

October 17, 2016

Ref: 57746.02

Ms. Zapata Courage District Wetlands Ecologist Vermont DEC – Watershed Management Division 1 National Life Drive, Main 2 Montpelier, VT 05620-3522

Re: BDE Grand Isle Solar Project
BDE Grand Isle LLC ("BDE")
Grand Isle, Vermont
Revised Application for a Vermont Wetland Individual Permit (#2015-520)

Dear Zapata:

On behalf of BDE Grand Isle Solar, LLC ("BDE"), VHB is electronically submitting the complete, revised application form and supporting materials to the Vermont Department of Environmental Conservation ("DEC") Wetlands Program requesting a Vermont Individual Wetland Permit per the Vermont Wetland Rules pursuant to 10 V.S.A. § 6025(d)(5), to authorize activities related to the construction and operation of the Grand Isle Solar Project (the "Project").

In an effort to avoid further contest with the DEC Wetlands Program, BDE has made extensive Project revisions, based on communications and meetings with you and others at the Agency of Natural Resources ("ANR"), in order to further avoid impacts to Class II buffers within the Project site. Below is a summary list of those changes to the Project, impacts on the Project.

- Re-align rows of solar panels in both Array 1 (western array) and Array 2 (eastern array) so that all
 panels are out of the adjacent Class II wetland buffer; this shift will result in additional shading of
 panels along the western edge of Array 1 and the eastern edge of Array 2, and a loss in
 production.
- Removal of 1,144 panels from the proposed Project layout to ensure all panels are out of the Class II wetland buffer.
- Shifting the perimeter fence further out of the buffer, and reducing the area of the Class II buffer which is located within the perimeter fence (see Table 1 below, revised/updated from table originally provided in the original application with the Alternatives, Avoidance, and Minimization memorandum).

40 IDX Drive, Building 100

Suite 200

South Burlington, Vermont 05403

Ms. Zapata Courage Ref: 57746.02 2 of 2 October 17, 2016



- Agreeing to certain operational vegetation management conditions as was discussed.
- Revisions to the proposed Vegetation Management Plan as per discussion.

Table 1. Comparison Summary of Proposed Areas in Class II Wetlands and Buffers (Revised)					
	Number of Solar				
Plan Version	Rack Posts in Class II Buffer	Class II	Wetland	Class II Buffer	
	n baner	(Sq Ft)	(Acre)	(Sq Ft)	(Acre)
Section 248 Permit Plan (revised January 11, 2016)	276	17,136	0.39	96,651	2.22
Permitting Plan (dated May 23, 2016)	139	0	0.00	43,741	1.00
Permitting Plan (date October 14, 2016)	0	0	0.00	26,305	0.60

Based on the fee calculations provided on the application form, the required fee for the revised Project application is \$7,070.25. The Applicant has already submitted payment totally \$7,085.25 for the original application fee, which is an overpayment for the proposed Project, however a refund is not requested.

Thank you for your assistance providing input as this Project was developed, and your timely review of the enclosed materials. It is the Applicant's understanding that with the proposed Project revisions, the DEC's concerns over project avoidance/minimization and impact mitigation have been addressed. Please do not hesitate to contact us if you have any questions, comments, or require further information regarding the enclosed Vermont Wetland Permit Application and supporting materials.

Sincerely,

Environmental Scientist

Adam R. Crary PWS, PWD Senior Ecologist

PBW/ARC/jkw

Enclosure

cc: Laura LaPierre, Program Manager, DEC Wetlands Program
Laura Woods, Environmental Technician, DEC Wetlands Program
Michael Adams, Senior Project Engineer, U.S. Army Corps of Engineers
Andy Thomas, BDE Grand Isle Solar, LLC

Vermont Wetlands Program Permit Application Database Form

Under Sections 8 and 9 of the Vermont Wetland Rules



Application Submittal Instructions

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).

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

- Applications can also be submitted via email to the following address: anr.wsmdwetlands@vermont.gov
 - 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. It is not necessary to mail in a copy of the complete application.

Span#: Vermont Wetlands Project (VWP)# if Known: Project Location Description: 911 street address or direction from nearest intersection Brief Project Summary: Application Type: Individual Permit (multiple wetlands) After the Fact Permit Wetland Determination Individual Permit (single wetland) General Permit Coverage Authorization Permit Amendment: VWP Project #	Applicant Name:	Application Preparer Name:			
Project Location Description: 911 street address or direction from nearest intersection	Town where project is located:	C	County:		
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Vermont Individual Wetland Permit Application and Determination Petition

Under Sections 8 and 9 of the Vermont Wetland Rules

Applicant Name: BDE Grand Isle Solar, LLC ("BDE"); c/o Andrew Thomas



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Address: 145 Pine Haven Shores Road Suite 1150	City/Town: Shelburne	State VT	Zip: 05482
Phone Number: (802) 999-3377	Email Address; andy@bullrockcorp.e		1 100.02
Applicant Certification:			
By signing this application you are certifying that all of the inform	mation contained within is true, as	ccurate and complete	to the hest of
your knowledge. Original signature is required.		rodicto, and complete	to the best of
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Also de de	1 =	11/	6-16
Applicant Signature: // /	(Ona)	Date: 10/11	12010
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			*
Landowner Information: Landowner must sign the application.	If landowner is different from the appl	icant this section must be	filled out
□Check this box if landowner is the same as the app	licant	Can this section must be	illied OUL
Landowner Name: Peter J. Johnson and Jocelyn J. Dubugue	ilcarit		
Address: 108 Allen Road	City/Town Grand Isle	Stoto: V	7:0105450
Phone Number: (802) 233-1969	Email Address:	State: Vermont	Zip: 05458
Landowner Easement: Attach copies of any easements, agreements		ainaina and anna marke	10. 11. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
stating who will be responsible for meeting the terms and conditions of the	he permit. I ist the attachment for t	lission, and agreement w	un the landowner
the nature of the agreement or easement in the space provided bel-	ow:	no mormadon m ano s	ection. Describe
Lease agreement dated: 11/02/2015.			
Louise agreement dated. 11/02/2015.			
Landowner Certification:			
By signing this application you are certifying that all the information	A contained within in true account	into and consider to the	
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Landowner Signature:	when I Williams	_ Date:/D/	11/70/6
A		_ Date	
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Application Preparer Information: Consultant, engineer, or other representative that is responsible for filling out the application, if other than

By signing this application you are certifying that all of the information contained within is true, accurate, and complete to the best of

Organization/Company: VHB

Email Address: acrary@vhb.com

State: VT

City/Town South Burlington

the applicant or landowner.

Applicant Information: If the applicant is someone other than the landowner, the landowner information must be included below

Handwritten signatures are also accepted

Application Preparer Name: VHB (Adam Crary)

your knowledge. Original signature is required.

Address: 40 IDX Drive, Builling 100

Application Preparer Certification:

Phone Number: 802-497-6100

Application Preparer Signature:

Vermont Individual Wetland Permit Application and Determination Petition

Under Sections 8 and 9 of the Vermont Wetland Rules



Date:

Applicant Information: If the applicant is someone other than the	e landowner, the landowner informa	tion must be included below	
Applicant Name:			
Address:	City/Town:	State	Zip:
Phone Number:	Email Address:		
Applicant Certification:			
By signing this application you are certifying that all of the information	ation contained within is true, a	ccurate, and complete to th	e best of
your knowledge. Original signature is required.			
Applicant Signature:		Date:	
Landowner Information: Landowner must sign the application. If	landowner is different from the app	licant this section must be fille	ed out
□Check this box if landowner is the same as the appli			
Landowner Name:			
Address:	City/Town	State:	Zip:
Phone Number:	Email Address:		
Landowner Easement: Attach copies of any easements, agreements,		mission, and agreement with	the landowner
stating who will be responsible for meeting the terms and conditions of the	e permit. List the attachment for	this information in this sect	ion. Describe
the nature of the agreement or easement in the space provided below	ow:		
Landowner Certification:			
By signing this application you are certifying that all the information	on contained within is true, accu	rate, and complete to the	best of your
knowledge. Original signature is required.		,	, ,
Landowner Signature:		Date:	
Application Preparer Information: Consultant, engineer, or of	bor roprocentative that is recognish	la for filling out the application	if other then
the application Freparer information. Consultant, engineer, or of the applicant or landowner		ie for filling out the application	, ii otrier triari
Application Preparer Name:	Organization/Company:		
Address:	City/Town	State:	Zip:
Phone Number:	Email Address:		1
Application Preparer Certification:	Email Address.		
By signing this application you are certifying that all of the information	ation contained within is true a	ccurate, and complete to th	ne hest of
your knowledge. Original signature is required.	ation contained within is true, at	odiato, and complete to the	10 0000
your tatomougo. Original digitatalo lo roquilou.			

Handwritten signatures are also accepted

Application Preparer Signature:

1. 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 features.

2. Site visit date(s) and attendees:

A site visit is **required** before the application can be called complete

2.1 Date of Visit(s) with State District Wetland Ecologist

2.2. List of people present for site visit(s) including Ecologist, landowner, and representatives.

3. Wetland Classification:

For multiple wetlands fill out the multiple wetlands table for sections 1 and 3 through 1

3.1. The wetland is a Class II wetland because :

3.2. Section 4.6 Presumption

If the wetland meets the Section 4.6 Presumption, it does so primarily because:

4. Description of the Entire Wetland:

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.

4.1. Size of Complex in Acres:

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.

4.2. Vegetation Cover Types Present:

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

4.3. Landscape Position:

Where is the wetland located on the landscape?

For example: Bottom of a basin, edge of a stream, shore of a lake, etc.

4.4. Hydrology:

Describe the main source of water for the entire wetland. List any river, stream, lakes, or ponds

4.4.1. Direction of Flow:

For example: Stream flows from north to south through the wetland complex, or the wetland drains generally to the southwest.

4.4.2. Influence of Hydrology on the Entire Wetland:

For example: The river provides floodwater to the wetland in the spring.

4.4.3. Relation of Entire Wetland to the Project Area:

The distance between the project area and any nearby surface waters

NP Application December 2015
4.4.4. Entire Wetland Hydroperiod: Discuss the frequency and duration of flooding, ponding, and/or soil saturation
4.5. Surrounding Landuse of the Entire Wetland:
For example: Rural residential and forested; Agricultural and undeveloped
4.6. Relation of the Entire Wetland 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.
4.7. Pre-project Cumulative Impacts to the Entire Wetland: 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.
5. Description of Subject Wetland and Buffer: 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.
5.1. Context of Subject Wetland: 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.
5.2. Subject Wetland Land Use: For example: Mowed lawn, old field, naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland.
5.3. Subject Wetland Vegetation: List dominant wetland vegetation cover type and associated dominant plant species.
5.4. Subject Wetland Soils: Use the USDA NRCS information where possible and use the ACOE Delineation Manual soil description

5.5. Subject Wetland Hydrology:Use the description from the ACOE Delineation Manual

5.6. Buffer Zone: Describe the bu	uffer zone of the subject wetland (50	foot envelope of land adjacent to wetland boundary).
	Land Use:	
		ld field, paved road, and residential lawns, etc.
Descrik	be any previous and ongoing disturba	ance in the buffer zone.
5.6.2. Buffer	Vegetation:	
List the	e vegetation cover type and dominan	t plant species.
5.6.3. Buffer	Soils:	
Use US	SDA NRCS information where possib	ble, and the ACOE Delineation Manual soil description.
		fined in the Vermont Wetland Rules Section 5):
	ons are present in the entire wetland	
☐ Flood/Storm Stor	rage ndwater Protection	☐ RTE Species ☐ Education & Research
☐ Fish Habitat	idwater i Totection	☐ Recreation/Economic
☐ Wildlife Habitat		☐ Open Space/Aesthetics
☐ Exemplary Natur	ral Community	☐ Erosion Control
Functions and Values	: For each function and value:	
1 Eva	aluate the entire wetland and check	all that apply I las Matland Inventory Mans for affaits areas
	aluate the entire wetland and check a aluate how the wetland in the project	all that apply. Use Wetland Inventory Maps for offsite areas
	plain how the project will not result in	
·		·
Include	any information on specific avoidance	ce and minimization measures.
If more t	than one wetland complex is involved	d, provide a function and value checklist for
	tland complex. In addition fill out the	
	,	'
7. Water Storage for F	lood Water and Storm Runoff	
	and Black to be a small and to America	faller vices who sized and constative above statical
	and likely to be significant: Any of the provides this function	following physical and vegetative characteristics
maioato trio wettaria	provided the fariotion	
☐ Constricted outlet or no outlet and an unconstructed inlet.		
□ Dhysical and		
		nse, persistent, emergent vegetation or dense woody nwater runoff during peak flows and facilitates water
<u> </u>	evaporation and transpiration.	Twater ranion during pour nows and radinates water
•		
		there is sufficient woody vegetation to intercept surface
flows in the	portion of the wetland that floods.	
☐ Physical evid	dence of seasonal flooding or ponding	ng such as water stained leaves, water marks on trees,
	ebris deposits, or standing water.	ig out at water stamps reares, water marks on troos,
☐ Hydrologic o	or hydraulic study indicates wetland a	attenuates flooding
If any of the above b	noves are checked the wetland	I provides this function. Complete the following to
		ove or below a moderate level. If none of the
	wetland provides this function	

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 <i>lower</i> 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.
\square 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.
\square 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
\square 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.
\square The wetland is large in size and naturally vegetated
\square 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 <u>Water Storage for Flood Water and Storm Runoff</u> : 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.
$\hfill\square$ Wetlands in depositional environments with persistent vegetation wider than 20 feet.
\square Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
□ Presence of seeps or springs.
$\hfill\square$ Wetland contains a high amount of microtopography that helps slow and filter surface water.
\square 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 <i>lower</i> level.
\square Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.
\square 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.
\square 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 <i>higher</i> level.
\square 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)
\Box The wetland contributes to the protection or improvement of water quality of any impaired waters.
\square 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.
Explain now the subject wetland contributes to the function listed above.
0.0 Ctatament of Na Hadria Advance Immedite Confess and One and Water Briefs at an
8.2. Statement of No Undue Adverse Impact to <u>Surface and Ground Water Protection</u> : 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.
\square 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 <i>Fish Habitat</i> :
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.
molade 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.
\square Meets four or more of the following conditions indicative of wildlife habitat diversity:
\square 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.
\square 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.
$\hfill\square$ 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.
\square 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 <i>lower</i> 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.
\square 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 <i>higher</i> level.
\square The wetland is large in size and high in quality.
\square The habitat has the potential to support several species based on the assessment above.
\square Wetland is associated with an important wildlife corridor.
\square 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 <u>Wildlife Habitat</u> : 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.
\square 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;
\square Forested wetlands displaying very old trees and other old growth characteristics;
\square A wetland natural community that is at the edge of the normal range for that type;
\square A wetland mosaic containing examples of several to many wetland community types; or
\square 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 creditable documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists;
☐ There is creditable documentation that threatened or endangered species have been present in past 10 years;
☐ There is creditable 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 creditable 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.
\square Owned by or leased to a public entity dedicated to education or research.
☐ History of use for education or research.
\square 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.
Explain now the subject wetand 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				
\square Has prominence as a distinct feature in the surrounding landscape;				
\square 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.				
\square 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. 				
\square 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 <u>moderate level</u> .
☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> 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 <u>higher</u> 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 <i>Erosion Control:</i>
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.

ve Application December 2015
17.3. Acreage of Parcel(s) or Easements(s): Acreage of subject property.
17.4. Acreage of Project Area: Acreage of area involved in the project.
Thirdage of area involved in the project.
18. Project Details: Provide details regarding specific impacts to the wetland and buffer zone.
For multiple wetlands fill out the multiple wetland table.
18.1. Specific Impacts to Wetland and Buffer Zone Dimensions:
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
18.2. Bridges and Culverts:
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.
18.3. Construction Sequence: 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.
18.4. Stormwater Design** List any stormwater permits obtained or applied for. Describe stormwater and/or erosion controls proposed. ** Erosion prevention is required in order to prevent sediment from entering the wetland.
18.5. Permanent Demarcation of Limit of Impacts** 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 required 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.

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	s.f.
(this number includes clearing of woody	
vegetation, dredging, and does not include fill)	
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) 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
□ wettand is not mapped on or contiguous to the vermont significant wettand 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.
previous decisions by the decretary of water board.

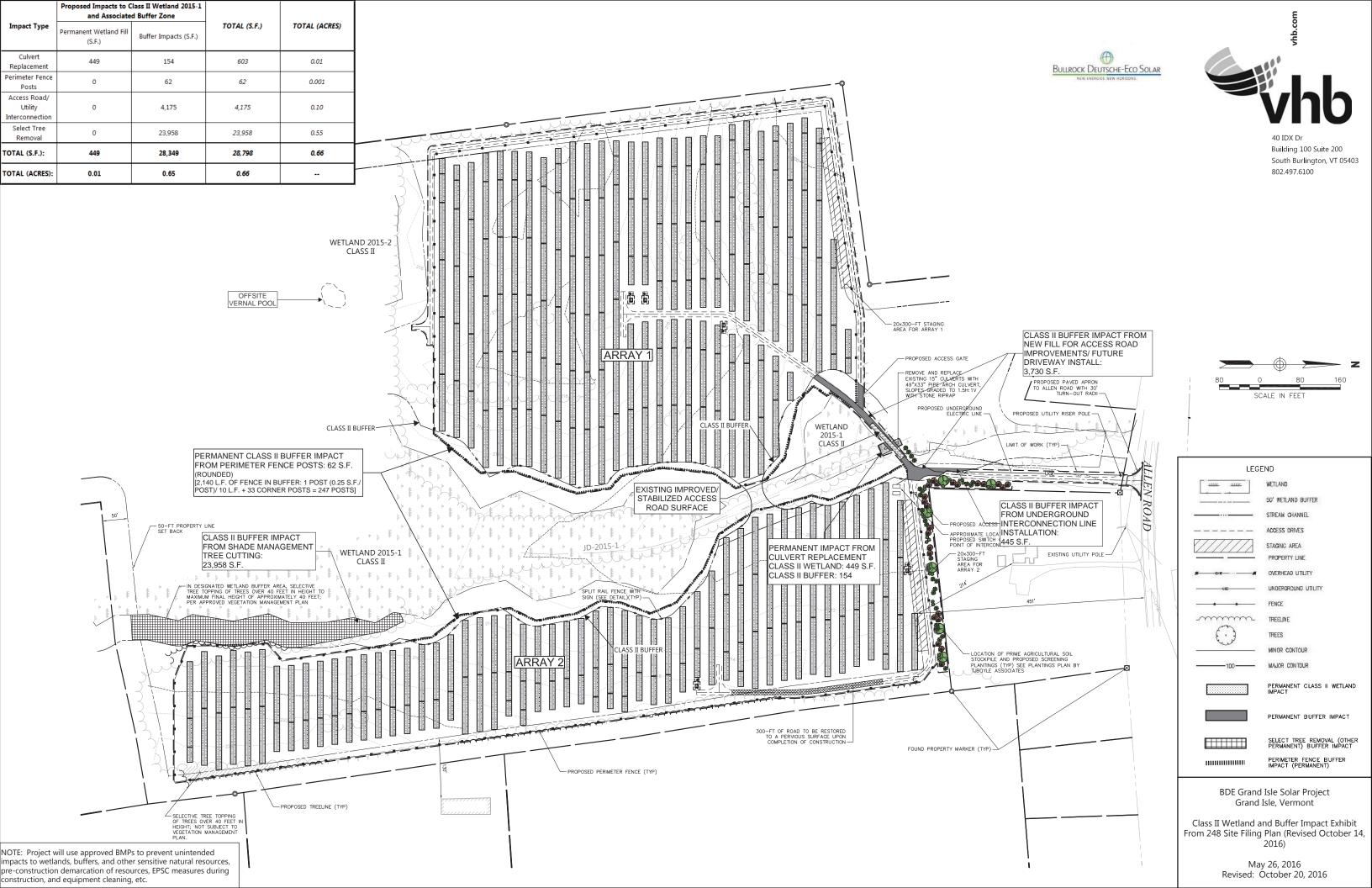
22. Supportin	_	RIAL REQI	UIRED TO CALL A	PPLICATION COM	MPLETE	
	The Vermont	ation map t Natural Re	that is 8 ½" x 11" ar esources Atlas is ap ds at a minimum.		GS topography map base	e layer,
		Date			Title	
		ied below.			land delineation and buffe permanent memorializatio	n.
	Title			Author	Date	Date of Last Revision
22.2	**!! 6 Aum.	Carna of E	ingineer Wetland	Dalinastian Forms		
22.3.					s sampled, and number o	f paired plots
Attachme		Rang	e of Collection Dates	Vegeta	tion Cover Types	# of Paired Plots
	Examples in GIS shapefile	other docui clude but s, addition	mentation that supp		ements, agreements, rest	oration/plan,
Date	Last Re	vision	Author		Title	

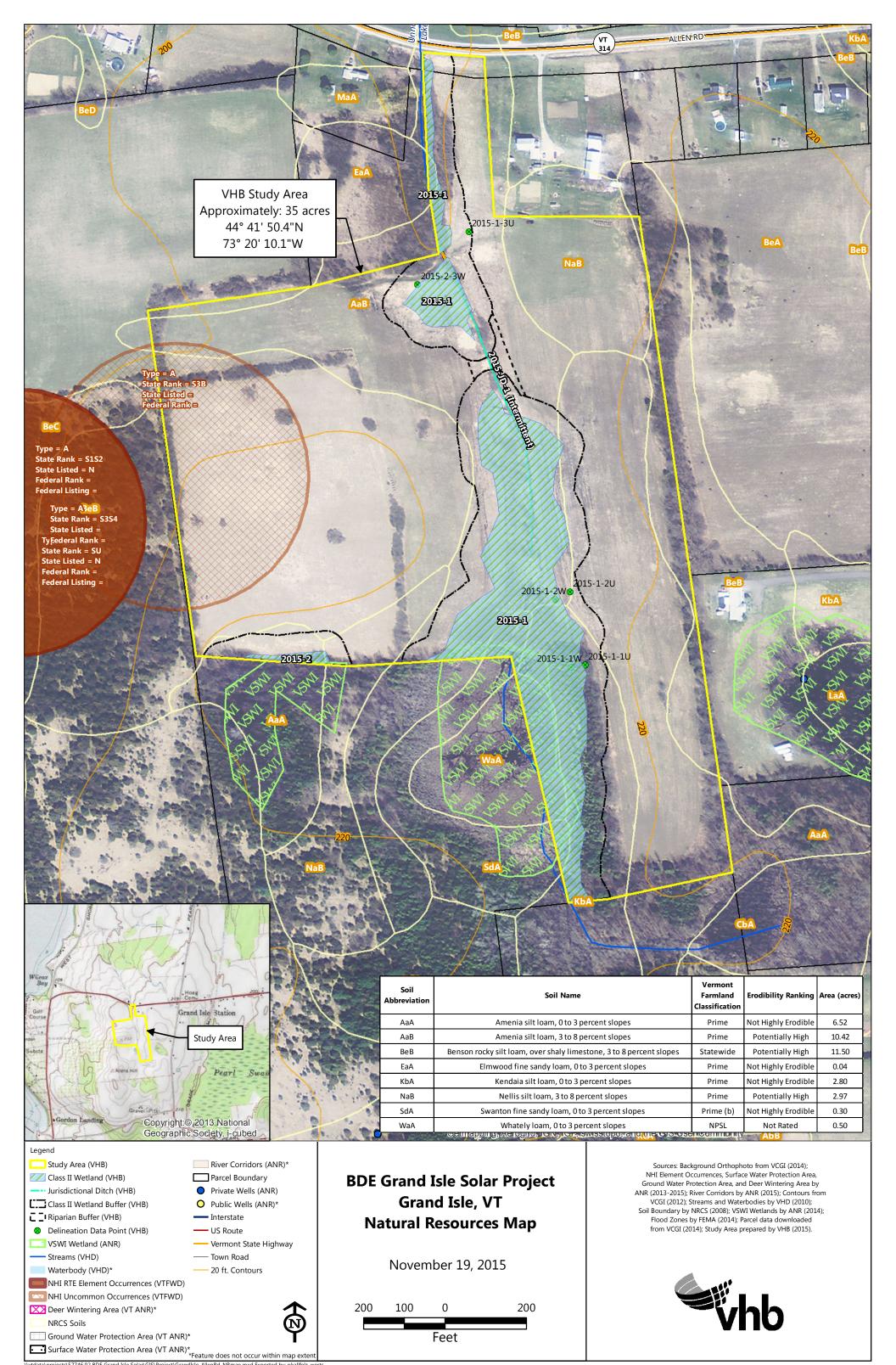
23. Abutting Landowners

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	st as first names first followed by last name
1. Name:	16. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
2. Name:	17. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
3. Name:	18. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
4. Name:	19. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
5. Name:	20. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
6. Name:	21. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
7. Name:	22. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
8. Name:	23. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
9. Name:	24. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
10. Name:	25. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
11. Name:	26. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
12. Name:	27. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
13. Name:	28. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
14. Name:	29. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
15. Name:	30. Name:
Street/Road:	Street/Road:
City/State/Zip:	City/State/Zip:
Οιτ <i>γ</i> /Οιαι ε /Διμ.	Oity/Glate/21p.

