

Vermont Wetlands Program Permit Application Database Form

Under Sections 8 and 9
of the Vermont Wetland Rules



| Application Submittal Instructions |
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| <ul style="list-style-type: none"> ■ If submitting via US post, include a check in the correct fee amount made payable to the “State of Vermont,” and a CD for applications that contain large files (1 MB or greater). <div style="margin-left: 40px;"> Mail to: Vermont Wetlands Program Watershed Management Division One National Life Drive, Main 2 Montpelier, VT 05620-3522 </div> ■ Applications can also be submitted via email to the following address: anr.wsmdwetlands@vermont.gov <ul style="list-style-type: none"> ■ If submitting via email, please mail a check in the correct fee amount, made payable to the “State of Vermont,” and a copy of the Vermont Wetlands Program Application Database Form (this page) to the address provided above. <i>It is not necessary to mail in a copy of the complete application.</i> |

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| Applicant Name: | Application Preparer Name: |
| Town where project is located: | County: |
| Span#: | Vermont Wetlands Project (VWP)# if Known: |
| Project Location Description: <i>911 street address or direction from nearest intersection</i> | |
| Brief Project Summary: | |
| Application Type: <input type="checkbox"/> Individual Permit (multiple wetlands) <input type="checkbox"/> After the Fact Permit <input type="checkbox"/> Wetland Determination <input type="checkbox"/> Individual Permit (single wetland) <input type="checkbox"/> General Permit Coverage Authorization <input type="checkbox"/> Permit Amendment: VWP Project # _____ | |
| Existing Land Use Type(s): <i>(Check all that apply)</i> <input type="checkbox"/> Residential (single family) <input type="checkbox"/> Residential (subdivision) <input type="checkbox"/> Undeveloped <input type="checkbox"/> Agriculture <input type="checkbox"/> Transportation <input type="checkbox"/> Forestry <input type="checkbox"/> Parks/Rec/Trail <input type="checkbox"/> Institutional <input type="checkbox"/> Industrial/Commercial | |
| Proposed Land Use Type(s): <i>(Check all that apply)</i> <input type="checkbox"/> Residential (single family) <input type="checkbox"/> Residential (subdivision) <input type="checkbox"/> Undeveloped <input type="checkbox"/> Agriculture <input type="checkbox"/> Transportation <input type="checkbox"/> Forestry <input type="checkbox"/> Parks/Rec/Trail <input type="checkbox"/> Institutional <input type="checkbox"/> Industrial/Commercial | |
| Proposed Impact Type(s): <i>(Check all that apply)</i> <input type="checkbox"/> Buildings <input type="checkbox"/> Utilities <input type="checkbox"/> Parking <input type="checkbox"/> Septic/Well <input type="checkbox"/> Stormwater <input type="checkbox"/> Driveway <input type="checkbox"/> Park/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"/> Road <input type="checkbox"/> Aesthetics <input type="checkbox"/> No Impact <input type="checkbox"/> Other: _____ | |
| Wetland and Buffer Impact Type: <i>(Check all that apply)</i> <input type="checkbox"/> Dredge <input type="checkbox"/> Drain <input type="checkbox"/> Cut Vegetation <input type="checkbox"/> Stormwater <input type="checkbox"/> Trench/Fill <input type="checkbox"/> Other: _____ | |
| Wetland Delineation Date(s): | |

| Wetland Improvements | Buffer Zone Improvements | Reason for Improvements |
|----------------------|--------------------------|---|
| Restoration: s.f. | Restoration: s.f. | <input type="checkbox"/> Correction of Violation |
| Creation: s.f. | Creation: s.f. | <input type="checkbox"/> To offset permit impacts |
| Enhancement: s.f. | Enhancement: s.f. | <input type="checkbox"/> Voluntary |
| Conservation: s.f. | Conservation: s.f. | |

| Wetland Impact Fee Calculations: Round to the nearest square foot. Fees will auto-calculate. | | | |
|---|--------------------|---|----|
| Total Wetland Impact <i>(minus linear clear, including ATF)</i> | square feet (s.f.) | Wetland Impact Fee: (\$0.75/sf) | \$ |
| Total Wetland Clearing <i>(qualified linear projects only)</i> | square feet (s.f.) | Wetland Clearing Fee: (\$0.25/sf) | \$ |
| After The Fact Wetland Impact <i>(to correct a violation)</i> | square feet (s.f.) | After the Fact Wetland Fee: (0.75/sf) <i>(Required for after the fact permit applications)</i> | \$ |
| Total Buffer Zone Impacts and Calculations: Round to the nearest square foot | | | |
| Total Buffer Zone Impact | square feet (s.f.) | Buffer Impact Fee: (\$0.25/sf) | \$ |

| Additional Fees | |
|-----------------|---|
| | Agricultural Crop Conversion <i>Check here:</i> <i>(Flat fee of \$200.00)</i> \$ |
| | Minimum Application Fee: (\$50.00) <i>Required when total impact fee is less than \$50.00</i> \$ |
| | Administrative Fee: \$ |

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| Make Checks Payable to: State of Vermont | Total Check Amount: | \$ |
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**Vermont Individual Wetland
Permit Application and
Determination Petition**
Under Sections 8 and 9
of the Vermont Wetland Rules



**VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**
**WATERSHED
MANAGEMENT DIVISION**
WETLANDS PROGRAM

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| Applicant Information: <i>If the applicant is someone other than the landowner, the landowner information must be included below</i> | | | |
| Applicant Name: Vermont Agency of Transportation, Attn: John Lepore | | | |
| Address: One National Life Drive | | City/Town: Montpelier | State VT |
| Phone Number: 802-828-2672 | | Email Address: john.lepore@vermont.gov | |
| Zip: 05633-6 | | | |
| Applicant Certification: By signing this application you are certifying that all of the information contained within is true, accurate, and complete to the best of your knowledge. Original signature is required. | | | |
| Applicant Signature: <u>John Lepore</u> | | Digitally signed by John Lepore Date: 2016.08.29 14:55:50 -04'00' Date: _____ | |

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| Landowner Information: <i>Landowner must sign the application. If landowner is different from the applicant this section must be filled out</i> | | | |
| <input checked="" type="checkbox"/> Check this box if landowner is the same as the applicant | | | |
| Landowner Name: _____ | | | |
| Address: _____ | | City/Town _____ | State: _____ |
| Phone Number: _____ | | Email Address: _____ | |
| Landowner Easement: <i>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. Describe the nature of the agreement or easement in the space provided below:</i> | | | |
| | | | |
| Landowner Certification: By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. Original signature is required. | | | |
| Landowner Signature: <u>John Lepore</u> | | Digitally signed by John Lepore Date: 2016.08.29 14:55:25 -04'00' Date: _____ | |

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| Application Preparer Information: <i>Consultant, engineer, or other representative that is responsible for filling out the application, if other than the applicant or landowner.</i> | | | |
| Application Preparer Name: Charlotte Brodie | | Organization/Company: DuBois & King, Inc. | |
| Address: 6 Green Tree Drive | | City/Town South Burlington | State: VT |
| Phone Number: 802-728-7202 | | Email Address: cbrodie@dubois-king.com | |
| Zip: 05403-6 | | | |
| Application Preparer Certification: By signing this application you are certifying that all of the information contained within is true, accurate, and complete to the best of your knowledge. Original signature is required. | | | |
| Application Preparer Signature: <u>Charlotte Brodie</u> | | Date: 08.05.16 | |

