

J.A. McDONALD, INC.

PO Box 132, Lyndon Center, VT 05850 (802) 626-5201

December 7, 2015

Shannon Morrison District Wetlands Ecologist Vermont Department of Environmental Conservation Watershed Management Division 1 National Life Drive, Main 2 Montpelier VT 05620-3522

Lunenburg NH CULV (27) Bridge Replacement Project- Request for additional wetland impacts permit application. Additions to Permit number 2013-271

Dear Shannon Morrison,

J.A. McDonald has been awarded the Vermont state project NH CULV (27). In regards to the Lunenburg project, the construction plans have a stream alteration. As part of the plans we are required to maintain 60 CFS. 60 CFS requires 6 each 12" pumps, of which we do not have the staging area and or work area. This also introduces issues of fuel and oil components that we feel are not needed near the wetland and wetland buffer. J.A. McDonald would propose a 4' culvert for stream alteration in place of pumping of the stream. As part of the stream alteration and phase 1 detour J.A. McDonald Inc., is requesting additional temporary wetland and wetland buffer impacts. The additional impacts would be for the construction of the temporary detour. J.A. McDonald is proposing a fill slope Vs. the designed bridge for the phase 1 detour. J.A. McDonald feels this is the best solution to the stream alteration, as this will minimize pumping and allow stream flows to stay at a natural flow through the culvert. The fill slope will add to our stream diversion to allow for less water to enter the cofferdam during construction.

The change in Design that J.A. McDonald is proposing will have additional impact to both the wetland and the wetland buffer, all of which are temporary impact. As Best management practices and least disturbance, all temporary fill in the wetland and wetland buffer will be placed on separation fabric for "least impact" to soils and clean remediation. The additional temporary wetland impacts requested is 1477 sf for a total Temporary impact of 1578 sf. The additional wetland buffer impact requested is 860sf, for a total of 5030sf. Page 18 (the wetland application fees) represent the wetland disturbances requested beyond the original permit 2013-271.



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Please find with this cover letter, the Vermont wetland permit application, new plan sheet and the original Vermont Wetland permit application permit number 2013-271.

Thanks for your consideration J.A. McDonald Inc

Eric Boyden, President

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Page 18 Vermont Wetland Section Wetland Application Database Form (AFFIX TO THE FRONT OF THE APPLICATION)

Applicant Name: Vermont Agency Of Transportation	Representative Name: J.A. McDonald Inc
Town where project is located: Lunenburg	County: Essex
Project Location Description: 1020 lancester rd I 911 Street Address or direction from nearest intersection	unenburg vt
Project Summary:Replace Bridge 126	
Permit Type Requested (check all that apply)	
🗌 🗌 Vermont General Permit Coverage 👘 🗌 Wetla	nd Determination 🛛 Vermont Wetland Permit
Impact Calculations: Total up proposed impacts from wetland	tables listed below
Total Wetland Impact 1477square feet (s.f.) Total Buffer Zone Impact 860square feet (s.f.)
Total Wetland Clearing Osquare feet (s.f.) Total Buffer Zone Clearing square feet (s.f.)
Permit Fees: Make check navable to - State of Ve	rmont
Wetland Impact East (\$0.75(aft) \$1.107.75	atrative East
Buffer Impact Fee: (\$0.25/sf) \$215.00 Total C	heck Amount: \$1.562.75
Clearing Fee: (\$0.25/sf) \$	
Existing Land Use Type: Forestry Cebeck all that apply)	Residential (Subdivision) Industrial/ commercial
Agriculture Transportation Parks/Rec/Trai	I Residential (Single Institutional Undeveloped Family)
Proposed Land Use Type: Forestry	Residential Industrial/ commercial
│ (check all that apply) │	(Subdivision)
Proposed Impact Type: Buildings Utili	ties 🗌 Parking 🔲 Septic/Well 🔄 Stormwater
(check all that apply)	Agriculture Pond Lawn
Dry Hydrant Beaver dam alteration Silviculture	☐ Aesthetics
	1 224
Wetland 1: (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being	Location:
impacted)	41 com
wettand Type. FOW - Open water WL Size Class	
Propos	sed Alterations
Wetland Alteration: Buffer Zone Alteration:	Wetland Alteration Type (check all that apply)
Wetland Fill: 3514s.f.	Dredge Drain
Temporary: 1578s.f. Temporary: 5030 s.f	Cut Vegetation
Permanent: : 1936s.f. Permanent: : 4885 s.f	⊠Trench/Fill ∐Other
	Aitigation
Avoidance and Minimization Wetland: 2 (s.f. of wetland NOT impacted):	26978s.f. Buffer Zone s.f.
Wetland Mitigation: (s.f. Gained)	Buffer Zone Mitigation (s.f. Gained):
Restoration s.f. Enhancement s.f.	Restoration s.f. Enhancement s.f
Creation s.f. Conservation s.f.	Creation s.f Conservation s.f
Reason for Mitigation:	Mitigation to offset permit Voluntary impacts

	All Applicat	tions Should be Maile	d To:		
	Vermo Watershe One Nati Montp	nt Wetlands Program ed Management Divisi ional Life Drive, Main pelier, VT 05620-3522	on 2		
	St	taff To Complete			
Wetland Project Number		Hour and any suit of the second			
Wetland Project Name:		DEC ID#:	DEC ID#:		
Date Application Received	1:				
Request for Information	Date:	Information Rec	eived Date:		
Request for Information 1	Date:	Information Received Date:			
Date Application Comple	te:	Distribution Con	nplete Date:		
Notice Begin Date:		Notice End Date:			
Final Action Date:		Public Meeting I	Date:		
Check#	Check Am	ount	Date Check Received		
Check#	Check Am	ount	Date Check Received		

Vermont Wetland Permit Application/Determination Petition

QUESTION		INSTRUCTIONS AND APPLICANT ANSWER		
1.	Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.		
	1.1. Applicant Name	Vermont Agency Of Transportation	Vermont Agency Of Transportation	
	1.2. Applicant Address	1 National Life Drive, Montpelier, VT, 05633		
	1.3. Applicant Phone	802-279-8143	802-279-8143	
	Number			
	1.4. Applicant Email	william.farley@vermont.gov		
	1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the icontained within is true, accurate, and complete to the b knowledge.	information est of your	
			Date:	
		× William Dailey	12/7/15	
2.	Representative	Consultant, engineer, or other representative that is resp this application, if other than the applicant or landowner	oonsible for filling out	
	2.1. Representative Name	J.A. McDonald INC		
	2.2. Representative Address	585 Gilman rd Lyndon Vt 05850		
	2.3. Representative Phone Number	802-626-5201		
	2.4. Applicant Email	Jamcdonaldinc@charter.net		
	2.5. Representative Signature	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge.		
	(original signature required)		Date:	
		x MMA	12/2/15	
3.	Landowner	Landowner must sign the application. Use this space if different from the applicant	landowner is	
	3.1. Landowner Name	Vermont Agency of Transportation		
	3.2. Landowner Address	1 National Life Drive Montpelier, VT 05633		
	3.3. Landowner Phone Number	802-279-8143		
	3.4. Landowner Email	william.farley@vermont.gov		
	3.5. Landowner Easement	Attach copies of any easements, agreements or other do permission, and agreement with the landowner stating w responsible for meeting the terms and conditions of the attachment for this information in this section.	ocuments conveying vho will be permit. List the	
	3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the i contained within is true, accurate, and complete to the b knowledge.	information est of your	
			Date:	
		× William Darles	12/7/15	
4.	Location of Wetland and Project	Location description should include the road the wetland compass direction of the wetland in relation to the road, available, and any other distinguishing geographic featu	I is located on, the 911 street address if res.	

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5. Site Visit Date and Attendees	The project area is within the Vtrans ROW for bridge no. 126 on US Route 2in Lunenburg, VT. Within this area a class II wetland was identified on thenorth side (inlet end of bridge 126) of Route 2. The wetland is a VermontSignificant Wetland Inventory (VSWI) - Mapped wetland.Date of visit with DistrictWetlands EcologistList people present for site visits includingEcologist, landowner, and representatives.	
	N/A	
6. Wetland Classification	The wetland is a Class II wetland because (Choose one):	
7. Description of Entire Wetland or Wetland Complex	Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.	
7.1. Size of Wetland Complex in Acres	Can be obtained from the Environmental Interest Locator Map for mapped wetlands Approximately 0.705 Acres	
7.2. Natural Community Types Present	List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland 100% alder shrub swamp, PSS1D (palustrine,scrub shrub, broad-leafed deciduous, semi-permanently flooded)	
7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc. Edge of the Hudson Brook	
7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds. Wetland Hydrology is formed along the banks of the Hudson Brook. Include answers to the following where appropriate:	
7.4.1. Direction of flow	For example: stream flows from north to south through the wetland complex. The General flow is from the northest to the southwest	
7.4.2. Influence of hydrology on wetland complex	For example: The river provides flood water to the wetland in the spring. The Hudson brook provides flood water to the wetland in the spring and during significant rain events	
7.4.3. Relation to the project area	Distance between the project area and any nearby surface waters. The project is over the Hudson Brook and along its banks	
7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil saturation. It is assumed that the duration of flooding is from the Hudson Brook following snow melt throughout the sprring season. Due to the surrounding topography and hydralics capacity of the structure, it is likely that temporary flooding occurs during significant rain events.	
7.5. Surrounding Landuse of the Wetland Complex	For example: rural residential and forested; agricultural and undeveloped, Rural residential and Forested. Agricultural use 200-300 feet both east and west.	
7.6. Relation to Other Nearby Wetlands	Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question. A VSWI- Mapped Class II Wetland is just south of this structure along the Hudson Brook to its confluence with the Conneticut River. This wetland complex was altered slightly during the Tropical Storm Irene Event In 2011 from the orginally Mapped VSWI area	
7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. The US Route 2 ROW is maintaained by the state of Vermont	

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8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.	
8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. See orginal Permit Application January 22nd 2014	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Naturally Vegetated with nearby maintenance of the US Route 2 ROW.	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. See orginal Permit Application January 22nd 2014	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description See orginal Permit Application January 22nd 2014	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. Surface Water, Saturation at surface, geomorphic position	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Forested and maintenance of route 2 ROW by the state of VT	
8.6.2. Buffer vegetation	List community type and dominant plant species Medium-sized Northern deciduous trees, northern Hardwood saplings, and herbaceous perennial plants	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description USDA NRCS has Kinsman Sand, 0 to 3 percent slope, within the subjest wetland buffer zone	

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

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

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

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	Remove the existing 27" iron culvert. Insta culvert. Construct temporary detours for c maintain traffic on Route 2.	all a new precast concrete arch lifferent phases of the project to			
10.2.Project Purpose	For example: To construct a residential s improve access, extend a trail system To Increase the hydraulic capacity of Brid	ubdivision, upgrade existing road to ge 126 in Lunenburg			
10.3.Acres Owned by Applicant	Acreage of subject property. 1.83				
10.4.Acres Involved in the Project	Acreage of area involved in the project. 1.96				
11. Project Details	Provide details regarding specific impacts	to the wetland and buffer zone			
11.1.Specific Impacts to Wetland and Buffer Zone	List portions of the project that will specific zone. Us route 2 to be widenedover the Hudsor will extend into the wetland area permane wetland buffer will be impacted by tempor	cally impact the wetland or buffer brook. The Precast arch wingwalls ently. Temporary wetland and rary fill for the detouring of traffic.			
11.2.Dimension Details	Square footage of buildings, dimension of Origainl permit included 1,936 sf of perme the same. Temporary wetland impacts to The wetland buffer impacts to remain the Permanent impacts and 6400 sf of tempo	f roads including fill footprint. enant wetland impacts to remainn increase from 110 sf to 1,587 sf. same as the original permit 4885 sf rary impacts			
11.3.Bridges and Culverts	Culvert circumference, length, placement A 7' arch curlert 116" long to remain in the culvert.	Culvert circumference, length, placement and shapes, or bridge details. A 7' arch curlert 116'' long to remain in the same alignment as the exisiting culvert.			
11.4.Construction Sequence	Describe any details pertaining to the wor buffer in terms of sequence or phasing the Temporary impacts will occur early in the and install onf the new structure. Permen- widening route 2 and final installs of stone	ked planned in the wetland and at is relevant detouring of traffic to allow removal ant impacts will occurr while e inlet and outlet pads.			
11.5.Stormwater Design	List any stormwater permits obtained or a stormwater and/or erosion controls propo- wetland and buffer zone. The project has been permited under low Number 2013-271	pplied for. Describe any sed to prevent discharges to the risk. Previous wetland permit			
11.6.Permanent Demarcation of Limits of Impact	Describe any plantings, fencing, signage, provides permanent on-the-ground bound for ongoing uses.	or other memorialization that laries for the limits of disturbance			
12. Wetland and Buffer Zone Impacts					
12.1.Wetland Impacts	Summarize the square footage of impact more than one wetland is impacted, provi supplemental wetland sheets.	in the appropriate category. If de that information and use the			
	Vetland Fill	1936 s f			
	Temporary Wetland Impact	1578 s f			
	Other Permanent Wetland Impact	0 s.f.			
	Describe in detail the proposed impact				
	see plan sheet				
	see plan sheet				