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)





ata\projects\57746.02 BDE Grand Isle Solar\GIS\Proje

W	\mathbf{R}
W	-

2015-1-1Up

Project Site:					City/County:					
		d Isle Solar Proj	-		C+! -	State:	VT	Sampling Point:	2015	-1-1Up
nvestigator(s): .andform (hillslope, ter		-Werts, M. Jack	man			on, Townshi of (concave, co		None	Slope (%):	0-3
Subregion (LRR or N		L LRR		Lat:	44°41'46.6			73°20'5.443"W	Datum:	NAD 83
	Kendia silt				44 41 40.0	037 IV	Long.	73 20 3.443 W	NWI Class:	na
Are climatic/hydrolog			vpical for this tim	e of year?	1	Yes	(If no. e	explain in Remarks.)		
Are Vegetation, Soil,				No			, -, -	'	rcumstances?	Yes
Are Vegetation, Soil,				No				(If needed, ex	xplain any answe	rs in Remarks
								<u> </u>		
SUMMARY OF F Hydrophytic Vegetat			e map showii	ng samp	ole point	locations	s, transe	cts, important fea	tures, etc.	
Hydric Soil Present?		ır	NO YES				Is This	Sample Area Within	a Wetland?	NO
Wetland Hydrology P			NO				13 11113	Jampie Area Witimi	a wedana:	
HYDROLOGY Wetland Hydrology In Primary Indicators (no Surface Water High Water Tab Saturation (A3) Water Marks (E Sediment Deposits (E Algal Mat or Cr Iron Deposits (E Innuation Visil Sparsely Vegeta	minimum of (A1) ble (A2)) B1) osits (B2) (B3) rust (B4) (B5) ible on Aerial	ıl (B7)	Water-Stair Aquatic Fau Marl Depos Hydrogen S Oxidized Rh	ned Leaves una (B13) sits (B13) Sulfide Odo hizospheres f Reduced I n Reduction Surface (C7	or (C1) s on Living Ro Iron (C4) n in Tilled Soil			Stunted or Stro Geomorphic P Shallow Aquita	acks (B6) erns (B10) es (B16) ater Table (C2) ws (C8) ible on Aerial (C9) essed Plants (D1) osition (D2) ard (D3) obic Relief (D4)	vo required)
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surface Water Present laturation Present? Describe Recorded D 3.46" of preci Remarks: SOIL Profile Description: (I Depth (In) Color (r D-10 10YR 10-16 10YR Fype: C=Concentration, I Histic Epipedon Black Histic (A3 Hydrogen Sulfie Stratified Layer Depleted Below Thick Dark Surf Sandy Mucky M Sandy Gleyed M Sandy Redox (S	(Describe to Matrix moist) Data (stream rip in Plattsk) (Describe to Matrix moist) 3/2 3/2 5/3 D=Depletion, I SS: In (A2) 3) ide (A4) rs (A5) w Dark Surfad face (A12) Wineral (S1) Matrix (S4) S5) ix (S6)	the depth nee Washington 100 99 100 1	Depth (Depth	the indica Redc st) Grains.	ow Surface (S) face (S9) (LRR Mineral (F1) Matrix (F2) rix (F3) irface (F6) sions (F8) cators of hydd hydrology	Type ¹ C S8) (LRR R, R R, MLRA 149 (LRR K, L)	vailable: l; 0.48" of rece of indi Loc² M PBB)	rain in the 5 days prior Texture LOAM SILT LOAM **Indicators for Proble* 2 cm Muck (A: Coast Prairie R 5 cm Mucky P* Dark Surface (: Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Ma	Rei Rematrix. Rematic Hydric Soil 10) (LRR K, L, MLRA ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (S9) (LRR K, L) se Masses (F12) (Li lodplain Soils (F19) (TA6) (MLRA 144A, leterial (F21) Dark Surface (TF12)	marks s ³ : .149B) L, R) R K, L, R) R K, L, R) MLRA 149B) 145, 149B)
Remarks: SOIL Profile Description: (I) Depth (in) Color (r 0-10 10YR 10-16 10YR Type: C=Concentration, E Hydric Soil Indicators Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfic Stratified Layer Depleted Below Thick Dark Surf Sandy Mucky M Sandy Gleyed M Sandy Redox (S Stripped Matrix	(Describe to Matrix moist) D=Depletion, I S: In (A2) Mide (A4) In (A5) What Dark Surfact (A12) Mineral (S1) Matrix (S4) Matrix (S4) Mineral (S1) Matrix (S4) Matrix (S4) Mineral (S1) Matrix (S4) Matrix (S6) Matrix (S6) Matrix (S6)	the depth nee Washington 100 99 100 1	Depth (Depth	the indica Redc st) Grains.	ow Surface (S) face (S9) (LRR Mineral (F1) Matrix (F2) rix (F3) irface (F6) sions (F8) cators of hydd hydrology	Type ¹ C 68) (LRR R,	vailable: l; 0.48" of rece of indi Loc² M PBB)	rain in the 5 days prior Texture LOAM SILT LOAM **Indicators for Proble* 2 cm Muck (A: Coast Prairie R 5 cm Mucky P Dark Surface (: Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Ma Very Shallow D	Rei Rematrix. Rematic Hydric Soil 10) (LRR K, L, MLRA ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (S9) (LRR K, L) se Masses (F12) (Li lodplain Soils (F19) (TA6) (MLRA 144A, leterial (F21) Dark Surface (TF12)	marks s ³ : .149B) L, R) R K, L, R) R K, L, R) MLRA 149B) 145, 149B)
surface Water Present aturation Present? Describe Recorded D 3.46" of precidemarks: Coll Corolle Description: (I) Color (I) Col	(Describe to Matrix moist) D=Depletion, I S: In (A2) Mide (A4) In (A5) What Dark Surfact (A12) Mineral (S1) Matrix (S4) Matrix (S4) Mineral (S1) Matrix (S4) Matrix (S4) Mineral (S1) Matrix (S4) Matrix (S6) Matrix (S6) Matrix (S6)	the depth nee Washington 100 99 100 1	Depth (Depth	the indica Redc st) Grains.	ow Surface (S) face (S9) (LRR Mineral (F1) Matrix (F2) rix (F3) irface (F6) sions (F8) cators of hydd hydrology	Type ¹ C S8) (LRR R, R R, MLRA 149 (LRR K, L)	vailable: l; 0.48" of rece of indi Loc² M PBB)	rain in the 5 days prior Texture LOAM SILT LOAM **Pulse Polyvalue Belo Thin Dark Surface (1) Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent May Very Shallow U Other (Explain	Rei Rematrix. Rematic Hydric Soil 10) (LRR K, L, MLRA ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (A16) (LRR K, ledox (S9) (LRR K, L) se Masses (F12) (Li lodplain Soils (F19) (TA6) (MLRA 144A, leterial (F21) Dark Surface (TF12)	marks s ³ : .149B) L, R) R K, L, R) R K, L, R) MLRA 149B) 145, 149B)

2015-1-1Up

		Absolute	Dom.	Indicator			
Tree	Stratum (Plot size:)	% Cover	Sp?	Status	Dominance Test Worksheet:		
1.	·	-			# Dominants OBL, FACW, FAC:	5	(A)
2.		-					_` ′
3.					# Dominants across all strata:	8	(B)
4.		-					_(_,
5.					% Dominants OBL, FACW, FAC:	63%	(A/B)
					% Dominants OBL, FACW, FAC.	03/0	_ (A/ b)
6.							
7.					Prevalence Index Worksheet:		
			= Tota	Cover	Total % Cover of: M	1ultiply By:	_
Saplii	ng Stratum (Plot size: 15' RAD)				OBL x 1 =		_
1.	Juniperus virginiana	38	X	FACU	FACW 4 x 2 =	8	_
2.	Rhamnus cathartica	15	X	FAC	FAC 20 x 3 =	60	_
3.	Fraxinus americana	3		FACU	FACU 45 x 4 =	180	_
4.	Ulmus americana	3		FACW	UPL x 5 =		<u>-</u> Н
5.		-			Sum: 69 (A)	248	(B)
6.							_(5)
		- -			Drevelence Index — D/A —	2 50	
7.					Prevalence Index = B/A =	3.59	_
		59	= Tota	Cover	Hydrophytic Vegetation Indicators:		
Shrul	Stratum (Plot size: 15' RAD)				X Dominance Test is > 50%		
1.	Lonicera morrowii	3	X	FACU	Prevalence Index is <= 3.0		
2.					Problematic Hydrophytic Vege	etation ¹ (exp	lain)
3.					Rapid Test for Hydrophytic Ve	getation	
4.					Morphological Adaptations		Н
5.							
5. 6.		- -			¹Indicators of hydric soil and wetland hydrolog	gy must be pr	esent,
					unless disturbed or problematic.		
7.					Definitions of Vegetation Strata:		
		3	= Tota	Cover			
Herb	Stratum (Plot size: 5' RAD)				Tree - Woody plants, excluding woody vines,		
1.	Eurybia divaricata	3	X	FAC	(6m) or more in height and 3in (7.6cm) or larg breast height (DBH).	ger in diamete	er at
2.	Anemone canadensis	1	Х	FACW	breast neight (DBH).		
	Anemone canadensis Rhus hirta	- <u>1</u> 1	X	FACU FACU	breast neight (DBH).		
3.	Rhus hirta	1	Х	FACU		nes, approxim	nately
3. 4.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in i		nately
3. 4. 5.	Rhus hirta	1	Х	FACU	Sapling - Woody plants, excluding woody vir		nately
3. 4. 5. 6.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir		nately
3. 4. 5. 6.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in i	(7.6cm) DBH.	
3. 4. 5. 6. 7.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in l Shrub - Woody plants, excluding woody vine	(7.6cm) DBH.	
3. 4. 5. 6.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in i	(7.6cm) DBH.	
3. 4. 5. 6. 7.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in l Shrub - Woody plants, excluding woody vine	(7.6cm) DBH.	
3. 4. 5. 6. 7. 8.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in l Shrub - Woody plants, excluding woody vine	(7.6cm) DBH. es, approxima	tely 3 to
3. 4. 5. 6. 7. 8. 9.	Rhus hirta Toxicodendron radicans	1 1	X	FACU FAC	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 10 Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plants	(7.6cm) DBH. es, approxima ncluding herb ts, except wo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10.	Rhus hirta Toxicodendron radicans	1 1 1	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vir 20ft (6m) or more in height and less than 3in (Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in	(7.6cm) DBH. es, approxima ncluding herb ts, except wo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11.	Rhus hirta Toxicodendron radicans Equisetum arvense	1 1	X	FACU FAC FAC	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 10 Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plants	(7.6cm) DBH. es, approxima ncluding herb ts, except wo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Rhus hirta Toxicodendron radicans	1 1 1	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 10 Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plants	(7.6cm) DBH. es, approxima ncluding herb ts, except wo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Rhus hirta Toxicodendron radicans Equisetum arvense	1 1 1	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vire 20ft (6m) or more in height and less than 3in (1). Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, ir vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2.	Rhus hirta Toxicodendron radicans Equisetum arvense	1 1 1	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 10 Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plants	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	1 1 1	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vire 20ft (6m) or more in height and less than 3in (1). Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, ir vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vire 20ft (6m) or more in height and less than 3in (1). Shrub - Woody plants, excluding woody vine 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, ir vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 10 20ft (6m) or more in height and less than 3in in 10 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of size.	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the woody vines, regardless of the woody vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the w	(7.6cm) DBH. es, approxima ncluding herb ts, except woo ght. of height.	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vines, r	(7.6cm) DBH. es, approxima ncluding herb ts, except woo	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4. 5.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vines, r	(7.6cm) DBH. es, approxima ncluding herb ts, except woo ght. of height.	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4. 5.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vines, r	(7.6cm) DBH. es, approxima ncluding herb ts, except woo ght. of height.	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4. 5.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vines, r	(7.6cm) DBH. es, approxima ncluding herb ts, except woo ght. of height.	tely 3 to
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Wood 1. 2. 3. 4. 5.	Rhus hirta Toxicodendron radicans Equisetum arvense dy Vines (Plot size:)	7	X X X	FACU FAC FAC Cover	Sapling - Woody plants, excluding woody vin 20ft (6m) or more in height and less than 3in in 20ft (6m) or more in height and less than 3in in 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plants, in vines, regardless of size. Includes woody plant vines, less than approximately 3ft (1m) in height woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vine - All woody vines, regardless of the Woody vines, r	(7.6cm) DBH. es, approxima ncluding herb ts, except woo ght. of height.	tely 3 to
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Jubbregion (LiRR or MIRA): LLRR LATE 441,446,469°N Lone; 73729-594°W Dotto: MAD AND AND AND AND AND AND AND AND AND A	• ,,		-Werts, M. Jack	man							
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we climatic/hydrologic conditions on the site typical for this time of year? Yes (if no, explain in Remarks.) We vegetation, Soil, or Hydrology registrally problematic? No (if no, explain in Remarks.) No (if no, explain in Remar					Lat:	44°41'46.64	45"N	Long:	73°20'5.934"W		
revergetation, Soil, or Hydrology significantly disturbed? No (freeded, explain any smowers in Remarks. SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc. Hydrology (resent? YES VES Is This Sample Area Within a Wetland? VES VES VES VES VES VES VES VE				umical for this times of	f	n	Vaa	/If no o	unlain in Damanka \	NWI Class:	PFO, PSS
Aver Vegetation, Soil, or Hydrology, naturally problematic? West and MARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc. Hydrolog Present? YES Is This Sample Area Within a Wetland? YES Wetland Hydrology recent? YES Wetland Hydrology Indicators Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? YES Tocknet Carlog Company Mydrology Yes Concentration, Displetion, Mindato						<u> </u>	Yes	(it no, e	'		V
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3.46" of precip in Plattsburgh, NY in the month of September no departure from normal; 0.48" of rain in the 5 days prior. Remarks: SOIL	Primary Indicators (i Surface Water High Water Ta X Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Inundation Vis	minimum of r (A1) able (A2) 3) (B1) cosits (B2) (B3) Crust (B4) (B5) sible on Aeria	al (B7)	Water-Stained Aquatic Fauna (Marl Deposits (Hydrogen Sulfic Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surf Other (Explain i	Leaves (B13) (B13) de Odd sphere duced duction face (Ci in Rem	or (C1) es on Living Ro Iron (C4) n in Tilled Soil 7)			Surface Soil Cra Drainage Patte Moss Trim Line Dry-Season Wa Crayfish Burror Saturation Visi Stunted or Stre Geomorphic Po Shallow Aquita Microtopograf	acks (B6) erns (B10) es (B16) ater Table (C2) ws (C8) ble on Aerial (C9) essed Plants (D1) osition (D2) ard (D3) bhic Relief (D4)	vo required)
Pepth Matrix Redox Features (in) Color (moist) % Color (moist) % Type¹ Loc² Texture Remarks 10AM SANDY LOAM L	ield Observations: urface Water Prese Vater Table Present aturation Present? Describe Recorded I 3.46" of prec	t? Data (strean	n gauge, monito	Depth (inch Depth (inch oring well, aerial phot	hes): hes): tos, pr	evious inspe		available:		r.	YES
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10-8 10YR 3/2 100 2.5Y 5/6 7 C M SANDY LOAM Type: C-Concentration, D-Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C-Concentration, D-Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. 1	ield Observations: iurface Water Preservations Preservation Preservaturation Preservaturati	nt? Data (strean cip in Platts	n gauge, monitd burgh, NY in th	Depth (inch Depth (inch Oring well, aerial phot e month of Septemb	hes): hes): tos, pr per no	evious inspe departure fi	rom norma	available: al; 0.48" of a	ain in the 5 days prior	<u>-</u>	YES
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Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Medox (S5) Sandy Redox (S5) Sandy Redox (S5) Stripped Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Sandy Redox (S5) Stripped Matrix (S6) Sandy Redox (S7) (LRR R, MLRA 149B) Sardy Surface (S7) (LRR R, MLRA 149B) Sandy Redox (S5) Stripped Matrix (S6) Stripped Mat	icield Observations: icurface Water Preservations: icurface Water Preservation Present? Describe Recorded I 3.46" of preservations: Describe Description: Depth (in) Color (0-8 10YR 8-16 2.5y Type: C=Concentration, Hydric Soil Indicator	Data (stream cip in Platts) (Describe to Matrix (moist) R 3/2 7 5/2	o the depth nee	Depth (inch Depth Depth (inch	hes): hes): tos, preno er no e indica Redi	ator or confi ox Features	rm the abs	ence of indi	Texture LOAM SANDY LOAM Location: PL=Pore Lining Indicators for Proble	Re s, M=Matrix. ematic Hydric Soi	marks
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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) Stripped Matrix (S6) Stripped Matrix (S6) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Stripped Matrix (S6) 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 149B) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Type: Hydric Soil Present? YES	ield Observations: urface Water Prese vater Table Present aturation Present? escribe Recorded I 3.46" of precentarions: emarks: OIL rofile Description: lepth (in) Color (0-8 10YR 8-16 2.5y Type: C=Concentration, ydric Soil Indicator Histosol (A1) Histic Epipedo	(Describe to Matrix (moist) R 3/2 , D=Depletion, rs:	o the depth nee	Depth (inch Depth Depth (inch Depth Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth Depth (inch Depth Depth (inch Depth Depth Depth Depth Depth Depth Depth Depth (inch Depth	hes): hes): tos, pr per no er no Red ins.	ator or confi ox Features % 7	rm the abs Type¹ C (RR R,	ence of indi	cators.) Texture LOAM SANDY LOAM LOAM LOAM Coast Prairie R	Re s, M=Matrix. ematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K	marks Is ³ : 149B) L, R)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox Depressions (F8) Stripped Matrix (S6) Stripped Matrix (S6) Dark Surface (S9) (LRR K, L) Redox Depressions (F8) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 149A, 145, 149B) Redox Depressions (F8) Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) estrictive Layer (if observed): Type: Hydric Soil Present? YES	with the contraction of the cont	(Describe to Matrix (moist) R 3/2 , D=Depletion, rs:	o the depth nee	Depth (inch Depth Depth (inch Depth	hes): hes): tos, pr per no eindica Redi ins.	ator or confi ox Features % 7	rm the abs Type C 8) (LRR R,	ence of indi	cators.) Texture LOAM SANDY LOAM 2Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe	Re s, M=Matrix. ematic Hydric Soi LO) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LF	marks s ³ : \(\frac{149B}{L, R}\)
Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox Depressions (F8) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) Wetland hydrology must be present, unless disturbed or problematic. Estrictive Layer (if observed): Type: Type: Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) YES	with the content of t	(Describe to Matrix (moist) R 3/2 7 5/2 Data (stream of pin Platts) (Describe to Matrix (moist) R 3/2 7 5/2 Describe to Matrix (moist) R 3/2 7 5/2 Describe to Matrix (moist) R 3/2 7 5/2 Describe to Matrix (moist)	o the depth nee	Depth (inch Depth Depth (inch Depth	hes): hes): tos, pr per no er no Redi ins.	ator or confi ox Features % 7	rm the abs Type C 8) (LRR R,	ence of indi	cators.) Texture LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S	Re 3, M=Matrix. Permatic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LF S9) (LRR K, L, M)	marks Is ³ : \(\dagger{1}\) (149B) \(\dagger{1}\) (1, R) \(\dagger{1}\) (1, R)
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) estrictive Layer (if observed): Type: Depleted Dark Surface (F7) Redox Depressions (F8) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 149B) Mesic Spodic (TA6) (MLRA 149B) Mesic Spodic (TA6) (MLRA 149B) Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 149B) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Hydric Soil Present? YES	with the content of t	(Describe to Matrix (moist) R 3/2 7 5/2 Data (stream of pin Platts) (Describe to Matrix (moist) R 3/2 7 5/2 Depletion, rs: on (A2) (3) fide (A4) ers (A5)	o the depth nee Mail	Depth (inch Depth Depth (inch Depth Depth (inch Depth Depth Depth Depth Depth (inch Depth Depth Depth Depth Depth Depth Depth (inch Depth (inch Depth	hes): hes): tos, pr per no e indica Red ins. lue Bela A 149B ark Suri Mucky Gleyec	ator or confi ox Features % 7 ow Surface (S	rm the abs Type C 8) (LRR R,	ence of indi	cators.) Texture LOAM SANDY LOAM LOAM Coation: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R Coast Prairie R Dark Surface (S Polyvalue Belo	Re 3, M=Matrix. ematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K eat or Peat (S3) (LF 59) (LRR K, L, M) w Surface (S8) (LR	marks Is ³ : A 149B) A L, R) RR K, L, R)
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) estrictive Layer (if observed): Type: Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Hydric Soil Present? YES	ield Observations: urface Water Preservations Present Preservaturation Present? escribe Recorded I a.46" of preservaturation	(Describe to Matrix (moist) R 3/2 7 5/2 Data (stream cip in Platts) (Describe to Matrix (moist) R 3/2 7 5/2 Dependent on, or (A2) (A3) (Fide (A4) (Fide (A4) (Fide (A5) (Fide	o the depth nee Mail	Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth (inch Depth Depth (inch Depth (inch Depth Depth (inch Depth Depth (inch	hes): hes): tos, pr per no er no er no lue Bela A 149B ark Suri Mucky Gleyeced Mat	ator or confi ox Features % 7 7 ow Surface (S	rm the abs Type C 8) (LRR R,	ence of indi	cators.) Texture LOAM SANDY LOAM LOAM Coast Prairie R Coast Prairie R Coast Prairie R Coast Prairie R Polyvalue Belo Thin Dark Surface (S	Rematrix. ematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K eat or Peat (S3) (LF 59) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L)	marks Is ³ : A 149B) A 149, R, L, R, R, K, L, R,
Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) wetland hydrology must be present, unless disturbed or problematic. estrictive Layer (if observed): Type: Hydric Soil Present? YES	ield Observations: urface Water Prese vater Table Present aturation Present? escribe Recorded I 3.46" of prec emarks: GOIL rofile Description: eepth (in) Color (0-8 10YR 8-16 2.5y Type: C=Concentration, lydric Soil Indicator Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sulf Stratified Laye Depleted Belo Thick Dark Sur	(Describe to Matrix (moist) , D=Depletion, rs: on (A2) in (A2) in (A3) fide (A4) ers (A5) ow Dark Surfarface (A12)	o the depth nee Mail	Depth (inch Depth Depth (inch Depth	hes): hes): tos, pr per no e indica Red hes hes hes hes hes hes hes hes hes he	evious inspe departure for departure for eator or confictors ox Features % 7 ow Surface (S s) face (S9) (LRR of Mineral (F1) d Matrix (F2) trix (F3) urface (F6)	rm the abs Type ¹ C 8) (LRR R,	ence of indi	rain in the 5 days prior cators.) Texture LOAM SANDY LOAM Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (5 Polyvalue Belo Thin Dark Surfa	Rematrix. ematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 59) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L) se Masses (F12) (L	marks Is ³ : 149B) 1, 149, R, L, R, R, K, L, R, R, R, K, L, R, R, R, K, L, R,
Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) Dark Surface (S7) (LRR R, MLRA 149B) wetland hydrology must be present, unless disturbed or problematic. estrictive Layer (if observed): Type: Hydric Soil Present? YES	ield Observations: urface Water Preservaturation Present? escribe Recorded I 3.46" of precentarions: emarks: GOIL rofile Description: epth (in) Color (0-8 10YF 8-16 2.5y Type: C=Concentration, lydric Soil Indicator Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sulf Stratified Laye Depleted Belo Thick Dark Sur Sandy Mucky I	(Describe to Matrix (moist) R 3/2 DD-Depletion, rS: On (A2) A3) fide (A4) ers (A5) ow Dark Surfarface (A12) Mineral (S1)	o the depth nee Mail	Depth (inch Depth	hes): hes): tos, pre er no er no er indica Red hes	ator or confi ox Features % 7 ow Surface (S 6) face (S9) (LRR v Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	rm the abs Type ¹ C 8) (LRR R,	ence of indi	rain in the 5 days prior cators.) Texture LOAM SANDY LOAM Location: PL=Pore Lining Indicators for Proble 2 cm Muck (AI Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa Iron-Mangane: Piedmont Floo	Rematrix. ematic Hydric Soi 10) (LRR K, L, MLR K, edox (A16) (LRR K, L) Set or Peat (S3) (LF S9) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L) se Masses (F12) (L dplain Soils (F19)	marks Is ³ : 1, 149B) 1, 1, R, R, R, R, R, L, R, R, L, R, R, L, R, R, L, R, MLRA 149B)
Dark Surface (S7) (LRR R, MLRA 149B) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Hydric Soil Present? YES	icield Observations: icurface Water Preservations: icurface Water Preservaturation Present? Describe Recorded I 3.46" of preservaturation Present? Describe Recorded I 3.46" of preservaturation Preservaturation Preservaturation Preservaturation Depth (in) Color (10-8 10YF 8-16 2.5y Type: C=Concentration, Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sulf Stratified Laye Depleted Belo Thick Dark Sur Sandy Mucky I Sandy Mucky I Sandy Gleyed	Data (stream cip in Platts) (Describe to Matrix (moist) R 3/2 7 5/2 Den (A2) R3) Ride (A4) Rers (A5) R Matrix (S4) R Matrix (S4)	o the depth nee Mail	Depth (inch Depth	hes): hes): tos, pre er no er no er indica Red hes	ator or confi ox Features % 7 ow Surface (S 6) face (S9) (LRR v Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	rm the abs Type ¹ C 8) (LRR R,	ence of indi	cators.) Texture LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (AI Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfi Iron-Mangane: Piedmont Floo Mesic Spodic (**	Rematrix. Pematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LF so) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L) se Masses (F12) (L dplain Soils (F19) (TA6) (MLRA 144A,	marks Is ³ : 1, 149B) 1, 1, R, R, R, R, R, L, R, R, L, R, R, L, R, R, L, R, MLRA 149B)
Restrictive Layer (if observed): Type: Hydric Soil Present? YES	icield Observations: icurface Water Preservations: icurface Water Preservaturation Present? Describe Recorded I 3.46" of precent of preservaturation Present? Describe Recorded I 3.46" of precent of preservaturation Depth (in) Color (0-8 10YR 8-16 2.5y Type: C=Concentration, Hydric Soil Indicator Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sulf Stratified Laye Depleted Belo Thick Dark Sur Sandy Mucky I Sandy Gleyed Sandy Redox ((Describe to Matrix (moist) R 3/2 , D=Depletion, rs: on (A2) ifide (A4) ers (A5) ow Dark Surfarface (A12) Mineral (S1) Matrix (S4) (S5)	o the depth nee Mail	Depth (inch Depth	hes): hes): tos, pre er no er no eindica Red hes hes lue Beld A 149B ark Sur Mucky Gleyec d Mat Dark Si ed Darl Depres	ator or confi ox Features % 7 7 ow Surface (S 8) face (S9) (LRR v Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	rm the abs Type¹ C 8) (LRR R,	ence of indi Loc ² M	rain in the 5 days prior Texture LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (\$ Polyvalue Belo Thin Dark Surfa Iron-Mangane: Piedmont Floo Mesic Spodic (* Red Parent Ma	Rematrix. Pematic Hydric Soi 10) (LRR K, L, MLR/ edox (A16) (LRR K, eat or Peat (S3) (LR soe) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L) se Masses (F12) (L dplain Soils (F19) (TA6) (MLRA 144A, sterial (F21)	marks Is ³ : A 149B) L, R) RR K, L, R) RR K, L, R) MIRA 149B) 145, 149B)
Type: Hydric Soil Present? YES	icield Observations: icurface Water Present icurface Water icurface Recorded I 3.46" of precent icurface Recorded I 3.46" of precent icurface Recorded I 3.46" of precent icurface Recorded I 4.60	(Describe to Matrix (moist) , D=Depletion, rs: on (A2) in (A4) on (A2) in (A2) in (A2) in (A2) in (A3) in (A4) in (A4) in (A4) in (A4) in (A4) in (A5) in (A5) in (A6)	o the depth nee where the depth nee mathematical stress of the depth	Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth Depth (inch Depth	hes): hes): tos, pre er no er no er no er no hindica Red hindica R	ator or confi ox Features % 7 7 ow Surface (S) face (S9) (LRR r Mineral (F1) dr Maria (F2) urface (F6) k Surface (F7) sions (F8)	rm the abs Type¹ C 8) (LRR R, R, MLRA 14 (LRR K, L)	ence of indi Loc² M 198)	rain in the 5 days prior Texture LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa Iron-Mangane: Piedmont Floo Mesic Spodic (* Red Parent Ma Very Shallow D	Rematrix. Pematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) se Masses (F12) (L dplain Soils (F19) (TA6) (MLRA 144A, aterial (F21) Dark Surface (TF12	marks Is ³ : A 149B) L, R) RR K, L, R) RR K, L, R) MIRA 149B) 145, 149B)
Depth (inches):	icield Observations: icurface Water Present icurface Recorded I 3.46" of precent icurface I 4.4" of precent icurface I 5.4" of precent icurface I 6.4" of prec	(Describe to Matrix (moist) To Data (stream cip in Platts) (Describe to Matrix (moist) R 3/2 7 5/2 To Data (stream cip in Platts) (Describe to Matrix (All) To Describe to Matrix (All)	o the depth nee where the depth nee mathematical stress of the depth	Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth (inch Depth Depth (inch Depth (inch Depth Depth (inch Depth	hes): hes): tos, pre er no er no er no er no hindica Red hindica R	ator or confi ox Features % 7 7 ow Surface (S) face (S9) (LRR r Mineral (F1) dr Maria (F2) urface (F6) k Surface (F7) sions (F8)	rm the abs Type¹ C 8) (LRR R, R, MLRA 14 (LRR K, L)	ence of indi Loc² M 198)	rain in the 5 days prior Texture LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa Iron-Mangane: Piedmont Floo Mesic Spodic (* Red Parent Ma Very Shallow D	Rematrix. Pematic Hydric Soi 10) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) se Masses (F12) (L dplain Soils (F19) (TA6) (MLRA 144A, aterial (F21) Dark Surface (TF12	marks Is ³ : A 149B) L, R) RR K, L, R) RR K, L, R) MIRA 149B) 145, 149B)
	icield Observations: icurface Water Present icurface Water icurface Recorded I 3.46" of precent icurface Recorded I 4.40" of precent ic	(Describe to Matrix (moist) , Data (stream cip in Platts) (Describe to Matrix (moist) R 3/2 , D=Depletion, rs: on (A2) 33) fide (A4) ers (A5) who Dark Surfarface (A12) Mineral (S1) Matrix (S4) (S5) rix (S6) (S7) (LRR R, N) observed):	o the depth nee where the depth nee mathematical stress of the depth	Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth Depth Depth (inch Depth (inch Depth Depth (inch Depth (inch Depth Depth (inch Depth	hes): hes): tos, pre er no er no er no er no hindica Red hindica R	ator or confi ox Features % 7 7 ow Surface (S) face (S9) (LRR r Mineral (F1) dr Maria (F2) urface (F6) k Surface (F7) sions (F8)	rm the abs Type¹ C 8) (LRR R, R, MLRA 14 (LRR K, L)	ence of indi Loc² M 198)	rain in the 5 days prior Texture LOAM SANDY LOAM LOA	Rematrix. Property of the control o	marks Is ³ : A 149B) L, R) IR K, L, R) R K, L, R) RR K, L, R) MLRA 149B) 145, 149B)