Handwritten signatures are also accepted

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| <p>1. Location of wetland and project: <i>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 features.</i></p> |
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| <p>2. Site visit date(s) and attendees: <i>A site visit is required before the application can be called complete</i></p> | |
| <p>2.1 Date of Visit(s) with State District Wetland Ecologist</p> | <p>2.2. List of people present for site visit(s) including Ecologist, landowner, and representatives.</p> |
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| <p>3. Wetland Classification: <i>For multiple wetlands fill out the multiple wetlands table for sections 1 and 3 through 1</i></p> |
| <p>3.1. The wetland is a Class II wetland because :</p> |
| |
| <p>3.2. Section 4.6 Presumption <i>If the wetland meets the Section 4.6 Presumption, it does so primarily because:</i></p> |
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| <p>4. Description of the Entire Wetland: <i>Answer the following questions regarding the entire wetland, which includes all wetland areas connected to the wetland proposed for impact. Answers may be estimates based on desktop review when the wetland extends past the investigation area (parcel boundary). Specific questions about the wetland in the project area will follow. For multiple wetlands , fill out the multiple wetlands table.</i></p> |
| <p>4.1. Size of Complex in Acres: <i>The size of the complex can be obtained from the Wetland Inventory Map for mapped wetlands, or best estimation based on review of aerial photography or site visit. This is not the size of the of the delineated wetland on the subject property unless the entirety of the wetland is represented in the delineation.</i></p> |
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| <p>4.2. Vegetation Cover Types Present: <i>List all wetland types in the wetland or wetland complex and their percent cover. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland</i></p> |
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| <p>4.3. Landscape Position: <i>Where is the wetland located on the landscape? For example: Bottom of a basin, edge of a stream, shore of a lake, etc.</i></p> |
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| <p>4.4. Hydrology: <i>Describe the main source of water for the entire wetland. List any river, stream, lakes, or ponds</i></p> |
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| <p>4.4.1. Direction of Flow: <i>For example: Stream flows from north to south through the wetland complex, or the wetland drains generally to the southwest.</i></p> |
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| <p>4.4.2. Influence of Hydrology on the Entire Wetland: <i>For example: The river provides floodwater to the wetland in the spring.</i></p> |
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| <p>4.4.3. Relation of Entire Wetland to the Project Area: <i>The distance between the project area and any nearby surface waters</i></p> |
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| <p>4.4.4. Entire Wetland Hydroperiod: <i>Discuss the frequency and duration of flooding, ponding, and/or soil saturation</i></p> |
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| <p>4.5. Surrounding Landuse of the Entire Wetland: <i>For example: Rural residential and forested; Agricultural and undeveloped</i></p> |
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| <p>4.6. Relation of the Entire Wetland to Other Nearby Wetlands: <i>Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question.</i></p> |
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| <p>4.7. Pre-project Cumulative Impacts to the Entire Wetland: <i>Identify any cumulative ongoing impacts outside of the proposed project that may influence the wetland. Examples include but are not limited to: Wetland encroachments on and off the subject property, land use management in or surrounding the wetland, or development that influences hydrology or water quality. List any past Vermont Wetland Permits or CUD's related to this property.</i></p> |
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| <p>5. Description of Subject Wetland and Buffer: <i>Subject wetland is defined as the area of wetland in the project vicinity, 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 wetland that could either be directly or indirectly impacted by the project, as defined by chemical, physical, or biological characteristics. This may include the entire wetland area, or wetland area off property. For multiple wetlands, fill out the multiple wetlands table.</i></p> |
| <p>5.1. Context of Subject Wetland: <i>Describe where the subject wetland is in the context of the entire wetland described in section 4 above. For example: Upslope, narrow eastern "finger", 400 ft. from open water portion.</i></p> |
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| <p>5.2. Subject Wetland Land Use: <i>For example: Mowed lawn, old field, naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland.</i></p> |
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| <p>5.3. Subject Wetland Vegetation: <i>List dominant wetland vegetation cover type and associated dominant plant species.</i></p> |
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| <p>5.4. Subject Wetland Soils: <i>Use the USDA NRCS information where possible and use the ACOE Delineation Manual soil description</i></p> |
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| <p>5.5. Subject Wetland Hydrology: <i>Use the description from the ACOE Delineation Manual</i></p> |
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| 5.6. Buffer Zone: <i>Describe the buffer zone of the subject wetland (50 foot envelope of land adjacent to wetland boundary).</i> |
| 5.6.1. Buffer Land Use: <i>For example: Mowed shoulder, forested, old field, paved road, and residential lawns, etc. Describe any previous and ongoing disturbance in the buffer zone.</i> |
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| 5.6.2. Buffer Vegetation: <i>List the vegetation cover type and dominant plant species.</i> |
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| 5.6.3. Buffer Soils: <i>Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description.</i> |
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| 6. Entire Wetland Function and Value Summary (as defined in the Vermont Wetland Rules Section 5): <i>Check which functions are present in the entire wetland</i> | |
| <input type="checkbox"/> Flood/Storm Storage | <input type="checkbox"/> RTE Species |
| <input type="checkbox"/> Surface & Groundwater Protection | <input type="checkbox"/> Education & Research |
| <input type="checkbox"/> Fish Habitat | <input type="checkbox"/> Recreation/Economic |
| <input type="checkbox"/> Wildlife Habitat | <input type="checkbox"/> Open Space/Aesthetics |
| <input type="checkbox"/> Exemplary Natural Community | <input type="checkbox"/> Erosion Control |

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| <p>Functions and Values: <i>For each function and value:</i></p> <ol style="list-style-type: none"> 1. <i>Evaluate the entire wetland and check all that apply. Use Wetland Inventory Maps for offsite areas</i> 2. <i>Evaluate how the wetland in the project area contributes to the function.</i> 3. <i>Explain how the project will not result in adverse impacts to the function.</i> <p><i>Include any information on specific avoidance and minimization measures.</i></p> <p><i>If more than one wetland complex is involved, provide a function and value checklist for each wetland complex. In addition fill out the Multiple Wetlands Table.</i></p> |
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| 7. Water Storage for Flood Water and Storm Runoff |
| <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"/> Constricted outlet or no outlet and an unconstructed inlet. <input 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 type="checkbox"/> If a stream is present, it's 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> |

Water Storage for Flood Water and Storm Runoff Continued...

Check this box if any of the following conditions apply that may indicate the wetland provides this function at a **lower** level.

- 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).
- Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.
- Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures.
- 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.

Check this box if any of the following conditions apply that may indicate the wetland provides this function at a **higher** level.

- History of downstream flood damage to public or private property.
- Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by loss or reduction of the water storage function.
 - Developed public or private property
 - Stream banks susceptible to scouring and erosion
 - Important habitat for aquatic life
- The wetland is large in size and naturally vegetated.
- 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.
 - Developed public or private property.
 - Stream banks susceptible to scouring and erosion.
 - Important habitat for aquatic life.
- The wetland is large in size and naturally vegetated
- Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland.
 - A large amount of impervious surface in urbanized areas.
 - Relatively impervious soils.
 - Steep slopes in the adjacent areas.

7.1 Subject Wetland Contribution to Water Storage:

Explain how the subject wetland contributes to the function listed above

7.2 Statement of No Undue Adverse Impact to Water Storage for Flood Water and Storm Runoff:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, and compensation measures relevant to this function.

8. Surface and Ground Water Protection:

- Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.
- Constricted or no outlets.
 - Low water velocity through dense, persistent vegetation.
 - 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 this box if any of the following conditions apply that may indicate the wetland provides 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 this box if any of the following conditions apply that may indicate the wetland provides 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 water. (Check ANR Atlas)
 - The wetland contributes to the protection or improvement of water quality of any impaired waters.
 - The wetland is large in size and naturally vegetated.

8.1. Subject Wetland Contribution to Water Protection:

Explain how the subject wetland contributes to the function listed above.

8.2. Statement of No Undue Adverse Impact to Surface and Ground Water Protection:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

9. Fish Habitat:

- Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.
 - 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.
 - 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.
 - Documented or professionally judged spawning habitat for northern pike.
 - Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species.
 - 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.

9.1. Subject Wetland Contribution to Fish Habitat:

Explain how the subject wetland contributes to the function listed above.

9.2. Statement of No Undue Adverse Impact to Fish Habitat:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

10. Wildlife Habitat

- Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.
- 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.
 - Habitat to support one or more breeding pairs or broods of 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 this species include softwood swamps. Evidence of use includes 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:
 - Wood frog, Jefferson salamander, blue-spotted salamander, or spotted salamander. Breeding habitat for these species includes vernal pools and small ponds.
 - Northern dusky salamander and the spring salamander. Habitat for these species includes headwater seeps, springs, and streams.
 - 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 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 include 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:
 - Three or more wetland vegetation classes (greater than 1/2 acre) present including but not

Wildlife Habitat Continued...

limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog.

- The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp.
- Located adjacent to a lake, pond, river or stream.
- Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land.
- Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water.
- One of the following:
 - Hydrologically connected to other wetlands of different dominant classes or open water within 1 mile.
 - Hydrologically connected to other wetlands of same dominant class within 1/2 mile.
 - 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.

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 indicate the wetland provides this function at a **lower** level.

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).

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.

The current use in the wetland results in frequent cutting, mowing or other disturbance.

The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species.

Check box if any of the following conditions apply that may indicate the wetland provides this function at a **higher** level.

The wetland is large in size and high in quality.

The habitat has the potential to support several species based on the assessment above.

Wetland is associated with an important wildlife corridor.

The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.

10.1. Subject Wetland Contribution to Wildlife Habitat Functions:

Explain how the subject wetland contributes to the function listed above.

10.2. Statement of No Undue Adverse Impact to Wildlife Habitat:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

11. Exemplary Wetland Natural Community

Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.

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

The wetland is also likely to be significant if any of the following conditions are met:

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.

Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to:

- Deep peat accumulation reflecting a long history of wetland formation;
- Forested wetlands displaying very old trees and other old growth characteristics;
- A wetland natural community that is at the edge of the normal range for that type;
- A wetland mosaic containing examples of several to many wetland community types; or
- A large wetland complex containing examples of several wetland community types.

List species or communities of concern:

11.1. Subject Wetland Proximity to Exemplary Natural Communities

11.2. Statement of No Undue Adverse Impact to Exemplary Wetland Natural Community:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

12. Rare, Threatened, and Endangered Species Habitat:

Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.

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.

The wetland is also likely to be significant if any of the following apply:

There is credible documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists;

There is credible documentation that threatened or endangered species have been present in past 10 years;

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;

There is credible documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank).

List name of species and ranking:

12.1. Subject Wetland Contribution to RTE Habitat:

Explain how the subject wetland contributes to the function listed above.

12.2 Statement of No Undue Adverse Impact to Rare, Threatened, or Endangered Species Habitat:

Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

13. Education and Research in Natural Sciences:

- Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function.
 - Owned by or leased to a public entity dedicated to education or research.
 - History of use for education or research.
 - Has one or more characteristics making it valuable for education or research.

13.1. Subject Wetland Education and Research Potential:

Explain how the subject wetland contributes to the function listed above.