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12.2.Buffer Zone Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.	
	Temporary Buffer Impact 5030 s f	
	Permanent Buffer Impact 4885 s.f.	
	Describe in detail the proposed impact.	
	see plan sheet	
12.3.Cumulative Impacts	List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project. Following construction, ongoing impacts will be made by VTrans for the maintenance of the US Route 2 ROW.	
12.4.Avoidance and Minimization	Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.	
12.4.1. Avoidance	Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design. No. The existing US Route 2 alignment and ROW cannot be altered without impacting significantly more wetland resources.	
12.4.2. Minimization	If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts Yes, an alternatives alignment study was completed by CLD Engineers. A one-way alternating bridge was evaluated based on traffic volumes and the detour length to minimize ROW, wetland, and archaeological impacts. It was concluded that one-way alternating traffic could be used for each phase and both detour options.	
12.4.3. Mitigation	If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts. A seperation fabric will be installed over areas of temporary fill to not disturb soils when removing. Wetland conservation seed mix will be applied if needed during restoring activity.	
12.4.4. Compensation	Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here. None is anticapated	
13. Supporting materials	Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.	
13.1.Location map	Provide a project location map that is 8 ½" x 11" and reproducible in black	

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	and white. An USGS topogra	Environmo phy map b	ental Interes ase layer, r	t Locator Map is oads, and VSWI	appropriate wetlands at	using the minimum.	
			V	T ANR VSWI M	ар		
13.2.Site Plans	List by title, au delineation and envelopes and	thor, date a d buffer zo permaner	and last revi nes, limits o it memoriali	ision date. Plans f disturbance, er zation.	s should incl osion contro	lude wetland bls, building	
	See new p	olan she	et by J.	A. McDona	ld. dated	d 12/3/15	
13.3.ACOE Delineation	List by author,	location, a	nd date. Re	equired only for I	Individual Pe	ermits.	
Forms	Matthew Montgom	iery, US Rou	te 2 Bridge 12	26 in Lunenburg, VT	, June 4th, 20	12	
13.4.Other Supporting Documents	Provide any ot photographs; e wetland submi	her docum easements ttal for dete	entation tha agreement erminations;	it supports the a ts; may include a etc.	pplication. L a GIS-compa	_ist atible	
	Original W	/etland	applica	tion include	ed		
13.5.List of Abutters (Neighbors with land	Attach list of na document.	ames and i	mailing addı	resses or submit	as word ma	ailing	
adjoining wetland or	see land owne	r sheet atta	ached	an na haran da kana kana kana kana kana kana kana	nen den div den den den de		
13.5.1. Newspaper	If choosing the	option to f	ulfill the not	ice requirement	with a news	paper	
Notification	notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. ***NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the potice period, depending on when the potice posts in						
	the newspape	r.					
	Wetland Function Summary: (if more than one wetland use						
	Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex	
14. Check Which Functions are	Flood/Storm Storage		\boxtimes	RTE Species			
Present in the Subject Wetland and in the Wetland	Surface & Groundwater Protection		\boxtimes	Education & Research			
Complex.	Fish Habitat			Recreation/ Economic			
	Wildlife Habitat			Open Space/ Aesthetics			
	Exemplary Natural Community			Erosion Control		\boxtimes	
15.Coverage under Vermont General Wetland Permit	If applying f Determinati the remainin If applying f Wetland Per submitting a	or an Indon, pleas ng applio or Cove rmit, plea applicati	dividual \ se procee cation qu rage und ase comp on.	/ermont Wet ed to number estions. er the Vermo plete questio	land Pern r 16 and a ont Gener n 15.1 pri	nit or inswer al or to	
15.1.VWP Vermont General Permit eligibility	If applying for c verify the follow	overage u ving to com	nder the Ve plete the ap	rmont General V oplication:	Vetland Per	mit, please	
checklist	The activity	[,] qualifies eral Wetla	as an eligi ınd Permit	ble activity for	coverage ι	under the	

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	The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit	
	☐ The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules.	
	The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values.	
	All impacts have been avoided and minimized to the greatest extent possible.	
	☐ The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat.	
	☐The activity is not located in or adjacent to a vernal pool, fen, or bog.	
	The wetland is not at or above 2,500' in elevation (headwaters wetland).	
	The project is not located in a Class I wetland or associated buffer zone.	
	☐The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.	
Stop here if applying for Covera	age under the Vermont General Wetland Permit	
Complete the following Eurotic	no and Values sheetlist if applying for an Individual Watland	
Permit and/or a Wetland Determ	nination	
Functions and Values	For each Function and Value, first evaluate the entire wetland or wetland complex and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures.	
	If more than one wetland complex is involved, use the Supplemental Wetland Forms.	
16. Storage for Flood Water and Storm Runoff	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	Constricted outlet or no outlet and an unconstricted inlet.	
	Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration.	
	If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods.	
	Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water.	
	Hydrologic or hydraulic study indicates wetland attenuates	

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	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.	
	Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment).	
	Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.	
	Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures.	
	Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.	
	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.	
	History of downstream flood damage to public or private property.	
	Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function.	
	1. Developed public or private property.	
	2. Stream banks susceptible to scouring and erosion.	
	3. Important habitat for aquatic life.	
	The wetland is large in size and naturally vegetated.	
	Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland.	
	 A large amount of impervious surface in urbanized areas. 	
	2. Relatively impervious soils.	
	3. Steep slopes in the adjacent areas.	
16.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland is within the Hudson Brook	
16.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. By replacing the structure within the US route 2 alignment, impacts to this wetland are minimized	

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17. Surface and Ground Water Protection	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	Constricted or no outlets.	
	Low water velocity through dense, persistent vegetation.	
	Hydroperiod permanently flooded or saturated.	
	Wetlands in depositional environments with persistent vegetation wider than 20 feet.	
	Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.	
	Presence of seeps or springs.	
	Wetland contains a high amount of microtopography that helps slow and filter surface water.	
	Position in the landscape indicates the wetland is a headwaters area.	
	Wetland is adjacent to surface waters.	
	Wetland recharges a drinking water source.	
	Water sampling indicates removal of pollutants or nutrients.	
	Water sampling indicates retention of sediments or organic matter.	
	☐ Fine mineral soils and alkalinity not low.	
	The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.	
	If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.	
	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.	
	Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.	
	Presence of ditches or channels that confine water and restrict contact of water with vegetation.	
	Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.	
	Current use in the wetland results in disturbance that compromises this function.	

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	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.	
	The wetland is adjacent to a well head or source protection area, and provides ground water recharge.	
	The wetland provides flows to Class A surface waters.	
	The wetland contributes to the protection or improvement of water quality of any impaired waters.	
	The wetland is large in size and naturally vegetated.	
17.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
	The wetland is adjacent to surface waters (Hudson Brook) and is comprised of microtopography that slows and filters surface waters.	
17.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
	By replacing the structure within the US route 2 alignment, Impacts are minimized.	
18. Fish Habitat	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability.	
	Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers.	
	Documented or professionally judged spawning habitat for northern pike.	
	Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species.	
	The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.	
18.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
18.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	

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19. 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 these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.
	Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
	Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.
	Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
	Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:
	1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
	2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes

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

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	habitat conservation; and	
	Contains evidence that it is used by wetland dependent wildlife species.	
	If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.	
	Check box if any of the following conditions apply that may 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.	
	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.	
	The wetland complex is large in size and high in quality.	
	The habitat has the potential to support several species based on the assessment above.	
	Wetland is associated with an important wildlife corridor.	
	The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.	
19.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above The location along the Hudson Brook may Provide habitat for the northern Dusky or Spring salamande, but importantance of this habitat is minor.	
19.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. By replacing the structure within the US Route 2 alignment, impacts to this	
20 Exemplary Wetland Natural	wetland are minimized.	
Community	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	

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	swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function.	
	The wetland is also likely to be significant if any of the following conditions are met:	
	Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department.	
	Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to:	
	 Deep peat accumulation reflecting a long history of wetland formation; 	
	Forested wetlands displaying very old trees and other old growth characteristics;	
	A wetland natural community that is at the edge of the normal range for that type;	
	A wetland mosaic containing examples of several to many wetland community types; or	
	A large wetland complex containing examples of several wetland community types.	
	List species or communities of concern:	
20.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
20.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
21. 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	

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	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:	
21.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
21.2.Statement of no adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
22. Education and Research in Natural Sciences	Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function.	
	Owned by or leased to a public entity dedicated to education or research.	
	History of use for education or research.	
	Has one or more characteristics making it valuable for education or research.	
22.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
22.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
23. 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:	
23.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
23.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	

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	N/A	
24. Open Space and Aesthetics	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	Can be readily observed by the public; and	
	Possesses special or unique aesthetic qualities; or	
	Has prominence as a distinct feature in the surrounding landscape;	
	Has been identified as important open space in a municipal, regional or state plan.	
	Comments:	
	The subject wetland is visible to the traveling public along US Route 2	
	in Lunenburg, VT. The wetland does not possess special or	
	unique aesthetic qualities, or a distinct feature.	
24.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above See comment above.	
24.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. By replacing the structure within the US Route 2 alignment, impacts to this wetland are minimized.	
25. Erosion Control through Binding and Stabilizing the Soil	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	 Erosive forces such as wave or current energy are present and any of the following are present as well: Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. 	
	 Good interspersion of persistent emergent vegetation and water along course of water flow. Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. 	
	What type of erosive forces are present:	
	Lake fetch and waves	
	High current velocities:	
	Water level influenced by upstream impoundment	
	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.	
	I he stream is artificially channelized and/or lacks	

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	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 <i>higher</i> 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.	
25.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
	The wetland provides erosion control through binding and stabilizing the soil along the bank of the Hudson Brook.	
25.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
	By replacing the structure within the US Route 2 alignment, impacts to this wetland are minimized	



January 22nd, 2014

Shannon Morrison Vermont Department of Environmental Conservation Watershed Management Division, Windham County Wetlands Ecologist 1 National Life Drive, Main 2 Montpelier VT 05620-3522

Re: Lunenburg NH CULV (27) Bridge Replacement Project Wetland Permit Application

Dear Ms. Morrison,

EIV Technical Services (EIV) is part of the CLD Engineers team to provide environmental permitting services on the Vermont Agency of Transportation's Lunenburg NH CULV (27) project. Matthew Montgomery, EIV wetlands scientist, completed the delineation of a class II wetland within this project area on June 4th, 2012. Below is an introduction of the proposed project in Lunenburg, VT and a description of the associated impacts to the class II wetland at this site.

Project Introduction

The need for the replacement of Bridge 126 is due to the limiting hydraulic capacity of the existing structure to meet State Design Flow requirements. This bridge carries US Route 2 over the Hudson Brook near its confluence with the Connecticut River. Bridge 126 is currently a 30" iron pipe extended at the outlet with a 4' by 4' concrete box culvert and extended at the inlet with a 27" liner. This existing structure was constructed in 1932 and has a waterway opening area of 4-sq. ft. The proposed design requires the replacement and widening from what is existing. The replacement structure will be a 116' precast arch bridge which will provide adequate hydraulic capacity for the Hudson Brook at this location. Construction activities are anticipated to last for an 18 month period.

Summary of Wetland Impacts

EIV delineates and characterizes wetlands in the field using methods outlined in the US Army Corps of Engineer's (COE) Northcentral and Northeast Interim Regional Supplement. A field visit was made to the bridge site on June 4th, 2012 by Matthew Montgomery to identify hydrophytic plant species and better characterize any wetland habitat occurring in the project area. A Class II Wetland area was delineated near the inlet of the structure. Tree, sapling, shrub, and herb stratums were observed within the wetland area.



Permanent wetland impacts total 1,936 square feet and temporary wetland impacts total 101 square feet for replacement of this structure. Additionally, there will be 4,885 square feet of permanent wetland buffer impacts and 6,400 square feet of temporary wetland buffer impacts.

With this letter we have included the Vermont Wetland Permit application, ACOE wetland delineation data forms, and select project plans developed by CLD Engineers.

