VTrans Working to Get You There
Vermont Agency of Transportation

NH Route 119
&
VT Route 142

Vermont Wetlands Permit

Prepared by:

McFarland Johnson

Brattleboro, VT-Hinsdale, NH
NHDOT 12210C
VTRANS BF A004(152)

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VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
WETLANDS PROGRAM

Application Submittal Instructions

- If submitting via US post, include a check in the correct fee amount made payable to the "**State of Vermont**," and a CD for applications that contain large files (1 MB or greater).

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

- Applications can also be submitted via email to the following address: anr.wsmdwetlands@vermont.gov
  - If submitting via email, please mail a check in the correct fee amount, made payable to the "**State of Vermont**," and a copy of the Vermont Wetlands Program Application Database Form (this page) to the address provided above. ***It is not necessary to mail in a copy of the complete application.***

Applicant Name: VT Agency of Transportation	**Application Preparer Name:** Christine Perron, McFarland Johnson, Inc.
Town where project is located: Brattleboro	**County:** Windham
Span#: *(As found on your property tax bill)* State Right-of-Way	**Vermont Wetlands Project (VWP)# if Known:**
Project Location Description: *911 street address or direction from nearest intersection* Route 142	
Brief Project Summary: The proposed project involves the construction of a new bridge structure carrying NH Route 119 over the Connecticut River between Brattleboro, VT and Hinsdale, NH. See attached Project Description.	

Application Type: ☒ Individual Permit (single wetland) ☐ After the Fact Permit ☐ Wetland Determination

Existing Land Use Type(s): *(Check all that apply)* ☐ Residential (single family) ☐ Residential (subdivision) ☐ Undeveloped ☐ Agriculture ☒ Transportation ☐ Forestry ☐ Parks/Rec/Trail ☐ Institutional ☐ Industrial/Commercial

Proposed Land Use Type(s): *(Check all that apply)* ☐ Residential (single family) ☐ Residential (subdivision) ☐ Undeveloped ☐ Agriculture ☒ Transportation ☐ Forestry ☐ Parks/Rec/Trail ☐ Institutional ☐ Industrial/Commercial

Proposed Impact Type(s): *(Check all that apply)* ☐ Buildings ☐ Utilities ☐ Parking ☐ Septic/Well ☒ Stormwater ☐ Driveway ☐ Park/Path ☐ Agriculture ☐ Pond ☐ Lawn ☐ Dry Hydrant ☐ Beaver Dam Alteration ☐ Silviculture ☐ Road ☐ Aesthetics ☐ No Impact ☐ Other:_____

Wetland and Buffer Impact Type: *(Check all that apply)* ☐ Dredge ☐ Drain ☒ Cut Vegetation ☒ Stormwater ☒ Trench/Fill ☐ Other:_____

Wetland Delineation Date(s): June 2018

Wetland Improvements		Buffer Zone Improvements		Reason for Improvements
Restoration:	s.f.	Restoration:	s.f.	☐ Correction of Violation
Creation:	s.f.	Creation:	s.f.	☐ To offset permit impacts
Enhancement:	s.f.	Enhancement:	s.f.	☐ Voluntary
Conservation:	s.f.	Conservation:	s.f.	

Wetland Review Fee Calculations: *Round to the nearest square foot. Fees will auto-calculate.*

Total Wetland Impact (minus linear clear, including ATF)	2500 square feet (s.f.)	Calculated at $0.75 per square foot	$ 1,875.00
Total Wetland Clearing (qualified linear projects only)	square feet (s.f.)	Calculated at $0.25 per square foot	$ 0.00
After The Fact Wetland Impact (to correct a violation)	square feet (s.f.)	Calculated at $0.75 per square foot *(Required for after the fact permit applications)*	$ 0.00

Total Buffer Zone Review Fee Calculations: *Round to the nearest square foot*

Total Buffer Zone Impact	2613 square feet (s.f.)	Calculated at $0.25 per square foot	$ 653.25

Additional Fees

	Agricultural Crop Conversion *Check here:* ☐ *(Flat fee of $200.00)*	$ 0.00
	Minimum Review Fee: ($50.00) *Required when total impact fee is less than $50.00*	$ 0.00
	Administrative Fee:	$ 240.00
Make Checks Payable to: State of Vermont	**Total Review Fee Amount:**	$ 2,768.25

Vermont Individual Wetland Permit Application and Determination Petition Single Wetland

Under Sections 8 and 9
of the Vermont Wetland Rules

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
WETLANDS PROGRAM

Refund Policy

- If an application is modified, withdrawn or denied after technical review has commenced, all fees are retained.
- If an application is withdrawn prior to administrative review, all fees will be refunded.
- If an application is withdrawn after administrative review but prior to commencement of technical review, deemed administratively incomplete and returned to the applicant, or determined that a permit is not required; administrative fees are retained, and permit application review fees will be refunded.