13.2 Statement of No Undue Adverse Impact to Education and Research in Natural Sciences:

Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

14. Recreational Value and Economic Benefits:

- Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function.
 - Used for, or contributes to, recreational activities.
 - Provides economic benefits.
 - Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law.
 - Used for harvesting of wild foods.

Comments:

14.1. Subject Wetland Recreational and Economic Value:

Explain how the subject wetland contributes to the value listed above.

14.2. Statement of No Undue Adverse Impact to Recreational Value and Economic Benefits:

Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

15. Open Space and Aesthetics:

Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.

- Can be readily observed by the public; and
 - Possesses special or unique aesthetic qualities; or
 - Has prominence as a distinct feature in the surrounding landscape;
- Has been identified as important open space in a municipal, regional or state plan.

Comments:

15.1. Subject Wetland Aesthetic Value:

Explain how the subject wetland contributes to the value listed above.

15.2. Statement of No Undue Adverse Impact to Open Space and Aesthetics:

Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

16. Erosion Control Through Binding and Stabilizing

Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.

- Erosive forces such as wave or current energy are present and any of the following are present as well:
 - Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force.
 - Good interspersion of persistent emergent vegetation and water along course of water flow.
 - Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control.

What type of erosive forces are present?

- Lake fetch and waves
- High current velocities:
- Water level influenced by upstream impoundment

Erosion Control Through Binding and Stabilization Continued...

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.
 - The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force.
- Check box if any of the following conditions apply that may indicate the wetland provides this function at a **higher** level.
 - The stream contains high sinuosity.
 - Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor.

16.1. Subject Wetland Contribution to Erosion Control:

Explain how the subject wetland contributes to the function listed above.

16.2. Statement of No Undue Adverse Impact to Erosion Control:

Explain how the proposed project will not result in any undue, adverse impact to this function. include any avoidance, minimization, or compensation measures relevant to this function.

17. Project Description:

17.1. Overall Project Purpose:

Description of the basic project and why it is needed. Partial projects with no clear purpose will not be accepted.

For example: *six-lot residential subdivision; expansion of an existing commercial building, building a single family residence.*

17.2. Description of Project Component Impacting Wetland or Buffer:

Explain in general terms which portions of the project will impact wetlands or buffer zones.

For example: *Cross the wetland with a driveway to construct a residential subdivision, upgrade existing road through buffer to improve access, extend a trail system.*

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| <p>17.3. Acreage of Parcel(s) or Easements(s): <i>Acreage of subject property.</i></p> |
| |
| <p>17.4. Acreage of Project Area: <i>Acreage of area involved in the project.</i></p> |
| |

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| <p>18. Project Details: <i>Provide details regarding specific impacts to the wetland and buffer zone.</i></p> <p><i>For multiple wetlands fill out the multiple wetland table.</i></p> |
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| <p>18.1. Specific Impacts to Wetland and Buffer Zone Dimensions: <i>List portions of the project that will specifically impact the wetland or buffer zone and their dimensions. For example: driveway crossing with 16' wide fill; installation of buried sewer force main with 5' trench including fill footprint; addition of Stormwater outfall which directs flow to northern portion of wetland</i></p> |
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| <p>18.2. Bridges and Culverts: <i>Culvert circumference, length, placement and shapes, or bridge details. List any stream alteration permits that are required or obtained where perennial streams or rivers are involved.</i></p> |
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| <p>18.3. Construction Sequence: <i>Describe any details pertaining to the work planned in the wetland and buffer in terms of sequence or phasing that is relevant. Describe the construction limits of disturbance, how those will be marked, and check to ensure these are shown on the site plans as well.</i></p> |
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| <p>18.4. Stormwater Design** <i>List any stormwater permits obtained or applied for. Describe stormwater and/or erosion controls proposed. ** Erosion prevention is <u>required</u> in order to prevent sediment from entering the wetland.</i></p> |
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| <p>18.5. Permanent Demarcation of Limit of Impacts** <i>Describe any boulders, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. **Permanent demarcations are <u>required</u> for projects with ongoing activities in or near wetlands or buffer zones such as houses, yards, woody clearing or parking areas, and needs to be depicted on the site plans.</i></p> |
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19. Wetland and Buffer Zone Impacts:

For multiple wetlands provide narrative overview for each section below, and fill out the Multiple Wetland Tables

19.1. Wetland Impacts:

*Summarize the square footage of impact in the appropriate category. Add After-the-Fact impacts here too. **Round to the nearest square foot***

| | |
|---|------|
| Permanent Wetland Fill | s.f. |
| Temporary Wetland Impact | s.f. |
| Other Permanent Wetland Impact <i>(this number includes clearing of woody vegetation, dredging, and does not include fill)</i> | s.f. |
| Total Wetland Impact: | s.f. |

Describe in detail the proposed impact to wetlands

For example: Fill for road crossing, temporary impacts for trench and fill related to utility installation.

General narrative required here even for projects with multiple wetlands and impacts

19.2. Buffer Zone Impacts:

Summarize the square footage of impact in the appropriate category.

| | |
|-------------------------|------|
| Temporary Buffer Impact | s.f. |
| Permanent Buffer Impact | s.f. |
| Total Buffer Impact: | s.f. |

Describe in detail the proposed impact to buffer zones

For example: Addition of fill along roadway embankment extending into buffer zone.

General narrative required here even for projects with multiple wetlands and impacts.

19.3. Cumulative Impacts:

List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland.

For example: Increased noise from parking lot, vegetation management, inputs from stormwater pond outlet, reduction in flood storage volume from the addition of fill from the project.

20. Mitigation Sequence:

Before you begin, please read all of Section 20 to respond most appropriately to specific questions. Questions specifically related to Section 9.5b of the Vermont Wetland Rules.

20.1. Avoidance of Wetland Impacts:

20.1.1. Can the activity be located on another site owned or controlled by the applicant, or reasonably available to satisfy the basic project purpose? If not, indicate why. Cite any alternative sites and explain why they were not chosen.

20.1.2. Can the proposed activity be practicably located outside the wetland/buffer zone? If not, indicate why. Explain the alternatives you have explored for avoiding the wetland and buffer onsite, And why they are not feasible.

20.2. Avoidance to the Impact to Functions and Values:

20.2.1. If the proposed activity cannot be practicably located outside the wetland/buffer zone, have all practicable measures been taken to avoid adverse impacts on protected functions? Yes No

20.2.2. What design alternatives were examined to avoid impacts to wetland function? *For example: Use of matting, relocation of footprint, etc.*

20.2.3. What steps have been taken to minimize the size and scope of the project to avoid impacts to wetland functions and values? Include information on project size reduction and relocation.

20.2.4. Explain how the proposed project represents the least impact alternative design. Explain why other alternatives, which you described above, were not chosen.

20.3. Minimization and Restoration:

20.3.1. If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity been planned to minimize adverse impacts on the protected function? Yes No N/A

20.3.2. What measures will be used during construction and on an ongoing basis to protect the wetland and buffer zone? *For example: Stormwater treatment, signs, fencing, etc.*

Minimization and Restoration Continued...

20.3.3. Has a plan been developed for the prompt restoration of any adverse impacts on protected functions? Yes No N/A

Restoration Narrative:

For example: Planting along the stream.

Quantification of Restoration:

| Wetland Area (sqft) | Buffer Area (sqft) | Functions/Value s Addressed |
|---------------------|--------------------|-----------------------------|
| | | |

20.4. Compensation:

*Please refer to Section 9.5c of the Vermont Wetland Rules for compensation, which is required when the project will result in net adverse impact to wetland function. Not all functions are presumed to be compensable. **All projects requiring compensation need prior consultation with the Vermont Wetlands Program.***

If compensation is proposed please include a summary here. Also list any supporting documents you may have attached to the application including In-Lieu-Fee proposal or detailed compensation plan.

21. Wetland Determination:

If the application involves a wetland determination please answer the following. For multiple wetlands provide narrative overview for each section below, and fill out the Multiple Wetland Tables.

- Wetland is mapped or contiguous to the Vermont Significant Wetland Inventory Map
- Wetland is not mapped on or contiguous to the Vermont Significant Wetland Inventory Map

21.1. Reason for Petition:

Please choose one from the dropdown menu.

21.2. Determination Narrative:

Please provide any narrative to support the petition for a wetland determination here, including previous decisions by the Secretary or Water Board.