Feel free to contact me with any questions regarding this submission.

Sincerely, EIV Technical Services

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Jacqueline Dagesse, MBA, CPESC, PMP Environmental Engineer

Enclosures cc:

Dannyl Landry, P.E., VTrans Project Manager John Lepore, VTrans Biologist John Byatt, P.E., CLD Engineers, Design Project Manager EIV Project File #E1655

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWEP	2	STAFE
1. Applicant	I. Applicant If the applicant is someone other than the landowner, the landowner information must also be included below.		
1.1. Applicant Name Vermont Agency of Transportation, attn: John Lepore			
1.2. Applicant Address	1 National Life Drive, Montpelier, VT 05633		्य विषे
1.3. Applicant Phone Number	802-828-3963		
1.4. Applicant Email	john.lepore@state.vt.us		
1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the contained within is true, accurate, and complete to the knowledge.	Date:	3
2. Representative	Consultant, engineer, or other representative that is rest this application, if other than the applicant or landowner	sponsible for filling out r	
2.1. Representative Name	EIV Technical Services, Attn: Jacqueline Dagesse		
2.2. Representative Address	55 Leroy Rd., Suite 15, Williston, VT 05495		
2.3. Representative Phone Number	802-497-3653		
2.4. Applicant Email	jdagesse@eivtech.com		in chiquan Traccation
2.5. Representative Signature (original signature required)	By signing this application you are certifying that all the contained within is true, accurate, and complete to the knowledge.	Information best of your $\frac{1}{2}$ Date: $\frac{1}{2}$ Zo $\frac{1}{3}$	
3. Landowner	Landowner must sign the application. Use this space if different from the applicant	f landowner is	
3.1. Landowner Name	Vermont Agency of Transportation		
3.2. Landowner Address	1 National Life Drive Montpelier, VT 05633		
3.3. Landowner Phone	802-828-6914		
3.4. Landowner Email	richard.tetreault@state.vt.us		
3.5. Landowner Easement	Attach copies of any easements, agreements or other of permission, and agreement with the landowner stating v responsible for meeting the terms and conditions of the attachment for this information in this section.	locuments conveying who will be permit. List the	
3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the contained within is true, accurate, and complete to the k knowledge.	Date:	
 Location of Wetland and Project 	X Location description should include the road the wetland compass direction of the wetland in relation to the road, available, and any other distinguishing geographic feature	d is located on, the 911 street address if ires.	

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		The project area is within the VTrans Right-of-Way (ROW) for Bridge No. 126 on US Route 2 in Lunenburg, VT. Within this area, a Class II Wetland was identified on the north banks of the Hudson Brook surrounding and extending above the existing inlet of Bridge 126. The wetland is a Vermont Significant Wetland Inventory (VSWI)-mapped wetland.			
		You can access this locatio 2.	n by walking the West River Trail from US Route		
5.	Site Visit Date and Attendees	Date of visit with District Wetlands Ecologist	List people present for site visits including Ecologist, landowner, and representatives.		
		N/A			
6.	Wetland Classification	The wetland is a Class II we	etland because (Choose one):		
		The wetland is mapped on	the VSWI map		
7.	Description of Entire Wetland or Wetland Complex	Answer the following quest complex. A wetland complet types that are contiguous a wetland in the project area	ons regarding the entire wetland or wetland ex is generally defined as two or more wetland nd interrelated. Specific questions about the will follow.		
	7.1. Size of Wetland	Can be obtained from the E	invironmental Interest Locator Map for mapped		
	Complex in Acres	Approximately 0.6 acres			
	7.2 Notural Community	List all wotland types in the	wotland or wotland complex and their abundance		
	Types Present	or relative abundance. For or 30% scrub swamp, 70%	or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland		
		deciduous, semi-permanently flooded)			
	7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc. Edge of the Hudson Brook			
	7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. I any river, streams, lakes and ponds.			
		Wetland hydrology is forme Include answers to the follo	d along the banks of the Hudson Brook. wing where appropriate:		
	7.4.1. Direction of flow	For example: stream flows The general flow is from the	from north to south through the wetland complex.		
	7.4.2. Influence of	For example: The river prov	vides flood water to the wetland in the spring.		
	hydrology on wetland complex	The Hudson Brook provides flood water to the Wetland in the spring and during significant rain events			
	7.4.3. Relation to the	Distance between the proje	ct area and any nearby surface waters.		
	project area	The project area is over the	Hudson Brook and along it's banks.		
	7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil satur			
		It is assumed that the durat	ion of flooding is from the Hudson Brook following		
		topography and hydraulic c	apacity of the existing structure, it is likely that		
	75.0	temporary flooding occurs of	during significant rain events.		
	7.5. Surrounding Landuse of	For example: rural resident	al and forested; agricultural and undeveloped,		
	the wettand Complex	agricultural use 300 ft. to th	e west of the structure and 200 ft. to the east of		
<u> </u>	7.6. Relation to Other	Provide any information on	wetlands or wetland complexes that are close		
1	Nearby Wetlands	enough to contribute to the	overall function of the wetland in question.		
A VSVVI-mapped Class II wetland is just south of this structure along the Hudson Brook to it's confluence with the Conneticut River. This wetland		enand is just south of this structure along the ence with the Conneticut River. This wetland			
1		complex was altered slightly	y during the Tropical Storm Irene Event in 2011		
		from the originally mapped	VSWI area.		

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7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. The US Route 2 ROW is maintained by the State of Vermont.	
8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.	
8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. The subject wetland is not contiguous with a VSWI-mapped Class II wetland directly to the south of the structure along the Hudson Brook. The hydrology on that side of the road was drastically altered by the Tropical Storm Irene flooding and subsequent repairs.	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Naturally vegetated with nearby maintenance of the US Route 2 ROW.	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. The dominant vegetation observed during delineation includes: adler (Alnus incana), fringed sedge (Carex crinita), and reed grass (Calamagrostis canadensis).	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description USDA NRCS has Kinsman sand, 0 to 3 percent slopes, within the subject wetland area. During a site assessment, the soils were observed to have a thick dark surface, hydrogen sulfide, and histic epipedon indicating hydric soils.	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. Surface water, saturation at surface, geomorphic position.	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Forested and maintenance of Route 2 ROW by the State of Vermont.	
8.6.2. Buffer vegetation	List community type and dominant plant species Medium-sized Northern deciduous trees, northern harwood saplings, and herbaceous perennial plants.	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description USDA NRCS has Kinsman sand, 0 to 3 percent slopes, within the subject wetland area and buffer zone.	

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

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determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions.

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

10. Project Description		
10.1.Overall Project	Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family residence.	
	The project will consist of the replacement of Bridge 126 in Lunenburg, VT. This bridge carries US Route 2 over the Hudson Brook near its confluence with the Connecticut River. Bridge 126 is currently a 30" iron pipe extended of the cutlet with a 4' by 4' concrete box culture and extended of the inlet with	
	a 27" liner. This existing structure was constructed in 1932 and has a waterway opening area of 4-sq. ft. The need for the project is due to the limiting hydraulic capacity of the existing structure to meet State Design Flow.	
	requirements. The new 116' precast arch bridge is necessary to provide adequate hydraulic capacity for the Hudson Brook.	
10.2.Project Purpose	For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system To increase the hydraulic capacity of Bridge 126 in Lunenburg, VT.	
10.3 Acres Owned by	Acreage of subject property.	
Applicant	The Route 2 ROW project area for Bridge 126 encompasses approximately 1.83 acres.	
10.4. Acres Involved in the	Acreage of area involved in the project.	
Project	Work will occur within 1.83 acres.	
11. Project Details	Provide details regarding specific impacts to the wetland and buffer zone	
11.1.Specific Impacts to Wetland and Buffer	List portions of the project that will specifically impact the wetland or buffer zone.	
Zone	There will be permanent wetland buffer impacts as a result of widening US	
20110	Route 2 over the Hudson Brook. The replacement structure's inlet wingwalls	
	wetland buffer impacts will result during construction to gain access for	
	installing the precast arch bridge.	
11.2.Dimension Details	Square footage of buildings, dimension of roads including fill footprint.	
	Permanent wetland impacts total 1,936 square feet and temporary wetland	
	there will be 4.885 square feet of permanent wetland buffer impacts and	
	6,400 square feet of temporary wetland buffer impacts.	
11.3.Bridges and Culverts	Culvert circumference, length, placement and shapes, or bridge details.	
_	The replacement 116' precast arch bridge will remain within the existing	
11.4 Construction Convense	alignment of US Route 2.	
11.4.Construction Sequence	buffer in terms of sequence or phasing that is relevant	
	Temporary impacts will result within the wetland and wetland buffer for the	
	contractor to gain access to the Hudson Brook for the installation of the new	
	structure. These areas will be stabilized at the end of earth disturbance	
	result from the widening of Route 2 and the installation of the new structure.	
11.5. Stormwater Design	List any stormwater permits obtained or applied for. Describe any	
	stormwater and/or erosion controls proposed to prevent discharges to the	
	wetland and buffer zone.	
	General Permit 3-9020. No stormwater permitting and design is currently in	

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	process. The permittee intends to follow all terms and conditions of that permit once it has been issued.		
11.6.Permanent Demarcation of Limits	Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for oppoing uses		
of Impact	None are proposed.		
12. Wetland and Buffer Zone Impacts			
12.1.Wetland Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.		
	Totals		
	Wetland Fill 1,936 s.f.		
	Cther Permanent Wetland Impact 101 s.f.		
	Describe in detail the proposed impact.		
	The impact areas along the north side of the Hudson Brook at the location of the Class II wetland are the result of installing a 116' precast arch bridge with wingwalls. The temporary impact areas are needed for the contractor to gain access to this area of the Hudson Brook and install the structure. It is		
	anticipated that construction activities will be completed over an 18 month period.		
12.2.Buffer Zone Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.		
	Totals		
	Temporary Buffer Impact 6,400 s.f. Dermanont Buffer Impact 4,895 s.f.		
	Permanent Burler Impact 4,005 S.I.		
	Describe in detail the proposed impact.		
	The temporary buffer impact areas are needed for the contractor to gain access to Hudson Brook and install the replacement structure. These temporary impacts are also needed for widening US Route 2 along it's existing alignment. The permanent buffer impacts are the result of the US Route 2 widening. It is anticipated that construction activities will be completed over an 18 month period.		
12.3.Cumulative Impacts	List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that result from the proposed project		
	Following construction, ongoing impacts will be made by VTrans for the maintenance of the US Route 2 ROW		
12.4.Avoidance and Minimization	Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.		
12.4.1. Avoidance	Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design.		

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	No. The existing US Route 2 alignment and ROW cannot be altered without impacting significantly more wetland resources.	
12.4.2. Minimization	If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts Yes, an alternatives alignment study was completed by CLD Engineers. A one-way alternating bridge was evaluated based on traffic volumes and the detour length to minimize ROW, wetland, and archaeological impacts. It was	
	concluded that one-way alternating traffic could be used for each phase and both detour options.	
12.4.3. Mitigation	If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts. Yes, a wetland conservation seed mix will be applied to the 101 sf of temporary wetland impacts. Wetland buffers will be restored to their original	
	conditions.	
12.4.4. Compensation	appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here.	
13. Supporting materials	Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.	
13.1.Location map	Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum. A VT ANR VSWI map, and USDA soils map are attached. See site plans for a locator map.	
13.2.Site Plans	List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization. See the attached Resource Impact Plan prepared by CLD Engineers.	
13.3.ACOE Delineation Forms	List by author, location, and date. Required only for Individual Permits. Matthew Montgomery, US Route 2 Bridge 126 in Lunenburg, VT, June 4 th , 2012	
13.4.Other Supporting Documents	Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible wetland submittal for determinations; etc. Wetland data forms are encolsed.	
13.5.List of Abutters	Attach list of names and mailing addresses or submit as word mailing document.	
adjoining wetland or buffer zone)	Find the list of adjoining property owners attached.	
13.5.1. Newspaper Notification	If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. ***NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification	

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	may extend th the newspape	e notice p r.	eriod, depe	ending on wher	n the notice	e posts in	
	Wetland Function Summary: (if more than one wetland use supplemental wetland sheets)						
	Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex	
14. Check Which Functions are	Flood/Storm Storage		\square	RTE Species			-
Present in the Subject Wetland and in the Wetland	Groundwater Protection		\boxtimes	Education & Research			
Complex.	Fish Habitat			Recreation/ Economic			
	Wildlife Habitat			Open Space/ Aesthetics			_
	Exemplary Natural Community			Erosion Control	\boxtimes	\boxtimes	
	If applying f Determinati the remainin	or an In on, plea ng appli	dividual \ se procee cation qu	/ermont Wet ed to number estions.	land Perr r 16 and a	mit or answer	
15. Coverage under Vermont General Wetland Permit	If applying f Wetland Per submitting a	or Cove rmit, ple applicati	rage und ase comp on.	er the Vermo blete questio	ont Gener n 15.1 pri	al ior to	
15.1.VWP Vermont General Permit eligibility	If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application:						
checklist	The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit						
	The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit						
	The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules.						
	The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values.						
	All impacts have been avoided and minimized to the greatest extent possible.						
	The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat.						
	The activity is not located in or adjacent to a vernal pool, fen, or bog.						
	The wetland is not at or above 2,500' in elevation (headwaters wetland).						
	The project zone.	t is not loc	ated in a C	Class I wetland	or associa	ated buffer	
	The activity	is not an	as-built pr	oject that cons	titutes a vi	iolation of	

Page 8 the Vermont Wetland Rules.

