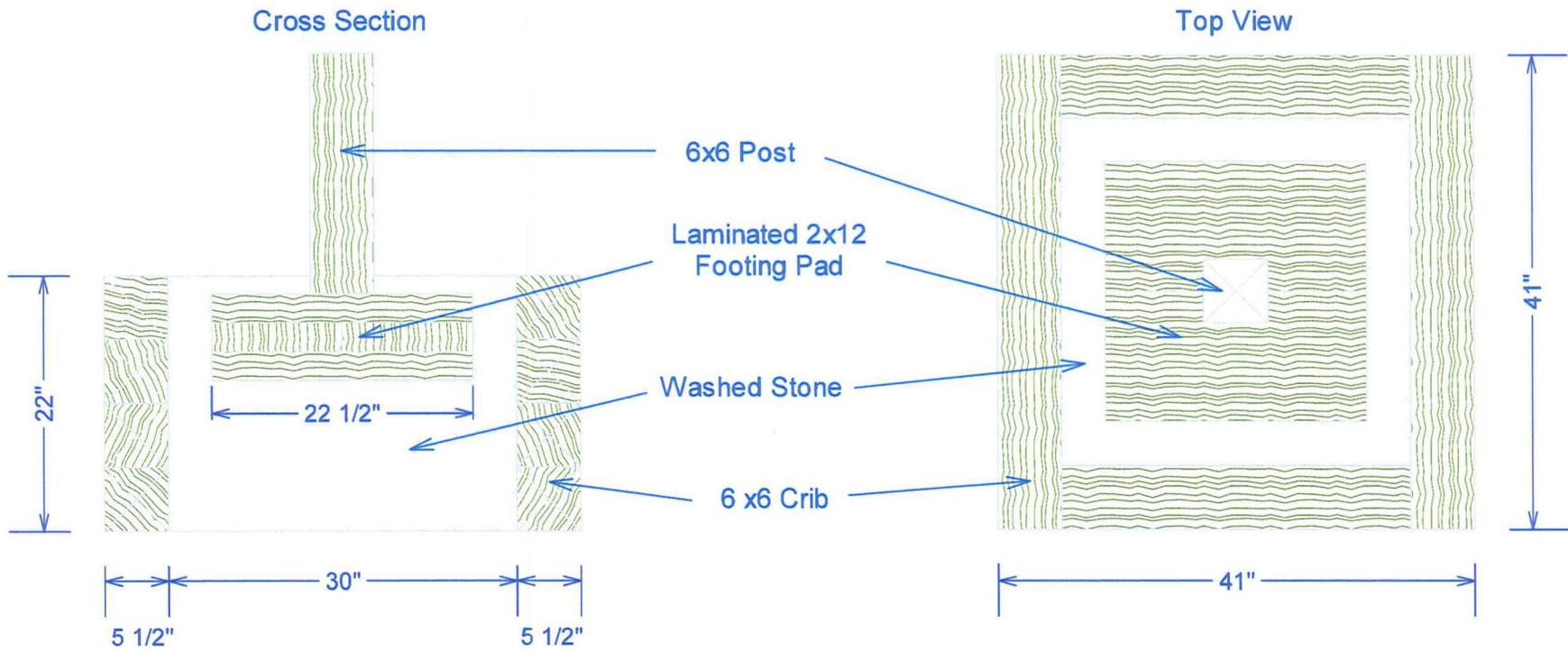
Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

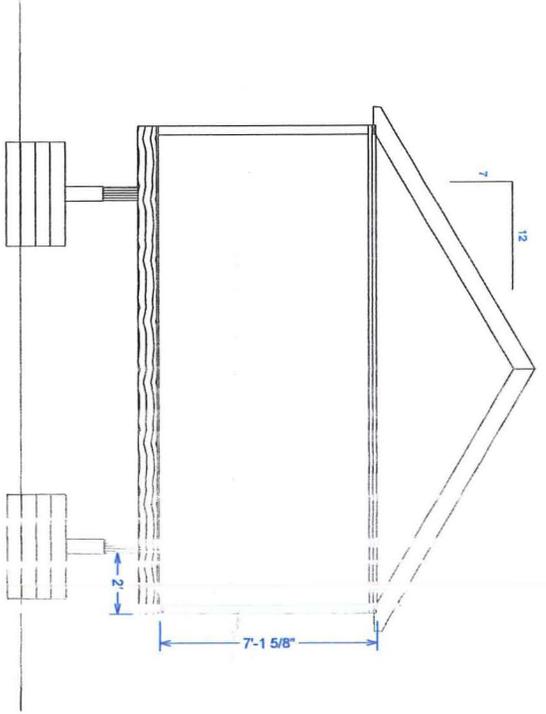
Wetland vegetation present

Boathouse Footing

Note: Wood components typically made of pressure treated, but may be changed to cedar at the customers request.