22. Supporting Materials:

****ADDITIONAL MATERIAL REQUIRED TO CALL APPLICATION COMPLETE**

22.1. **Location Map:

Provide a location map that is 8 ½” x 11” and separate from any site plans.
 The Vermont Natural Resources Atlas is appropriate using USGS topography map base layer, roads, and VSWI wetlands at a minimum.

| Date | Title |
|------|-------|
| | |
| | |

22.2. **Site Plan(s):

List as specified below. Plans must be legible and include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes, and any permanent memorialization.

| Title | Author | Date | Date of Last Revision |
|-------|--------|------|-----------------------|
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22.3. **U.S. Army Corps of Engineer Wetland Delineation Forms:

List attachment names, dates data was collected, cover types sampled, and number of paired plots included

| Attachment #/Title | Range of Collection Dates | Vegetation Cover Types | # of Paired Plots |
|--------------------|---------------------------|------------------------|-------------------|
| | | | |
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22.4. Other Supporting Documents:

Provide any other documentation that supports the application.
Examples include but are not limited to: Photographs, easements, agreements, restoration/plan, GIS shapefiles, additional ACOE forms.

| Date | Last Revision | Author | Title |
|------|---------------|--------|-------|
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23. Abutting Landowners

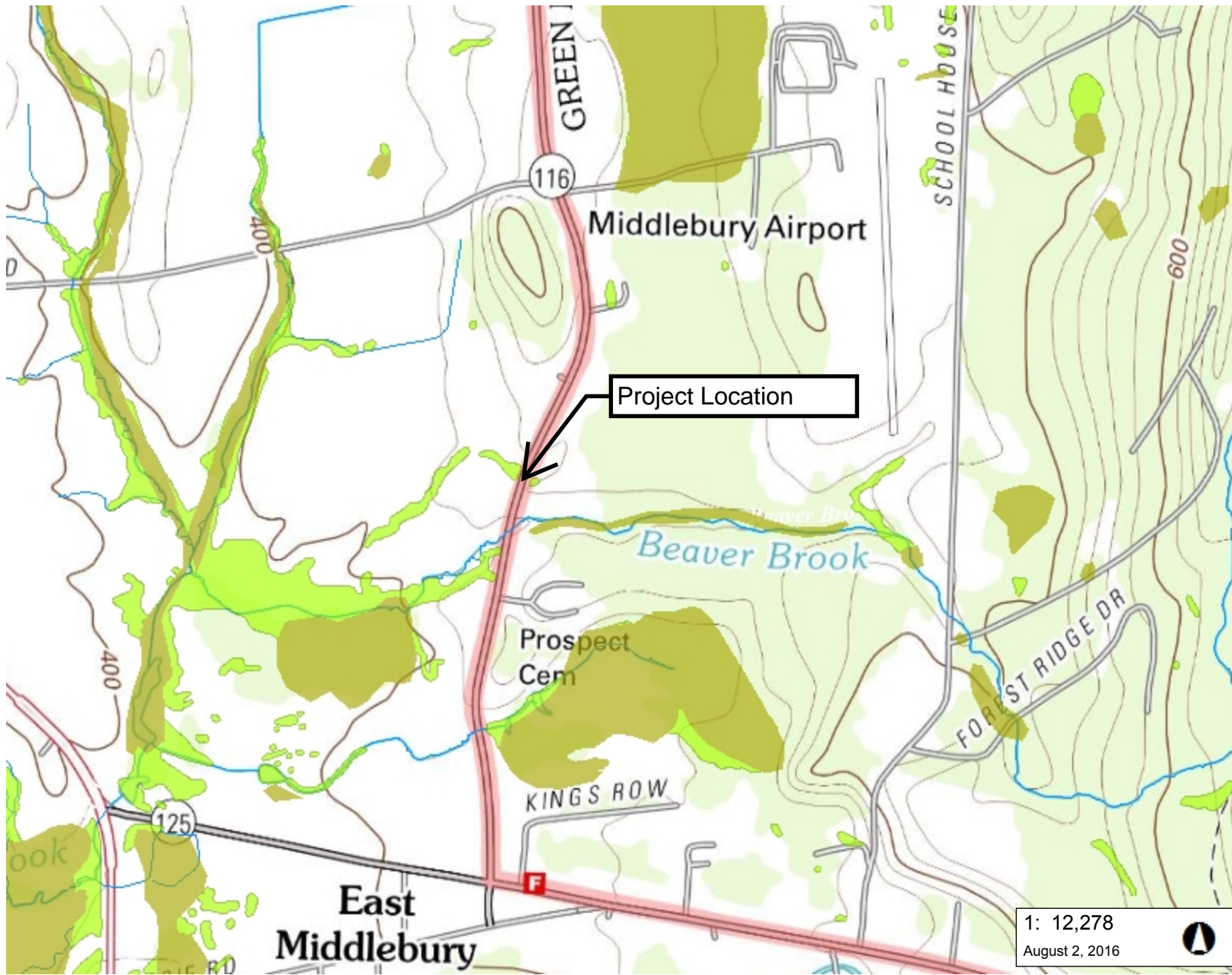
Please provide abutting landowner information so that all persons owning property within, or adjacent to, the affected wetland area of buffer zone can be notified during the public notice period. **Please use additional sheets if necessary.**

23.1. Abutting Land Owner Information: Please list as first names first followed by last name

| | |
|--|--|
| 1. Name: Street/Road: City/State/Zip: | 16. Name: Street/Road: City/State/Zip: |
| 2. Name: Street/Road: City/State/Zip: | 17. Name: Street/Road: City/State/Zip: |
| 3. Name: Street/Road: City/State/Zip: | 18. Name: Street/Road: City/State/Zip: |
| 4. Name: Street/Road: City/State/Zip: | 19. Name: Street/Road: City/State/Zip: |
| 5. Name: Street/Road: City/State/Zip: | 20. Name: Street/Road: City/State/Zip: |
| 6. Name: Street/Road: City/State/Zip: | 21. Name: Street/Road: City/State/Zip: |
| 7. Name: Street/Road: City/State/Zip: | 22. Name: Street/Road: City/State/Zip: |
| 8. Name: Street/Road: City/State/Zip: | 23. Name: Street/Road: City/State/Zip: |
| 9. Name: Street/Road: City/State/Zip: | 24. Name: Street/Road: City/State/Zip: |
| 10. Name: Street/Road: City/State/Zip: | 25. Name: Street/Road: City/State/Zip: |
| 11. Name: Street/Road: City/State/Zip: | 26. Name: Street/Road: City/State/Zip: |
| 12. Name: Street/Road: City/State/Zip: | 27. Name: Street/Road: City/State/Zip: |
| 13. Name: Street/Road: City/State/Zip: | 28. Name: Street/Road: City/State/Zip: |
| 14. Name: Street/Road: City/State/Zip: | 29. Name: Street/Road: City/State/Zip: |
| 15. Name: Street/Road: City/State/Zip: | 30. Name: Street/Road: City/State/Zip: |

24. Modified Distribution (Newspaper Notification): In situations where there is an application within a large wetland or buffer zone that has a large number of landowners, applicants can choose to limit the distribution list with a supplemental newspaper notification. At a minimum the applicant must 1) provide notice to immediate abutters, 2) provide notice to all persons owning property containing the wetland or buffer within 500 ft. of the project area, and 3) shall have the VWP publish notice of the application in a local newspaper generally circulating in the area where the wetland is located. *****The applicant will be billed directly by the newspaper listed. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper*****

| |
|-----------------------------|
| Name of Newspaper(s) |
| |
| |
| |



LEGEND

- Wetlands - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
- Wetlands Advisory Layer
- Stream
- Town Boundary

1: 12,278
August 2, 2016

NOTES

Map created using ANR's Natural Resources Atlas

Project Location Map

624.0 0 312.00 624.0 Meters
 WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 1023 Ft. 1cm = 123 Meters
 © Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

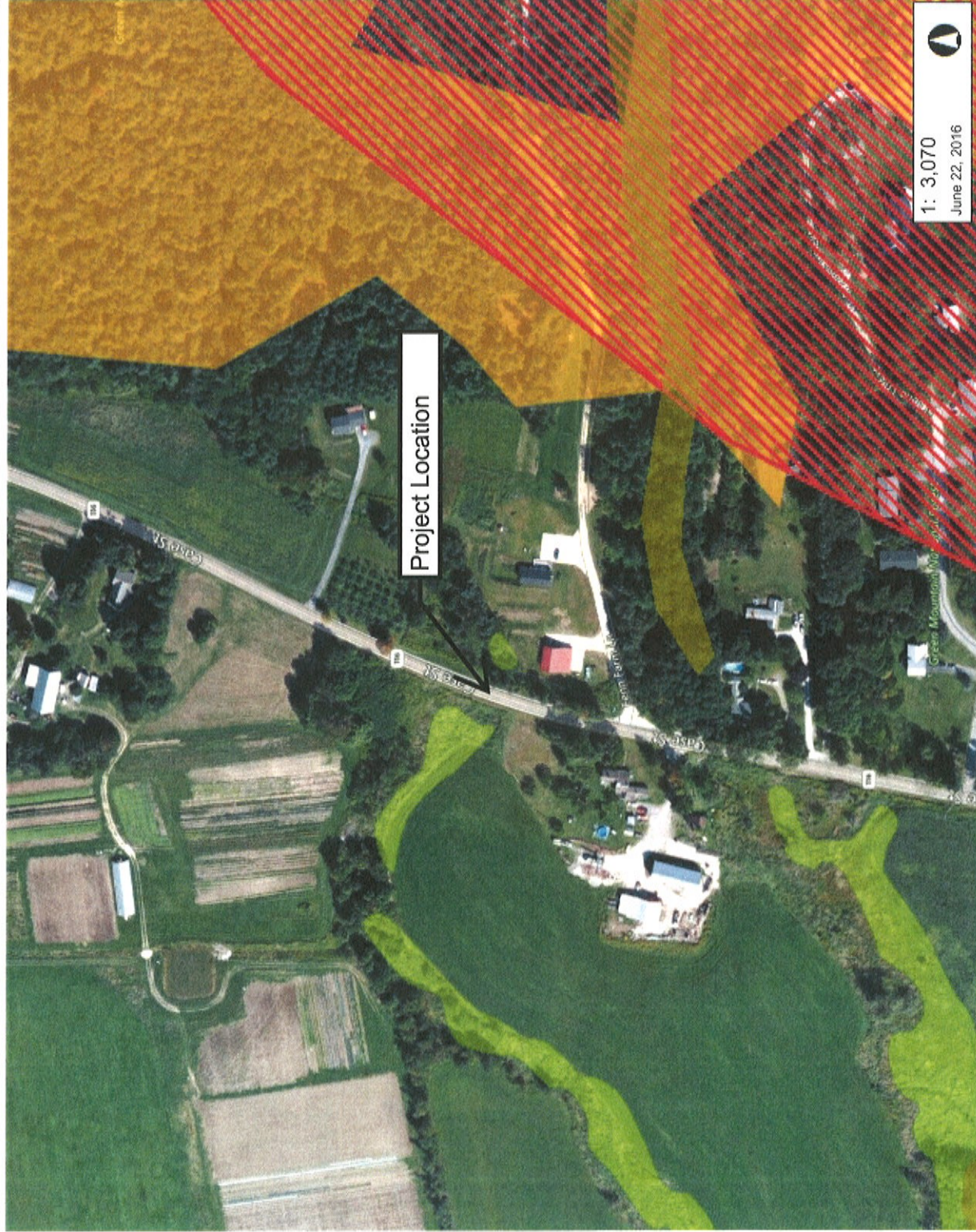
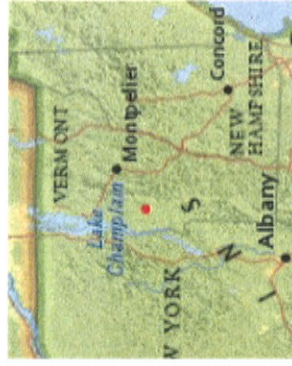
DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular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