Stop here if applying for Coverage under the Vermont General Wetland Permit

Complete the following Functio	ons and Values checklist if applying for an Individual Wetland		
Permit and/or a Wetland Determ	nination		
Functions and Values	For each Function and Value, first evaluate the entire wetland or wetland complex and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures.		
	If more than one wetland complex is involved, use the Supplemental Wetland Forms.		
16. Storage for Flood Water and Storm Runoff	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.		
	Constricted outlet or no outlet and an unconstricted inlet.		
	Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration.		
	If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods.		
	Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water.		
	Hydrologic or hydraulic study indicates wetland attenuates flooding.		
	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.		
	Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment).		
	Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.		
	Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures.		
	Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.		

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	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.			
	History of downstream flood damage to public or private property.			
	Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function.			
	 Developed public or private property. 			
	2. Stream banks susceptible to scouring and erosion.			
	3. Important habitat for aquatic life.			
	The wetland is large in size and naturally vegetated.			
	Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland.			
	 A large amount of impervious surface in urbanized areas. 			
	2. Relatively impervious soils.			
	3. Steep slopes in the adjacent areas.			
16.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed			
	The subject wetland is within the Hudson Brook floodplain.			
16.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.			
	By replacing the structure within the US Route 2 alignment, impacts to this wetland are minimized.			
17. Surface and Ground Water Protection	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.			
	Constricted or no outlets.			
	Low water velocity through dense, persistent vegetation.			
	Hydroperiod permanently flooded or saturated.			
	Wetlands in depositional environments with persistent vegetation wider than 20 feet.			
	Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.			
	Presence of seeps or springs.			
	Wetland contains a high amount of microtopography that helps slow and filter surface water.			
	Position in the landscape indicates the wetland is a headwaters area.			
	Wetland is adjacent to surface waters.			

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	Wetland recharges a drinking water source.	
	Water sampling indicates removal of pollutants or nutrients.	
	Water sampling indicates retention of sediments or organic matter.	
	Fine mineral soils and alkalinity not low.	
	The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.	
	If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.	
	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>lower</i> level.	
	Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.	
	Presence of ditches or channels that confine water and restrict contact of water with vegetation.	
	Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.	
	Current use in the wetland results in disturbance that compromises this function.	
	Check box if any of the following conditions apply that may indicate the wetland provides this function at a <i>higher</i> level.	
	The wetland is adjacent to a well head or source protection area, and provides ground water recharge.	
	The wetland provides flows to Class A surface waters.	
	The wetland contributes to the protection or improvement of water quality of any impaired waters.	
	The wetland is large in size and naturally vegetated.	
17.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
	The wetland is adjacent to surface waters (Hudson Brook) and is comprised of microtopography that slows and filters surface waters.	
17.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
	By replacing the structure within the US Route 2 alignment, impacts to this wetland are minimized.	
18. Fish Habitat	Function is present and likely to be significant: Any of the	
	following physical and vegetative characteristics indicate the	

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	wetland provides this function.	
	Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability.	
	Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers.	
	Documented or professionally judged spawning habitat for northern pike.	
	Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species.	
	The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.	
18.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
18.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
19. 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	

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	breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.
	Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.
	Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
	Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.
	Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
	Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:
	1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
	2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
	3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.
	Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance. Good habitat for these types of species includes large marsh systems with open water components.
	Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle, Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.
	Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.
	Meets four or more of the following conditions indicative of

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	1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;	
	2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;	
	\boxtimes 3. Located adjacent to a lake, pond, river or stream;	
	 4. Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land; 	
	5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;	
	6. One of the following:	
	 i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile; 	
	ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;	
	iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;	
	Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and	
	Contains evidence that it is used by wetland dependent wildlife species.	
	If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.	
	Check box if any of the following conditions apply that may 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.	
	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	
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	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.	
	The wetland complex is large in size and high in quality.	
	The habitat has the potential to support several species based on the assessment above.	
	Wetland is associated with an important wildlife corridor.	
	The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.	
19.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed	
	The location along the Hudson Brook may provide habitat for the Northern Dusky or Spring salamandar, but the importantance of this habitat is minor.	
adverse impact	adverse impact to this function. Include any avoidance and minimization	
	measures relevant to this function. By replacing the structure within the US Route 2 alignment, impacts to this	
	wetland are minimized.	
20. Exemplary Wetland Natural Community	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.	
	Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function.	
	The wetland is also likely to be significant if any of the following conditions are met:	
	Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department.	
	Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to:	
	Deep peat accumulation reflecting a long history of wetland formation;	
	 Forested wetlands displaying very old trees and other old growth characteristics; 	
	A wetland natural community that is at the edge of the normal range for that type;	
	A wetland mosaic containing examples of several to many wetland community types; or	
	A large wetland complex containing examples of	

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	several wetland community types.	
	List species or communities of concern:	
20.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
20.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
21. 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:	
21.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
21.2.Statement of no adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
22. Education and Research in Natural Sciences	Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function.	
	Owned by or leased to a public entity dedicated to education or research.	

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	History of use for education or research.	
	Has one or more characteristics making it valuable for education or research.	
22.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
22.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
23. 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. 	
23.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above N/A	
23.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. N/A	
24. Open Space and Aesthetics	 Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. Can be readily observed by the public; and Possesses special or unique aesthetic qualities; or Has prominence as a distinct feature in the surrounding landscape; Has been identified as important open space in a municipal, regional or state plan. Comments: The subject wetland is visible to the traveling public along US Route 2 in Lunenburg, VT. The wetland does not possess special or unique aesthetic qualities, or a distinct feature. 	
24.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed above See comment above.	
24.2.Statement of no undue	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization	

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adverse impact	measures relevant to this function.					
	By replacing the structure within the US Route 2 alignment, impacts to this wetland are minimized.					
25. Erosion Control through Binding and Stabilizing the Soil	Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function.					
	 Erosive forces such as wave or current energy are present and any of the following are present as well: Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. 					
	 Good interspersion of persistent emergent vegetation and water along course of water flow. Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. 					
	What type of erosive forces are present:					
	Lake fetch and waves					
	High current velocities:					
	Water level influenced by upstream impoundment					
	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 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 <i>higher</i> 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.					
25.1.Subject Wetland	Please explain how the subject wetland contributes to the function listed					
	above The wetland provides erosion control through binding and stabilizing the soil along the bank of the Hudson Brook.					
25.2.Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function.					
	wetland are minimized.					

Page 18 Vermont Wetland Section Wetland Application Database Form

(AFFIX TO THE FF		APPLICATION)
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Applicant Name: Vermont Agency of Transportation	Representative Name: Jacqueline Dagesse					
Town where project is located: Lunenburg	County: Essex					
Project Location Description: Latitude: 44.48516 911 Street Address or direction from nearest intersection	9 degrees North, Longitude: -71.627994 degrees West					
Project Summary: Replacement obridge 120 stru	cture along US Route 2 in Lunenburg, vi.					
Impact Calculations: Total up proposed impacts from wetland	tables listed below					
Total Wetland Impact 2037square teet (s.t	.) Total Buffer Zone Impact 11285square feet (s.f.)					
Total Wetland Clearing Osquare feet (s.f	.) Total Buffer Zone Clearing Osquare feet (s.f.)					
Permit Fees: Make check payable to - State of V	ermont					
Wetland Impact Fee: (\$0 75/sf) \$0.00 Admin	istrative Fee: \$120					
Buffer Impact Fee: (\$0.25/sf) \$0.00 Total (Check Amount: \$0.00					
Clearing Fee: (\$0.25/sf) \$0.00						
Existing Land Use Type: Forestry	Residential (Subdivision) Industrial/ commercial					
(check all that apply)						
	Family)					
Proposed Land Use Type: Forestry	Residential Industrial/ commercial					
(check all that apply)	(Subdivision)					
	Family)					
Proposed Impact Type: Buildings Util	ities Parking Septic/Well Stormwater					
(check all that apply)	Agriculture Pond Lawn					
Dry Hydrant Beaver dam alteration Silviculture	Aesthetics 🛛 Other 🗌 No Impact					
Wetland 1: (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted)	Location:					
Wetland Type: POW - Open Water WL Size Class	: <1 acre					
Propo	sed Alterations					
Wetland Alteration: Buffer Zone Alteration:	Wetland Alteration Type (check all that apply)					
Wetland Fill: 2037s.f.	Dredge Drain					
Temporary: 101s.f. Temporary: 6400 s.f	Cut Vegetation Stormwater					
Permanent: : 1936s.f. Permanent: : 4885 s.f	⊠Trench/Fill □Other					
Mitigation						
Avoidance and MinimizationWetland:(s.f. of wetland NOT impacted):	s.f. Buffer Zone s.f.					
Wetland Mitigation: (s.f. Gained)Restorations.f.Enhancements.f.	Buffer Zone Mitigation (s.f. Gained): Restoration s.f. Enhancement s.f					
Creation s.f. Conservation s.f.	Creation s.f Conservation s.f					
Reason for Mitigation: Correction of Violation	Mitigation to offset permit Voluntary impacts					

	All Applications	Should be Mailed To:				
Vermont Wetlands Program Water Quality Division 103 South Main St Building 10 North Waterbury, VT 05671-0408						
	Staff '	To Complete				
Wetland Project Number:						
Wetland Project Name:		DEC ID#:				
Date Application Received:						
Request for Information Date:		Information Received D	ate:			
Request for Information Date:	Request for Information Date: Information Received Date:					
Date Application Complete: Distribution Complete Date:						
Notice Begin Date:		Notice End Date:				
Final Action Date:Public Meeting Date:						
Check#	Check Amount	nt Date Check Received				
Check#	Check Amount	ţ	Date Check Received			

WETLAND DETERMIN	IATION DATA FORM Northcentra	I and Northeast Region
Printing HUDSON BROOK	US PTE 2 CHUCAUMAN (UNENIRS)	PIN FSSEX Romalina Data (76/14/12
Project/Site: 10/00/00/00/00/00/00/00/00/00/00/00/00/0		Sampling Date: <u>Off</u>
Applicant/Owner: (1) for 1 AC	<u>37</u>	State: Sampling Point:
Investigator(s):	Section, Township, Range:	<u></u>
Landform (hillslope, terrace, etc.):	TH- AN ASPECT Local relief (conce	ave, convex, none):
Slope (%): <u>NR</u> Lat: <u>NH4 29' O</u>	<u>7-4903</u> Long: <u>W 71°37'5</u>	<u>「つえげイ」</u> Datum: 冬
Soil Map Unit Name: CABOT SET La	MAC	NWI classification:
Are climatic / hydrologic conditions on the site typical f	or this time of vear? Yes X No	(If no, explain in Remarks.)
Are Vegetation N. Soil N. or Hydrology N	significantly disturbed? Are "Norma	al Circumstances" present? Yes X
Are Vegetation M. Soil M. or Hydrology	/ naturally problematic? (If needed	
SUMMARY OF FINDINGS – Attach site n	nap showing sampling point locati	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No No Is the Sampled Area	$\mathbf{\lambda}$
Hydric Soil Present? Yes X	No within a Wetland?	Yes No
Wetland Hydrology Present? Yes	No If yes, optional Wetlan	d Site ID:
Remarks: (Explain alternative procedures here or in	a separate report.)	
XIVAD SATI TIME	CATANT ILEAN ABANA	EN - CAUN RE SIGNICA
1110 - when when which	ANNAS WINGS UISSERV	high it is the way fighting the course of the
BY ASPECT & DEUSE EVE	JEGRELL CANDY COVERSE	E PROLONGENG EARLY.
Con Charles		
SLASON SOL SAIVENI		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec	k all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Eveld Observations:	T	
Surface Water Present? Yes No X	Depth (inches):	
Water Table Present? Yes No	Depth (inches):	
Saturation Present? Yes No	Depth (inches): Wetland I	Hydrology Present? Yes No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring v	vell, aerial photos, previous inspections), if ava	ailable:
Remarks:		
	6 8 8	Second S. S. S. S. S. S.
N-MULASPECT = VB	CY MOEST + SHADY	HLU-SLOPE.
1. 10.00 . (