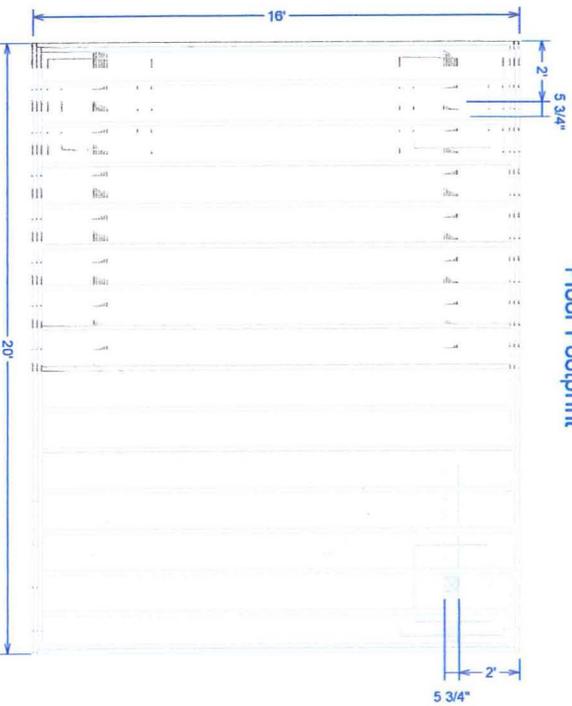
Gable Elevation



Eave Elevation

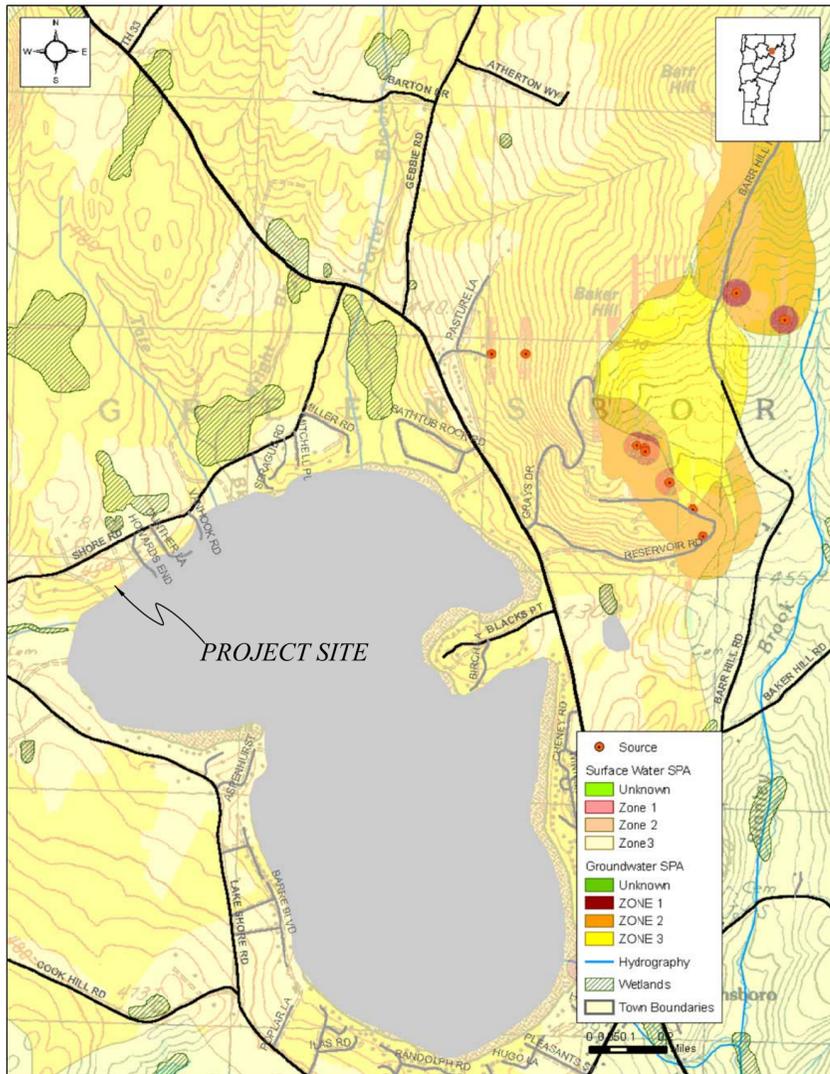


Floor Footprint

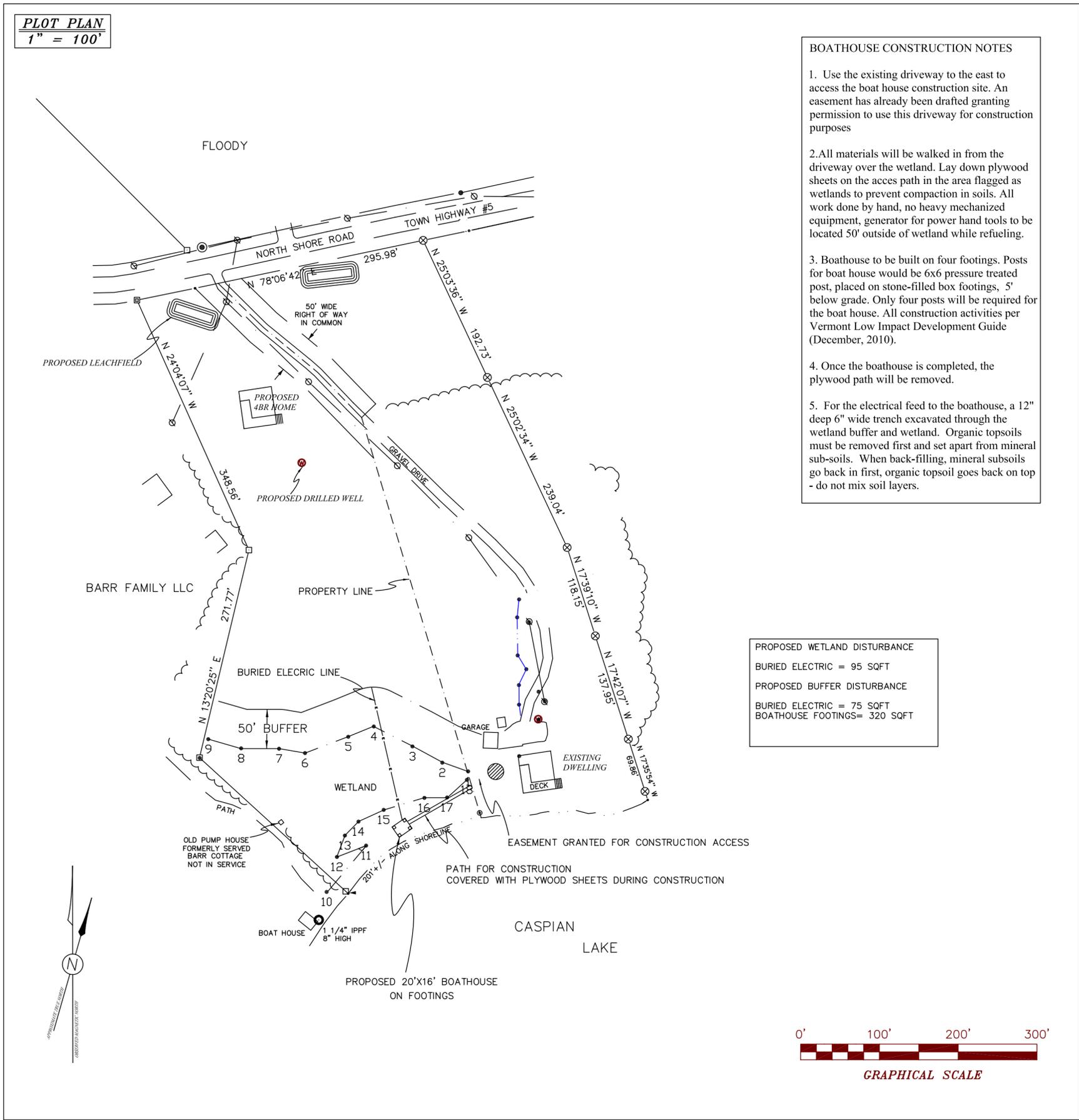


Preliminary
Bathroom Footprint
&
Structural Elevation

REV. NO.	DATE	DESCRIPTION	MADE BY
WETLAND/BOATHOUSE PLOT PLAN GILES 298 NORTH SHORE ROAD GREENSBORO, VERMONT 05841			
LARSEN APPLIED EARTH SCIENCE, LLC P.O. BOX 376 HARDWICK, VERMONT 05843 (802) 793-6236			SHEET: 1 OF 1 SCALE: 1" = 100' DES. BY: PLL DRAWN BY: PLL VT DESIGNER: 504B DATE: 1/27/16 PROJ. NO. 110274



LOCUS MAP



BOATHOUSE CONSTRUCTION NOTES

1. Use the existing driveway to the east to access the boat house construction site. An easement has already been drafted granting permission to use this driveway for construction purposes
2. All materials will be walked in from the driveway over the wetland. Lay down plywood sheets on the access path in the area flagged as wetlands to prevent compaction in soils. All work done by hand, no heavy mechanized equipment, generator for power hand tools to be located 50' outside of wetland while refueling.
3. Boathouse to be built on four footings. Posts for boat house would be 6x6 pressure treated post, placed on stone-filled box footings, 5' below grade. Only four posts will be required for the boat house. All construction activities per Vermont Low Impact Development Guide (December, 2010).
4. Once the boathouse is completed, the plywood path will be removed.
5. For the electrical feed to the boathouse, a 12" deep 6" wide trench excavated through the wetland buffer and wetland. Organic topsoils must be removed first and set apart from mineral sub-soils. When back-filling, mineral subsoils go back in first, organic topsoil goes back on top - do not mix soil layers.

PROPOSED WETLAND DISTURBANCE	
BURIED ELECTRIC	= 95 SQFT
PROPOSED BUFFER DISTURBANCE	
BURIED ELECTRIC	= 75 SQFT
BOATHOUSE FOOTINGS	= 320 SQFT