☒ ***By checking this box, the applicant certifies that they have read and understands the refund policy***

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

Applicant Name: James Brady, VT Agency of Transportation

Address: One National Life Drive, Davis Building	City/Town: Montpelier	State: VT	Zip: 05633
Phone Number: (802) 279-2562	Email Address: james.brady@vermont.gov *(Required to receive notices via Environmental Notice Bulletin)*		

Applicant Certification:
By signing this application, you are certifying that all information contained within is true, accurate, and complete to the best of your knowledge.

☒ ***By checking this box, the applicant certifies that all adjoining landowners have been provided an official notice via US mail prior to the submission of this application. For guidance on who you need to notify, please go to our website: APO Guidance Document***

Applicant Signature: James Brady Digitally signed by James Brady Date: 2019.08.28 11:05:19 -04'00' Date:_____

Landowner Information: *Landowner must sign the application. If landowner is different from the applicant this section must be filled out*

☐ **Check this box if landowner is the same as the applicant**

Landowner Name:

Address:	City/Town:	State:	Zip:
Phone Number:	Email Address: *(Required to receive notices via Environmental Notice Bulletin)*		

Landowner Easement: *Attach copies of any easements, agreements, or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit.* ***List the attachment for this information in this section. Describe the nature of the agreement or easement in the space provided below:***

Landowner Certification:
By signing this application, you are certifying that all information contained within is true, accurate, and complete to the best of your knowledge.
Original signature is required.

Landowner Signature:_____ Date:_____

Application Preparer Information: *Consultant, engineer, or other representative that is responsible for filling out the application, if other than the applicant or landowner.*

Application Preparer Name: Christine Perron, McFarland Johnson, Inc.

Address: 53 Regional Drive	City/Town: Concord	State: NH	Zip: 03301
Phone Number: (603) 225-2978	Email Address: cperron@mjinc.com *(Required to receive notices via Environmental Notice Bulletin)*		

Application Preparer Certification:
By signing this application, you are certifying that all information contained within is true, accurate, and complete to the best of your knowledge.
Original signature is required.

Application Preparer Signature: Christine Perron Digitally signed by Christine Perron Date: 2019.08.28 12:03:14 -04'00' Date:_____

1. Location of wetland and project:
Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing features.

Project area is located south of the existing NH route 119 crossing along Vernon Drive in Brattleboro, VT.

2. Site visit date(s) and attendees:
*A site visit is **required** before the application can be called complete*

2.1 Date of Visit(s) with State District Wetland Ecologist	2.2. List of people present for site visit(s) including Ecologist, landowner, and representatives.
August 8, 2018	Rebecca Chalmers

3. Wetland Classification:
If the wetland is presumptive, (not mapped) you are required to fill out section 21

3.1. The wetland is a Class II wetland because:

The wetland is mapped on the VSWI

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

<Choose One>
<Choose One>
<Choose One>

4. Description of the Entire Wetland:
Answer the following questions regarding the entire wetland, which includes all wetland areas connected to the wetland proposed for impact. Answers may be estimates based on desktop review when the wetland extends past the investigation area (parcel boundary). Specific questions about the wetland in the project area will follow.

4.1. Size of Complex in Acres:
The size of the complex can be obtained from the Wetland Inventory Map for mapped wetlands, or best estimation based on review of aerial photography or site visit. This is not the size of the of the delineated wetland on the subject property unless the entirety of the wetland is represented in the delineation.

3.1 acres (based on delineated wetland boundary and aerial imagery). Wetland is adjacent to the Connecticut River (not included in complex acreage).

4.2. Vegetation Cover Types Present:
List all wetland types in the wetland or wetland complex and their percent cover.
***For example:** 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland*

Approximately 52% (1.6 ac) palustrine emergent marsh adjacent to the Connecticut River. The remaining 48% (1.5 ac) consists of a backwater area of open water.