e Stratum (Plot size: 0		Dominan	indicator	Dominance Test worksheet:
	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species
Abes Dalbamea	<u> </u>	<u> </u>	<u>FAC</u>	That Are OBL, FACW, or FAC: (A)
LOUNS SERDINA	<u>- 45</u>		FACU	Total Number of Dominant
Filea IVens			FR VI	Species Across All Strata: (B)
Larix Tationa	- Contraction of the Contraction		<u>1XC-W</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/E
				Provalence index worksheet:
				Total % Cover of: Multiply by:
a	<u>95</u>	= Total Co	ver	OBL species x 1 =O
pling/Shrub Stratum (Plot size: 15 dia.)	-		grami	FACW species6_ x 2 =62_
Promus Vinniniana	<u> </u>	<u> </u>	HAC.U	FAC species 50 x 3 = 150
Almus incaña	15		FACW	FACU species $4 = 388$
Corulus cornuta	5		FALU	UPL species $ x = -$
Abies balcomed				Column Totals: $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $
				Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
				Rapid Test for Hydrophytic Vegetation
anterio 🗿 s	40	= Total Cov	/er	_X Dominance Test is >50%
b Stratum (Plot size:)			,	Prevalence Index is ≤3.0'
Damunda cinnamomea.	35_	<u> </u>	FACW	data in Remarks or on a separate sheet)
Dhoclea. Sensibilis	20	X	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
Drubberic campulatera	10		FACU	
Carex aracillima	na seconda		FACU	'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
C. intimescens			FACW	Definitions of Vagetation Strates
Thalictrum GD (no influet)	nonen esper		NA	
Theteroteric Phenosteris hexanan	optera 2		FACU	Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Majonthemum canadense	12		FACU	Sapling/shrub Woody plants loss than 2 in DPH
FAGARIA VIRAINIANA			FACU	and greater than 3.28 ft (1 m) tall.
Frindiens Carensis	T		FACW	Herb - All herbaceous (non-woody) plants, regardless
Arisaema triphullum	T	· ·	FAL	of size, and woody plants less than 3.28 ft tall.
				Woody vines – All woody vines greater than 3.28 ft in
	85.	= Total Cov	er	height.
bdy Vine Stratum (Plot size:			-	
1 LNE				
		<u> </u>		Vegetation
······································	<u> </u>	- Total Cav		Present? Yes No
parks: (Include photo numbers here or on a separate	sheet)			
	Sheet.y			
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06/14/12 MBM LUNDUBURG

	ariations (Describ)	to the dee	th peopled to decum	nont the ir	dicator	or confir	m the abconce	Sampling	
Denth	cription: (Descrip) Matriv	e to the dep	In needed to docum	rient the ir v Festures	laicator	or contin	m the absence	of indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>_%</u>	Type ¹	Loc ²	Texture	Rem	arks
<u>()-4"</u>	104R 3/3	100					STUF-LUAH	A MOIST W	CONRE ROOT
	(DARK BROW	ม)							960 1
4-10"	KOND 4/4	90	TOYR 5/2	10	RM	M	N	MUCH FEWER	ADOTS 2
								More N	SYE
10-16+	" JOYR GLA) an	ZCYPHI	4 40	C	M	1	1055-0-	DEMX
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		P J		<u> </u>			<u> </u>	1100 10 0	I'' Samas
	<u> </u>	<u>Lařie</u>					- <u></u>	THAN UNOVE	<i></i>
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¹ Type: C=Co	oncentration, D=De	pletion, RM=	Reduced Matrix, CS	=Covered	or Coate	d Sand G	Grains. ² Loo	cation: PL=Pore Lini	ng, M=Matrix.
Histosol	(A1)		Polyvalue Below	/ Surface (S8) (LRR	R.	2 cm M	Juck (A10) (LRR K.	L. MLRA 149B)
Histic Ep	pipedon (A2)		MLRA 149B)			,	Coast	Prairie Redox (A16)	(LRR K, L, R)
Black Hi	stic (A3)		Thin Dark Surfac	ce (S9) (LF	RRR, ML	RA 1498	3) 5 cm N	Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroge Stratified	t Layers (A5)		Loamy Mucky M	Aatrix (F2)	LKK N	L)	Dark S	lue Below Surface (S	L) 58) (LRR K, L)
X Depleted	d Below Dark Surfac	ce (A11)	X Depleted Matrix	(F3)			Thin D	ark Surface (S9) (LF	RRK,L)
Thick Da Sandy M	ark Surface (A12) Aucky Mineral (S1)		Redox Dark Suri	face (F6) Surface (F7	'n		Iron-M Piedm	anganese Masses (F ont Eloodolain Soils	F12) (LRR K, L, R)
Sandy G	Bleyed Matrix (S4)	•	Redox Depressi	ons (F8)	/		Mesic	Spodic (TA6) (MLRA	A 144A, 145, 149B)
Sandy R	edox (S5)						Red Pa	arent Material (TF2)	(7540)
Surpped Dark Sur	rface (S7) (LRR R, I	MLRA 149B)				Very S	(Explain in Remarks)	(11-12)
3									
Restrictive L	aver (if observed)	ition and wei	land hydrology must	be presen	t, unless	disturbed	or problematic	<u>.</u>	
Type:	NON	E W	<u>/w</u> 16"					\sim	/
Depth (inc	ches):						Hydric Soil	Present? Yes	No
Remarks:		<u></u>		·······					·······
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SAT	TURA-TE T	THE S	JAP - MIL	TEN	ARAG	TV.	21	CAN TI	
	C. E. Samer		- ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		an ann a' an			STOLOSOL	- E - / - /