Natural Resources Atlas

Vermont Agency of Natural Resources

vermont.gov



1: 3,070
June 22, 2016

LEGEND

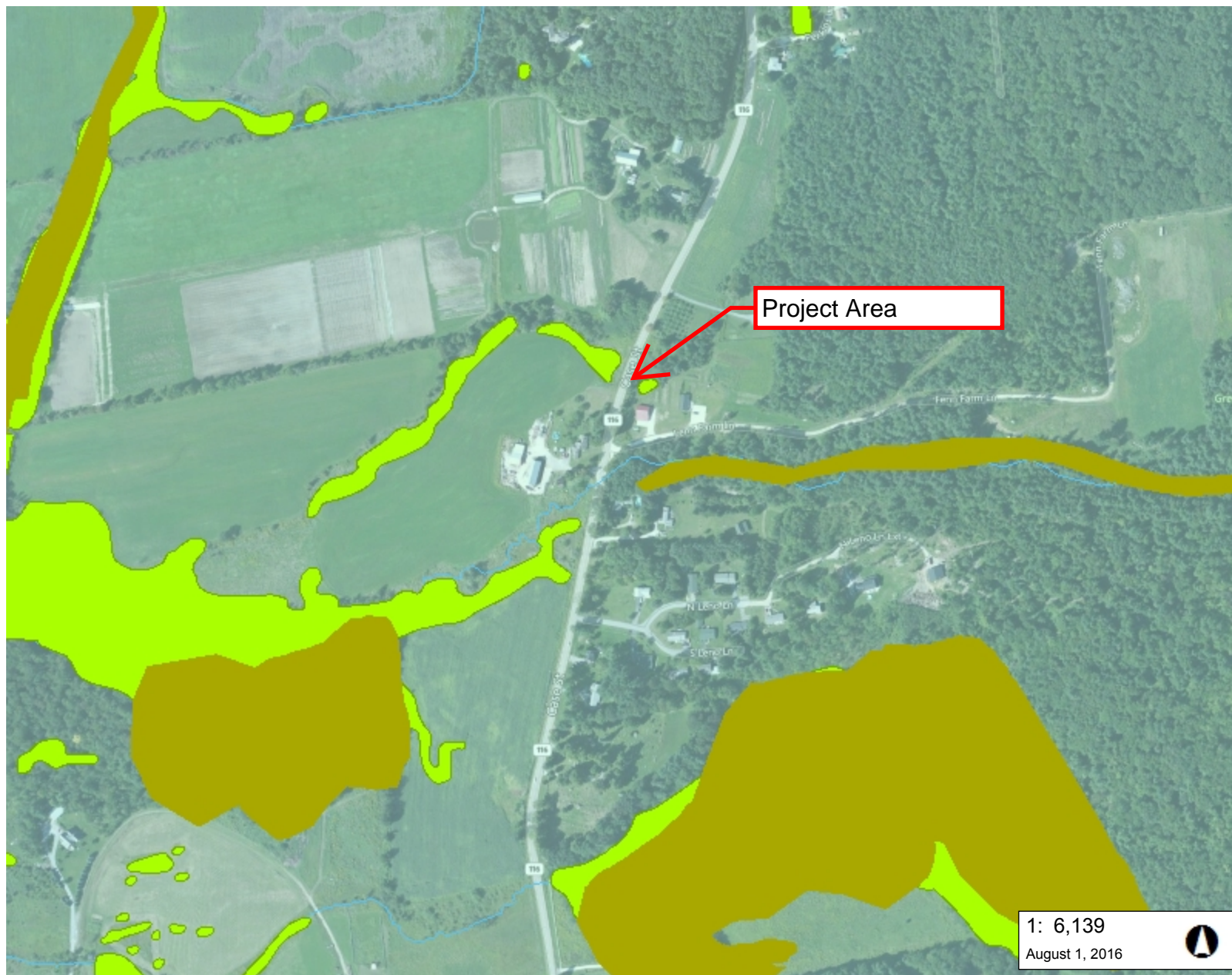
- Vernal Pools Confirmed - AEA
- Vernal Pools Unconfirmed - AI
- Wetlands - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
- Wetlands Advisory Layer
- Amphibian and Reptile Crossir
 - Confirmed
 - Potential
- Rare Threatened Endangered
 - Threatened or Endangered
 - Rare
- Significant Natural Community
 - Uncommon Species and Other
 - Animal
 - Plant
 - Natural Community
- Deer Wintering Areas
- Habitat Blocks
 - 10 - Higher Priority
 - 9
 - 8
 - 7
 - 6
 - 5
 - 4
 - 3
 - 2

NOTES

Map created using ANR's Natural Resources Atlas

156.0 78.00 156.0 Meters
 1" = 256 FL 1cm = 31 Meters
 THIS MAP IS NOT TO BE USED FOR NAVIGATION
 WGS_1984_Web_Mercator_Auxiliary_Sphere
 © Vermont Agency of Natural Resources

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.



LEGEND

- Wetlands - VSWI
 - Class 1 Wetland
 - Class 2 Wetland
- Wetlands Advisory Layer
- Indiana Bat Hibernacula
 - Observed
 - Potential
- Stream
- Town Boundary