			Absolute	Dom.	Indicator			
Tree S	tratum (Plot size:)	% Cover	Sp?	Status	Dominance Test Worksheet:		
1.						# Dominants OBL, FACW, FAC:	2	(A)
2.								
3.						# Dominants across all strata:	2	(B)
4.				. ——				_ `-'
5.				. ——		9/ Dominants ORL FACIAL FAC	100%	(A /D)
-			. ————			% Dominants OBL, FACW, FAC:	100%	(A/B)
6.								
7.						Prevalence Index Worksheet:		
				= Tota	Cover	Total % Cover of:	Multiply By:	:
Sapling	g Stratum (Plot size: 15' RAD)				OBL 6 x 1 =	6	_
1.		_ '				FACW x 2 =		_
2.						FAC 4 x 3 =	12	_
-			, ,	. ——				_
3.				. ——		FACU x 4 =		_
4.						UPL x5=		
5.						Sum:(A)	18	(B)
6.								
7.			- '-			Prevalence Index = B/A =	1.80	
-								_
				= Tota	Cover	Hydrophytic Vegetation Indicator	rc·	
Cll-	Charte III III III III III III III III III I	\		- 1018	COVE	, , , ,		
	Stratum (Plot size: 15' RAD					X Dominance Test is > 50%		
1.						X Prevalence Index is <= 3.0		
2.						Problematic Hydrophytic	Vegetation ¹ (ex	plain)
3.						Rapid Test for Hydrophyti	c Vegetation	
4.						Morphological Adaptation	ıs	
5.				. ——		I——		
-			· -	. ——		¹ Indicators of hydric soil and wetland hy	drology must be p	resent,
6.			· 			unless disturbed or problematic.		
7.						Definitions of Vegetation Strata:		
				= Tota	Cover			
Herb S	itratum (Plot size: 5' RAD)				Tree - Woody plants, excluding woody	vines, approximat	ely 20ft
4	<u></u>		_			(C)		
Ι.	Glyceria striata		3	Х	OBL	(6m) or more in height and 3in (7.6cm) of	or larger in diamet	er at
	Glyceria striata Symphyotrichum lateriflorum					breast height (DBH).	or larger in diamet	er at
2.	Symphyotrichum lateriflorum		3	<u>X</u>	FAC		or larger in diamed	er at
2. 3.	Symphyotrichum lateriflorum Acer negundo		3		FAC FAC	breast height (DBH).		
2. 3. 4.	Symphyotrichum lateriflorum Acer negundo Carex echinata		3 1 1		FAC FAC OBL	breast height (DBH). Sapling - Woody plants, excluding woo	dy vines, approxii	mately
2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH).	dy vines, approxii	mately
2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata		3 1 1		FAC FAC OBL	breast height (DBH). Sapling - Woody plants, excluding woo	dy vines, approxii	mately
2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo	dy vines, approxii	mately
2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that	ndy vines, approxin n 3in (7.6cm) DBH	mately
2	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo	ndy vines, approxin n 3in (7.6cm) DBH	mately
2	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood	ndy vines, approxin n 3in (7.6cm) DBH	mately
2. 3. 4. 5. 6. 7. 8. 9.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height.	ody vines, approxii n 3in (7.6cm) DBH y vines, approxim	nately ately 3 to
2	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including herl	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody	ndy vines, approxing 13in (7.6cm) DBH y vines, approximents, including herliplants, except wo	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1		FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla	ndy vines, approxing 13in (7.6cm) DBH y vines, approximents, including herliplants, except wo	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus		3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody	ndy vines, approxing 13in (7.6cm) DBH y vines, approximents, including herliplants, except wo	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woods	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre		3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody	ndy vines, approxing 13in (7.6cm) DBH y vines, approximents, including herliplants, except wo	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woods	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus	_)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less than Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL OBL	breast height (DBH). Sapling - Woody plants, excluding woo 20ft (6m) or more in height and less than Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxin n 3in (7.6cm) DBH y vines, approxim nts, including heri plants, except wo n height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	<u>x</u>	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less than Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:		3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus)	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:) ns below).	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:) ns below).	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:)	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:)	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
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2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:) ns below).	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Woodd 1. 2. 3. 4. 5.	Symphyotrichum lateriflorum Acer negundo Carex echinata Galium palustre Lycopus americanus y Vines (Plot size:) ns below).	3 1 1 1 1 1	= Tota	FAC FAC OBL OBL Cover	breast height (DBH). Sapling - Woody plants, excluding wood 20ft (6m) or more in height and less that Shrub - Woody plants, excluding wood 20ft (1 to 6m) in height. Herb - All herbaceous (non-woody) plavines, regardless of size. Includes woody vines, less than approximately 3ft (1m) in Woody vine - All woody vines, regard Hydrophytic Vegetation	ndy vines, approxinn 3in (7.6cm) DBH y vines, approximnts, including herle plants, except won height.	mately . ately 3 to
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Project Site:	BDE Grand	isic solar r ro	ect		City/County: _	Grand Isle			Samp. Date: 9/	13/2013
pplicant/Owner:		Isle Solar Pro	•			State:	VT	Sampling Point:	2015	-1-2Up
ivestigator(s): andform (hillslope, t		Werts, M. Jack	man			n, Township, (concave, conv		None	Slope (%):	3-8
ubregion (LRR or	_	L LRR		Lat:	44°41'48.44		Long:	None 73°20'6.005"W	Datum:	NAD 83
oil Map Unit:	Amenia silt				77 71 70.77	+0 IV	Long.	73 20 0.003 W	NWI Class:	na
re climatic/hydrol			ypical for this tim	e of year?)	Yes	(If no, e	xplain in Remarks.)		
re Vegetation, Soi	il, or Hydrolog	gy significantly	disturbed?	No				Normal Cir	cumstances?	Yes
re Vegetation, Soi	il, or Hydrolog	gy naturally pr	oblematic?	No				(If needed, ex	plain any answe	rs in Remark
SUMMARY OF	FINDINGS	- Attach si	te man showi	ng samr	ale noint la	ocations	transec	ts, important feat	tures etc	
lydrophytic Vegeta			NO	118 20111	ore point it		transet	its, important real	tures, etc.	
lydric Soil Present	?		NO				Is This	Sample Area Within	a Wetland?	NO
Vetland Hydrology Remarks:	Present?		NO							
iemano.										
IYDROLOGY										
etland Hydrology								Secondary Indicators		vo required)
rimary Indicators	,	one is require	•	1 1 77	(0.0)			Surface Soil Cra		
Surface Wate	` '		Water-Stair		(B9)			Drainage Patte		
High Water Ta Saturation (A:			Aquatic Fat Marl Depos					Moss Trim Line Dry-Season Wa		
Water Marks	•		Hydrogen S		or (C1)			Crayfish Burrov		
Sediment Dep					s on Living Roo	ots (C3)			ble on Aerial (C9)	
Drift Deposits			Presence o		_	/			essed Plants (D1)	
Algal Mat or 0			Recent Iron	n Reduction	n in Tilled Soils	(C6)		Geomorphic Po	osition (D2)	
Iron Deposits	(B5)		Thin Muck	Surface (C7	7)			Shallow Aquita	ırd (D3)	
Inundation Vi	isible on Aerial	(B7)	Other (Exp	lain in Rem	arks)			Microtopograp	hic Relief (D4)	
Sparsely Vege	etated Concave	Surface (B8)						FAC-Neutral Te	est (D5)	
ield Observations:										
			Depth ((inches):						
ield Observations: Surface Water Pres Water Table Preser	sent? nt?		Depth ((inches):			Wetlan	d Hydrology Present?		NO
Surface Water Pres Water Table Preser Saturation Present Describe Recorded 3.46" of pre	sent? nt? ? Data (stream		Depth (Depth (oring well, aerial p	(inches): (inches): ohotos, pre			ailable:	d Hydrology Present? ain in the 5 days prior	<u>-</u>	NO
urface Water Pres Vater Table Preser aturation Present? escribe Recorded 3.46" of pre emarks:	sent? nt? ? Data (stream		Depth (Depth (oring well, aerial p	(inches): (inches): ohotos, pre			ailable:		-	NO
urface Water Pres Vater Table Preser aturation Present; escribe Recorded 3.46" of pre emarks: OIL rofile Description:	sent? nt? ? Data (stream e cip in Plattsb	urgh, NY in th	Depth (Depth (oring well, aerial p e month of Septe	(inches): (inches): ohotos, pro ember no o	departure fro	om normal; (ailable: 0.48" of u	ain in the 5 days prior	. <u>-</u>	NO
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: GOIL rofile Description: epth (in) Color	ent? nt? Data (stream cip in Plattsb	the depth nee	Depth (Depth (oring well, aerial p e month of Septe	(inches): (inches): ohotos, pro ember no o the indica Redo	departure fro	om normal; (ailable: 0.48" of I	ain in the 5 days prior cators.)		NO
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: GOIL rofile Description: epth (in) Color 0-8 COIC	sent? nt? Data (stream cip in Plattsb	the depth nee	Depth (Depth	(inches): (inches): ohotos, pre ember no d the indica Redost)	departure fro ator or confirm ox Features	om normal; (ailable: 0.48" of u	ain in the 5 days prior		
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: GOIL rofile Description: epth (in) Color 0-8 COIC	ent? nt? Data (stream cip in Plattsb (Describe to Matrix (moist) R 3/3	the depth nee	Depth (Depth	(inches): (inches): ohotos, pre ember no d the indica Redost)	departure fro stor or confirm ox Features %	m the absen	nilable: 0.48" of the control of th	ain in the 5 days prior cators.) Texture SILT LOAM		
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: OIL rofile Description: epth (in) Color 0-8 Under Preservation Color Color	ent? nt? Data (stream cip in Plattsb (Describe to Matrix (moist) R 3/3	the depth nee	Depth (Depth	(inches): (inches): ohotos, pre ember no d the indica Redost)	departure fro stor or confirm ox Features %	m the absen	nilable: 0.48" of the control of th	ain in the 5 days prior cators.) Texture SILT LOAM		
urface Water Pres Vater Table Preser eturation Present escribe Recorded 3.46" of pre emarks: OIL rofile Description: epth (in) Color 0-8 10Y 3-14 2.53	ent? nt? nt? Data (stream cip in Plattsb (Describe to Matrix (moist) R 3/3 Y 4/4	the depth nee	Depth (Depth	(inches): (inches): ohotos, pre ember no o the indica Redo st)	departure fro stor or confirm ox Features %	m the absen	nilable: 0.48" of the control of th	ain in the 5 days prior cators.) Texture SILT LOAM	Rei	
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: OIL rofile Description: lepth (in) Color 0-8 10Y 3-14 2.5	ent? nt? nt? Data (stream cip in Plattsb (Describe to Matrix (moist) R 3/3 Y 4/4	the depth nee	Depth (Depth	(inches): (inches): ohotos, pre ember no o the indica Redo st)	departure fro stor or confirm ox Features %	m the absen	nilable: 0.48" of the control of th	ain in the 5 days prior cators.) Texture SILT LOAM SANDY LOAM 2Location: PL=Pore Lining.	Rei	marks
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: GOIL rofile Description: epth (in) Color 0-8 10Y 8-14 2.5\frac{1}{2} Type: C=Concentration lydric Soil Indicato	ent? nt? nt? Data (stream cip in Plattsb (Describe to Matrix (moist) R 3/3 Y 4/4	the depth nee	Depth (Depth	(inches): (inches): chotos, pre cmber no o the indica Redo st) Grains.	ator or confirmox Features % 2	m the absence Type ¹	nilable: 0.48" of the control of th	ain in the 5 days prior cators.) Texture SILT LOAM SANDY LOAM Location: PL=Pore Lining. Indicators for Proble	Rei , M=Matrix. matic Hydric Soil	marks
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urface Water Pres Vater Table Preser aturation Present; escribe Recorded 3.46" of pre emarks: OIL rofile Description: epth (in) Color 0-8 10Y; 3-14 2.5' Gype: C=Concentration ydric Soil Indicato Histosol (A1) Histic Epipeds Black Histic (A) Histic Epipeds Black Histic (A) Hydrogen Sul Stratified Laye Depleted Belog Thick Dark Su	ent? nt? Pata (stream reip in Plattsb cip in Plattsb cip in Plattsb cip in Plattsb discribe to Matrix (moist) R 3/3 Y 4/4 n, D=Depletion, R ors: on (A2) A3) Iffide (A4) ers (A5) ow Dark Surfac urface (A12) Mineral (S1)	the depth nee	Depth (Depth	(inches): (inches): chotos, prosember no of the indica Redo st) Grains. Grains. yvalue Belo MLRA 149B) n Dark Surf amy Mucky amy Gleyed pleted Matr dox Dark Surf	ator or confirmox Features % 2 ow Surface (S8)) face (S9) (LRR F Mineral (F1) (I Matrix (F2) rrix (F3) urface (F6) c Surface (F7)	m the absender of the state of	ce of indi	ain in the 5 days prior Texture SILT LOAM SANDY LOAM 2 Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S Polyvalue Beloo Thin Dark Surfae Iron-Manganes Piedmont Floor	Rei , M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) se Masses (F12) (LI	marks is ³ : 149B) 1, R, R, L, R) R K, L, R) RR K, L, R) MLRA 149B)
urface Water Pres Vater Table Preser aturation Present escribe Recorded 3.46" of pre emarks: GOIL rofile Description: Pepth (in) Color 0-8 10Y 8-14 2.5 Type: C=Concentration lydric Soil Indicato Histosol (A1) Histic Epipedo Black Histic (A Hydrogen Sul Stratified Layı Depleted Belo Thick Dark Su Sandy Mucky	rent? Data (stream reip in Plattsb reip in Pl	the depth nee	Depth (Depth	(inches): (inche	ator or confirmox Features % 2 ow Surface (S8)) face (S9) (LRR F Mineral (F1) (I Matrix (F2) rrix (F3) urface (F6) c Surface (F7)	m the absender of the state of	ce of indi	ain in the 5 days prior Texture SILT LOAM SANDY LOAM 2 Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S Polyvalue Beloo Thin Dark Surfae Iron-Manganes Piedmont Floor	Rei , M=Matrix. matic Hydric Soii .0) (LRR K, L, MLRA edox (A16) (LRR K, E39) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) fee Masses (F12) (Li dplain Soils (F19) (TA6) (MLRA 144A,	marks is ³ : 149B) 1, R) R K, L, R) R K, L, R) RR K, L, R) MLRA 149B)
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SOIL Profile Description: Depth (in) Color 0-8 10Y1 8-14 2.5\(\) Type: C=Concentration Histosol (A1) Histic Epipedd Black Histic (A Hydrogen Sul Stratified Laye Depleted Belc Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mati	tent? Data (stream cip in Plattsb display and a cip in Plattsb at (moist) R 3/3 Y 4/4 display and a cip in Plattsb cip in Plattsb display and a cip in Plattsb cip in Plattsb display and a cip in Plattsb cip in Care in Plattsb display and a cip in Plattsb dis	the depth nee % 100 98	Depth (Depth	(inches): (inche	ator or confirmox Features % 2 ow Surface (S8) face (S9) (LRR F Mineral (F1) (I Matrix (F2) rix (F3) irface (F6) sourface (F7) sions (F8) cators of hydrology m	m the absence Type ¹ C () (LRR R, R, MLRA 149B LRR K, L)	ce of indi Loc² M ation and nt, unless	ain in the 5 days prior Texture SILT LOAM SANDY LOAM Coast Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S Polyvalue Belov Thin Dark Surfa Iron-Manganes Piedmont Floor Mesic Spodic (T Red Parent Ma	Rei "M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A, sterial (F21) bark Surface (TF12)	marks s ³ : .149B) L, R) R K, L, R) R K, L, R) MLRA 149B) 145, 149B)
urface Water Pres Vater Table Preser aturation Present Describe Recorded 3.46" of pre Demarks: COIL Tofile Description: Depth (in) Color D-8 10Y1 8-14 2.5\(\) Type: C=Concentration Histosol (A1) Histic Epipedd Black Histic (A Hydrogen Sul Stratified Laye Depleted Belo Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mati	rent? Data (stream reip in Plattsb C (Describe to Matrix (moist) R 3/3 Y 4/4 Data (stream Matrix (moist) R 3/3 Y 4/4 Data (Matrix (moist) R 3/3 Honers R 3/3 Honers Honer	the depth nee % 100 98	Depth (Depth	(inches): (inche	ator or confirmox Features % 2 ow Surface (S8) face (S9) (LRR F Mineral (F1) (I Matrix (F2) rix (F3) irface (F6) sourface (F7) sions (F8) cators of hydrology m	m the absence Type ¹ C) (LRR R, R, MLRA 149B LRR K, L)	ce of indi Loc² M ation and nt, unless	ain in the 5 days prior Texture SILT LOAM SANDY LOAM *Location: PL=Pore Lining. Indicators for Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S) Polyvalue Belov Thin Dark Surfac Iron-Manganes Piedmont Floor Mesic Spodic (1) Red Parent Ma Very Shallow D	Rei "M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A, sterial (F21) bark Surface (TF12)	marks S ³ : 149B L, R R K, L, R R K, L, R MLRA 149B 145, 149B
urface Water Pres Vater Table Preser aturation Present Describe Recorded 3.46" of pre Demarks: GOIL Tofile Description: Depth (in) Color 0-8 10Y 8-14 2.51 Type: C=Concentration Histosol (A1) Histic Epipede Black Histic (A Hydrogen Sul Stratified Laye Depleted Belo Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mate Dark Surface	ent? nt? Pata (stream rip in Plattsb recip in P	the depth nee % 100 98	Depth (Depth	(inches): (inche	ator or confirmox Features % 2 ow Surface (S8) face (S9) (LRR F Mineral (F1) (I Matrix (F2) rix (F3) irface (F6) sourface (F7) sions (F8) cators of hydrology m	m the absence Type ¹ C () (LRR R, R, MLRA 149B LRR K, L)	ce of indi Loc² M ation and nt, unless	ain in the 5 days prior Texture SILT LOAM SANDY LOAM **Location: PL=Pore Lining, Indicators for Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S Polyvalue Belov Thin Dark Surfa Iron-Manganes Piedmont Flood Mesic Spodic (1 Red Parent Ma Very Shallow D Other (Explain	Rei "M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A, sterial (F21) bark Surface (TF12)	marks s ³ : .149B) L, R) R K, L, R) R K, L, R) MLRA 149B) 145, 149B)