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

ApplicantOomer: CLD_For YT	Project/Site: HUDSON BROOK, USRTE 2 City/C	County: LUNENBURG, ESSEY Sampling Date: 06/14/12
Investigator(s): Math Mostrichterry ELV Section, Township, Range Mathematical Section, Township, Range <	Applicant/Owner: (LD FOR VT AOT	State: VT Sampling Point: WET
Interview Stope (%) List M H1 35 07.3903 Logit Millione to rate to the state of the s	Investigator(s): MATT MONTADHERY FIN Secti	on Townshin Ranne:
Solo (%): Lat. H + + + + + + + + + + + + + + + + + + +	Landform (hillstone terrace etc.): VALLEY ROTTOM FLOOD DA	
Solde (a) Congregation Congregation PSS (C) Are classification: CARA NNU classification: PSS (C) Are Vagetation Soll or Hydrologic conditions on the site typical for this time of year? Yes No (ff no, explain in Remarks.) Are Vagetation Soll or Hydrology Significantly disturbed? Are Thomas Dictumstances' present? Yes No Hydrophylic Vagetation Present? Yes No If the Sampled Area No If the Sampled Area Hydriophylic Vagetation Present? Yes No If the Sampled Area No If the Sampled Area Wetland Hydrology Present? Yes No If the Sampled Area No If the Sampled Area Wetland Hydrology Present? Yes No If the Sampled Area No If the Sampled Area Wetland Hydrology Present? Yes No If the Sampled Area No If the Sampled Area Wetland Hydrology Present? Yes No If the Sampled Area No If the Sampled Area Wetland Hydrology Indicators: Execute Area Area Execute Area If the Sampled Area No If the Sampled Area	Since (4) : $\leq 1.\%$ Let: $M_{44}^{\circ} \geq 9.077$ ± 903.077 Long	. \\/ 11° 37 39.0217 Datum:
Add Halp, Volume Hame.	Sold Man Linit Name: (A POT STLT LOAM	
Are channels of hydrologic controls of the set syncar to this and syncar its syncar to the set syncar to th	And clience of the state of the	
Are Vogetation Soil Or Hydrology Instantally problematic? Vie excellation No No SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area No It has been point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It has been point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It has been point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It has been point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It has been point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It has been point locations, transects, important features, etc. Bortw Extract HWE Proceedee Cultures to the point locations, transects, important features, etc. WERNOLOGY Wetland Hydrologi Indicators: It has been point locations (Bit) Software Kokes (Bit) Dorale petitons (Bit) Sufface Water (A)	Are climatic / hydrologic conditions on the site typical for this time of year?	tes No (if no, explain in Remarks.)
Are vegetation	Are vegetation <u>N</u> , Soli <u>N</u> , or Hydrology <u>N</u> significantly distur	bed? Are "Normal Circumstances" present? Yes <u>/ No</u>
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No It the Sampled Area within a Wetland? No Remarks: (Explain alternative procedures here or in a separate report) No It was, optional Wetland? No It was, optional Wetland? No Remarks: (Explain alternative procedures here or in a separate report) Social Status of the Sampled Area wetland Hydrology Present? Yes No It was, optional Wetland? Wetland Hydrology Indicators: It was, optional Wetland? Wetland Hydrology Indicators: No It was, optional Wetland? No It was, optional Wetland? It was, optional Wetland? It was, optional Wetland? No It was, optional Wetland? It was, optiona	Are Vegetation, Soil, or Hydrology haturally problem	atic? (If needed, explain any answers in Remarks.)
Hydrophylic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Yes No It this a Wedland? Yes No Wetland Hydrology Present? Yes No If yes, optional Wetland Site ID:	SUMMARY OF FINDINGS – Attach site map showing san	pling point locations, transects, important features, etc.
Hydric Soil Present? Yes No within a Wetland? Yes No Wetland Hydrology Present? Yes No If yes, optional Wetland Site ID: Bortw BERAVER Arburry a THE WADDERSEAN CUUMBS ENERT Bortw BERAVER Arburry a THE WADDERSEAN CUUMBS ENERT Bortw StraceAH HAVE Acoust Countrations CUUMBS ENERT Watand Hydrology Indicators: Primary Indicators (minimum of neis required; check all that apply) Surface Water (A1) Surface Water (A1) Surface Water (A1) Surface Water (A1) Mater Eable (A2) CrayIn (B13) Drainage Patterns (B10) Yes Yes No Water Marks (B1) Water And Deposits (B1) Draves C(B) Surface Water (A1) Mater Eable (A2) CrayIn Burrows (C3) Yes No Marine Reduced Inor (C4) Surface Valuation (C3) Surface Valuation (C4) Surface Valuation (C3)	Hydrophytic Vegetation Present? Yes <u>X</u> No	Is the Sampled Area
Wetland Hydrology Present? Yes <	Hydric Soil Present? Yes Yes No	within a Wetland? Yes No
Remarks: (Explain alternative procedures here of in a separate report) UNDERSEAS CUMPS INVESTIGAT Borw Braver Activery + TWE UNDERSEAS COUNTS INVES Joww STRAM HAVE Problem Countributions to the Cosserves Hutson Water Table Hate Primary Indicators (minimum of one is required: check all that apply) Surface Water (A1) Surface Water (A1) — Water Stater (A1) Surface Water (A1) — Water Stater (A1) Water Table (A2) — Aquatic Fauna (B13) Water Table (A2) — Aquatic Fauna (B13) Water Marks (B1) — Hydrogen Stuffee Odd (C1) Surface Water (A4) — Recent Ion Reduction In Titled Solis (C3) Saturation (A3) — Mar Deposits (B15) — Crayfish Burnows (C8) Join Deposits (B3) — Presence of Reduced Iron (C4) Secondary Indicator (C9) Jaker Mar Crust (B4) — Recent Ion Reduction in Titled Solis (C5) Sturied on Stressed Plants (D1) Jaker Mar Crust (B4) — Depth (inches): _ Sturied on Stressed Plants (D1) Algai Mar Crust (B4) _ Depth (inches): _ Sturied on Stressed Plants (D1) Sturation Present? Yes _ No _ Depth (inches): _ Sturation Present? Yes _ No _ Depth (inches):	Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID:
Down Lawe with the Access of the observed interval Down Stract HAVE Access of the observed interval Down Stract HAVE HAVE Hyperiod Water Cable Have Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (66) Surface Valer (A1) Water Statue Leaves (89) Drainage Patterns (810) High Vater Table (A2) Aquatic Fauna (813) Moss Tim Lines (816) Surface Soil Cracks (67) Oxiface Soil Cracks (67) Drainage Patterns (810) Mater Marks (81) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C3) Sediment Deposits (82) Oxidated Rinzospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Jin Deposits (83) Presence of Reduced Iron (C4) Stunde or Stressed Parts (D1) Agaid Mar Crust (84) Recent Ion Reduction in Tilled Soils (C6) Stunde or Stressed Parts (D1) Sparsely Vagetated Concave Surface (88) Thin Muck Surface (C7) Shallow Aquilard (D3) Surface Water Present? Yes No Depth (Inches): Cubred Saturation Present? Yes No Depth (Inches): Cubred Valet Table Present? Yes No Depth (Inches): Cubred Saturation Pres	Remarks: (Explain alternative procedures here or in a separate report.)	LINDERSTOPP CULLUFTS INCO
Now Strate Hate High Count above Water Table Hate Hotes Primary Indicators (minimum of one is required; check all that apply)	NUMBERVICE APRILLE OF	A TIF ARCEWIEN WHAT
WMMC TARKE HEE. HYDROLOGY Vetland Hydrology Indicators: Scinca Water (A1) Surface Water (A1) Water Stained Leaves (B9) High Water (A1) Aquatic Fauna (B13) High Water (A1) Aquatic Fauna (B13) Water Marks (B1) High Water Table (A2) Sturation (A3) Marl Deposits (B15) Sediment Deposits (B2) Oxid Zer Ritzospheres on Living Roots (C3) Sturation (A3) Presence of Reduced Iron (C4) Sturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Aqial Mat or Crust (B4) Recent Iron Reduction in Tilled Solis (C6) Iron Deposits (B5) Stunted or Stressed Plants (D1) Jage Mat or Crust (B4) Recent Iron Reduction in Tilled Solis (C6) Jost Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Jost Present (B1) Other (Explain in Remarks) Stained Orstressed Plants (D1) Sturated Present? Yes No Depth (Inches): Wetland Hydrology Present? Yes No Sturated Present? Yes No Depth (Inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous Inspections), if available: Previous I	DUNNSTOLAPT MAJE FROBALLY CON	Masures 10 me use and 140m
HYDROLOGY Wetland Hydrology Indicators: (minimum of two required) Primary Indicators: (minimum of one is required: check all that apply)	WATER TARLE HERE.	
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply)	HYDROLOGY	
Primary Indicators (minimum of one is required: check all that apply)	Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Surface Water (A1) Water-Stained Leaves (B9) Drainage Patterns (B10) High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Mard Deposits (B5) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B3) Presence of Reduced Iron (C4) Sturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Solis (C6) Geomorphic Position (D2) Inon Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes X No Depth (inches): Saturation Present? Yes X No Depth (inches): Saturation Present? Yes X No Depth (inches): Cincludes capillary finge) Depth (inches): Wetland Hydrology Present? Yes X No Describe Recorded Data (stream gauge, monitoring well, serial photos, previous inspections), if available: Previous Diffest Streack Graze K Apall Mat	Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
A High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Craytish Burrows (C8) Saturation (A3) Mod Deposits (B3) Mod Deposits (B3) Mod Deposits (B3) Mod Matter C(C) Saturation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Saturation (D2)Shallow Aquitard (D3)Mdited Concave Surface (B8) Mod Matter Table Present? Moss	Surface Water (A1) Water-Stained Leave	s (B9) Drainage Patterns (B10)
→ Saturation (A3)	<u> </u>	Moss Trim Lines (B16)
	Saturation (A3) Mari Deposits (B15)	Dry-Season Water Table (C2)
Contract Deposite (B2) Contract Nizzes and Ni	Vater Marks (b1)	or (C1) Crayfish Burrows (C8)
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Solis (C6) Geomorphic Position (D2) Inon Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Microtopographic Relief (D4) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Openh (inches): Water Table Present? Yes No Depth (inches): Openh (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: — MVKM SATURDATES © SUBTACE SUBTACE SUBTACE Fred WATER SURFACE EVEN. W. Soci. PET WAK UPTHEW	Drift Deposits (B3)	Living Roots (C3) Saturation visible on Aerial Imagery (C9)
Iron Deposits (B5)	Algal Mat or Crust (B4) Recent Iron Reductio	n in Tilled Soils (C6) X Geomorphic Position (D2)
	Iron Deposits (B5) Thin Muck Surface (C	57) Shallow Aquitard (D3)
	Inundation Visible on Aerial Imagery (B7) Other (Explain in Ren	narks) X Microtopographic Relief (D4)
Field Observations: Surface Water Present? Yes No Depth (inches): III0114 Recently Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: No	Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Surface Water Present? Yes <u>No</u> <u>Depth (inches):</u> Water Table Present? Yes <u>No</u> <u>Depth (inches):</u> Saturation Present? Yes <u>No</u> <u>Depth (inches):</u> Saturation Present? Yes <u>No</u> <u>Depth (inches):</u> Wetland Hydrology Present? Yes <u>No</u> <u>No</u> <u>Cincludes capillary fringe</u> Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: - <u>MVXY</u> / <u>SATURATES</u> <u>SUBBACE</u> - <u>SOME</u> <u>HUMMCOX</u> + <u>HOUOW</u> <u>AROUND</u> > <u>CESPIDOSE</u> <u>CAREX</u> + > <u>PREVIOUS</u> <u>LIVESTOCK</u> <u>GEAZE</u> - <u>FDUAL</u> WATER <u>SURFACE</u> EVEV. <u>JU</u> <u>SOUL</u> <u>PLET</u> <u>WAX</u> <u>WITHEN</u> <u>No</u>	Field Observations:	
Water Table Present? Yes X No Depth (inches): <u>Allor + Kazer</u> Saturation Present? Yes X No Depth (inches): <u>Subtrace</u> Wetland Hydrology Present? Yes X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: - MUXY / SATURATES @ SUBPACE - SOME HUMMOOK + HOLLOW AROUND > CESPITOSE CAREX + > PREVIOUS (IDVESTOCK GEAZINE - FILL WATER SURFACE EVEN. IN SOLL PLT WAS WITHEN N	Surface Water Present? Yes No Depth (inches):	No De la
Saturation Present? Yes X No Depth (inches): W SWRACE Wetland Hydrology Present? Yes No No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: - MVXY / SATURATES @ SUBFACE - SOME HUMMOCK + HOULOW AROUND > CESPITOSE CAREX + > PREVIOUS (INVESTOCK GPAZIUS - FEVAL WATER SURFACE EVEN. IN SOCI PLT WAY WETHEN N	Water Table Present? Yes X No Depth (inches): AND	<u>V V V V V V V V V V V V V V V V V V V </u>
Theodes capitally integer Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: - MUCKY/SATURATES @ SUBTACE - SOME HUMMOCK + HONOW AROUND > CESPIDOSE CAREX + > PREVIOUS LIVESTOCK GEAZING - FILM WATER SURFACE EVEN IN SOLL PET WAY WITHEN N	Saturation Present? Yes X No Depth (inches):	Wetland Hydrology Present? Yes No
REMARKS: - MUCKY/SATURATES O SUBJACE - SOME HUMMOCK & HOLLOW AROUND > CESPITOSE CAREX & > PREVIEOUS LEVESTOCK GEATING - FELAL WATER SURFACE EVEN IN SOLL PET WAY WITHEN N	Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre-	vious inspections), if available:
- MUCKY/SATURATES @ SUBRACE - SOME HUMMOOK + HOLLOW AROUND > CESPITOSE CAREX + > PREVIOUS LEVESTOCK GRAZING - FEVEL WATER SURFACE EVEN. IN SOLL PET WAS WITHEN N		
- MUCKY/SATURATES @ SUBDAUE - SOME HUMMOCK + HOLLOW AROUND >> CESPEDOSE CAREX + > PREVIOUS LEVESTOCK GEATERS - FEVEL WATER SURFACE EVEN. IN SOLL PET WAS WETHEN ~	Remarks:	
- SOME HUMMOCK + HOLLOW AROUND > CESPEDENSE CAREX + > PREVEOUS LEVESTOCK GEAZENE - FENAL WATER SURFACE EVEN IN SOLL PET WAS WETHEN N	- MUCKY/SATURATES @ SUBRACE	
- SOME HUNWICCK + NOLLOW AROUND > LESPEDOSE CAREA + > PREVIOUS LEVESTOCK GRAZILE - FELAL WATER SURFACE EVEN. IN SOLL RET WAY WETHEN N		To second on TADEV
- FEVEL WATER SURFACE EVEN JU SOEL RET WAY WETHEN N	- SOME HUMMICCK + HOLLOW AR	ONND & CREASED & CUNCY &
- FEVAL WATER SURFACE EVEN IN SOEL RET WAR WETHEN N	- n n	> PREVEOUS LEVESTOCK GRAZENTS
- FOUL WATER SURFACE EVEN UN SOEL PET WAR WETHEN N	and the second se	
	- FILL WATER SURFACE EVEN	W SOLL HIT WAS WETHEN N
8" DE THE GRANNER SURFACE	8" OF THE GROUND SURFACE	1.

G/IH/12 MBM JUNEURU

Sampling Point:

VEGETATION - Use scientific names of plants.				Sampling Point:	
Tree Stratum (Plot size: 30 Aut.)	Absolute % Cover	Dominan	t Indicator	Dominance Test worksheet:	
1. ULMUS Americana			FACW	Number of Dominant Species (A)
2				Total Number of Dominant Species Across All Strata:	B)
4				Percent of Dominant Species 100% (/	A/B)
6.					
7		······································	· <u></u>	Total % Cover of Multiply by	
	5	= Total Co	ver	$\frac{1}{\text{OBL species}} = \frac{58}{58} \times 1 = \frac{58}{58}$	
Sapling/Shrub Stratum (Plot size: 15 dia)		\.		FACW species $200 \times 2 = 200$	
1. Alnus incana	<u>65</u>	<u> </u>	FACW	FAC species \bigcirc x 3 = \bigcirc	
2. Spiraea alba	10_		FACW	FACU species $x = 0$	
3			·	UPL species $x_5 = $ Column Totals: $f \neq A$ (A) 298	/ B)
4				$\frac{1}{2} = \frac{1}{2} = \frac{1}$	(0)
5			·		
6	· ····			Hydrophytic Vegetation Indicators:	
7			· ·	\sim Dominance Test is >50%	
A.	<u></u>	= Total Co	ver	Prevalence Index is $\leq 3.0^{1}$	
Herb Stratum (Plot size:()	40	Х	OBL	Morphological Adaptations ¹ (Provide supporting	3
2 Chowling	5		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)	
2 (in ED (immetion autor tim)	·		- IIA		
A C GLONGCOIDE MARESTYLE	· <u> </u>		EACUT	¹ Indicators of hydric soil and wetland hydrology mus	st
5 Calaba apostic Caladoncia	20	X	FALIN	be present, unless disturbed or problematic.	
6 Overley Sensibilis	10	<u>_</u>	FACW	Definitions of Vegetation Strata:	
7 Chelane alubra			ORI	Tree – Woody plants 3 in. (7.6 cm) or more in diame	eter
8 Leensia ontroides	<u>englan</u>	••••••••••••••••••••••••••••••••••••••	OBL	at breast height (DDH), regardless of height.	
9. Enpa Eutrachium miculatum			OBL	Sapling/shrub Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10			- <u></u>	Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.	SS
12				Woody vines – All woody vines greater than 3.28 ft	in
P ^{4/201} 446 5	100	= Total Co	ver	neight.	
Woody Vine Stratum (Plot size: <u>50 dia</u>)					
1. <u>/////</u>		- <u></u>			
2	<u></u>				
3				Hydrophytic	
4	·····			Vegetation Present? Yes No	
	<u> </u>	= Total Co	ver		
Remarks: (Include photo numbers here or on a separate s	heet.)				