1: 6,139
August 1, 2016

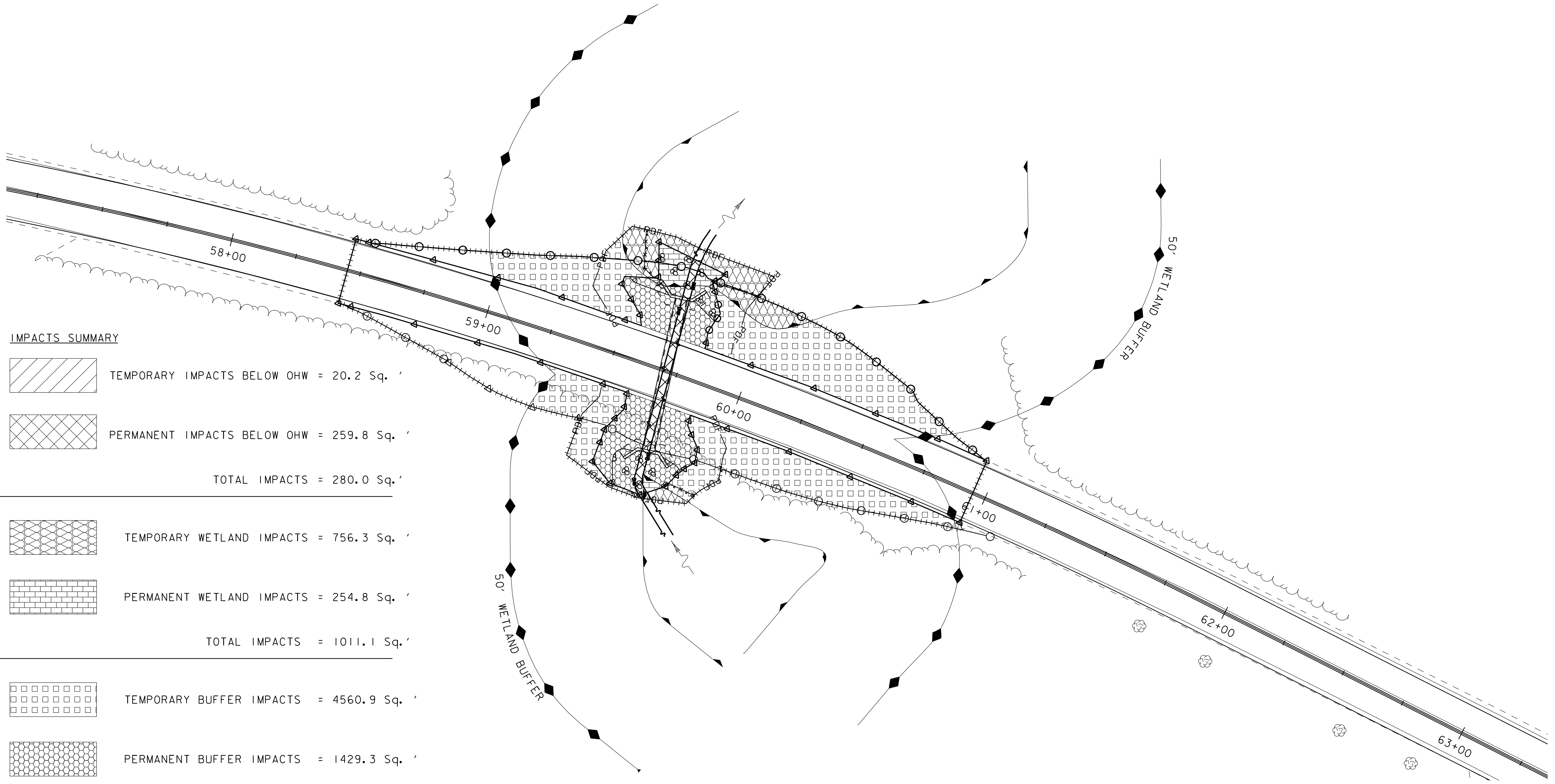
NOTES

Map created using ANR's Natural Resources Atlas


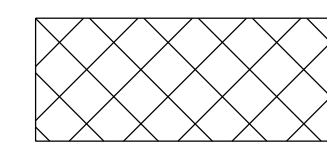
312.0 0 156.00 312.0 Meters

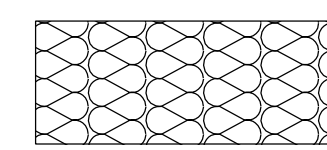
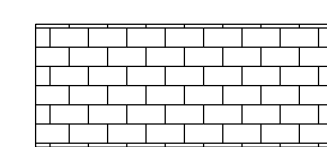
WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 512 Ft. 1cm = 61 Meters
© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

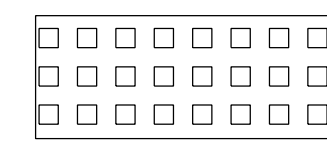
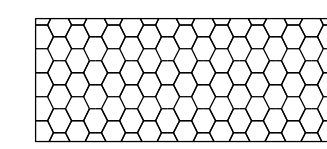
DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular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

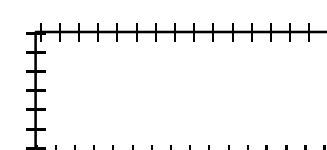
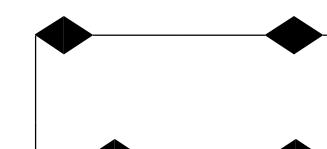


IMPACTS SUMMARY

 TEMPORARY IMPACTS BELOW OHW = 20.2 Sq. '
 PERMANENT IMPACTS BELOW OHW = 259.8 Sq. '
 TOTAL IMPACTS = 280.0 Sq. '

 TEMPORARY WETLAND IMPACTS = 756.3 Sq. '
 PERMANENT WETLAND IMPACTS = 254.8 Sq. '
 TOTAL IMPACTS = 1011.1 Sq. '

 TEMPORARY BUFFER IMPACTS = 4560.9 Sq. '
 PERMANENT BUFFER IMPACTS = 1429.3 Sq. '
 TOTAL IMPACTS = 5990.2 Sq. '

 TOTAL IMPACT AREA
 WETLANDS BUFFER BOUNDARY

EXCAVATION = 28.7 CY
 FILL = 28.0 CY
 NET EXCV. = 0.7 CY

0 20 40
 SCALE IN FEET

PROJECT NAME: MIDDLEBURY-STARKSBORO
 PROJECT NUMBER: STP 2953(I)
 FILE NAME: z14v227mml131wetImpact.dgn PLOT DATE: 7/28/2016
 PROJECT LEADER: C.LATHROP DRAWN BY: S.SOLLA
 DESIGNED BY: S.SOLLA CHECKED BY: C.LATHROP
 CULVERT MM 1,131 WETLANDS IMPACTS SHEET 1 OF 1

GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
 STA. 0+98 - STA. 1+11 RT (PHASE 2)
 STA. 1+04 - STA. 1+06 LT (PHASE 2)
 STA. 1+89 - STA. 2+00 LT (PHASE 1)
 STA. 1+88 - STA. 1+90 RT (PHASE 1)
 STA. 58+51 - STA. 60+94 LT (PHASE 1)
 STA. 58+90 - STA. 61+09 RT (PHASE 2)

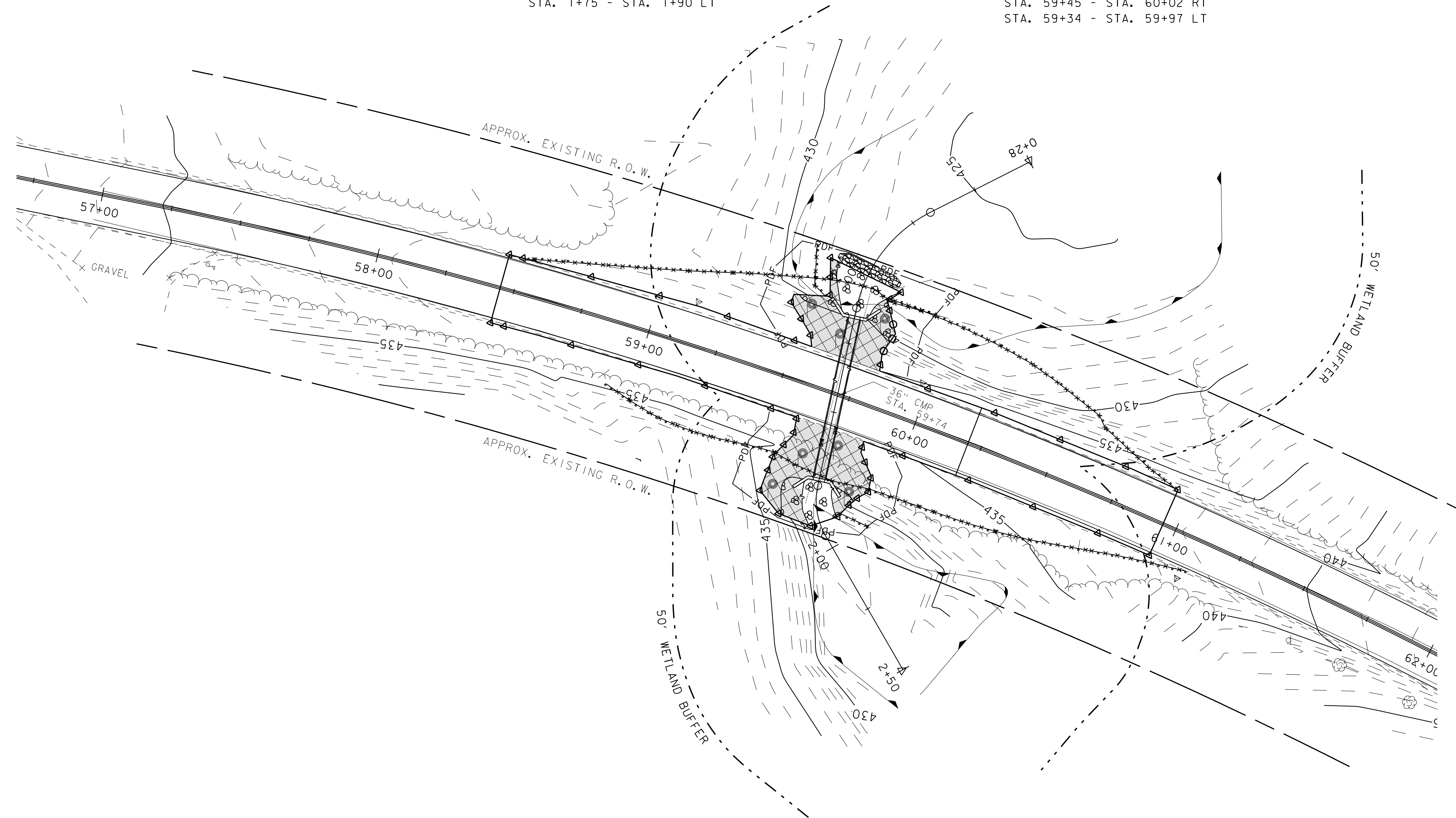
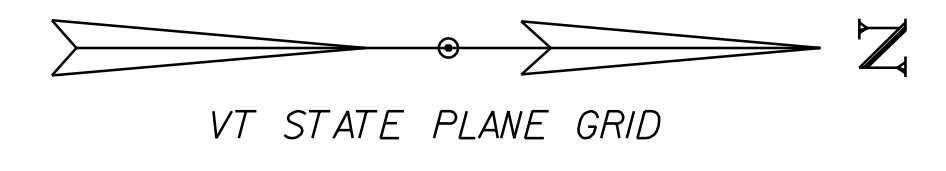
TOPSOIL
 STA. 59+44 - STA. 59+83 LT
 STA. 59+55 - STA. 55+93 RT