			Absolute	Dom.	Indicator			
Tree S	tratum (Plot size:)	% Cover	Sp?	Status	Dominance Test Worksheet:		
1.	`	 '				# Dominants OBL, FACW, FAC:	1	(A)
2.								_'`'
3.			-			# Dominants across all strata:	5	(B)
						# Dominants across an strata.		_(b)
4.						.,	200/	(- (-)
5.						% Dominants OBL, FACW, FAC:	20%	(A/B)
6.								
7.						Prevalence Index Worksheet:		
				= Total	Cover	Total % Cover of:	Multiply By	<u>:_</u>
Saplin	g Stratum (Plot size: 1	15' RAD)				OBL x 1 =		
1.						FACW x 2 =		
2.						FAC 16 x 3 =	48	_
3.						FACU 90 x 4 =	360	_
4.						UPL 3 x5=	15	_
							423	(D)
5.						Sum: 109 (A)	423	(B)
6.								
7.						Prevalence Index = B/A =	3.88	_
				= Total	Cover	Hydrophytic Vegetation Indicate	rs:	
Shrub	Stratum (Plot size: 1	15' RAD)				Dominance Test is > 50%		
1.						Prevalence Index is <= 3.0)	
2.						Problematic Hydrophytic		nlain)
3.						Rapid Test for Hydrophyt	•	piu.i.,
							-	
4.						Morphological Adaptatio	ns	
5.						¹ Indicators of hydric soil and wetland h	drology must be p	resent,
6.						unless disturbed or problematic.		
7.						Definitions of Vegetation Strata:		
				= Total	Cover			
Herb	Stratum (Plot size:	5' RAD)				Tree - Woody plants, excluding woody	vines, approximat	ely 20ft
	Galium mollugo	,	38	х	FACU	(6m) or more in height and 3in (7.6cm)		
	Trifolium repens		15	<u> </u>	FACU	breast height (DBH).		
			15					
	Equisetum arvense			<u>X</u>	FAC			
	Melilotus albus		15	X	FACU	Sapling - Woody plants, excluding wo		
5.	Centaurea stroebe		15	X	FACU	20ft (6m) or more in height and less that	in 3in (7.6cm) DBH	
6.	Daucus carota		3		UPL			
7.	Fragaria virginiana		3		FACU			
8.	Setaria viridis		3		FACU	Shrub - Woody plants, excluding wood	dy vines, approxim	ately 3 to
9.	Vicia sativa		1		FACU	20ft (1 to 6m) in height.		
	Juncus tenuis				FAC			
11.	Julicus telluis				FAC	Horb All berbassaus (non woods) pl	nate including bod	hacaa
						Herb - All herbaceous (non-woody) pla vines, regardless of size. Includes wood		
12.						vines, less than approximately 3ft (1m)		oody
			109	= Total	Cover	,	- 0	
Wood	y Vines (Plot size:)						
1.								
2.						Woody vine - All woody vines, regard	dless of height.	
3.								
4.						Hydrophytic		
5.								
5.						Vegetation		
				= Total	Cover	Present?	NO	_
Remark	s: (If observed, list morphologica	al adaptations below).						

W	\mathbf{R}
W	-

2015-1-2Wet

Project Site:	BDF Grand	Isle Solar Pro	iect		City/County:	Grand Icla			Samn Date: 0/	
Applicant/Owner:		Isle Solar Pro			ity/ county.	State:	VT	Sampling Point:	Samp. Date: <u>9/</u> 2015-	1-2Wet
vestigator(s):		Werts, M. Jack			Section	, Township,	, Range:			
andform (hillslope, t	_				Local relief (Slope (%):	3-8
ubregion (LRR or	· -	L LRR		Lat:	44°41'48.44	17"N	Long:	73°20'6.049"W	Datum:	NAD 83
oil Map Unit: re climatic/hydrol	Amenia silt		tunical for this tim	oo of woor?)	Yes	(If no o	xplain in Remarks.)	NWI Class:	PEM
re Vegetation, Soi	•			No		163	(11 110, 6		cumstances?	Yes
re Vegetation, Soi				No					plain any answe	
,	, ,	,, ,,						_ ` ` ´		
SUMMARY OF	FINDINGS	- Attach si	te map showi	ing samp	ole point lo	ocations,	transed	cts, important feat	tures, etc.	
lydrophytic Vegeta		?	YES							
lydric Soil Present			YES				Is This	Sample Area Within	a Wetland?	YES
Vetland Hydrology Iemarks:	Present?		YES							
Ciliaiks.										
HYDROLOGY										
etland Hydrology	Indicators:							Secondary Indicators		vo required)
		one is require	d; check all that a					Surface Soil Cra	acks (B6)	
Surface Wate	. ,			ined Leaves	(B9)			Drainage Patte		
High Water T			Aquatic Fa					Moss Trim Line		
X Saturation (A Water Marks	•		Marl Depo	Sulfide Odo	or (C1)			Dry-Season Wa		
Sediment Dep					s on Living Roo	ts (C3)			ble on Aerial (C9)	
Drift Deposits				of Reduced I	_	,			essed Plants (D1)	
Algal Mat or 0	Crust (B4)		Recent Iron	n Reduction	n in Tilled Soils	(C6)		Geomorphic Po	osition (D2)	
Iron Deposits				Surface (C7	•			Shallow Aquita		
	isible on Aerial		Other (Exp	olain in Rem	arks)			Microtopograp		
Sparsely Vege	etated Concave	Surface (B8)						FAC-Neutral Te	est (D5)	
sparsery rege										
ield Observations:										
ield Observations: Jurface Water Pres	sent?		•	(inches):						
ield Observations: surface Water Pres Vater Table Preser saturation Present Describe Recorded 3.46" of pre	sent? nt? ? Data (stream		Depth Depth oring well, aerial	(inches): (inches): photos, pre			ailable:	d Hydrology Present? ain in the 5 days prior	<u>-</u>	YES
ield Observations: surface Water Pres Vater Table Preser saturation Present Describe Recorded 3.46" of pre	sent? nt? ? Data (stream		Depth Depth oring well, aerial	(inches): (inches): photos, pre			ailable:		<u>-</u>	YES
ield Observations: urface Water Pres Vater Table Preser aturation Present describe Recorded 3.46" of pre demarks:	sent? nt? ? Data (stream ecip in Plattsb	ourgh, NY in th	Depth Depth Oring well, aerial ee month of Septe	(inches): (inches): photos, pro ember no o	departure fro	om normal; (ailable: 0.48" of r	ain in the 5 days prior		YES
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icield Observations: icurface Water Preservations Present Staturation Staturat	sent? nt? ? Data (stream ecip in Plattsb cip in Plattsb difficit (A4) ers (A5) ers (A5) ers (A5) ers (A5) ers (A12) difficit (A4) ers (A5)	the depth nee % 100 95 RM=Reduced Mat	Depth	t the indica Redo ist) d Grains. d Grains.	ator or confirmox Features % 5 ow Surface (S8) face (S9) (LRR R Mineral (F1) (L Matrix (F2) rix (F3) urface (F6) s Surface (F7) sions (F8) cators of hydro	m the absence Type ¹ C O(LRR R, R, MLRA 149BLRR K, L)	ce of indi Loc² M	Texture SILT LOAM SANDY LOAM **Location: PL=Pore Lining.* Indicators for Proble 2 cm Muck (A1 Coast Prairie Re 5 cm Mucky Pe Dark Surface (S) Polyvalue Belov Thin Dark Surfac Iron-Manganes Piedmont Floor Mesic Spodic (1) Red Parent Ma Very Shallow D	Re , M=Matrix. matic Hydric Soi .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LR ace (S9) (LRR K, L) se Masses (F12) (L dplain Soils (F19) (TA6) (MLRA 144A, sterial (F21)	marks Is ³ : A 149B) L, R) RR K, L, R) RR K, L, R) (MLRA 149B) 145, 149B)
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	Absolute	Dom.	Indicator			
Tree Stratum (Plot size:) % Cover	Sp?	Status	Dominance Test Worksheet:		
1			-	# Dominants OBL, FACW, FAC:	6	(A)
				# Dominants Obt, FACW, FAC.		(^)
2						
3.				# Dominants across all strata:	6	(B)
4.						
					4000/	(4 (5)
5				% Dominants OBL, FACW, FAC:	100%	(A/B)
6						
7				Prevalence Index Worksheet:		
7.			<u></u>		N. A. Jahrele D.	
		_ = Tota	Cover	Total % Cover of:	Multiply By	<u>/:</u>
Sapling Stratum (Plot size: 15' RAD)			OBL 49 x 1 =	49	
1.				FACW 30 x 2 =	60	
					114	—
2				FAC <u>38</u> x 3 =	114	
3				FACU x 4 =		
1				UPL x5=		
5.					223	(D)
j				Sum:(A)		(B)
6						
7.	-			Prevalence Index = B/A =	1.91	
				,		_
		= Tota	Cover	Hydrophytic Vegetation Indicat	ors:	
Shrub Stratum (Plot size: 15' RAD)			X Dominance Test is > 50%	6	
1.	·			X Prevalence Index is <= 3		
				l 		
2				Problematic Hydrophyti	c Vegetation* (e)	xplain)
3.				Rapid Test for Hydrophy	tic Vegetation	
4.				Morphological Adaptation	_	
				ivioi priologicai Adaptatio	JIIS	
5				¹ Indicators of hydric soil and wetland l	nvdrology must be	present.
6.				unless disturbed or problematic.	,	,
7				Definitions of Vegetation Strata	1:	
		= Tota	Cover			
Herb Stratum (Plot size: 5' RAD)			Tree - Woody plants, excluding wood	y vines, approxima	ately 20ft
1. Equisetum arvense		х	FAC	(6m) or more in height and 3in (7.6cm) or larger in diame	eter at
-				breast height (DBH).	-	
2. Typha angustifolia	15	X	OBL	5 , ,		
3. Galium palustre	15	Х	OBL			
4. Impatiens capensis	15		FACW	Sapling - Woody plants, excluding w	oody vines annrovi	vimately
				20ft (6m) or more in height and less th		
5. Carex vulpinoidea	15	X	OBL	2011 (6111) of more in neight and less th	Iaii 3iii (7.0Ciii) DBF	л.
6. Symphyotrichum novae-angliae	15	Х	FACW			
7. Carex crinita	3		OBL			
				CL L		
8. Scirpus atrovirens	1		OBL	Shrub - Woody plants, excluding woo	ody vines, approxim	nately 3 to
9.				20ft (1 to 6m) in height.		
10.	-					
				Harle and a constant		
11.				Herb - All herbaceous (non-woody) p	· -	
12.				vines, regardless of size. Includes woo		<i>r</i> oody
	117	= Tota	Cover	vines, less than approximately 3ft (1m) in height.	
			Cover			
Woody Vines (Plot size:)					
1.						
2.				Woody vine - All woody vines, rega	rdless of height.	
-				, , , , , ,		
3.						
4.				Hydrophytic		
5.				Vegetation		
· .			<u></u>		VEC	
		= Tota	Cover	Present?	YES	
Remarks: (If observed, list morphological adaptation	is helow).			•		
The marks. (If observed, list morphological adaptation	13 5010 11/1.					