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6/14/12 MBM LUNEURURG

Prome bescription. Description to the depth integrated to document the indicator of continuit to document the indicator document	Texture Remarks MVCKY ≥ REDOX ON CUUC I P TO WATES TABLE I I P REDUCEN MTDEY IoYL I P REDUCEN MTDEY IoYL OASERVEN RECOW Hao Indicators for Problematic Hydric Soils ³ : Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) LRR K, L, MLRA 149B) Coast Prairie Redox (A16) Coast Prairie Redox (A16) LRR K, L, R) S cm Mucky Peat or Peat (S3) Dark Surface (S7) LRR K, L) Polyvalue Below Surface (S8)
Color (moist) % Color (moist) % Type' Loc' (BUCK) (A (A) (A (A)<	Texture Remarks MVCKY ⇒ REDOX ON COULD F ⇒ TO WATER TABLE ⇒ REDUCES MATARY (JOYK ORSERVES RECOW BASERVES Recow Baserves<
Yet Contract Yet Contrant Yet Contrant <td< th=""><th>Mucky ⇒ IEDDX ON UNDUG ⇒ TO WATER TABLE ⇒ PEDUCEN Mitney (Joye ORSERVEN BELOW ORSERVEN BELOW Baserven Below Baserven</th></td<>	Mucky ⇒ IEDDX ON UNDUG ⇒ TO WATER TABLE ⇒ PEDUCEN Mitney (Joye ORSERVEN BELOW ORSERVEN BELOW Baserven
(BUCK) (Yerconnext) Beauty	→ TO WATER TABLE → TO WATER TABLE → REDUCES METATY (JOYE) → REFORE BELOW Here To the test of the test of the test of test of the test of test
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain ydric Soil Indicators: Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR K, L) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Scandt Mucky Mineral (F1) Depleted Dark Surface (F7)	PEDUCEN_MATAEY (10Y6 ORSERVEN_BELOW_H_00 Y ACCEVEN_BELOW_H_00 Y ACCEVEN_BELOW_H_00 Y ACCEVEN_BELOW_H_00 Y ACCEVEN_BELOW_H_00 Y Science Straine Problematic Hydric Soils ³ : 2 cm Muck (A10) (LRR K, L, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)
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Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)	
Sandy Mucky Mineral (S1) Denleted Dark Sufface (F7)	Thin Dark Surface (S9) (LRR K, L)
	Piedmont Floodplain Soils (F19) (MLRA 149B)
_ Sandy Gleyed Matrix (S4) Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
_ Stripped Matrix (S6)	Very Shallow Dark Surface (TF12)
_ Dark Surface (S7) (LRR R, MLRA 149B)	Other (Explain in Remarks)
dicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or	problematic.
strictive Layer (if observed):	
Type: <u>MONE 70 278</u>	
Depth (inches):/ //	
narks.	
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BELOW WATER TABLE.	
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CURRENT OWNERS: APRIL 18, 2012

LUNENBURG NH CULV (27)

PARCEL 10	(TM 7 LT 14)	STINEHOUR, RODERICK D. & ELIZABETH 851 Lancaster Road, Lunenburg Vermont 05906
PARCEL 11	(TM 7 LT 13.19)	FORBES FARM PARTNERSHIP 304 North Road, Lancaster, New Hampshire 03584
PARCEL 12	(TM 7 LT 17)	SPAULDING, JOHN A. & ROSALIE E. 1020 Lancaster Road, Lunenburg, Vermont 05906
PARCEL 13	(TM 7 LT 18)	HOBART, FREDERICK S. II 1062 Lancaster Road, Lunenburg, Vermont 05906
PARCEL 14	(TM 7 LT 19)	STINEHOUR, STEPHEN R. PO Box 125, Lunenburg, Vermont 05906
PARCEL 15	(TM 7 LT 19.01)	MAGGIO, JOSEPHINE PO Box 77, Lunenburg, Vermont 05906
PARCEL 16	(TM 7 LT 19.02)	HENDERSON, HARVEY G. 1209 Lancaster Road, Lunenburg, Vermont 05906



STATE OF VERMONT AGENCY OF TRANSPORTATION

DDEL: PI

CLD 12-

PRELIMINARY INFORMATION SHEET (BRIDGE)

FINAL HYDRAULIC REPORT

Version 11.06.1

LRFD

					INDEX OF ONLETO		FINAL HI DA	ROLIG REPORT
		PLAN SHE	ETS		STAND/	ARDS LIST	HYDROLOGIC DATA Date: JUNE 3, 2013	PROPOSED STRUCTURE
1	TITLE SHEET							
3-4	TYPICAL BRIDGE SECTION	ON SHEET 1 NS					CHARACTER OF TERRAN : HILLY TO MOUNTAINOUS	STRUCTURE TYPE: PRECAST CONCRETE ARCH ON MATFOUNDATION
5-6	TYPICAL ROADWAY SECT	nons					STREAM CHARACTERISTICS : SINUOUS ALLUVIAL CHANNEL	CLEAR SPAN(NORMAL TO STREAM): 20 FT
	CONVENTIONAL SYMBOL	OGY LEGEND SHEET	e i i i i i i i i i i i i i i i i i i i				NATURE OF STREAMBED : FINE SAND & SILTS W/ RIFFLEPOOL BED MORPHOLOGY	WATERWAY OF FULL OPENING. 115 SF
9 - 10	TE SHEETS						PEAK FLOW DATA	WATER CIDEACE ELEVATIONS AT
13 - 14	US 2 PROFILE SHEETS						Q 2.33 = 130 CFS Q 50 = 470 CFS	WATER SUIFAGE ELEVATIONS AT:
15 - 18	TRAFFIC CONTROL SHEET	TS					Q 10 = 340 CFS Q 100 = 550 CFS	Q2.33 = 836.3 FT VELOCITY= 5.8 FPS
21 - 22	TEMPORARY DETOUR PRI TEMPORARY TRAFFIC SIG	SNAL SHEETS					Q 25 = 440 CFS Q 500 = /1C CFS	Q25 = 839.0 FT * 9.9 FPS
23	BORING INFORMATION SH	∉ET					DATE OF FLOOD OF RECORD AUGUST 2011 (TROPICAL STORM RENE)	Q50 = 839.6 FT 10.1 FPS
24 - 31 32	PLAN AND ELEVATION						WATER SURFACE ELEV. UNKNOWN	Q100 = 840.2 FT
33 - 37	US 2 CROSS SECTIONS						NATURAL STREAM VELOCITY: @ Q50 = 10.0 FPS	IS THE ROADWAY OVERTOPPED BELOW Q100: NO
38 - 41 42 - 44	CHANNEL CROSS SECTIO	IDSS SECTIONS					DEBRIS: HEAVY	RELEF ELEVATION: 856.1 FT
45 - 46	RESOURCE LAYOUTS						DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? NO	DISCHARGE OVER ROAD @Q100: N/A
48 - 53	EPSC PLAN SHEETS	GATIVE					IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO	AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 840.2 FT OUTLET (841.5 FT INLET
54 - 55	EPSC DETAILS						IF YES, DESCRBE:	VERTICAL CLEARANCE: @ Q50 = 1.2 FT AT OUTLET (1.9 FT AT INLET)
								SCOUR: CONTRACTION SCOUR 1 FT
							WATERSHED STORAGE: 1% HEADWATERS:	
							MMEDIATELY ABOVE SITE:	REQURED CHANNEL PROTECTION. TIPE IN STONE FEL
								PERMIT INFORMATION
							EXISTING STRUCTORE INFORMATION	AVERAGE DALLY FLOW: 30 CFS DEPTH OR ELEVATION:
							STRUCTURE TYPE: 30-NCH IRON PIPE WITH 27-NCH EXT. AND 4X4 BOX EXT.	ORDINARYLOW WATER: 15 CFS 834.7 FT
							CLEAR SPAN(NORMAL TO STREAM): 27 INCH	ORDINART HIGH WATER: 55 CFS 835.2 FT
							VERTICAL CLEARANCE ABOVE STREAMBED: 27 INCH	TEMPORARY BRIDGE REQUIREMENTS
							DISPOSITION OF STRUCTURE: REMOVAL	STRUCTURE TYPE: TEMPORARY BRIDGE (SEE NOTE ON PI SHEET)
							TYPE OF MATERIAL UNDER SUBSTRUCTURE: SEE BORINGS	CLEAR SPAN (NORMAL TO STREAM): 4 FT
							WATER SURFACE ELEVATIONS AT	WATERWAYAREA OF FULL OPENING: 46 SF
							0233 = • VELOCITY = •	
							Q10 =	
							Q25 =	* THE EXISTING CULVERT IS SEVERELY UNDERSIZED AND HEC-RAS MODEL DOES
							Q100 = · · ·	BEEN OVERTOPPED ACCORDING TO LOCAL OBSERVATIONS WAS DURING
							LONG TERM STREAMBED CHANGES: UPSTREAM CHANNEL IS SIGNEICANTLY	TROPICAL STORM IRENE.
							WIDER THAN THE DOWNSTREAM CHANNEL AND HAS A LARGE SCOUR HOLE.	1. MANTAN ONE-WAY TRAFFIC ON A TEMPORARY BRIDGE.
							IS THE ROADWAY OVERTOPPED BELOW Q100:	2. INSTALL AND MAINTAIN TRAFFIC SIGNALS. 3. SIDEWALKS ARE NOT NECESSARY
							FREQUENCY:	4. THE APPROACHES FOR THE TEMPORARY BRIDGE SHALL BE PAVED.
							DISCHARGE OVER ROAD @Q100: *	DESIGN VALUES
								1. DESIGN LIVE LOAD HL-93
							UPSTREAM STRUCTURE	3. DESIGN SPAN L. 20.00 FT
							TOWN: GJLDHALL DISTANCE: 17 MI	
							CLEAR SPAN UNKNOWN CLEAR HEIGHT: UNKNOWN	5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX) Jy: 270 KSI
							YEAR BULT: UNKNOWN FULL WATERWAY: UNKNOWN	6. PRESTRESSED CONCRETE STRENGTH / c: 6.0 KSI 7. DESTRESSED CONCRETE DELEASE STRENGTH / c: 5.0 KSI
							STRUCTORE TIPE ORKNOWN	RESTRESSED CONCRETE RECEIPSE STRENGTH For BORST STRENGTH STRENGTH
							DOWNSTREAM STRUCTURE	9. CONCRETE, HIGH PERFORMANCE CLASS A I's: 4.0 KSI
							TOWN: LUNENBURG DISTANCE: 0.1 MI	11. CONCRETE, CLASS C I's 3.0 KSI
							HIGHWAY#: N/A STRUCTURE#: N/A	12. RENFORCING STEEL 13. STRUCTURAL STEEL AASHTO M270 (WEATHERING) 14. KO KSI
							YEAR BULT: NA FULL WATERWAY: NA	14. SOL UNIT WEIGHT Y 0.140 KCF
							STRUCTURE TYPE: N/A DUE TO CONFLUENCE WITH CONNECTICUT RIVER	15. NOMINAL BEARING RESISTANCE OF SOL 47: 2.5 KSF 16. SOL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)
								17. NOMINAL BEARING RESISTANCE OF ROCK q1. 10.0 KSF
							LRFR LOAD RATING FACTORS	10. KUCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) 19. NOMINAL AXIAL PLE RESISTANCE 19. NOMINAL AXIAL PLE RESISTANCE
							LOADING LEVELS H-20 HL-13 3S2 6 AXLE 3A STR 4A STR 5A SEM	20. PILE YIELD STRENGTH ASTN A572 fy:
							TONNAGE 20 36 36 66 30 34.5 38	22. EST. PLE LENGTH Lat
							POSTING	
							OPERATING	24. LATERAL PLE DEFLECTION
						AC DUNT INFRADE DETAIL	COMMENTS:	25. BASIC WIND SPEED V3a:
						LEVEL I LEVEL II LEVEL II	-	20. MINIMUM GROUND SNOW LOAD P0: 27. SEISMIC DATA P04: \$1:
						TYPE: TYPE: TYPE	NOTE:	\$1: ····
						GRADE: GRADE: GRADE:	THE TEMPORARY BRIDGE AS SHOWN IN THESE PLANS WAS DESIGNED FOR	PROJECT NAME: LUNENBURG
			т	RAFFIC DAT	A	TEMPORARY BRIDGE PROFILE ALONG TEMP CL	TRAFFIC CONTROL PURPOSES ONLY AND WILL MORE THAN MEET THE MINIMUM	PROJECT NUMBER: NH CULV(27)
YEAR	ADT DHV	% D	%T	ADTT	20 year ESAL for flexible pavement from 2014 to 2014 : 4515000	BOTTONI OF BEAMS FLEV + 84145 FT	HYDRAULIC REQUIREMENTS SPECIFIED ON THIS SHEET. AN ALTERNATE METHOD	FILE NAME: z11b294pi.xls PLOT DATE: 1/17/2014
2014	26(0 320	57	11.9	400	40 year ESAL for flexible payement from 2014 to 2014 to 2014	0 20.00 FT (MIN) 2 2	FOR THE DURATION OF THE PROJECT AND SHALL BE DESIGNED BY THE	PROJECT LEADER: DAN LANDRY DRAWN BY: SRB
		57	11.0	400	Design Speed : 50 mob	COENING 195 OF FT AM	CONTRACTOR TO MEET THE MINIMUM REQUIREMENTS SPECIFIED IN THE VTRANS	DESIGNED BY: SRB CHECKED BY: JPB
2024	2700 330	57	13.7	480	Preside chago: 20 mbu	 OPERATO 122:00 F1* (MIN) 	ITDRAULICO MARUAL.	PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 55