4.3. Landscape Position:
Where is the wetland located on the landscape?
***For example:** Bottom of a basin, edge of a stream, shore of a lake, etc.*

The wetland is adjacent to the Connecticut River. The western edge of the wetland boundary follows he toe-of-slope of a steep railroad embankment. The eastern edge consists of a narrow strip of palustrine emergent marsh approximately 50-80 feet wide that is dominated by broad leaf cattail, separating the backwatered area from the main channel of the river.

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

The wetland consists of a backwatered area adjacent to the Connecticut River.

4.4.1. Direction of Flow:
For example: *Stream flows from north to south through the wetland complex, or the wetland drains generally to the southwest.*

The Connecticut River flows from the north to the south in the project area. There is a direct connection between the wetland and the river at the northern end of the wetland.

4.4.2. Influence of Hydrology on the Entire Wetland:
For example: *The river provides floodwater to the wetland in the spring.*

The Connecticut River regularly floods the wetland during higher flows. The wetland is located entirely within the 100-year floodplain of the river.

4.4.3. Relation of Entire Wetland to the Project Area:
The distance between the project area and any nearby surface waters

The project entails the construction of a new bridge spanning the Connecticut River and connecting with VT Route 142 just to the north of the wetland. Proposed work extends north and south along VT Route 142 from the proposed intersection with NH Route 119. The only work within the wetland, which is located between Route 142 and the river, will be the construction of a new drainage outlet.

4.4.4. Entire Wetland Hydroperiod:
Discuss the frequency and duration of flooding, ponding, and/or soil saturation

The backwatered portion of the wetland is permanently flooded, the emergent marsh portion of the wetland is semipermanently flooded.

4.5. Surrounding Land Use of the Entire Wetland:
For example: *Rural residential and forested; Agricultural and undeveloped*

The wetland is bordered by a steep railroad enbankment to the west, with a railroad running north-south. There is an oil facility adjacent to the north of the wetland. The Connecticut River is located to the east and south of the wetland.

4.6. Relation of the Entire Wetland to Other Nearby Wetlands:
Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question.

The wetland is hydrologically connected to and within the floodplain of the Connecticut River.

4.7. Pre-project Cumulative Impacts to the Entire Wetland:
Identify any cumulative ongoing impacts outside of the proposed project that may influence the wetland.
Examples include but are not limited to: *Wetland encroachments on and off the subject property, land use management in or surrounding the wetland, or development that influences hydrology or water quality. List any past Vermont Wetland Permits or CUD's related to thisproperty.*

None known.

5. Description of Subject Wetland and Buffer:

Subject wetland is defined as the area of wetland in the project vicinity, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the wetland that could either be directly or indirectly impacted by the project, as defined by chemical, physical, or biological characteristics. This may include the entire wetland area, or wetland area off property. For multiple wetlands, fill out the multiple wetlands table.

5.1. Context of Subject Wetland:

Describe where the subject wetland is in the context of the entire wetland described in section 4 above.
***For example:** Upslope, narrow eastern "finger", 400 ft. from open water portion.*

The subject wetland is located along the Connecticut River. The only area of this wetland that will be impacted is located at the southern end of the wetland.

5.2. Subject Wetland Land Use:

***For example:** Mowed lawn, old field, naturally vegetated.*
Describe any previous and ongoing disturbance in the subject wetland.

Naturally vegetated and partially open water; floodplain. There is no known or visible ongoing disturbance at the site.

5.3. Subject Wetland Vegetation:

List dominant wetland vegetation cover type and associated dominant plant species.

The majority of this wetland consists of an area of open water, with a narrow strip of palustrine emergent marsh approximately 50-80 feet wide that is dominated by broad leaf cattail separating this backwatered area from the main channel of the river.

5.4. Subject Wetland Soils:

Use the USDA NRCS information where possible and use the ACOE Delineation Manual soil description

The soil type identified by USDA NRCS within the wetland is water.

5.5. Subject Wetland Hydrology:

Use the description from the ACOE Delineation Manual

Surface water (A1)

5.6. Buffer Zone:

Describe the buffer zone of the subject wetland (50-foot envelope of land adjacent to wetland boundary).

5.6.1. Buffer Land Use:

***For example:** Mowed shoulder, forested, old field, paved road, and residential lawns, etc.*
Describe any previous and ongoing disturbance in the buffer zone.

The buffer zone consists of a narrow forested strip of land between the wetland edge and existing railroad tracks. There is a steep embankment with the railroad corridor located at the top and the wetland located along the toe-of-slope. The buffer also extends slightly onto the Barrows Oil Company property at the north end of the wetland.