W	\mathbf{R}
W	-

2015-1-3Up

Project Site: Applicant/Owner:	BDE Grand	d Isle Solar Proje		City/Count	State:	VT	Sampling Point:	2015-	1-3Un
nvestigator(s):		-Werts, M. Jack	•	Sect	tion, Towns		Sumpling Fourt.	2013	1-30p
andform (hillslope, te						convex, none):	None	Slope (%):	3-8
ubregion (LRR or I	MLRA):	L LRR	La	_			73°20'9.552"W	Datum:	NAD 83
oil Map Unit:	Amenia si	lt loam						NWI Class:	na
re climatic/hydrolo	gic condition	ons on the site t	pical for this time of ye	ar?	Yes	(If no, e	xplain in Remarks.)	· 	
re Vegetation, Soil,	, or Hydrolo	gy significantly	disturbed? No			_	Normal Cir	rcumstances?	Yes
re Vegetation, Soil,	, or Hydrolo	gy naturally pro	blematic? No				(If needed, ex	xplain any answer	s in Remarks
SUMMARY OF F	FINDINGS	S - Attach sit	e map showing sa	mple poin	it location	ıs, transe	cts, important fea	itures, etc.	
ydrophytic Vegetat		t?	YES						
ydric Soil Present?		-	YES NO			Is This	Sample Area Within	a Wetland?	NO
Vetland Hydrology I Remarks:	resenti		NO .						
HYDROLOGY									
/etland Hydrology I	Indicators:						Secondary Indicator	s (minimum of tw	o required)
rimary Indicators (r	minimum o	f one is required	; check all that apply)				Surface Soil Cr		. ,
Surface Water			Water-Stained Lea	ves (B9)		-	Drainage Patte	erns (B10)	
High Water Tal	ble (A2)	-	Aquatic Fauna (B1	3)			Moss Trim Line	es (B16)	
Saturation (A3)	3)	-	Marl Deposits (B13	3)			Dry-Season Wa	ater Table (C2)	
Water Marks (B1)	- -	Hydrogen Sulfide (Odor (C1)			Crayfish Burro	ows (C8)	
Sediment Depo		<u>-</u>	Oxidized Rhizosph	eres on Living	Roots (C3)		Saturation Visi	ible on Aerial (C9)	
Drift Deposits	. ,	-	Presence of Reduc	ed Iron (C4)				essed Plants (D1)	
Algal Mat or Cr		-	Recent Iron Reduc		oils (C6)		Geomorphic P		
Iron Deposits (-	Thin Muck Surface				Shallow Aquita		
Inundation Visi		· · ·	Other (Explain in R	emarks)				phic Relief (D4)	
Coorsolulloant	tated Concav	e Surface (B8)					FAC-Neutral Te	est (D5)	
Sparsely veget									
ield Observations:			Depth (inches):					
sparsely veget Field Observations: Surface Water Prese Water Table Present	ent?		Depth (inches Depth (inches		_	Wetlan	d Hydrology Present?		NO
ield Observations: Surface Water Prese Water Table Present Saturation Present? Describe Recorded D	ent? t? Data (strear			previous ins	-	available:	d Hydrology Present? rain in the 5 days prio		NO
ield Observations: urface Water Prese Vater Table Present aturation Present? Pescribe Recorded D 3.46" of prec emarks:	ent? t? Data (strear		Depth (inches Depth (inches ring well, aerial photos,	previous ins	-	available:		<u>-</u>	NO
ield Observations: iurface Water Prese Water Table Present aturation Present? Describe Recorded D 3.46" of prec Remarks:	ent? t? Data (strear S ip in Platts	burgh, NY in the	Depth (inches Depth (inches ring well, aerial photos, month of September i): previous ins no departure	e from norm	available: al; 0.48" of	rain in the 5 days prio	<u>-</u>	NO
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with the contraction of the cont	(Describe to Matrix moist) D=Depletion, s:	the depth need % 98 95	Depth (inches Depth (inches Depth (inches Pepth (inches ring well, aerial photos, emonth of September of Sept	dicator or coredox Feature % 2 5 8elow Surface	onfirm the above Ses C C C C C C C C C C C C C C C C C C C	sence of indi	Texture SILT LOAM SANDY LOAM	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K,	marks 5 ³ : 149B) L, R)
eld Observations: urface Water Prese /ater Table Present aturation Present? escribe Recorded Describe Recorded Description: (in) Color (in) 0-8 10yrs 3-14 2.5yrs ype: C=Concentration, ydric Soil Indicators Histosol (A1) Histic Epipedon Black Histic (A3	(Describe to Matrix moist) D=Depletion, S: n (A2)	the depth need % 98 95	Depth (inches Depth (inches Depth (inches Pepth (inches ring well, aerial photos, emonth of September in Pepth (inches Pepth (in	previous ins no departure licator or coredox Feature % 2 5 Selow Surface 19B) Surface (S9) (Li	onfirm the above the set of the s	sence of indi	Texture SILT LOAM SANDY LOAM	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LR	marks 5 ³ : 149B) L, R)
eld Observations: urface Water Prese /ater Table Present aturation Present? escribe Recorded Describe Recorded Description: (in) Color (in) 0-8 10yrs 3-14 2.5yrs ype: C=Concentration, ydric Soil Indicators Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfi	(Describe to Matrix moist) Baj1 P=Depletion, S: n (A2) 3) ide (A4)	the depth need % 98 95	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	previous ins no departure licator or coredox Feature % 2 5 Selow Surface 198) Surface (S9) (Licky Mineral (F	e from norm Infirm the above Ses Type¹ C C C (S8) (LRR R,	sence of indi	rain in the 5 days prior cators.) Texture SILT LOAM SANDY LOAM Indicators for Proble	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M)	narks s ³ : 149B) L, R) R K, L, R)
eld Observations: urface Water Prese /ater Table Present aturation Present? escribe Recorded E 3.46" of prec emarks: OIL rofile Description: (epth (in) Color (i) 0-8 10YR 3-14 2.5YR ype: C=Concentration, ydric Soil Indicators Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfi Stratified Layer	(Describe to Matrix Matrix Peppletion, S: In (A2) (A3) (A4) (A4) (A5)	the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the dep	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	previous ins no departure licator or coredox Feature % 2 5 Selow Surface 198) Surface (S9) (Licky Mineral (F2) yed Matrix (F2)	e from norm Infirm the above Ses Type¹ C C C (S8) (LRR R,	sence of indi	rain in the 5 days prior cators.) Texture SILT LOAM SANDY LOAM Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky Po Dark Surface (: Polyvalue Belo	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) ow Surface (S8) (LRF	narks s ³ : 149B) L, R) R K, L, R)
celld Observations: urface Water Prese vater Table Present aturation Present? escribe Recorded C 3.46" of prece emarks: OIL rofile Description: (epth (in) Color (in) 0-8 10YR 3-14 2.5YR ype: C=Concentration, ydric Soil Indicators Histosol (A1) Histic Epipedor Black Histic (A3 Hydrogen Sulfi Stratified Layer Depleted Belov	(Describe to Matrix Matrix Peppletion, Page 14/1 D=Depletion, Page 14/1 D=De	the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the dep	Depth (inches Depth (inches Depth (inches Depth (inches ring well, aerial photos, emonth of September in Research for the sept	previous ins no departure licator or coredox Feature % 2 5 Below Surface 1998) surface (59) (Licky Mineral (F2) Matrix (F3)	e from norm Infirm the above Ses Type¹ C C C (S8) (LRR R,	sence of indi	rain in the 5 days prior cators.) Texture SILT LOAM SANDY LOAM Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky P Dark Surface (: Polyvalue Belo Thin Dark Surf	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) ow Surface (S8) (LRF face (S9) (LRR K, L)	marks s ³ : 149B) L4, R) R, K, L, R)
eld Observations: urface Water Preservaturation Present aturation Present? escribe Recorded Date of preservaturation Present? escribe Recorded Date of preservaturation Present? escribe Recorded Date of preservation Preservation: (epth Color (in C	(Describe to Matrix moist) D=Depletion, S: (A2) (Describe to Matrix moist) (Describe to Matrix moist) (Describe to Matrix moist) (Describe to Matrix moist) (A3/1 (A4/1 D=Depletion, S: (A5) w Dark Surfa face (A12)	the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the dep	Depth (inches Depth (inches Depth (inches Depth (inches Pepth (inches Pe	Delow Surface Selow Surface Selow Surface Selow Matrix (F2 Matrix (F3) Surface (F6)	e from norm Infirm the above Ses Type¹ C C C (S8) (LRR R, RR R, MLRA 1	sence of indi	rain in the 5 days prior rain in the 5 days prior Texture SILT LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky Pr Dark Surface (: Polyvalue Belo Thin Dark Surf Iron-Mangane	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA kedox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) ow Surface (S8) (LRF face (S9) (LRR K, L) see Masses (F12) (LF	marks 5 ³ : 149B) 1, R, R, L, R) 8 K, L, R)
relied Observations: urface Water Preservaturation Present? escribe Recorded Earnarks: OIL rofile Description: (epth (in) Color (in) 0-8 10YR 3-14 2.5YR Color (in) Histosol (A1) Histic Epipedon Black Histic (A2) Hydrogen Sulfi Stratified Layer Depleted Below Thick Dark Surf Sandy Mucky M	Conta (stream cip in Platts (Describe to Matrix moist) 3 3/1 7 4/1 D=Depletion, S: In (A2) 3) Ide (A4) Irs (A5) w Dark Surfaface (A12) Mineral (S1)	the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the dep	Depth (inches Depth (inches Depth (inches Depth (inches ring well, aerial photos, a month of September of Representation of September of Septemb	Discrete (F6) Below Surface Below	e from norm Infirm the above Ses Type¹ C C C (S8) (LRR R, RR R, MLRA 1	sence of indi	rain in the 5 days prior rain in the 5 days prior Texture SILT LOAM SANDY LOAM	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LRI S9) (LRR K, L, M) DW Surface (S8) (LRF face (S9) (LRR K, L) ese Masses (F12) (LF odplain Soils (F19) (I	marks s³: 149B) L, R, L, R) R K, L, R) MR K, L, R) MIRA 149B)
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icield Observations: icurface Water Present i	(Describe to Matrix moist) D=Depletion, rs: In (A2) In (A3) In (A4) In (A5) In	the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the depth need where the depth need graph of the dep	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	previous ins no departure licator or coredox Feature % 2 5 Below Surface 1998) Gurface (S9) (Licky Mineral (F2) Astrix (F3) As Surface (F6) Park Surface (F6) Park Surface (F8)	refrom norm Infirm the above ses Type¹ C C (S8) (LRR R, RR R, MLRA 1 11) (LRR K, L) 2)	sence of indi Loc² M M 49B)	rain in the 5 days prior rain in the 5 days prior Texture SILT LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky P* Dark Surface (: Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Ma	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA kedox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) wo Surface (S8) (LRF face (S9) (LRR K, L) cise Masses (F12) (LF odplain Soils (F19) (I (TA6) (MLRA 144A, aterial (F21)	marks s³: 149B) L, R, L, R) R K, L, R) MR K, L, R) MIRA 149B)
icield Observations: icurface Water Preservations: icurface Water Preservation Present? Describe Recorded Recorded Describe Recorded Recorded Describe Recorded Recor	(Describe to Matrix moist) Data (strear sip in Platts) (Describe to Matrix moist) R 4/1 D=Depletion, S: In (A2) Joint (A4) In (A5) In (A2) Mide (A4) In (A5) In (A2) Mineral (S1) Matrix (S4) S5) In (S6)	the depth need % 98 95 RM=Reduced Matri	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	dicator or coredox Feature % 2 5 Selow Surface 998) Surface (S9) (Licky Mineral (F 2) Matrix (F3) x Surface (F6) Sark Surface (F6) Surface (F8) Midicators of hytland hydrolog	refrom norm Infirm the above the ses of the	sence of indi Loc² M M 49B)	rain in the 5 days prior rain in the 5 days prior Texture SILT LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky P* Dark Surface (: Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Ma	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA kedox (A16) (LRR K, eat or Peat (S3) (LRF S9) (LRR K, L, M) ow Surface (S8) (LRF face (S9) (LRR K, L) see Masses (F12) (LF odplain Soils (F19) (I (TA6) (MLRA 144A, aterial (F21) Dark Surface (TF12)	marks s³: 149B) L, R, L, R) R K, L, R) MR K, L, R) MIRA 149B)
ield Observations: urface Water Preservations aurface Water Preservation Present? Describe Recorded De	(Describe to Matrix moist) D=Depletion, S: n (A2) 3) ide (A4) rs (A5) w Dark Surfaface (A12) Mineral (S1) Matrix (S4) S5) ix (S6) S7) (LRR R, M	the depth need % 98 95 RM=Reduced Matri	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	dicator or coredox Feature % 2 5 Selow Surface 998) Surface (S9) (Licky Mineral (F 2) Matrix (F3) x Surface (F6) Sark Surface (F6) Surface (F8) Midicators of hytland hydrolog	e from norm Infirm the above ses Type¹ C C C (S8) (LRR R, RR R, MLRA 1 11) (LRR K, L) 2) ydrophytic ve	sence of indi Loc² M M 49B)	rain in the 5 days prior Texture SILT LOAM SANDY LOAM 2 Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky Pr Dark Surface (! Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Material Problem (Explain) Other (Explain)	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA Redox (A16) (LRR K, eat or Peat (S3) (LRF S9) (LRR K, L, M) DW Surface (S8) (LRF face (S9) (LRR K, L) see Masses (F12) (LF odplain Soils (F19) (I (TA6) (MLRA 144A, aterial (F21) Dark Surface (TF12) t in Remarks)	marks s ³ : 149B) L, R) R K, L, R) R K, L, R) MR K, L, R) MIRA 149B) 145, 149B)
icield Observations: icurface Water Present icurface Recorded ID icurface Becorded ID icurface Below IType: C=Concentration, Hydric Soil Indicators Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfi Stratified Layer Depleted Below Thick Dark Surf Sandy Mucky M Sandy Gleyed I Sandy Redox (S Stripped Matri	(Describe to Matrix moist) D=Depletion, S: n (A2) 3) ide (A4) rs (A5) w Dark Surfaface (A12) Mineral (S1) Matrix (S4) S5) ix (S6) S7) (LRR R, M	the depth need % 98 95 RM=Reduced Matri	Depth (inches Depth (inches Depth (inches Pepth (inches Pe	dicator or coredox Feature % 2 5 Selow Surface 998) Surface (S9) (Licky Mineral (F 2) Matrix (F3) x Surface (F6) Sark Surface (F6) Surface (F8) Midicators of hytland hydrolog	refrom norm Infirm the above the ses of the	sence of indi Loc² M M 49B)	rain in the 5 days prior Texture SILT LOAM SANDY LOAM 2 Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A: Coast Prairie R 5 cm Mucky Pr Dark Surface (! Polyvalue Belo Thin Dark Surf Iron-Mangane Piedmont Floo Mesic Spodic (Red Parent Material Problem (Explain) Other (Explain)	Rer g, M=Matrix. ematic Hydric Soil 10) (LRR K, L, MLRA kedox (A16) (LRR K, eat or Peat (S3) (LRF S9) (LRR K, L, M) ow Surface (S8) (LRF face (S9) (LRR K, L) see Masses (F12) (LF odplain Soils (F19) (I (TA6) (MLRA 144A, aterial (F21) Dark Surface (TF12)	marks s³: 149B) L, R, L, R) R K, L, R) MR K, L, R) MIRA 149B)

		Absolute	Dom.	Indicator			
Tree St	ratum (Plot size:)	% Cover	Sp?	Status	Dominance Test Workshee	t:	
1					# Dominants OBL, FACW, FA	AC: 3	(A)
2.							
3.					# Dominants across all strat	ta: 3	(B)
4							
5					% Dominants OBL, FACW, F	AC: 100%	(A/B)
6							
7					Prevalence Index Workshee		
C!:	Charten (District AFI DAD		= Total	Cover	Total % Cover of:	Multiply By	<u>/:</u>
_	Stratum (Plot size: 15' RAD)					1 = 76 2 = 84	_
1. 2.	_					2 = 84 3 = 9	_
3.						4 = 4	_
4.						5 =	_
5.					Sum: 122 (A)	173	(B)
6.							
7.					Prevalence Index = B	/A = 1.42	
-						·	_
			= Total	Cover	Hydrophytic Vegetation Inc	licators:	
Shrub S	Stratum (Plot size: 15' RAD)				X Dominance Test is >	50%	
1.					X Prevalence Index is	<= 3.0	
2.					Problematic Hydrop	hytic Vegetation ¹ (e	xplain)
3.					Rapid Test for Hydro	phytic Vegetation	
4.					Morphological Adap	tations	
5					¹ Indicators of hydric soil and wetl	and hydrology must be	present,
6					unless disturbed or problematic.		
7					Definitions of Vegetation St	rata:	
	ri pap		= Total	Cover			
Herb St	·	20	v	ODL	Tree - Woody plants, excluding v (6m) or more in height and 3in (7		
_	Carex crinita	38	<u>X</u>	OBL	breast height (DBH).	iodini, or larger in alame	ice. de
_	Phalaris arundinacea	38	<u> </u>	FACW			
_	Carex vulpinoidea Eupatorium perfoliatum	38		FACW	Sapling - Woody plants, excludi	ng woody vinos, annrov	imataly
_	uncus tenuis	3		FAC	20ft (6m) or more in height and le		
_	Trifolium pratense	1		FACU			
_	Fraxinus pennsylvanica			FACW			
8.					Shrub - Woody plants, excluding	g woody vines, approxin	nately 3 to
9.					20ft (1 to 6m) in height.	, , ,	•
10.							
11.					Herb - All herbaceous (non-woo	dy) plants, including he	rbaceous
12.					vines, regardless of size. Includes		oody
_		122	= Total	Cover	vines, less than approximately 3ft	(1m) in height.	
Woody	Vines (Plot size:)						
1.	<u> </u>						
2.					Woody vine - All woody vines,	regardless of height.	
3.							
4					Hydrophytic		
5					Vegetation		
			= Total	Cover	Present?	YES	_
Remarks	(If observed, list morphological adaptations below).						
1							

W!	m
w	"

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

2015-1-3Wet

Project S Applican Investiga										
Investiga	· · · · · · · · · · · · · · · · · · ·	rand Isle Solar Pr rand Isle Solar Pr	•		City/County:	State:	VT	Sampling Point:	Samp. Date: <u>9/</u>	15/2015 1-3Wet
_		felz-Werts, M. Ja	•		Sectio	n, Townshi			2015	1-54461
Landforn	n (hillslope, terrace, etc	•				(concave, co		None	Slope (%):	3-8
Subregio	on (LRR or MLRA):	L LRR		Lat:	44°41'55.8	27"N	Long:	73°20'11.3"W	Datum:	NAD 83
Soil Map		a silt loam							NWI Class:	PEM
	atic/hydrologic con				?	Yes	(If no, e	xplain in Remarks.)	. 2	.,
_	etation, Soil, or Hyd etation, Soil, or Hyd		•	No No					cumstances?	Yes
Are vege	etation, son, or nyu	rology haturally p	roblematics	NO					cpiairi ariy ariswe	is iii Keiliaiks.)
				ing sam	ple point	locations	, transec	cts, important fea	tures, etc.	
	ytic Vegetation Pre oil Present?	sent?	NO YES				Is This	Sample Area Within	a Wetland?	NO
•	Hydrology Present	?	YES				15 11115	Sumple Allea Within		
Remark	J.									
HYDRO										
	Hydrology Indicato		and shock all that	20014)				Secondary Indicators		vo required)
	Indicators (minimui urface Water (A1)	iii oi one is requir		apply) ained Leaves	c (RQ)			Surface Soil Cra		
	igh Water (A1)			ained Leaves auna (B13)	(כם)			Drainage Patte Moss Trim Line		
	aturation (A3)			osits (B13)				Dry-Season Wa	. ,	
W	/ater Marks (B1)		Hydroger	Sulfide Odd	or (C1)			Crayfish Burrov	ws (C8)	
	ediment Deposits (B2))			es on Living Ro	ots (C3)			ble on Aerial (C9)	
	rift Deposits (B3)			of Reduced		(20)			essed Plants (D1)	
	lgal Mat or Crust (B4)				n in Tilled Soil	s (C6)		Geomorphic Po		
	on Deposits (B5) Jundation Visible on A	Aprial (R7)		k Surface (C plain in Rem				Shallow Aquita Microtopograp		
	parsely Vegetated Cor		Other (Ex	piaiii iii keiii	iai ks)			FAC-Neutral Te		
	servations:									
	Water Present?		Depth	(inches):						
	able Present?	-	- '	(inches):		•	Wetlan	d Hydrology Present?		YES
Saturatio	on Present?	X		ı (inches):	8	•		, 0,		
SOIL										
Profile Do Depth	escription: (Describ Mat	•	eded to documer			rm the abse				
(in)	Color (moist)	%		Rea	ox Features		nce of indi	cators.)		
0-3	10YR 2/2		Color (mo		%	Type ¹	Loc ²	cators.) Texture	Re	marks
		100		oist)	%	Type ¹	Loc ²	Texture LOAM	Rei	marks
3-8	2.5Y 3/1	98	7.5YR 3	oist)	2	Type ¹	Loc ²	Texture LOAM LOAM	Rei	marks
	2.5Y 3/1 10YR 5/2			oist)	%	Type ¹	Loc ²	Texture LOAM	Rei	marks
3-8		98	7.5YR 3	oist)	2	Type ¹	Loc ²	Texture LOAM LOAM	Rei	marks
3-8 8-14		98	7.5YR 3, 10YR 5,	/6 /6	2	Type ¹	Loc ²	Texture LOAM LOAM		marks
3-8 8-14 Type: C=C	10YR 5/2	98	7.5YR 3, 10YR 5,	/6 /6	2	Type ¹	Loc ²	Texture LOAM LOAM SANDY LOAM	, M=Matrix.	
3-8 8-14 Type: C=C	10YR 5/2	98	7.5YR 3, 10YR 5, atrix, MS=Masked San	/6 /6 d Grains.	2	Type ¹ C C	Loc ²	Texture LOAM LOAM SANDY LOAM	, M=Matrix.	s ³ :
Type: C=C	10YR 5/2 concentration, D=Deplet	98	7.5YR 3, 10YR 5, atrix, MS=Masked San	/6 /6 d Grains.	% 2 2 2 ow Surface (S.	Type ¹ C C	Loc ²	Texture LOAM LOAM SANDY LOAM	, M=Matrix. matic Hydric Soil	s ³ : .149B)
3-8 8-14 Type: C=C Hydric Sc Hi Hi	10YR 5/2 Concentration, D=Deplet Dil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3)	98	7.5YR 3, 10YR 5, atrix, MS=Masked San	oist) /6 /6 d Grains. olyvalue Bela MLRA 149B hin Dark Suri	% 2 2 2 ow Surface (S	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR	s ³ : 149B) L, R)
3-8 8-14 Fype: C=C Hydric Sc Hi Hi	ioncentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4)	98	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr	oist) /6 /6 d Grains. olyvalue Beld MLRA 149B hin Dark Suri	% 2 2 3 ow Surface (S 3) face (S9) (LRR y Mineral (F1)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 59) (LRR K, L, M)	s ³ : 149B) L, R) R K, L, R)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl	noncentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5)	98 98 ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr	oist) /6 /6 d Grains. olyvalue Beld MLRA 149B hin Dark Suri pamy Mucky pamy Gleyec	ow Surface (S. 8) face (S9) (LRR v Mineral (F1)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LR)	s ³ : 149B) L, R) R K, L, R)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl Hy	noncentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S	98 98 ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Property Lo	d Grains. olyvalue Beld MLRA 149B hin Dark Suri Damy Mucky Damy Gleyec epleted Mat	ow Surface (S face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L)	is ³ : . 149B) L, R) R K, L, R)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl Hy St	inconcentration, D=Deplet Dil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S nick Dark Surface (A1:	ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Property Local Company	d Grains. olyvalue Beld MLRA 149B hin Dark Surboamy Mucky coamy Gleyece epleted Matedox Dark Sur	ow Surface (S B) face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3) urface (F6)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R. 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) se Masses (F12) (LI	is ³ : . 149B) L, R) R K, L, R) R K, L, R)
3-8 8-14 Type: C=C Hydric Sc Hi Bl Hy St Do Th Sa	noncentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S	ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr Lu Lu D X R	d Grains. olyvalue Beld MLRA 149B hin Dark Surboamy Mucky coamy Gleyece epleted Matedox Dark Sur	% 2 2 2 ow Surface (S8) face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L)	ls ³ : . 149B) L, R) R K, L, R) R K, L, R) RR K, L, R) MLRA 149B)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl Hy St De Th Sa Sa	noncentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S hick Dark Surface (A1: andy Mucky Mineral (ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr Lu Lu D X R	olist) /6 /6 d Grains. olyvalue Bela MLRA 149B hin Dark Surre pamy Mucky pamy Gleyec epleted Mat edox Dark Sur epleted Darl	% 2 2 2 ow Surface (S8) face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	Type ¹ C C C R, MLRA 149	M M	Texture LOAM LOAM SANDY LOAM	"M=Matrix. matic Hydric Soil "O) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A,	ls ³ : . 149B) L, R) R K, L, R) R K, L, R) RR K, L, R) MLRA 149B)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl Hy St Dec Th Sa Sa	concentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S hick Dark Surface (A1: andy Mucky Mineral (andy Gleyed Matrix (S	ion, RM=Reduced Ma	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr Lu Lu D X R	olist) /6 /6 d Grains. olyvalue Beld MLRA 149B horark Sur pamy Mucky pamy Gleyec epleted Mat edox Dark Su epleted Darl edox Depres	% 2 2 2 ow Surface (S8) face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7)	Type ¹ C C R B) (LRR R,	M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R. 5 cm Mucky Pe Dark Surface (\$ Polyvalue Belo Thin Dark Surfa Iron-Manganes Piedmont Floo Mesic Spodic (* Red Parent Ma	"M=Matrix. matic Hydric Soil "O) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR S9) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A,	IS ³ : .149B) L, R) R K, L, R) RR K, L, R) MRR L, R) MLRA 149B) 145, 149B)
3-8 8-14 Type: C=C Hydric Sc Hi Hi Bl Hy St Sc Sc Sc Sc Sc	concentration, D=Deplet bil Indicators: istosol (A1) istic Epipedon (A2) lack Histic (A3) ydrogen Sulfide (A4) tratified Layers (A5) epleted Below Dark S hick Dark Surface (A1: andy Mucky Mineral (andy Gleyed Matrix (Sandy Redox (S5)	98 98 ion, RM=Reduced Ma uurface (A11) 2) 51) 64)	7.5YR 3, 10YR 5, atrix, MS=Masked San Pr Lu Lu D X R	olist) /6 /6 d Grains. olyvalue Beld MLRA 149B hin Dark Surr pamy Mucky pamy Gleyec epleted Mat edox Dark St epleted Darl edox Depres	ow Surface (S-1) face (S9) (LRR / Mineral (F1) d Matrix (F2) trix (F3) urface (F6) k Surface (F7) ssions (F8)	Type ¹ C C C B) (LRR R, R, MLRA 149 (LRR K, L)	M M M	Texture LOAM LOAM SANDY LOAM **Location: PL=Pore Lining Indicators for Proble 2 cm Muck (A1 Coast Prairie R. 5 cm Mucky Pe Dark Surface (\$ Polyvalue Belo Thin Dark Surfa Iron-Manganes Piedmont Floo Mesic Spodic (* Red Parent Ma	, M=Matrix. matic Hydric Soil .0) (LRR K, L, MLRA edox (A16) (LRR K, eat or Peat (S3) (LR 69) (LRR K, L, M) w Surface (S8) (LRI ace (S9) (LRR K, L) se Masses (F12) (LI dplain Soils (F19) (TA6) (MLRA 144A, terial (F21)	IS ³ : .149B) L, R) R K, L, R) RR K, L, R) MRR L, R) MLRA 149B) 145, 149B)
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	Absolute	Dom.	Indicator		
Tree Stratum (Plot size:)	% Cover	Sp?	Status	Dominance Test Worksheet:	
1.				# Dominants OBL, FACW, FAC:	(A)
2.					`` ′
3.		· ——		# Dominants across all strata:	1 (B)
4.		· ——		# Dominants deross an strata.	(5)
	-	· ——		OV Demainments ODL FACIAL FAC	(A /D)
5	<u> </u>			% Dominants OBL, FACW, FAC:	(A/B)
6					
7				Prevalence Index Worksheet:	
		= Total	Cover	Total % Cover of:	/lultiply By:
Sapling Stratum (Plot size: 15' RAD)				OBL x 1 =	
1				FACW x 2 =	
2.				FAC 1 x 3 =	3
2				FACU 18 x 4 =	72
4				UPL	
					75 (B)
5				Sum: 19 (A)	75 (B)
6					
7				Prevalence Index = B/A =	3.95
		= Total	Cover	Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: 15' RAD)		•		Dominance Test is > 50%	
				Prevalence Index is <= 3.0	
2				Problematic Hydrophytic Vege	etation ¹ (ovelain)
	- ·-				
3.				Rapid Test for Hydrophytic Ve	egetation
4				Morphological Adaptations	
5				¹ Indicators of hydric soil and wetland hydrolo	ogy must be present,
6				unless disturbed or problematic.	
7.				Definitions of Vegetation Strata:	
		= Total	Cover		
Herb Stratum (Plot size: 5' RAD)				Tree - Woody plants, excluding woody vines	annrovimately 20ft
	45	v	FACIL	(6m) or more in height and 3in (7.6cm) or large	
1. Trifolium repens	15	X	FACU	breast height (DBH).	9
2. Glycine max	3		FACU		
3. Echinochloa crus-galli	1		FAC		
4.				Sapling - Woody plants, excluding woody vi	ines, approximately
5.				20ft (6m) or more in height and less than 3in	(7.6cm) DBH.
6.					
7.					
-					
8.				Shrub - Woody plants, excluding woody vin	es, approximately 3 to
9				20ft (1 to 6m) in height.	
10					
11.				Herb - All herbaceous (non-woody) plants, i	ncluding herbaceous
12.				vines, regardless of size. Includes woody plan	
-	19	= Total	Cover	vines, less than approximately 3ft (1m) in hei	ght.
Woods Visco (Blat size)		- 10tai	COVCI		
Woody Vines (Plot size:)					
1.					
2				Woody vine - All woody vines, regardless of	of height.
3					
4.				Hydrophytic	
5.				Vegetation	
-		= Total	Cover	Present?	NO
		- 10tai	Cover		
Remarks: (If observed, list morphological adaptations below).					