GRUBBING MATERIAL
 STA. 1+00 - STA. 1+15 RT
 STA. 1+00 - STA. 1+15 LT
 STA. 1+75 - STA. 1+90 RT
 STA. 1+75 - STA. 1+90 LT

TEMPORARY EROSION MATTING
 STA. 59+44 - STA. 59+83 LT
 STA. 59+55 - STA. 55+93 RT

TEMPORARY STONE CHECK DAM, TYPE I
 STA. 0+98

PROJECT DEMARCATION FENCE
 STA. 59+45 - STA. 60+02 RT
 STA. 59+34 - STA. 59+97 LT



| | |
|-----------------------------------|------------|
| AREA OF FULL DEPTH RECONSTRUCTION | 2555.50 SF |
| AREA OF SLOPE RECONSTRUCTION | 1872.85 SF |
| AREA BETWEEN PDF AND WORK LIMITS | 1863.84 SF |
| TOTAL AREA OF DISTURBANCE | 6292.19 SF |



| | |
|-------------------------------------|-----------------------|
| PROJECT NAME: MIDDLEBURY-STARKSBORO | PLOT DATE: 8/3/2016 |
| PROJECT NUMBER: STP 2953(I) | DRAWN BY: S.SOLLA |
| FILE NAME: z14v227mml131erobdr.dgn | CHECKED BY: C.LATHROP |
| PROJECT LEADER: C.LATHROP | SHEET 128 OF 182 |
| DESIGNED BY: S.SOLLA | |
| EPSC CONSTRUCTION PLAN SHEET | |

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

| POINT CODE | DESCRIPTION |
|------------|------------------------------|
| CH | CHANNEL EASEMENT |
| CONST | CONSTRUCTION EASEMENT |
| CUL | CULVERT EASEMENT |
| D&C | DISCONNECT & CONNECT |
| DIT | DITCH EASEMENT |
| DR | DRAINAGE EASEMENT |
| DRIVE | DRIVEWAY EASEMENT |
| EC | EROSION CONTROL |
| HWY | HIGHWAY EASEMENT |
| I&M | INSTALL & MAINTAIN EASEMENT |
| LAND | LANDSCAPE EASEMENT |
| R&RES | REMOVE & RESET |
| R&REP | REMOVE & REPLACE |
| SR | SLOPE RIGHT |
| UE | UTILITY EASEMENT |
| (P) | PERMANENT EASEMENT |
| (T) | TEMPORARY EASEMENT |
| ■ | BNDNS BOUND SET |
| □ | BNDNS BOUND TO BE SET |
| ● | IPNS IRON PIN SET |
| ⊙ | IPNS IRON PIN TO BE SET |
| ⊠ | CALC EXISTING ROW POINT |
| ○ | PROW PROPOSED ROW POINT |
| [LENGTH] | LENGTH CARRIED ON NEXT SHEET |

COMMON TOPOGRAPHIC POINT SYMBOLS

| POINT CODE | DESCRIPTION |
|------------|----------------------------------|
| ⊕ | APL BOUND APPARENT LOCATION |
| □ | BM BENCHMARK |
| □ | BND BOUND |
| □ | CB CATCH BASIN |
| ⊕ | COMB COMBINATION POLE |
| □ | DITHR DROP INLET THROATED DNC |
| ⊕ | EL ELECTRIC POWER POLE |
| ○ | FPOLE FLAGPOLE |
| ○ | GASFIL GAS FILLER |
| ○ | GP GUIDE POST |
| × | GSO GAS SHUT OFF |
| ○ | GUY GUY POLE |
| ○ | GUYW GUY WIRE |
| × | GV GATE VALUE |
| ⊕ | H TREE HARDWOOD |
| △ | HCTRL CONTROL HORIZONTAL |
| △ | HVCTRL CONTROL HORIZ. & VERTICAL |
| ◇ | HYD HYDRANT |
| ● | IP IRON PIN |
| ● | IPIPE IRON PIPE |
| □ | LI LIGHT - STREET OR YARD |
| □ | MB MAILBOX |
| ○ | MH MANHOLE (MH) |
| □ | MM MILE MARKER |
| □ | PM PARKING METER |
| □ | PMK PROJECT MARKER |
| □ | POST POST STONE/WOOD |
| ⊕ | RRSIG RAILROAD SIGNAL |
| ⊕ | RRSL RAILROAD SWITCH LEVER |
| ⊕ | S TREE SOFTWOOD |
| ⊕ | SAT SATELLITE DISH |
| ⊕ | SHRUB SHRUB |
| ⊕ | SIGN SIGN |
| ⊕ | STUMP STUMP |
| ⊕ | TEL TELEPHONE POLE |
| ○ | TIE TIE |
| ⊕ | TSIGN SIGN W/DOUBLE POST |
| ⊕ | VCTRL CONTROL VERTICAL |
| ○ | WELL WELL |
| × | WSO WATER SHUT OFF |

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

| CODE | DESCRIPTION |
|------|-------------------------|
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| CC | CENTER OF CURVE |
| PT | POINT OF TANGENCY |
| PCC | POINT OF COMPOUND CURVE |
| PRC | POINT OF REVERSE CURVE |
| POB | POINT OF BEGINNING |
| POE | POINT OF ENDING |
| STA | STATION PREFIX |
| AH | AHEAD STATION SUFFIX |
| BK | BACK STATION SUFFIX |
| D | CURVE DEGREE OF (100FT) |
| R | CURVE RADUIS OF |
| T | CURVE TANGENT LENGTH |
| L | CURVE LENGTH OF |
| E | CURVE EXTERNAL DISTANCE |

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

| | |
|----------|---------------------------|
| — UGU — | UTILITY (GENERIC-UNKNOWN) |
| — UT — | TELEPHONE |
| — UE — | ELECTRIC |
| — UC — | CABLE (TV) |
| — UEC — | ELECTRIC+CABLE |
| — UET — | ELECTRIC+TELEPHONE |
| — UCT — | CABLE+TELEPHONE |
| — UECT — | ELECTRIC+CABLE+TELEP. |
| — G — | GAS LINE |
| — W — | WATER LINE |
| — S — | SANITARY SEWER (SEPTIC) |

ABOVE GROUND UTILITIES (AERIAL)

| | |
|-------------|---------------------------|
| — AGU — | UTILITY (GENERIC-UNKNOWN) |
| — T — | TELEPHONE |
| — E — | ELECTRIC |
| — C — | CABLE (TV) |
| — EC — | ELECTRIC+CABLE |
| — ET — | ELECTRIC+TELEPHONE |
| — AER E&T — | ELECTRIC+TELEPHONE |
| — CT — | CABLE+TELEPHONE |
| — ECT — | ELECTRIC+CABLE+TELEP. |
| — | UTILITY POLE GUY WIRE |

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

| | |
|--------|-----------------------|
| — CZ — | CLEAR ZONE |
| — | PLAN LAYOUT MATCHLINE |

PROJECT CONSTRUCTION FEATURES

| | |
|-----|----------------------------|
| — | TOP OF CUT SLOPE |
| — | TOE OF FILL SLOPE |
| — | STONE FILL |
| — | BOTTOM OF DITCH |
| — | CULVERT PROPOSED |
| — | STRUCTURE SUBSURFACE |
| PDF | PROJECT DEMARCATION FENCE |
| BF | BARRIER FENCE |
| — | TREE PROTECTION ZONE (TPZ) |
| — | STRIPING LINE REMOVAL |
| — | SHEET PILES |

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

| | |
|-----|--|
| — | TOWN BOUNDARY LINE |
| — | COUNTY BOUNDARY LINE |
| — | STATE BOUNDARY LINE |
| — | PROPOSED STATE R.O.W. (LIMITED ACCESS) |
| — | PROPOSED STATE R.O.W. |
| — | STATE ROW (LIMITED ACCESS) |
| — | STATE ROW |
| — | TOWN ROW |
| — | PERMANENT EASEMENT LINE (P) |
| — | TEMPORARY EASEMENT LINE (T) |
| — | SURVEY LINE |
| P | PROPERTY LINE (P/L) |
| SR | SLOPE RIGHTS |
| 6f | 6F PROPERTY BOUNDARY |
| 4f | 4F PROPERTY BOUNDARY |
| HAZ | HAZARDOUS WASTE |

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES

| | |
|---|---|
| — | FILTER CURTAIN |
| — | SILT FENCE |
| — | SILT FENCE WOVEN WIRE |
| — | CHECK DAM |
| — | DISTURBED AREAS REQUIRING RE-VEGETATION |
| — | EROSION MATTING |

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

ENVIRONMENTAL RESOURCES

| | |
|-----------------|---------------------------------|
| — | WETLAND BOUNDARY |
| — | RIPARIAN BUFFER ZONE |
| — | WETLAND BUFFER ZONE |
| — | SOIL TYPE BOUNDARY |
| — T&E — | THREATENED & ENDANGERED SPECIES |
| — HAZ — | HAZARDOUS WASTE AREA |
| — AG — | AGRICULTURAL LAND |
| — HABITAT — | FISH & WILDLIFE HABITAT |
| — FLOOD PLAIN — | FLOOD PLAIN |
| — OHW — | ORDINARY HIGH WATER (OHW) |
| — | STORM WATER |
| — | USDA FOREST SERVICE LANDS |
| — | WILDLIFE HABITAT SUIT/CONN |