GENERAL INFORMATION	COMMON TOPOGRAPHIC POINT SYMBOLS	UTILITY SYMBOLOGY	EPSC LAYOUT PLAN SYMBOLOGY
GENERAL INFORMATION SYMBOLOGY LEGEND NOTE THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVER LINE WEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS, THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED. R.O.W. ABBREVIATIONS KONDES SHOULD BE USED TO CLARIFY AS NEEDED. POINT CODE DESCRIPTION CH CHANNEL EASEMENT CONST CONSTRUCTION EASEMENT CONST CONSTRUCTION EASEMENT COLL CULVENT EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR WE MAY EASEMENT DR WE MAY EASEMENT CO ERVICENT EASEMENT CO ERVICENT EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT CO ERVICENT EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT CO ERVICENT EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT DR DIRAINAGE EASEMENT CO ERVICENT EASEMENT DR DIRAINAGE ASEMENT DR DIRAINAGE ASEMENT DR DIRAINAGE ASEMENT DR DIRAINAGE ASEMENT DR DIRAINAGE ASEMENT DR DIRAINAGE ASEMENT DR DIRA	COMMON TOPOGRAPHIC POINT SYMBOLS POINT CODE DESCRIPTION * APL BOUND APPARENT LOCATION * BM BENCH MARK * BM BENCH MARK * BM BOUND ** COMB COMBINATION POLE ** COMB COMBINATION POLE ** COMB COMBINATION POLE ** COMB COMBINITION POLE ** COMB COMBINITION POLE ** CSO GAS FILL CAPOLE ** CSO GAS SHUT OFF ** GUY GUY WIRE ** GUYW GUY POLE ** HTTEE HARDWOOD A ** HYD HYDRANT * ** IPPE RON PIN ** IPPE RON PIN ** IPPE RO	UTILITY SYMBOLOGY UNDERGROUND UTILITIES	EPSC LAYOUT PLAN SYMBOLOGY EPSC MEASURES ONMOONNOONNO SILT FENCE SILT FENCE WETLAND SILT FENCE WETLAND BOUNDARY EROSION MATTING ENVIRONMENTAL RESOURNO RE-VEGE WETLAND BUFFER Z WIDLIFE HABITAT S ARCHEOLOGICAL & HISTORIC ISTICT HISTORIC STRICT I HISTORIC STRICT I HISTORIC STRICT INSTICT EXISTING FEA
UE LITITY EASEMENT (P) PERMANENT EASEMENT (T) TEMPORARY EASEMENT BNDNS BOUND SET BNDNS BOUND TO BE SET PNS IRON PIN SET PNS IRON PIN TO BE SET CALC CALCULATED ROW POINT [DISTANCE] DISTANCE CARRIED ON NEXT SHEET	POB POINT OF BEGINNING POB POINT OF EBGINNING STA STATION PREFIX AH AHEAD STATION SUFFIX BK BACK STATION SUFFIX D CURVE DEGREE OF (IOOFT) R CURVE DEGREE OF (IOOFT) R CURVE TANGENT LENGTH L CURVE LENGTH OF E CURVE EXTERNAL DISTANCE	TOWN ROW TOWN ROW TOWN ROW TOWN ROW TEMPORARY EASEMENT LINE (P) TEMPORARY EASEMENT LINE (T) TEMPORARY EASEMENT LINE (P/L) SR SR SR SR SR SLOPE RIGHTS	PROJECT NAME: LUNENBURG
		640 Commencia Streak, Marcolander, NH 65107 (620) 588-6222 - Free (500) 588-5822 chiptoneogene com - verse chiptoneo com	FROJECT NUMBERS INFL CULV(21) FLE NAME: IIb294/cos/zilb294/egend.dgn PROJECT LEADER: DAN LANDRY, P.E. DESIGNED BY1 MFH CONVENTIONAL SYMPHOLOGY LEGEND SWEET

OWNOOMNOOMNO	FILTER CURTAIN
	SILT FENCE
• × • × • ×	SILT FENCE WOVEN WIRE
••	CHECK DAM
	DISTURBED AREAS REQUIRING RE-VEGETATION
	EROSION MATTING
RONMENTA	
	WETLAND BOUNDARY
	RIPARIAN BUFFER ZONE
	WETLAND BUFFER ZONE
	SOIL TYPE BOUNDARY
	THREATENED & ENDANGERED SPECIES
NZ - HAZ -	HAZARDOUS WASTE AREA
AG	AGRICULTURAL LAND
- HABITAT	FISH & WILDLIFE HABITAT
- FLOOD FLAN	FLOOD PLAIN
∽—0HW—√—	ORDINARY HIGH WATER (OHW)
• • •	STORM WATER
	USDA FOREST SERVICE LANDS
	WILDLIFE HABITAT SUIT/CONN
HEULUGICA	L & HISTURIC
ARCH	ARCHEOLOGICAL BOUNDARY
-HISTORIC DIST	HISTORIC DISTRICT BOUNDARY
LINETOWNER	

HISTORIC -HISTORIC AREA HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

ISTING FEATURES	
	ROAD EDGE PAVEMENT
	ROAD EDGE GRAVEL
	DRIVEWAY EDGE
	DITCH
28	FOUNDATION
x	FENCE (EXISTING)
000	FENCE WOOD POST
000	FENCE STEEL POST
	GARDEN
000000	ROAD GUARDRAIL
	RAILROAD TRACKS
	CULVERT (EXISTING)
	STONE WALL
	WALL
alu lu lu lu	WOOD LINE
AUL CULUT	BRUSH LINE
*****************	HEDGE
5 5 5 5 5 5 5 5	BODY OF WATER EDGE
	LEDGE EXPOSED

FLE NAME: IIb294/cos/zIb294/egend.dgn PLOT DATE: //1/2014 PROJECT LEADER: DAN LANDRY, P.E. DRAWN BY: MFH DESIGNED BY: MFH CHECKED BY: MFH COVENTIONAL SYMBOLOGY LEGEND SKEET SHEET 8 0F 55













EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE 126 WHICH IS A 30" IRON PIPE EXTENDED AT THE OUTLET WITH A 4'-0"x4'-0" CONCRETE BOX CONSTRUCTED IN 1932 AND EXTENDED AT THE INLET 27"/28" UNER AND ITS HEADWALLS. BRIDGE 126 WILL BE REPLACED WITH A 116 FOOT PRECAST ARCH WITH A 10 FOOT RISE, SPANNING 20 FEET OVER THE HUDSON BROOK, ON NEW FOOTINGS ALONG THE SAME ALIGNMENT. BRIDGE 126 IS LOCATED IN THE TOWN OF LUNENBURG, ON US ROUTE 2, APPROXIMATEU 9.09 MILES WEST OF THE LUNENBURG, COULDHALL TOWN LINE.

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

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.82 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST 18 MONTHS.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS MOSTLY WELL ESTABLISHED OPEN AREAS WITH SOME WOODED AREAS. US ROUTE 2, A PAYED DRIVEWAY, AND FOUR GRAVEL DRIVEWAYS ARE WITHIN THE PROJECT SITE. THERE ARE TWO RESIDENCES ON THE SOUTH SIDE OF THE SITE AND A RESIDENCE ON THE NORTHEAST SIDE OF THE PROJECT WITH GRASS AND TREE BUFFERS AT EACH RESIDENCE.

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

THE HUDSON BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROCK IS CLASSIFIED AS LOW-GRADIENT, VEGETATED WETLAND AT THE SITE. THE STREAM BED CONSISTS OF SILTS AND FINE SAND WITH OCCASIONAL SMALL POCKETS OF FINE GRAVEL. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS 3.2 MILES². DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF PINE AND HAROWOOD TREES, UNDERGROWTH, AND BRUSH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACE/RENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STANDE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDER SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S., DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ESSEX, VERMONT, SOILS ON THE PROJECT SITE ARE KINSMAN SAND, 0 TO 3% SLOPES, "K FACTOR" = 0.17. THE SOIL IS NOT CONSIDERED HIGHLY ERODIBLE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING: 0.0-0.23 = LOW EROSION POTENTIAL 0.24-0.36 = MODERATE EROSION POTENTIAL

0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS CRITICAL HABITATS: NO

UNITED HADITATS: NO HISTORICAL OR ARCHEOLOGICAL AREAS: YES, FOUR ARCHAEOLOGICAL AREAS IN EACH QUADRANT PRIME AGRICULTURAL LAND: YES, PRIME(b) ON WEST SIDE OF US ROUTE 2 THREATENED AND ENDANGERED SPECIES: NO WATER RESOURCE: HUDSON BROOK WETLANDS: YES, UPSTREAM OF THE CULVERT

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORWWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC).

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED ON THIS PROJECT. THE EXISTING ROADWAY WILL BE UTILIZED TO ACCESS THE BRIDGE.

1.4.4 INSTALL SEDIMENT BARRIERS

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CCP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE JSED INSTEAD OF SILT FENCE WITHIN 100 FET UPSLOPE OF RECEIVING WATERS.

1.4.5 DIVERT UPLAND RUNOFF

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

THIS PROJECT WILL HAVE A PAVED DETOUR. CONSTRUCTION VEHICLES WILL BE ABLE TO UTILIZE THE EXISTING ROADWAY. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

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

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT ANTICIPATED ON THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

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

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

TEMPORARY EROSION CONTROL MATTING WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.9 WINTER STABILIZATION

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

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE ERCSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH. STONE FILL SHALL BE USED TO STABILIZE ROADWAY SLOPES AND THE CHANNEL AS SHOWN ON THE PLANS.

1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING COFFERDAM IS ANTICIPATED. THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

1.4.12 INSPECT YOUR SITE

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

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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

1.5.3 UPDATES

	PROJECT NAME: LUNENBURG PROJECT NUMBER: NH CULV(27)	
540 Commercial Street, Manchestar, NH 03101	FILE NAME: IIb294/cos/zIIb294erodet.dgn	PLOT DATE: 1/17/2014
(003) 668-8223 - Fax: (603) 668-8602	PROJECT LEADER: DAN LANDRY, P.E.	DRAWN BY: MFH
deglorations - New Hampshire - Vermont	DESIGNED BY: MFH	CHECKED BY: PTS
Maine - New Hampshire - Vermont	EROSION CONTROL NARRATIVE	SHEET 47 OF 55













	LD	SIAG		Lorman of	merman (a)
WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
57.5%	22.0	45	PED TOP	90%	95%
5.0%	3	0	RED TUP	90%	9375
15.0%	3	10	ANNUAL BYE CRASS	05%	90%
5.0%		0	ANNUAL RIE GRASS	05%	55%
100 %	00	120			
		VAOT UR	BAN AREA MIX		
	LB	S/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			
1		SOIL AMEND	MENT GUIDANCE		
1	FER	RTILIZER	LIME		
3	BROADCAST	HYDROSEED	BROADCAST HYDROSE	ED	
	10.20.10	FOLLOW	DELLETIZED EQUION		
2	10 20 10	ALA MUTACTUR	PELLETIZED FOLLOW	OTUOCO	
	500 LBS/AC	MANUFACTURE	R 2 TONS/AC MANUFA	CTURER	
	500 LBS/AC		R 2 TONSIAC MANUFA	CTURER	
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RAL SEED TABLISHE BAN SEED TABLISHE ISHE AND IGHT AND RTILIZER RECTED B V MULCHI HIEVE 90 PSOIL: RECTED B DROSECDID THE TY PES OF S	500 LBS/AC MIX: USE D UPLAND X D LAWN ARE D LAWN ARE IX TURES4 SHALL BE X AND LIMES Y THE ENGI TO BE PL X GROUND C TO BE USED Y THE ENGI NG: ALTHO DE OF HYDR OIL AMENDM	MANUFACTURE CONSTRUCT AS INDICATE NON WETLAND AS INDICATE SHALL NOT H. FREE OF ALL TONES SHALL NEER ACED ON EAR OVER OF AS I WITH SEED NEER. UCH GUIDANC SEED WILL ENTS TO BE	IPELETIZED CONCENT IPELETIZED CONCENT IN THE PLANS AND/C IN THE	CTURER OR FOR A Y THE CO OR FOR A EXCEED IN N ON PLA TE OF 2 PLANS, E SITE C THE AMOUNT	LL NTRACTOR. LL G 0.40% BY N OR AS TONS/ACRE, OR AS ONDITIONS NTS AND
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(000) 685-622 - Nex (100) 685-6822	PROJECT LEADER: DAN LANDRY, P.E.	DRAWN BY: MFH
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