BDE Grand Isle-Johnson Solar Project Grand Isle, Vermont Summary of Delineated Wetlands and Streams Prepared by VHB (P. Kallfelz-Werts, M. Jacmkan) October 30, 2015

	VHB Delineated Wetlands									
	Vermont We		nont Wetland F	Rules Classification						
Wetland ID	Delineated Area (Square Feet) ¹	Cowardin Classification	Contiguous to a VSWI-	Riparian Wetland Contiguous to	VWR Section 4.6	VWR Section 5 Functional Criteria Presence/ Significance		VHB Proposed VWR	Typical Vegetation	Comments
			mapped Wetland?	Stream Channel? (Flow Regime) ³	Presumptions 4	Type⁵	VHB- Proposed Significant?	Classification 6		
2015-1	215,845	PEM/PFO/PSS	Yes	Yes	a.b.c	5.1(P), 5.2(H), 5.4(H), 5.10(L)	Yes	II	Typha latifolia, Phalaris arundinacea	2015-1 is a high functioning wetland complex which contains several cover classes with potential to provide a wide range of habitat
2015-2	3,710	PSS	Yes	No	a	5.2(P)	Yes	П	Cornus amomum, Phalaris arundinacea	2015-2 is a small wetland which is contiguous to a VSWI- mapped feature; the wetland is located in a topographic depression in a shrub/ young deciduous forested area, and extends very slightly into the adjacent agricultural field

¹All wetlands field-delineated per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeast and North Central Region. U.S. Army Corps of Engineers. 2011; Delineated Wetlands that extend outside the Study Area are Bold.

⁵VWR Section 5: Functional Criteria for Evaluating a Wetland's Significance: 5.1=Water Storage for Flood Water and Storm Runoff, 5.2=Surface and Groundwater Protection, 5.3=Fish Habitat, 5.5=Exemplary Wetland Natural Community, 5.6=Rare, Threatened or Endangered Species Habitat, 5.7=Education and Research in Natural Sciences, 5.8=Recreational Value and Economic Benefits, 5.9=Open Space and Aesthetics, 5.10=Erosion Control Through Binding and Stabilizing the Soil. (P)= Present, (H)=High, (L)=Low; Correspond to observed level of functionality

⁶VHB-Proposed VWR Classification is based on review and application of the VWR, particularly VHB's interpretation of Section 4.6 Presumptions and is subject to final determinations by the ANR-DEC. DEC Wetland Scientist Zapata Courage conducted a site visit on October 20, 2015.

	VHB Delineated Streams											
Stream ID	Stream Name	Associated Wetlands	Average Ordinary High Water Width (OHW) Feet ¹	Dominant Substrate	Water Depth (Inches)	Bank Height	Intermittent	Mapped River Corridor (Yes	VHB Mapped River Corridor (Yes or No)	Watershed Size (square miles) ³	VWQS Classification (2014) ⁴	Comments
2015-JD-1	na	2015-1	3	Silt/ Vegetation	3	24	Intermittent	No	No	< 0.5	В	Jurisdictional ditch which flows through portions of Wetland 2015-1

¹U.S. Army Corps of Engineers (USACE). 2005. "Regulatory Guidance Letter. Subject: Ordinary High Water Mark Identification." No. 05-05.

\\vtdata\projects\57746.02 BDE Grand Isle Solar\ssheets\Wetlands_Stream_SSWetlands_Stream_SSS

²Classification follows Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitat of the United States. U.S. Fish and Wildlife Service. FWS/OBD-79/31. 103pp.

³Wetland contiguity to streams as defined in the Vermont ANR 12/9/05 *Guidance for Agency Act 250 and Section 248 Comments Regarding Riparian Buffers* and confirmed if a delineated perennial or intermittent stream channel inflows, through flows, and outflows from a delineated wetland (ephemeral channels not typically being subject to ANR Riparian Buffer Guidance). The vegetative assemblage or natural community type is used when determining riparian vegetation function. Flow regime determined based on qualitative observations of instream hydrology indicators and geomorphic characteristic and are subject to professional judgment (P=perennial, I=intermittent, E=ephemeral).

 $^{^4}$ Alpha-numeric codes correspond with Section 4.6 Presumptions , of the 2010 Vermont Wetland Rules.

²Stream flow regime determined based on qualitative observations of in stream hydrology indicators and geomorphic characteristic and are subject to professional judgment.

³Watershed size was determined from Vermont ANR Stream Alteration Regulatory Program mapping. Watershed Sizes Used as Guidance in Stream Alteration Regulations for the Town of Grand Isle.

⁴Under Vermont Water Quality Standards (Vt. Code R. 12 004 052), Effective December 30, 2014, the waters found within the Study Area are considered Class B waters.



To: BDE Grand Isle Solar, LLC Project

File

Date: May 27, 2016

Memorandum

Project #: 57746.02

From: Patti B. Kallfelz-Werts, A. Crary; Re: Alternatives and Wetland Impact Avoidance and

A. Thomas (BDE) Minimization Summary

On behalf of BDE Grand Isle Solar LLC ("BDE"), and in support of the BDE Grand Isle Solar Project ("Project"), VHB has prepared this memorandum to document the natural resources impact avoidance and minimization measures undertaken by BDE during Project development. This memorandum is intended to support BDE's Petition for a Certificate of Public Good ("CPG") from the Public Service Board ("PSB"), submitted November 24, 2015 (Docket No. 8665). This memo also supports the required collateral environmental permit applications, specifically the Individual Vermont Wetland Permit ("VWP"), and the request for General Permit authorization from the U.S. Army Corps of Engineers ("USACE") under Section 404 of the Clean Water Act. As described in detail in the CPG Petition materials, the proposed Project is an approximately 5 MW alternating current ("AC") ground mounted solar project located south of Allen Road / VT Route 314 in Grand Isle, Vermont. A detailed description of the proposed Project is provided in the pre-filed and rebuttal testimony of BDE's Andrew Thomas and supporting exhibits. The following provides a synopsis of the Project's stated purpose/need, alternatives considered, as well as various avoidance/minimization and subsequent mitigation measures taken or proposed to avoid undue adverse impact to wetland function.

The "Section 248 Natural Resources Assessment Memorandum" (VHB 2015), submitted with the CPG Petition as Exhibit BDE-AC-2, includes description of the existing site conditions in the Project Study Area, the natural resources included in the assessment, the individual methodologies for assessing each natural resource, and the findings.

Project Purpose/Need:

The Project purpose is to develop and operate solar energy generation in the Lake Champlain Islands region of Vermont Electric Cooperative ("VEC") service territory. Vermont Act 56 law mandates that VEC build or acquire distributed renewable generation, and generation in this region, as proposed in this Project, will provide low-cost electricity and support peak summer load conditions. VEC can more efficiently meet the mandated goal by supporting the construction of one 5 MW project in a single location, as opposed to the construction and resulting maintenance/operation of numerous smaller solar projects which would potentially have greater collective impacts and would be more costly for VEC members.

Alternative Sites Considered:

The primary factor in assessing sites is finding available and affordable land that will meet the Project purpose. BDE's process involves real estate agents, private land agents, in-house research, and marketing and public outreach. Once a potential site is identified, BDE uses a desktop screening process to determine whether a site warrants further investigation and investment through hiring experts to conduct and initial site visit. If the project development proceeds to the next level, then a site visit is conducted to determine, at a cursory level, the viability of a solar

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Ref: 57746.02 Page 2 of 5 May 27, 2016



development project at the given site based on a feasibility review of the potential environmental, aesthetic, archeological, geotechnical, electrical, utility interconnection, and customer challenges that the site location presents.

In March 2015, VEC filed a Section 248 petition to construct an approximately 1.5 MW solar generation project in South Hero which VEC subsequently withdrew due to wetland impacts opposed by the Vermont Agency of Natural Resources ("ANR"). BDE's review of land available in the target region (the Lake Champlain Islands region) is a key factor, as there are limited options available that could host a 5 MW solar project as that was the preferred Project capacity As such, BDE did a desktop review of two additional sites. One is a landfill site in North Hero. That site required at least a 4,500 foot electric line extension through sensitive environmental areas, potential significant upgrades to VEC's infrastructure, and geotechnical analysis of the below grade structural soils capacity, and the membrane material used to cap the prior site use. As such, coupled with high financial risk, the landfill site was not selected. The second site was an approximately 63-acre tract located in Isle La Motte. This site contained areas of potentially sensitive forested areas that would need to be cleared and grubbed in order to prep the necessary acreage for a 5 MW AC project. Based on the environmental constraints expected, BDE did not elect to pursue the Isle La Motte site. The proposed site in Grand Isle was selected based on the close proximity to VEC's existing three phase line, which would not require significant upgrades, and had limited aesthetic, archeological, and environmental challenges when compared to alternative sites considered.

Alternative Design Concepts

BDE uses a number of criteria to determine project layout, including intensive system modeling to optimize kilowatt hours produced (output) from kilowatt peak (potential capacity). The modeling system generates the most efficient system layout/design. Typically this preferred shape is a continuous rectangle that has a central relationship to the point of interconnection. The preferred layout would also have sufficient row spacing to avoid panel shading impacts as well as no other shading impacts, such as those posed by trees. BDE then relies on the site specific environmental, aesthetic, archeological, geotechnical, shading, and electrical assessments to determine what compromises to the optimal system layout are necessary to mitigate impacts from other constraints.

BDE has considered several design concept layouts prior to selecting the preferred concept that was proposed in the original petition and since revised in May 2016. The Petitioner considered three concepts included in Attachment 1, and this attachment represents the concept plan progression from the preferred (optimal) layout as site constraints were factored. For this Project, the conceptual layout images (from Helioscope) in Attachment 1 demonstrate that over time the scale (and productivity) of this Project has been reduced in order to avoid and minimize wetland impacts. Concept 1 represents the initial and optimal concept. Concept 2 represents a smaller project and the first concept to account for discovery of the wetland system in the center of the Project site. Concept 3 begins to take into account the detailed wetland mapping and forested areas and generally represents the concept used to develop the current site plan. As shown below, Concept 3 is the least productive system proposed. The AC system capacity sizes referred to below assume the concepts maintain the same degree of tilt on the racking, the same module equipment selection, and the same row to row spacing.

Concept 1 is 4.99 AC/6.49 DC Concept 2 is 4.88 AC/6.35 DC Concept 3 is 4.05 AC/5.27 DC

Ref: 57746.02 Page 3 of 5 May 27, 2016



Concept 3 is the alternative/current design and has significant financial consequences for the Project. Building two separate arrays requires additional infrastructure, such as underground electric lines and conduit, access road/impervious area, fencing, and also for this project more potential for shade and aesthetic impacts. The concessions made by the Project primarily to avoid/minimize impacts to significant wetlands will prevent the Project from generation at maximum capacity.

Since the Project was conceived, the Petitioner has reduced the conceptual Project size by 22-percent in order to avoid and minimize natural resource impacts. In order for the Project to adjust to less available site area, the Petitioner has modified the system design parameters to achieve 5 MW (AC) of system capacity, which is the design proposed in the May 2016 site plan revision. The Petitioner has made changes in response to Project impact investigations. Examples of these changes are shortening the row to row spacing, utilizing higher producing modules, and reducing the tilt on the racking system. These compromises in system design directly impact the system production capacity and thus create adverse impacts on the financial performance of the Project. At this time, the Petitioner feels the Project has made every attempt to avoid and minimize impacts to natural resources while maintaining the financial viability of a competitive, fixed rate power purchase structured solar power generation project.

Avoidance-Minimization-Mitigation

Based on the site constraints, concept planning, and detailed design, activities within Class II wetland and primarily 50-foot buffers are unavoidable. Below are the avoidance and minimization measures which were incorporated into the Project as part of the CPG Petition submittal and also described in various Discovery responses.

- Siting the Project on agricultural lands to avoid undisturbed areas, including using the existing access road from Vermont Route 314;
- Conducting site screening and natural resources assessments early in the Project concept development process to help steer Project design, and avoid impacts to wetlands and buffers;
- Early redesign of the Project into two separate arrays (from an initial, single contiguous array design) to avoid impacts to mapped natural resources (see Attachment 1);
- Minimizing the areas of proposed vegetation management to reduce shading of the solar array, to avoid tree cutting in Class II wetlands and to minimize tree cutting in the buffer; it should be noted that there will still be shading of portions of the array (on all sides except for north). Noteworthy items regarding shade management:
 - o BDE has not proposed shade impact management clearing for all areas that are expected to impact the array production. As a general rule, BDE assumes that shade impacts will occur on panels from a distance of 2-times the obstruction height. Using this rule (and approximately 50-foot average existing tree heights), there is approximately 5.05-acres of forest or trees to the east, south, and west of the proposed Project and within the subject property that may create shade impacts ("optimal shade management area"). Of these, BDE is proposing to manage shade impacts in approximately 0.65-acre, or approximately 13-percent of the optimal management area, representing an approximately 87-percent reduction in potential overall tree cutting.
 - Optimal shade management area for the Project would likely result in impacts to forested Class II wetlands,
 Class II wetland buffers, riparian area, vernal pool functional envelope, potential protected bat roost habitat,
 and Project screening vegetation.
 - o Minimizing the area of proposed tree cutting in the wetland buffer to only the area at the southwest corner of Array 2 (the eastern array), and furthermore only to those trees which are over 40-feet tall (not whole tree removal and with no earth disturbance).

Ref: 57746.02 Page 4 of 5 May 27, 2016



- BDE will use best management practices ("BMP"s) during tree cutting activities, including adherence to a vegetation management plan.
- Using non-reflective panel coatings to minimize potential indirect effects on wetland dependent wildlife/invertebrates in the vicinity;
- Proposing to use a conservation seed mix rather than a basic erosion control mix or forage crop mix for site stabilization which will include a mix of quick germinating species for site stability, and wildflower species for wildlife value enhancement (the fields are currently either tilled/cultivated or under forage hay crop), and to enhance the existing herbaceous vegetation community which currently exists.

BDE revised the site plans in May 2016 following formal and informal comments and requests from ANR where additional impact avoidance and minimization was requested. Attachment 2 includes both the site plan used for the CPG petition filing and the current revised version for comparison. Largely reflected in the revised version, BDE has incorporated a number of Project design changes in order to further avoid impacts to wetlands. These measures include:

- Changed the Project module specification from a 60 cell module to a 72 cell module (which is a more costly type), this change reduces the number of modules for the project by approximately 5,004. The design change reduces the number of racking support posts and increases the row to row spacing between the racking tables which results in less racking posts in the wetland buffer. This amount of panel reduction would equate to approximately 1.30 MW (DC) using the less expensive and originally proposed 60-cell module. By switching to the 72-cell module, the overall project capacity reduction is 250kW (DC);
- The revised proposed modules and layout reduces the amount of permanent buffer impact from posts by 50-percent (see Table 1. Comparison Summary of Proposed Areas in Class II Wetlands and Buffers, below);
- Removed racking structures and fence posts from the west side of Array 2, and from the south east side of Array 1
 to reduce panels and the fenced footprint within this buffer to the higher functioning portion of the wetland (the
 overall area of the Project perimeter fence within wetland and wetland buffer has been reduced by 100-percent
 and 55-percent respectively, see Table 1. Comparison Summary of Proposed Areas Class II Wetlands and Buffers,
 below);
- Converted to the more expensive option of installing the interconnection line underground instead of an overhead line, which will be located immediately adjacent to the proposed access road, and which will avoid approximately 0.2-acre of tree clearing to part of a Class II buffer area in the northern part of the Project site;
- The access road alignment has been shifted in order to minimize impacts to the Class II buffer in the northern part of the Project site;
- Revised the perimeter fence from one contiguous fence line to two separate fences to maintain the central wetland corridor for wildlife travel function and avoid the fence crossing the jurisdictional ditch;
- Revised the access drive for property owner and the perimeter fence (south edge of Array 1) location to avoid any activity in the buffer of Wetland 2015-2;
- For replacement of existing culvert on the access road, note added to plan specifying use of steepened road crossing slopes (1.5:1) to minimize the fill footprint from farm access upgrades;
- VHB has conducted vernal pool surveys in late April 2016 in areas outside (south) of the Project Study Area within Wetland 2015-2 at ANR's request to determine if there are areas which support breeding by vernal pool species.
 From this, two areas outside of the Project Study Area, one vernal pool within Wetland 2015-2 and one inundated portion of Wetland 2015-2, support breeding by vernal pool species, including wood frogs (Rana sylvatica) and

Ref: 57746.02 Page 5 of 5 May 27, 2016



fairy shrimp (*Eubranchipus sp.*). The area meeting the vernal pool criteria is included on the revised site plan (no direct or indirect impacts to the vernal pool or functional envelope will occur);

- Preparation of a Project-specific vegetation management plan to ensure the tree cutting, which is necessary to prevent undue shading of the array, and is conducted in a way that minimizes wetland buffer function impact;
- Preparation of a supplemental native species planting plan, as part of the vegetation management plan, to enhance the non-forested areas of Class II wetland 2015-1 and buffer proximal to the Project area.