ARCHEOLOGICAL & HISTORIC

| | |
|-------------------|----------------------------|
| — ARCH — | ARCHEOLOGICAL BOUNDARY |
| — HISTORIC DIST — | HISTORIC DISTRICT BOUNDARY |
| — HISTORIC — | HISTORIC AREA |
| Ⓜ | HISTORIC STRUCTURE |

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

EXISTING FEATURES

| | |
|---|--------------------|
| — | ROAD EDGE PAVEMENT |
| — | ROAD EDGE GRAVEL |
| — | DRIVEWAY EDGE |
| — | DITCH |
| — | FOUNDATION |
| — | FENCE (EXISTING) |
| — | FENCE WOOD POST |
| — | FENCE STEEL POST |
| — | GARDEN |
| — | ROAD GUARDRAIL |
| — | RAILROAD TRACKS |
| — | CULVERT (EXISTING) |
| — | STONE WALL |
| — | WALL |
| — | WOOD LINE |
| — | BRUSH LINE |
| — | HEDGE |
| — | BODY OF WATER EDGE |
| — | LEDGE EXPOSED |

PROJECT NAME: MIDDLEBURY-STARKSBORO

PROJECT NUMBER: STP 2953(I)

FILE NAME: z14v2271dx.dgn

PLOT DATE: 7/20/2016

PROJECT LEADER: VTRANS

DRAWN BY: VTRANS

DESIGNED BY: VTRANS

CHECKED BY: VTRANS

CONVENTIONAL SYMBOLGY LEGEND SHEET

SHEET 3 OF 182

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF A 36" X 78' CMP CULVERT AND REPLACING IT WITH A 48" CPEP, WITH NEW HEADWALLS ON NEW FOOTINGS. CULVERT MM 1.131 IS LOCATED IN THE TOWN OF MIDDLEBURY, ON VT ROUTE 116, APPROXIMATELY 2,150 FT SOUTH OF THE INTERSECTION OF VT ROUTE 116, AND AIRPORT RD (TH 28). THE LENGTH OF THE CULVERT WILL BE DECREASED TO 60 FEET.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.33 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS RELATIVELY FLAT GRADIENT WITH WETLANDS BOTH UP AND DOWN STREAM SURROUNDED BY FORESTS AND FIELDS.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THIS SITE HAS A HILLY DRAINAGE AREA OF ABOUT .16 SQUARE MILES. WETLANDS EXTEND ABOUT 40 FT UPSTREAM FROM THE CULVERT AND WELL BEYOND THE PROJECT AREA. THE STREAM IS INTERMITTENT.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES SCRUB AND HERBACEOUS VEGETATION. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT AND TEMPORARY DETOUR. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE II AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES IN THE UPLAND AREAS AND A WETLAND SEED MIX IN THE WETLANDS.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ADDISON COUNTY, VERMONT. SOILS ON THE PROJECT SITE ARE ADAMS LOAMY FINE SAND, 5% TO 30% SLOPES, "K FACTOR" = 0.17, ELMWOOD FINE SANDY LOAM, COARSE VARIANT, 0% TO 8% SLOPES, "K FACTOR" = 0.15, AND SALMON VERY FINE SANDY LOAM, 12% TO 50% SLOPES, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO SIGNIFICANT SLOPES.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL

0.24-0.36 = MODERATE EROSION POTENTIAL

0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO

HISTORICAL OR ARCHEOLOGICAL AREAS: NO

PRIME AGRICULTURAL LAND: NO

THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BATS

WATER RESOURCE: UNNAMED STREAM (INTERMITTENT)

WETLANDS: CLASS II

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED NON-WETLAND SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED AS WORK IS ANTICIPATED TO BE PERFORMED FROM THE ROADWAY.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

TEMPORARY DIVERSION MEASURES SHALL BE IMPLEMENTED SO THAT RUNOFF UPLAND OF THE CONSTRUCTION AREA FROM ANY POSSIBLE STORM EVENT WILL BE DIVERTED TEMPORARILY DIVERTED AROUND THE CONSTRUCTION AREA.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE LOW RISK SITE HANDBOOK.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

THE STREAM THROUGH THIS AREA IS INTERMITTENT THEREFORE DEWATERING ACTIVITIES ARE NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

1.5.3 UPDATES

PROJECT NAME: MIDDLEBURY-STARKSBORO

PROJECT NUMBER: STP 2953(I)

FILE NAME: z14v227mm131er0nar.dgn

PLOT DATE: \$\$\$DATE\$\$\$

PROJECT LEADER: C.LATHROP

DRAWN BY: S.SOLLA

DESIGNED BY: S.SOLLA

CHECKED BY: C.LATHROP

CULVERT MM 131EPSC NARRATIVE

SHEET 127 OF \$T*\$

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Middlebury-Starksboro City/County: Middlebury Sampling Date: 06.24.16
 Applicant/Owner: VTrans State: VT Sampling Point: A1
 Investigator(s): Charlotte Brodie Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): None
 Slope (%): 1 Lat: 43.98124 Long: 73.10529 Datum: _____
 Soil Map Unit Name: _____ NWI classification: PEM

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? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: <u>Wetland A</u> |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

HYDROLOGY

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

SOIL

Sampling Point: A1

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 | | |
| 0-3 | 10YR 3/2 | 100 | | | | | | |
| 3-9 | 10YR3/2 | 98 | 7.5YR4/6 | 2 | C | PL | si l | |
| 9-13 | 10YR5/1 | 93 | 10YR3/6 | 5 | C | PL | si l | |
| | | | 5Y6/1 | 2 | D | M | si l | |
| 13-18 | 10YR4/1 | 100 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A1

| Tree Stratum (Plot size: <u>30' r</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
|--|------------------|-------------------|----------------------|
| 1. <u>Ulmus americana</u> | <u>20</u> | <u>x</u> | <u>FACW</u> |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ |
| <u>20</u> = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: <u>15' r</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>Salix sp.</u> | <u>20</u> | <u>x</u> | <u>FAC or wetter</u> |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ |
| <u>20</u> = Total Cover | | | |
| Herb Stratum (Plot size: <u>5' r</u>) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. <u>Phalaris arundinacea</u> | <u>83</u> | <u>x</u> | <u>FACW</u> |
| 2. <u>Impatiens capensis</u> | <u>20</u> | _____ | <u>FACW</u> |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| 5. _____ | _____ | _____ | _____ |
| 6. _____ | _____ | _____ | _____ |
| 7. _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ |
| 9. _____ | _____ | _____ | _____ |
| 10. _____ | _____ | _____ | _____ |
| 11. _____ | _____ | _____ | _____ |
| 12. _____ | _____ | _____ | _____ |
| <u>103</u> = Total Cover | | | |
| Woody Vine Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. _____ | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |
| _____ = Total Cover | | | |

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Middlebury-Starksboro City/County: Middlebury Sampling Date: 06.24.16
 Applicant/Owner: VTrans State: VT Sampling Point: A2
 Investigator(s): Charlotte Brodie Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Stream terrace Local relief (concave, convex, none): None
 Slope (%): 25 Lat: 43.98124 Long: 73.10529 Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (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 _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____ |
| Remarks: (Explain alternative procedures here or in a separate report.) | |

HYDROLOGY

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

SOIL

Sampling Point: A2

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 | | |
| 0-2 | 10YR3/2 | 100 | | | | | sa l | fill slope |
| 2-18 | 10YR3/3 | 100 | | | | | l sa | fill slope |
| | | | | | | | | |
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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: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: A2

| | Absolute % Cover | Dominant Species? | Indicator Status | |
|---|------------------|-------------------|------------------|--|
| Tree Stratum (Plot size: <u>30' r</u>) | | | | |
| 1. <u>Acer saccharum</u> | <u>10</u> | <u>x</u> | <u>FACU</u> | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B) |
| 2. _____ | _____ | _____ | _____ | |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| | <u>10</u> | | | |
| Sapling/Shrub Stratum (Plot size: <u>15' r</u>) | | | | |
| 1. <u>None</u> | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| | | | | |
| Herb Stratum (Plot size: <u>5' r</u>) | | | | |
| 1. <u>Solidago canadensis</u> | <u>86</u> | <u>x</u> | <u>FACU</u> | 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. |
| 2. <u>Festuca ovina</u> | <u>20</u> | | <u>UPL</u> | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| 5. _____ | | | | |
| 6. _____ | | | | |
| 7. _____ | | | | |
| 8. _____ | | | | |
| 9. _____ | | | | |
| 10. _____ | | | | |
| 11. _____ | | | | |
| 12. _____ | | | | |
| | <u>106</u> | | | |
| Woody Vine Stratum (Plot size: _____) | | | | |
| 1. _____ | | | | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> |
| 2. _____ | | | | |
| 3. _____ | | | | |
| 4. _____ | | | | |
| | | | | |

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

Middlebury-Starksboro STP 2953(1)
Wetland Photos



Wetland A, east side, looking towards culvert



Wetland A, east side; intermittent stream at culvert inlet



Wetland A, west side, looking west



Wetland A, west side; intermittent stream at culvert outlet