5.6.2. Buffer Vegetation:

List the vegetation cover type and dominant plant species.

The forested strip between the wetland and railroad consists of oak and maple with scattered white pine. The remaining buffer consists of the maintained railroad corridor.

5.6.3. Buffer Soils:
Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description.

USDA NRCS soils within the buffer consist of Quonset and Warwick soils on 25-70% slopes and Windsor loamy sand on 25-60% slopes.

6. Entire Wetland Function and Value Summary (as defined in the Vermont Wetland Rules Section 5):
Check which functions are present in the entire wetland

■ Flood/Storm Storage	☐ RTE Species
■ Surface & Groundwater Protection	☐ Education & Research
☐ Fish Habitat	☐ Recreation/Economic
■ Wildlife Habitat	☐ Open Space/Aesthetics
☐ Exemplary Natural Community	■ Erosion Control

Functions and Values: *For each function and value:*

1. *Evaluate the entire wetland and check all that apply. Use Wetland Inventory Maps for offsite areas*
2. *Evaluate how the wetland in the project area contributes to the function.*
3. *Explain how the project will not result in adverse impacts to the function.*

Include any information on specific avoidance and minimization measures.

7. Water 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 unconstructed 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, it's 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 this box if any of the following conditions apply that may indicate the wetland provides this function at a ***lower*** level.

- ☐ Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment).
- ☐ Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.
- ☐ Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures.
- ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.

Water Storage for Flood Water and Storm Runoff Continued…

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

☐ History of downstream flood damage to public or private property.

☐ Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by loss or reduction of the water storage function.

- ☐ Developed public or private property
- ☐ Stream banks susceptible to scouring and erosion
- ☐ Important habitat for aquatic life

☐ The wetland is large in size and naturally vegetated.

☐ Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function.

- ☐ Developed public or private property.
- ☐ Stream banks susceptible to scouring and erosion.
- ☐ Important habitat for aquatic life.

☐ The wetland is large in size and naturally vegetated

☒ Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland.

- ☒ A large amount of impervious surface in urbanized areas.
- ☐ Relatively impervious soils.
- ☒ Steep slopes in the adjacent areas.

7.1 Subject Wetland Contribution to Water Storage:
Explain how the subject wetland contributes to the function listed above

The wetland is located within the floodplain of the Connecticut River and adjacent to VT Route 142 and the NE Central Railroad.

7.2 Statement of No Undue Adverse Impact to *Water Storage for Flood Water and Storm Runoff*:
Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, and compensation measures relevant to this function.

Overall, the project will be adding 0.8 acres of new impervious surface and removing 0.4 acres of existing impervious surface, for a net increase of 0.4 acres. A proposed gravel wetland will treat runoff from 1.1 acres of pavement to the north of the wetland. The proposed project will only result in temporary impacts to the wetland. There will be no adverse impact to storage capacity within the wetland.

8. Surface and Ground Water Protection:

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

- ■ Constricted or no outlets.
- ☐ Low water velocity through dense, persistent vegetation.
- ■ Hydroperiod permanently flooded or saturated.
- ☐ Wetlands in depositional environments with persistent vegetation wider than 20 feet.
- ■ Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
- ☐ Presence of seeps or springs.
- ☐ Wetland contains a high amount of microtopography that helps slow and filter surface water.
- ☐ Position in the landscape indicates the wetland is a headwaters area.
- ■ Wetland is adjacent to surface waters.
- ☐ Wetland recharges a drinking water source.
- ☐ Water sampling indicates removal of pollutants or nutrients.
- ☐ Water sampling indicates retention of sediments or organic matter.
- ☐ Fine mineral soils and alkalinity not low.
- ☐ The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

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

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

- ☐ Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.
- ☐ Presence of ditches or channels that confine water and restrict contact of water with vegetation.
- ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.
- ☐ Current use in the wetland results in disturbance that compromises this function.

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

- ☐ The wetland is adjacent to a well head or source protection area, and provides ground water recharge.
- ☐ The wetland provides flows to Class A surface water. (Check ANR Atlas)
- ☐ The wetland contributes to the protection or improvement of water quality of any impaired waters.
- ☐ The wetland is large in size and naturally vegetated.

8.1. Subject Wetland Contribution to Water Protection:
Explain how the subject wetland contributes to the function listed above.

The backwatered area of the wetland is permanently flooded, there is a vegetated bar/peninsula, and the wetland is adjacent to the Connecticut River.