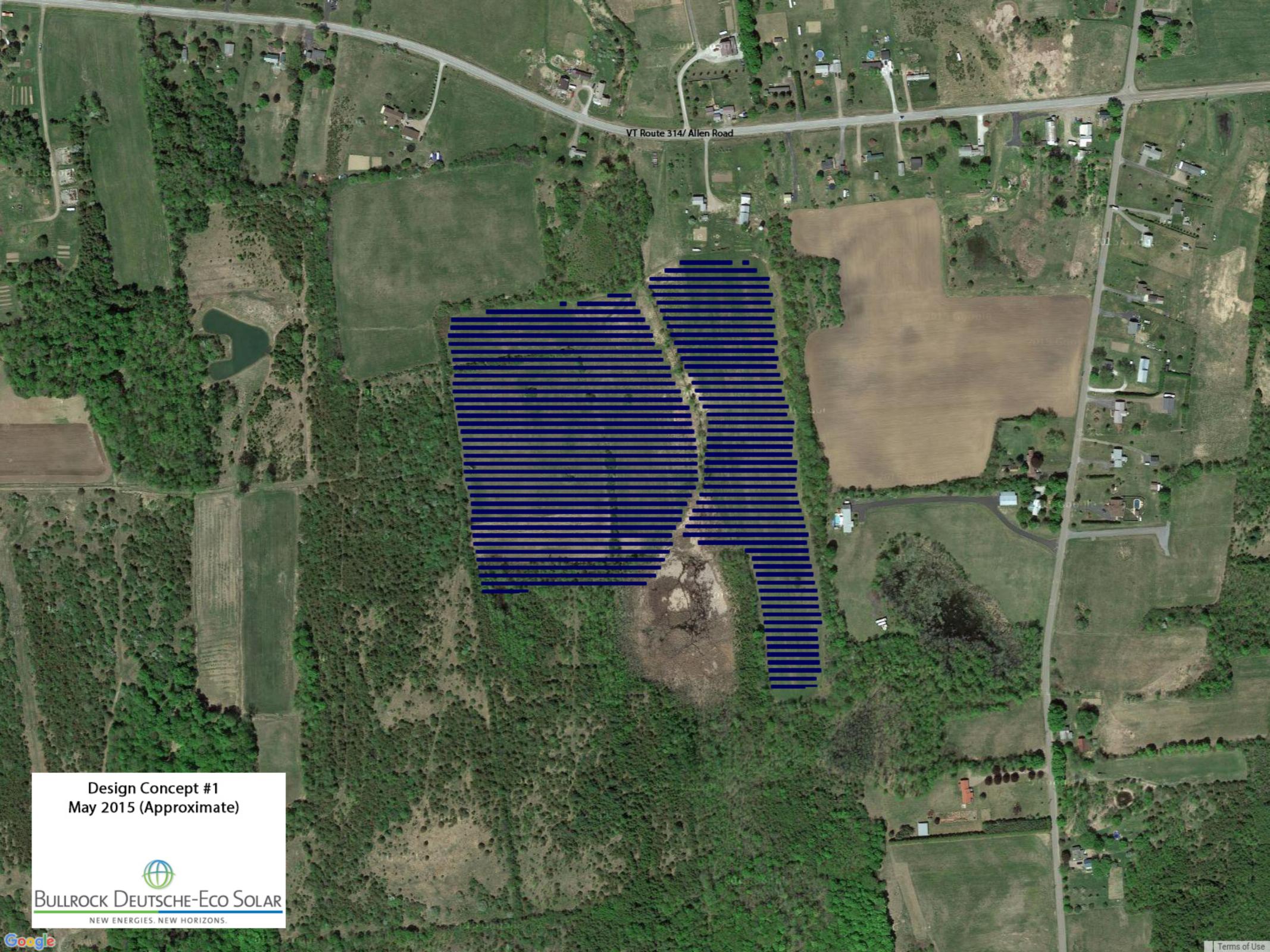
Table 1. Comparison Summary of Proposed Areas in Class II Wetlands and Buffers							
Permit Plan Version (VHB)	Number of Solar Rack Posts in Class	Resource Areas Within Perimeter Fence (Sq Ft)					
(VIII)	II Buffer	Class II Wetland	Class II Buffer				
revised date January 11, 2016	276	17,136	96,651				
revised date May 23, 2016	139	0	43,741				

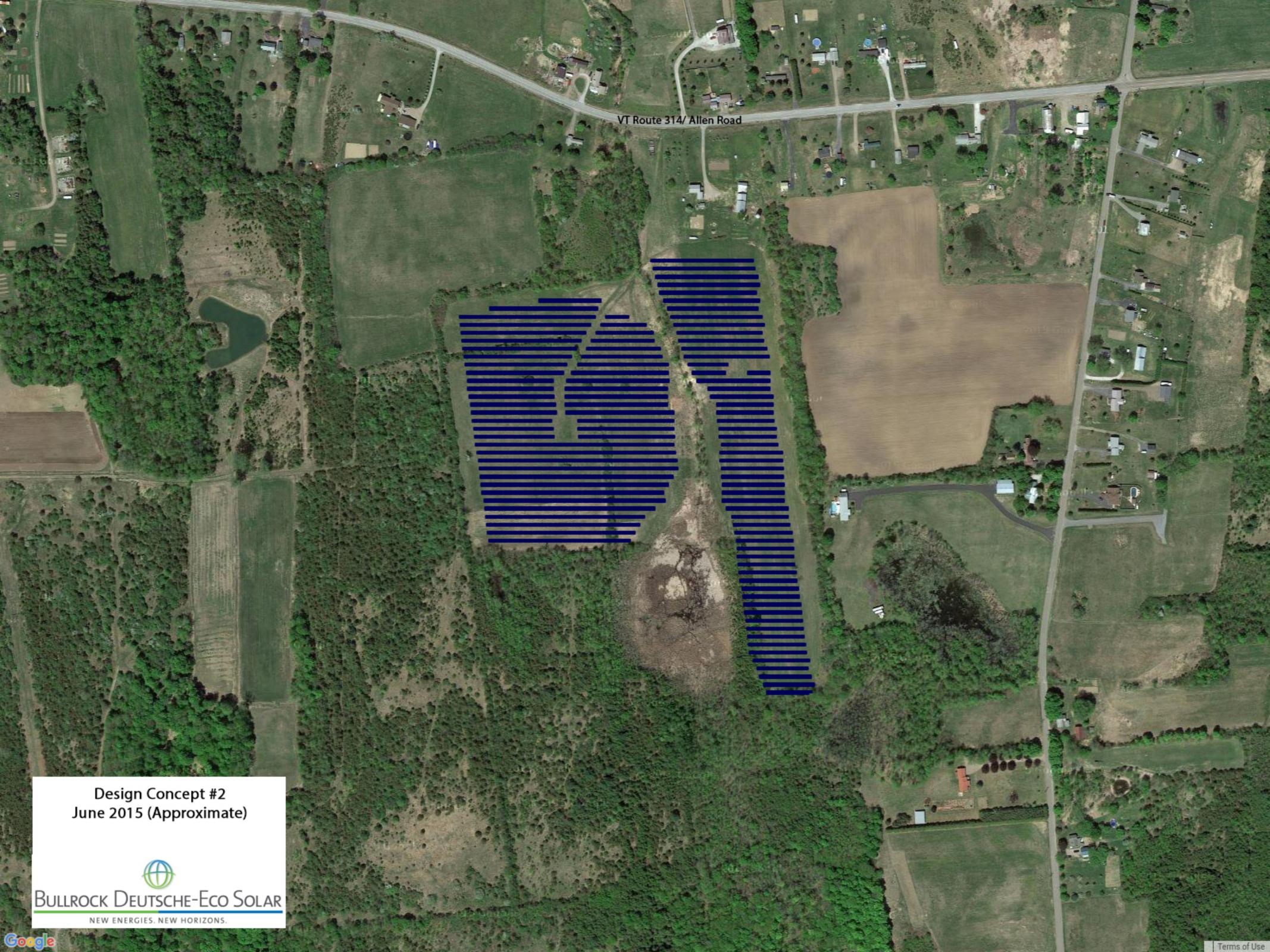
On behalf of BDE and in support of the proposed BDE Grand Isle Solar Project, VHB has prepared this memo to summarize the alternatives considered and the numerous measures and design revisions BDE has incorporated into the Project to first avoid, and then minimize unavoidable impacts to Class II wetlands and buffers within the Project area. ANR has provided comments and recommendations on the Project intended to ensure maximum avoidance of impacts to Class II wetlands and associated buffers. BDE has incorporated as many avoidance and minimization measures into the Project as feasible, both before and during regulatory review of the Project, while still ensuring the viability of the Project.

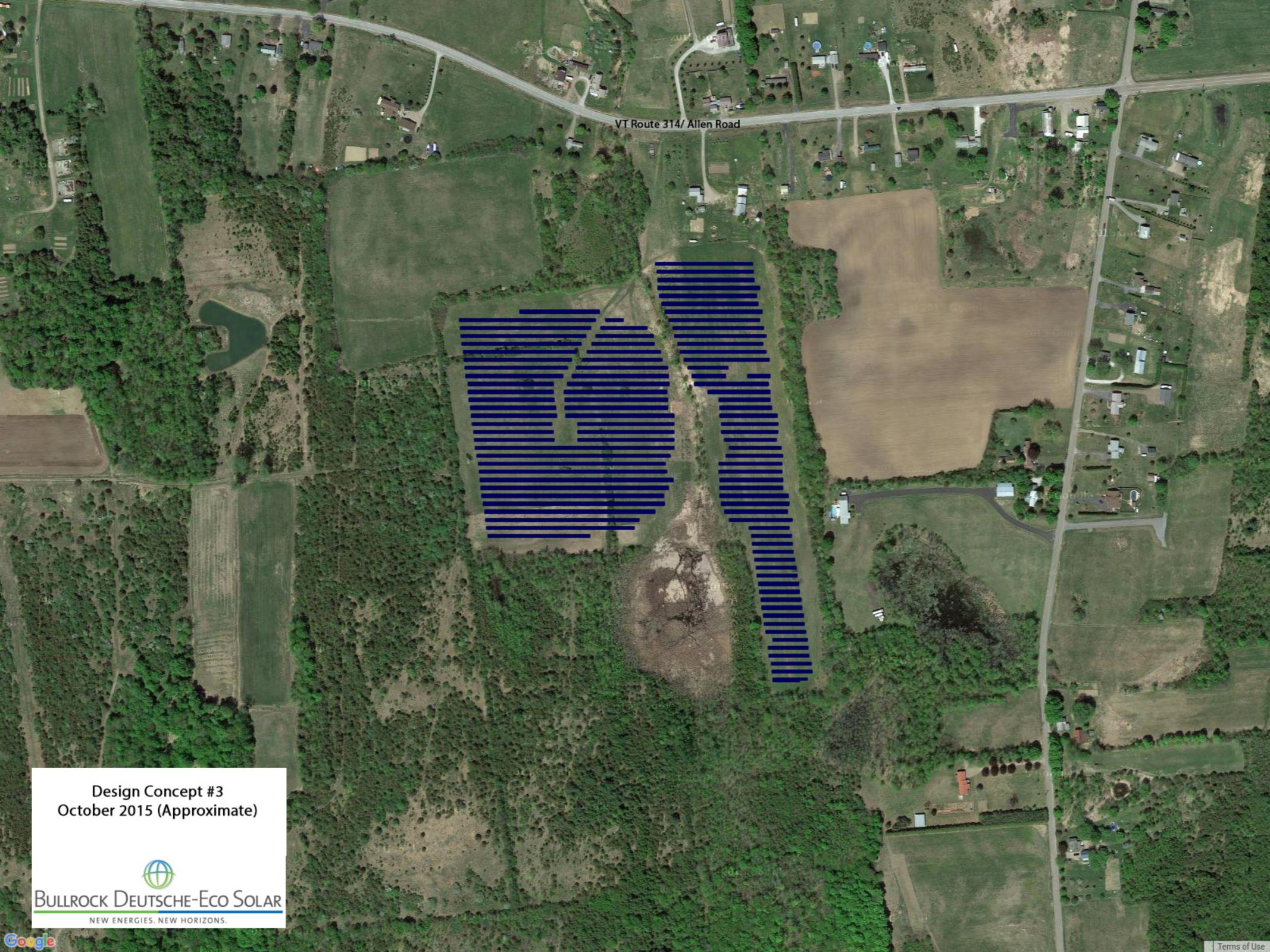
ATTACHMENTS

- 1. Design Concept Alternatives Layouts
- 2. Site Plan Comparison Layout

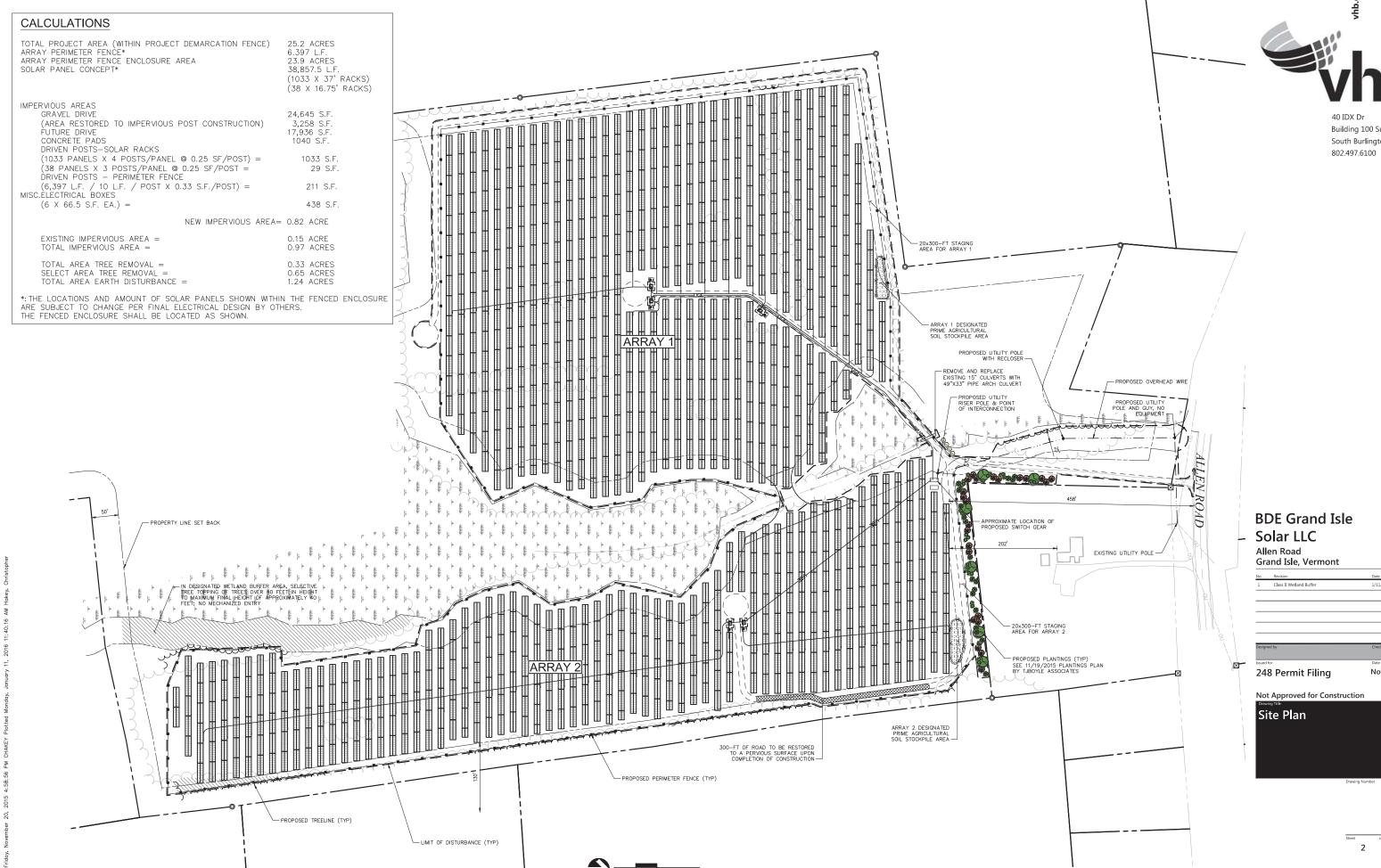
ATTACHMENT 1







ATTACHMENT 2



Building 100 Suite 200 South Burlington, VT 05403

Designed by	Checked by
ssued for	Date
248 Permit Filina	Nov. 24, 2015

57746.02

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Representative Natural Resources Assessment Site Photographs BDE Grand Isle-Johnson Solar Project Grand Isle, Vermont



Photograph 1. Existing distribution line along VT Rt 314 at northern edge of the Study Area, looking east



Photograph 2. South end of existing agricultural access road off VT Rt 314, looking north



Photograph 3. Agricultural access road crossing delineated jurisdictional ditch 2015-JD-1, looking west



Photograph 4. Representative view of the soybean field on the west side of Wetland 2015-1, looking north



Photograph 5. Soybean field on the east side of Study Area, east side of Wetland 2015-1, looking north



Photograph 6. Representative view of hay field on the western edge of the study area



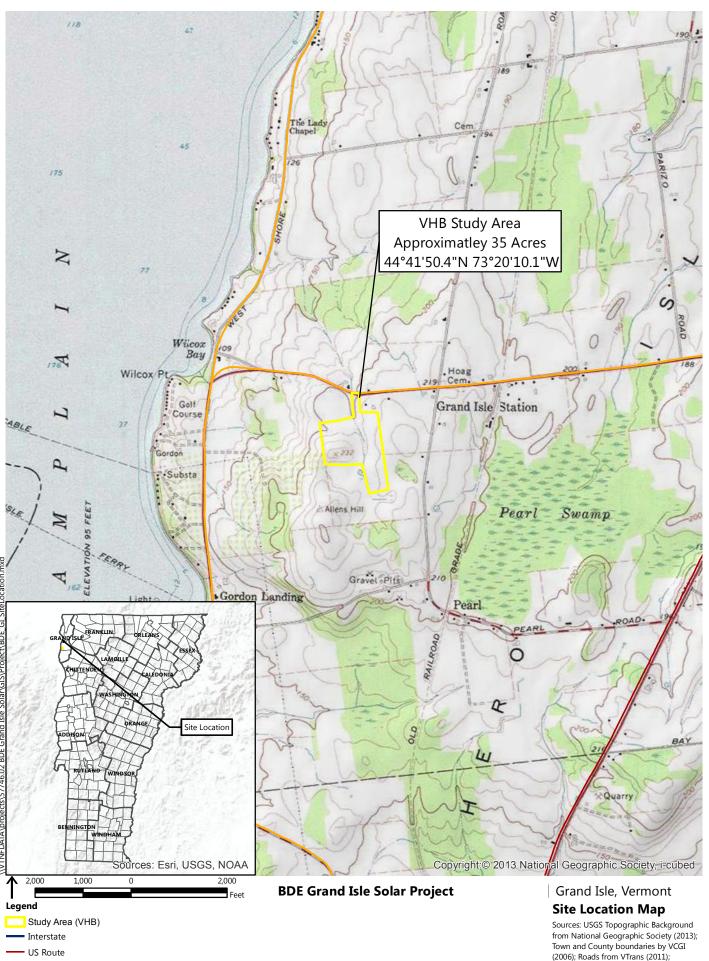
Representative Natural Resources Assessment Site Photographs BDE Grand Isle-Johnson Solar Project Grand Isle, Vermont



Subwatershed Boundary and discharge points

digitized by VHB (2016).





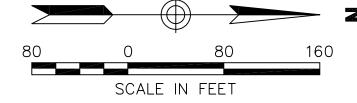
Vermont State Highway

– Town Road



40 IDX Dr Building 100 Suite 200 South Burlington, VT 05403 802.497.6100





BDE Grand Isle Solar LLC

Allen Road Grand Isle, Vermont

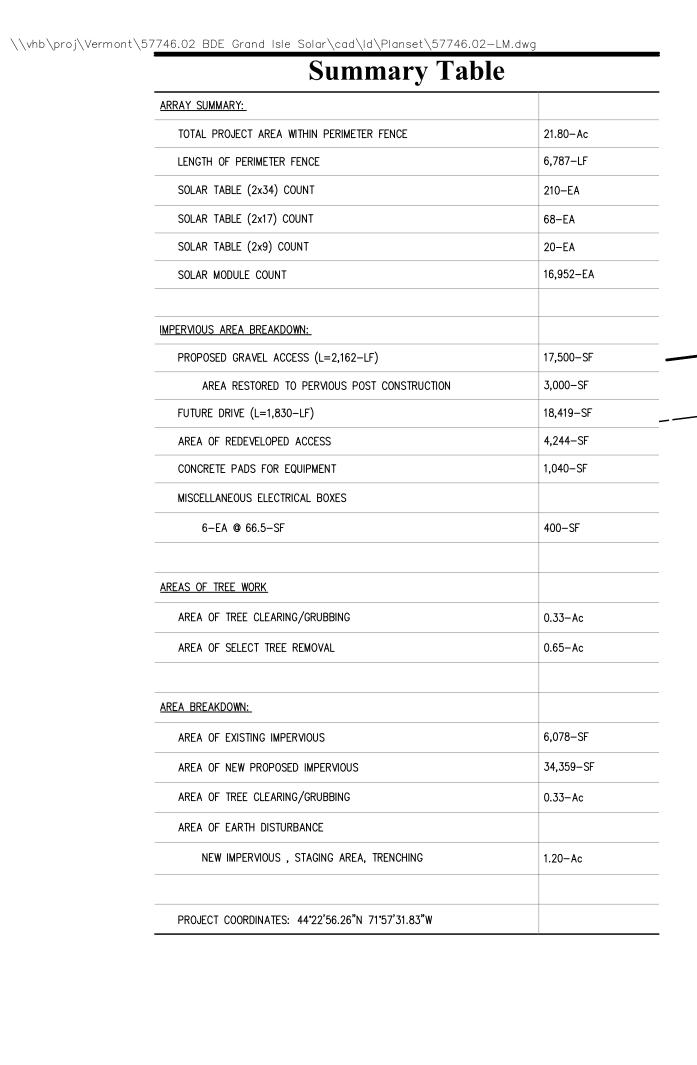
No.	Revision	Date	Appvd.
1	Class II Wetland Buffer	1/11/2016	CJH
2	Revised Module\ANR Comments	5/23/2016	CJH
3	Design Changes in Wetland Buffer	10/17/2016	CJH
-			

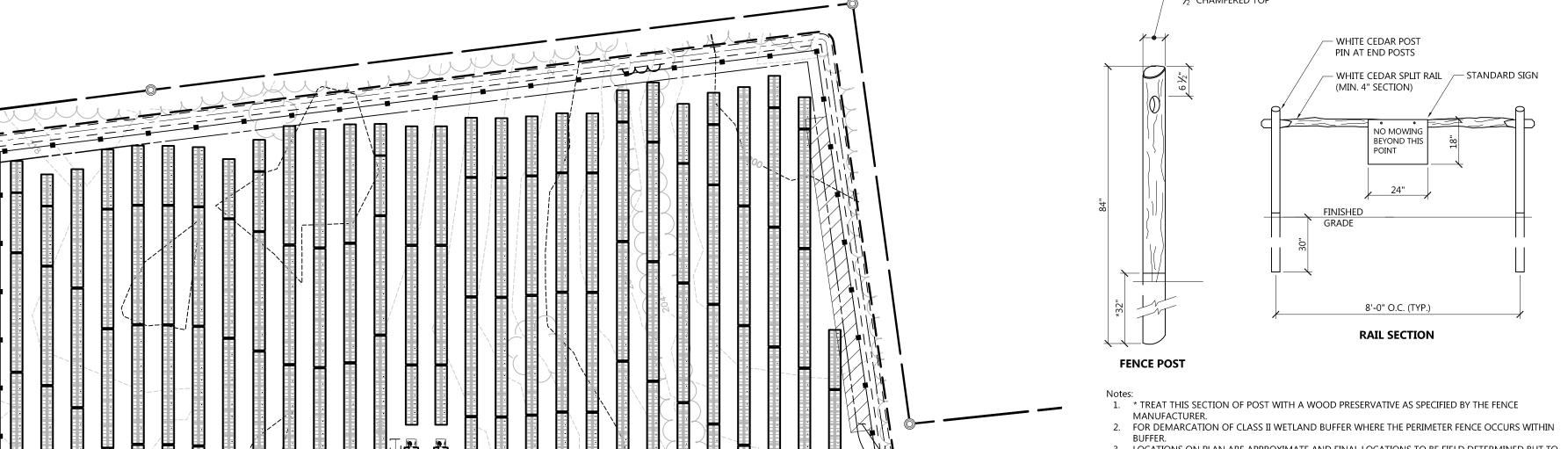
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Existing Conditions Plan

Project Number **57746.02**





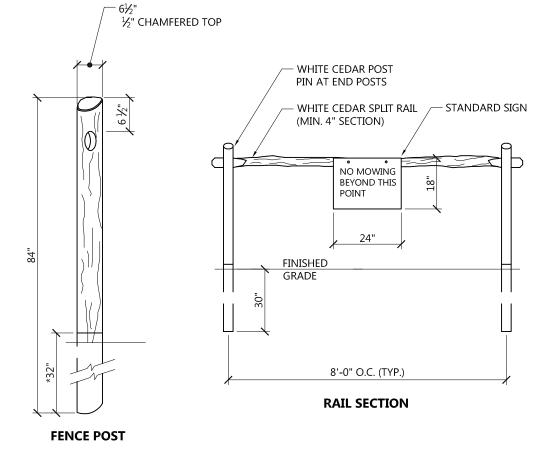
— 20x300—FT STAGING AREA FOR ARRAY 1

- PROPOSED ACCESS GATE

- REMOVE AND REPLACE

EXISTING 15" CULVERTS WITH 49"X33" PIPE ARCH CULVERT, SLOPES GRADED TO 1.5H:1V WITH STONE RIPRAP

PROPOSED UNDERGROUND ELECTRIC LINE —

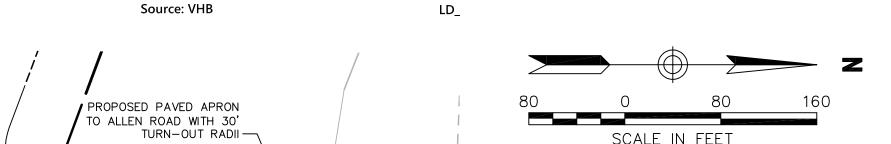


- LOCATIONS ON PLAN ARE APPROXIMATE AND FINAL LOCATIONS TO BE FIELD DETERMINED BUT TO BE SPACED NO GREATER THAN 75 FEET ON BUFFER BOUNDARY.

Split Rail Fence For Wetland Buffer Demarcation

PROPOSED UTILITY RISER POLE -

LIMIT OF WORK (TYP) -





SCALE IN FEET

40 IDX Dr

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BULLROCK DEUTSCHE-ECO SOLAR

NEW ENERGIES. NEW HORIZONS.

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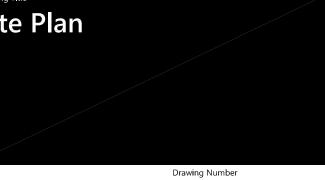
Allen Road Grand Isle, Vermont

No.	Revision	Date	Appvd.
1	Class II Wetland Buffer	1/11/2016	CJH
2	Revised Module\ANR Comments	5/23/2016	CJH
3	Design Changes in Wetland Buffer	10/17/2016	CJH

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Project Number **57746.02**

50' 50-FT PROPERTY LINE SET BACK			PROPOSED ACCESS GATE	
IN DESIGNATED WETLAND BUFFER AREA, SELECTIVE TREE TOPPING OF TREES OVER 40 FEET IN HEIGHT TO MAXIMUM FINAL HEIGHT OF APPROXIMATELY 40 FEET; PER APPROVED VEGETATION MANAGEMENT PLAN	THE WILL WITH WITH WITH WITH WITH WITH WITH WITH	T RAIL FENCE WITH (SEE DETAIL)(TYP)	APPROXIMATE LOCATION PROPOSED SWITCH GEAR POINT OF INTERCONNECT 20x300-FT STAGING AREA FOR ARRAY 2	EXISTING UTILITY POLE
TEN AFFICULD VEGLIATION MANAGEMENT FEAN	ARRAY 2		STOCKPILE AND	RIME AGRICULTURAL SOIL PROPOSED SCREENING P) SEE PLANTINGS PLAN BY DIATES
222		300-FT OF ROAD TO BE TO A PERVIOUS SURF COMPLETION OF CON	STRUCTION —	
PROPOSED TREELIN		PERIMETER FENCE (TYP)	FOUND PROPERTY MARKER (TYP)	
SELECTIVE TREE TOPPING OF TREES OVER 40 FEET IN HEIGHT; NOT SUBJECT TO VEGETATION MANAGEMENT PLAN.				

TOTAL # OF STEMS IN CLASS II BUFFER:	256

Scientific Name	Common Name	Height at 20 Years (ft)	Mature Height (ft)	Approximate Quantity of Each Species	Recommended Planting Size
Planting Area W-A (16,900 S.F.)			•		
Alnus incana ssp. rugosa	Speckled Alder	16	16	23	18-24"
Cornus amomum	Silky Dogwood	7	10	23	18-24"
Cornus sericea	Red-osier Dogwood	12	12	23	18-24"
Salix bebbiana	Bebb Willow	12	12	23	15-18"
Spiraea tomentosa	Steeplebush	4	4	23	12-15"
Planting Area W-B (25,000 S.F.)	Planting Area W-A Total Stems:		115		
Alnus incana ssp. rugosa	Speckled Alder	16	16	34	18-24"
Cornus amomum	Silky Dogwood	7	10	34	18-24"
Cornus sericea	Red-osier Dogwood	12	12	34	18-24"
Salix bebbiana	Bebb Willow	12	12	34	15-18"
Spiraea tomentosa	Steeplebush	4	4	34	12-15"
Planting Area W-C (24,800 S.F.)	Planting Area W-B Total Stems:		170		
Alnus incana ssp. rugosa	Speckled Alder	16	16	34	18-24"
Cornus amomum	Silky Dogwood	7	10	34	18-24"
Cornus sericea	Red-osier Dogwood	12	12	34	18-24"
Salix bebbiana	Bebb Willow	12	12	34	15-18"
Spiraea tomentosa	Steeplebush	4	4	34	12-15"
		Planting Area	W-C Total Stems:	170	
	TOTA	L # OF STEMS IN CL	ASS II WETLAND:	455	

Area of Select Tree Removal (Buffer: 0.55 Acres; Upland: 0.1 Acres)

TOTAL # OF PROPOSED PLANTINGS:

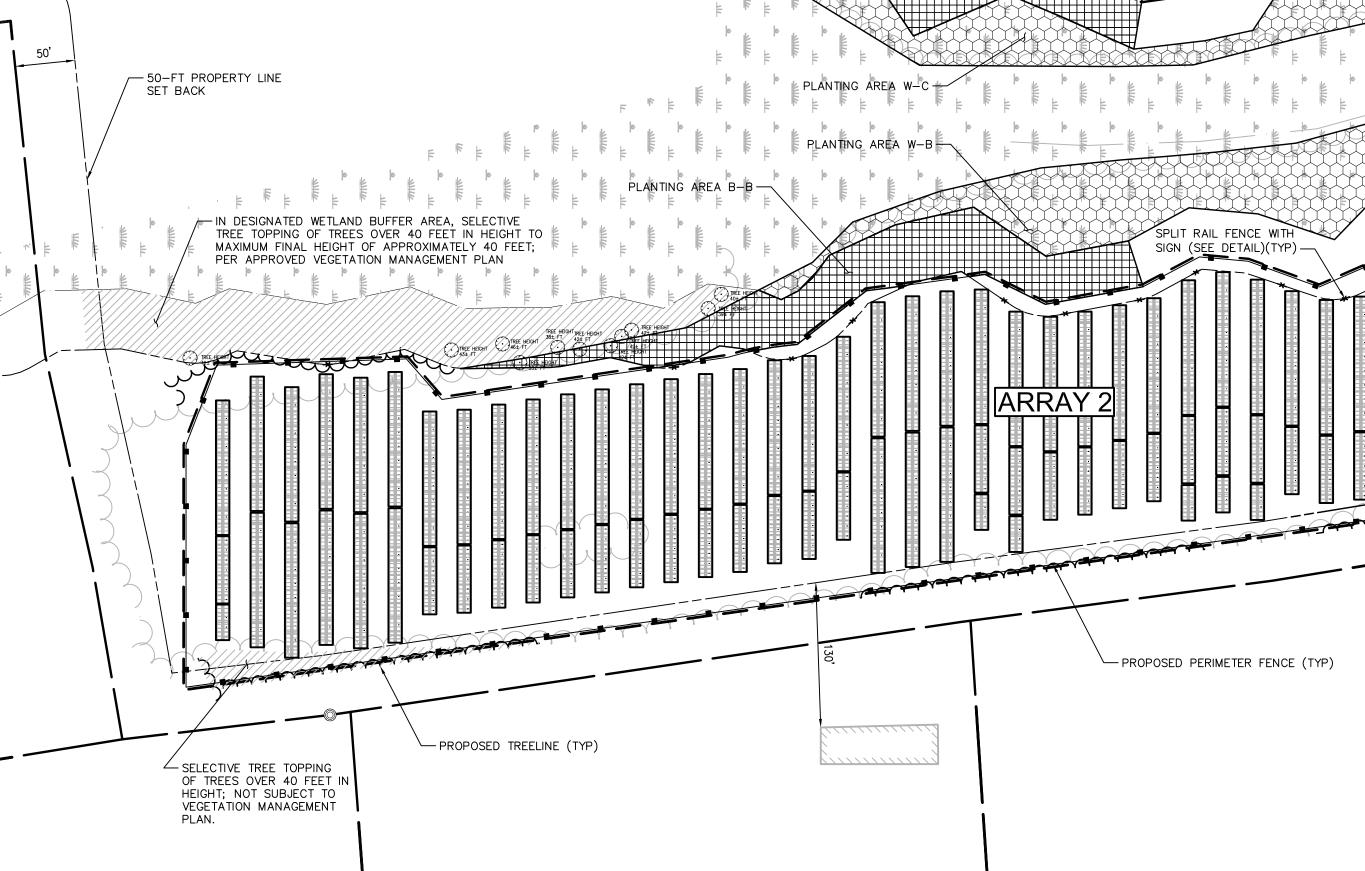


Area of Supplemental Wetland Planting (1.53 Acres)



Area of Supplemental Class II Buffer Planting (0.85 Acres)

PLANTING AREA B-A-



SUPPLEMENTAL PLANTING PLAN NOTES:

SUPPLEMENTAL PLANTINGS ARE PROPOSED FOR THREE (3) CLASS II WETLAND (W-A, W-B, & W-C) AND TWO (2) CLASS II BUFFER (B-A & B-B) AREAS, AND WILL BE LOCATED ADJACENT TO THE ARRAY. ACREAGE OF EACH PLANTING AREA AND NUMBERS OF SPECIES IN EACH PLANTING AREA ARE LOCATED IN THE "PROPOSED SUPPLEMENTAL PLANTINGS" TABLE ON THIS PLAN.

THE TOTAL SUPPLEMENTAL PLANTING AREA IS 37,700 SQ. FT (0.85 ACRE) OF BUFFER PLANTINGS, AND 66,700 SQ. FT (1.53 ACRES) OF CLASS II WETLAND PLANTINGS, FOR A TOTAL OF 103,900 SQ. FT. (2.39 ACRES) OF SUPPLEMENTAL PLANTINGS.

THE PURPOSE OF THE PLANTING PLAN IS TO ENHANCE THE CONDITION AND FUNCTIONS OF THE ON-SITE WETLAND AND BUFFERS WHERE PLANTINGS WILL OCCUR, AND WHICH WERE PREVIOUSLY PART OF THE ON-SITE AGRICULTURAL OPERATIONS.

THE SUPPLEMENTAL PLANTING AREAS WILL NOT BE SUBJECT TO VEGETATION MANAGEMENT CUTTING, AND INCLUDES SHRUB SPECIES WHICH WILL BE VERY UNLIKELY TO CAUSE SHADING OF THE ARRAY.

PLANTING MATERIALS WILL BE COMMERCIALLY AVAILABLE NATIVE PLANT MATERIALS FROM A NEW ENGLAND

ACTUAL SPECIES PLANTED SUBJECT TO SOURCE AND SEASON; STEM QUANTITY AND DENSITY MAY VARY

ACTUAL SPECIES PLANTED SUBJECT TO SOURCE AND SEASON; STEM QUANTITY AND DENSITY MAY VARY ACCORDING TO AVAILABLE STOCK SIZE AND SITE CONDITIONS.

PLANTING WILL BE BY HAND, WITH NO FILL PLACED IN WETLAND. SHRUBS SHOULD BE PLANTED IN SAME-SPECIES GROUPS OF 3-5 STEMS.

PLANTING WILL OCCUR EITHER THE SPRING OR FALL FOLLOWING PROJECT CONSTRUCTION, DEPENDING ON CONSTRUCTION SCHEDULE (SPRING OR FALL TYPICALLY YIELD MORE FAVORABLE SOIL MOISTURE CONDITIONS FOR PLANTING AND ESTABLISHMENT, AND CAN THEREFORE MINIMIZE TRANSPLANT SHOCK)

PLANTINGS WILL BE INSTALLED USING A RECOMMENDED 12-FOOT SPACING BETWEEN STEMS, RESULTING IN AN APPROXIMATE 300 STEMS/ ACRE DENSITY, RECOMMENDED FOR A SHRUB-DOMINATED COMMUNITY.

SCIENTIFIC NAMES, AND APPROXIMATE HEIGHTS OF SPECIES FROM USDA, NRCS. 2016. THE PLANTS DATABASE (USDA, NRCS. 2016. The PLANTS Database (http://plants.usda.gov, 13 April 2016). National Plant Data Team, Greensboro, NC 27401-4901 USA).

VEGETATION MANAGEMENT PLAN NOTES:

ENVIRONMENTAL RESOURCES.

OR PRIOR TO COMMISSIONING OF THE ARRAY.

BETWEEN NOVEMBER 1 AND MARCH 31.

THE PURPOSE OF THE VEGETATION MANAGEMENT PLAN ("VMP") IS TO MINIMIZE SHADING AND LOSS

OF ELECTRICITY GENERATION CAPACITY FROM THE PHOTOVOLTAIC ARRAYS, WHILE MAINTAINING NATURAL VEGETATION AS MUCH AS POSSIBLE TO PROTECT AND BUFFER IDENTIFIED SENSITIVE

2. THIS VMP APPLIES TO AREAS IDENTIFIED ON THE PLAN AS "AREA OF SELECT TREE REMOVAL" FOR INITIAL SHADE REDUCTION CUTTING AND APPLIES TO FUTURE SHADE MANAGEMENT CUTTING AS

MANAGE HERBACEOUS VEGETATION WITHIN THE FENCED IN ARRAY.

NECESSARY/ APPLICABLE IN THE BUFFER AREA INDICATED ON THIS PLAN, TO MAINTAIN CONDITIONS

FOLLOWING INITIAL CUTTING. THIS PLAN ALSO DESCRIBES THE MEASURES THAT WILL BE USED TO

3. VEGETATION MANAGEMENT OUTLINED IN THIS PLAN IS TO OCCUR DURING PROJECT CONSTRUCTION,

4. THE PROCEDURES OUTLINED IN THE CURRENT STATE OF VERMONT "ACCEPTABLE MANAGEMENT

GUIDANCE DOCUMENT, WILL BE FOLLOWED DURING TREE CUTTING ACTIVITIES.

PRACTICES FOR PROTECTING WATER QUALITY ON LOGGING JOBS", OR SUBSEQUENT APPROVED

5. TREES TO BE INDIVIDUALLY CUT USING NON-MECHANIZED EQUIPMENT FOR ACCESS TO AVOID SOIL

DISTURBANCE, AND NON-NATIVE AND INVASIVE SPECIES SPREAD. TREE CUTTING IS LIMITED TO

6. VEGETATION MANAGEMENT ACTIVITIES FOR SHADE MANAGEMENT WILL CONSIST OF CUTTING OR

- 20x300-FT STAGING AREA FOR ARRAY 1

- PROPOSED ACCESS GATE

- REMOVE AND REPLACE
EXISTING 15" CULVERTS WITH

WITH STONE RIPRAP

49"X33" PIPE ARCH CULVERT,

SLOPES GRADED TO 1.5H:1V

PROPOSED UNDERGROUND

ELECTRIC LINE -

- PROPOSED ACCESS GATE

STAGING

AREA FOR ARRAY 2

- APPROXIMATE LOCATION OF

PROPOSED SWITCH GEAR AND POINT OF INTERCONNECTION

PLANTING SPACING FROM GUIDANCE IN USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS).
SPECIFICATION GUIDE SHEET FOR RIPARIAN FOREST BUFFER (391). AVAILABLE ONLINE:
HTTP://EFOTG.SC.EGOV.USDA.GOV/REFERENCES/PUBLIC/VT/VTSPEC391-0109.P

THE FINAL STEM DENSITY GOAL FOR THE SUPPLEMENTAL PLANTING AREAS IS 300 STEMS/ ACRE, WHICH IS RECOMMENDED BY THE USDA FOR SHRUB-DOMINATED COMMUNITIES WHICH ACT AS BUFFERS TO RIPARIAN SYSTEMS. THE PROJECT PROPONENT ANTICIPATES THIS GOAL WILL BE MET THROUGH A COMBINATION OF PLANTINGS AND NATIVE RECRUITS GROWTH. IN ORDER TO ENSURE THIS GOAL IS MET, THE PROJECT PROPONENT IS PROPOSING THE FOLLOWING MONITORING ACTIONS:

- THE SUPPLEMENTAL PLANTING AREAS WILL BE MONITORED FOR A PERIOD OF NO MORE THAN THREE
 (3) YEARS FOLLOWING THE COMPLETION OF CONSTRUCTION AND INSTALLATION OF THE WOODY

 OTHER
- MONITORING WILL INCLUDE BOTH MONITORING THE STEM DENSITIES WITHIN THE SUPPLEMENTAL
 PLANTING AREAS, AND MONITORING THE "NO MOW" AREAS WITHIN THE CLASS II BUFFER. THE PURPOSE
 OF THE MONITORING WILL BE TO ENSURE WOODY STEM DENSITY GOALS ARE BEING MET; THE "NO
 MOW" ZONE OF THE CLASS II BUFFER IS NOT MOWED; AND TO ENSURE NO CORRECTIVE ACTION OR
 RECOMMENDATIONS ARE NEEDED TO ENSURE THE GOALS ARE MET.
- MONITORING FOR SHRUB STEM DENSITY WILL OCCUR THROUGH ESTABLISHING TEN (10) 5-METER DIAMETER PLOTS (EVENLY DISTRIBUTED THROUGHOUT THE SUPPLEMENTAL PLANTING AREAS) IN WHICH EACH STEM (BOTH PLANTED AND NATURAL RECRUIT) WILL BE TALLIED AND EXTRAPOLATED. THIS ANNUAL DATA COLLECTION WILL BE USED TO MAKE RECOMMENDATIONS ON CORRECTIVE ACTIONS IF NECESSARY (I.E., ADDITIONAL PLANTINGS).
- MONITORING WILL ALSO INCLUDE ESTABLISHING PERMANENT PHOTOGRAPH LOCATIONS (THROUGH GPS-LOCATION) THROUGHOUT THE SUPPLEMENTAL PLANTING AREAS AND THE "NO MOW ZONE" TO VISUALLY RECORD AND MONITOR ON-SITE CONDITIONS.
- AFTER YEAR THREE (3) MONITORING, THE PROJECT PROPONENT WILL PREPARE AND SUBMIT A
 MONITORING REPORT TO THE DEC WETLANDS SECTION (BY DECEMBER 31ST OF THE FINAL
 MONITORING YEAR). THE MONITORING REPORT WILL INCLUDE THE FOLLOWING:
 - A BRIEF SUMMARY OF THE PROJECT BACKGROUND;
 - A SUMMARY OF THE DEVELOPMENT OF THE SUPPLEMENTAL PLANTING AREAS; A BRIEF DESCRIPTION OF THE CONDITIONS OF THE "NO MOW ZONES";
 - A SUMMARY OF THE WOODY STEM MONITORING RESULTS;

PROPOSED PAVED APRON

TO ALLEN ROAD WITH 30'

PROPOSED UTILITY RISER POLE

LIMIT OF WORK (TYP)

- LOCATION OF PRIME AGRICULTURAL SOIL STOCKPILE AND PROPOSED SCREENING PLANTINGS (TYP) SEE PLANTINGS PLAN BY

TJBOYLE ASSOCIATES

MEANS.

TURN-OUT RADII-

EXISTING UTILITY POLE -

TOPPING TREES OVER 40-FT IN HEIGHT. NO STUMPING, GRUBBING, OR SOIL GRADING TO OCCUR WITHIN THE VEGETATION MANAGEMENT AREA. FUTURE CUTTING OF TREES OVER 40-FT TO OCCUR

7. CUT TREES MAY BE OFFERED TO THE PROPERTY OWNER AS FIREWOOD. OTHER WOODY MATERIAL

8. EXISTING ELEVEN (11) TREE SPECIES THAT ARE ANTICIPATED TO BE SUBJECT TO SELECT TREE

9. HERBACEOUS VEGETATION MANAGEMENT IS ALSO NECESSARY TO PREVENT SHADING OF THE

MIX OF FAST-GROWING SPECIES FOR SITE STABILITY AND FLOWERING SPECIES FOR WILDLIFE.

10. THE AREA OF WETLAND BUFFER BETWEEN THE PERIMETER FENCE AND PANEL EDGE IS A "NO MOW

ZONE". HOWEVER, IF WOODY SPECIES WITHIN THE PERIMETER FENCE BEGIN TO SHADE THE ARRAY

TO AN UNACCEPTABLE DEGREE, THE SHRUBS MAYBE BE CUT TO AN ACCEPTABLE HEIGHT (TO NO

LESS THAN THREE (3) FEET IN HEIGHT) IF THE CUTTING IS CONDUCTED USING NON-MECHANIZED

TO BE EITHER BUCKED AND LEFT IN PLACE, USED FOR WILDLIFE HABITAT ENHANCEMENT FEATURES

REMOVAL ARE SHOWN ON THIS PLAN, AND INCLUDE GREEN ASH (FRAXINUS AMERICANA), RED MAPLE

(ACER RUBRUM), SUGAR MAPLE (ACER SACCHARUM), AND ELM (ULMUS AMERICANA). THE PORTIONS

OF THE TREES THAT REMAIN WILL BE ALLOWED TO STUMP SPROUT AND WILL CONTINUE TO PROVIDE

ARRAY. A CONSERVATION SEED MIX IS PROPOSED FOR SITE RESTORATION, WHICH WILL INCLUDE A

ONLY AS NEEDED IN ACCORDANCE WITH APPLICABLE VMP ELEMENTS.

WITHIN THE ON-SITE BUFFERS, OR CHIPPED AND USED FOR MULCH.

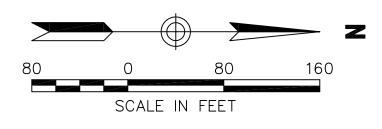
COVER AND STRUCTURE TO THE VEGETATIVE COMMUNITY.

- A DESCRIPTION OF ANY RECOMMENDATIONS AND CORRECTIVE ACTIONS UNDERTAKEN DURING THE MONITORING PERIOD;
- AN OVERALL MAP SHOWING THE MONITORING AREAS (SUPPLEMENTAL PLANTING AREAS
- AND " NO MOW ZONES"; AND
 A PHOTO LAYOUT OF THE MONITORING PHOTOGRAPHS.



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BDE Grand Isle - Solar LLC

Allen Road Grand Isle, Vermont

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248 Permit Filing	Nov. 24, 201	
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Project Number **57746.02**