8.2. Statement of No Undue Adverse Impact to *Surface and Ground Water Protection*:
Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

The proposed project will result in only temporary impacts to the wetland and will not impact the surface and groundwater protection function of the wetland.

9. Fish Habitat:

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

☐ Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability.

☐ Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers.

☐ Documented or professionally judged spawning habitat for northern pike.

☐ Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species.

☐ The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water and food sources.

9.1. Subject Wetland Contribution to Fish Habitat:
Explain how the subject wetland contributes to the function listed above.

9.2. Statement of No Undue Adverse Impact to *Fish Habitat*:
Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

10. Wildlife Habitat

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

- ▣ Provides resting, feeding staging or roosting habitat to support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands.
- ▣ Habitat to support one or more breeding pairs or broods of waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer zone.
- ☐ Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees.
- ▣ Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.
- ☐ Supports winter habitat for white-tailed deer. Good habitats for this species include softwood swamps. Evidence of use includes browsing, bark stripping, worn trails, or pellet piles.
- ☐ Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
- ▣ Has the habitat to support muskrat, otter, or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers, and streams.
- ☐ Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
- ☐ Provides the following habitats that support the reproduction of uncommon Vermont amphibian species including:
  - ☐ Wood frog, Jefferson salamander, blue-spotted salamander, or spotted salamander. Breeding habitat for these species includes vernal pools and small ponds.
  - ☐ Northern dusky salamander and the spring salamander. Habitat for these species includes headwater seeps, springs, and streams.
  - ☐ The four-toed salamander, Fowler's toad, western or boreal chorus frog, or other amphibians, found in Vermont of similar significance.
- ▣ Supports or has the habitat to support populations of Vermont amphibian species including, but not limited to, pickerel frog, northern leopard frog, mink frog, and others found in Vermont of similar significance. Good habitat for these types of species include large marsh systems with open water components.
- ☐ Supports or has the habitat to support populations of uncommon Vermont reptile species including: wood turtle, northern map turtle, eastern musk turtle, spotted turtle, spiny softshell, eastern ribbonsnake, northern watersnake, and others found in Vermont of similar significance.
- ☐ Supports or has the habitat to support significant populations of Vermont reptile species, including smooth greensnake, DeKay's brownsnake, or other more common wetland-associated species.
- ▣ Meets four or more of the following conditions indicative of wildlife habitat diversity:
  - ☐ Three or more wetland vegetation classes (greater than 1/2 acre) present including but not

Wildlife Habitat Continued…

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

☒ The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp.

☒ Located adjacent to a lake, pond, river or stream.

☐ Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land.

☒ Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water.

☒ One of the following:

- ☒ Hydrologically connected to other wetlands of different dominant classes or open water within 1 mile.
- ☐ Hydrologically connected to other wetlands of same dominant class within 1/2 mile.
- ☐ Within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected.

☐ Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation.

☐ Contains evidence that it is used by wetland dependent wildlife species

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

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

- ☒ The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools and seeps are generally small in size, so this does not apply).
- ☒ The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use.
- ☐ The current use in the wetland results in frequent cutting, mowing or other disturbance.
- ☐ The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species.

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

- ☐ The wetland is large in size and high in quality.
- ☐ The habitat has the potential to support several species based on the assessment above.
- ☐ Wetland is associated with an important wildlife corridor.
- ☐ The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.

10.1. Subject Wetland Contribution to Wildlife Habitat Functions:
Explain how the subject wetland contributes to the function listed above.

The wetland contains both open water and emergent marsh. Additionally, the wetland is adjacent to the Connecticut River, which contributes to this function.

10.2. Statement of No Undue Adverse Impact to *Wildlife Habitat*:
Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

The project will only result in temporary impacts to install drainage and will not result in impacts to the wildlife habitat function of the wetland.

11. Exemplary Wetland Natural Community

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

☐ Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function

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

☐ Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department.

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

☐ Deep peat accumulation reflecting a long history of wetland formation;

☐ Forested wetlands displaying very old trees and other old growth characteristics;

☐ A wetland natural community that is at the edge of the normal range for that type;

☐ A wetland mosaic containing examples of several to many wetland community types; or

☐ A large wetland complex containing examples of several wetland community types.

List species or communities of concern:

11.1. Subject Wetland Proximity to Exemplary Natural Communities

11.2. Statement of No Undue Adverse Impact to Exemplary Wetland Natural Community:
Explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance, minimization, or compensation measures relevant to this function.

12. Rare, Threatened, and Endangered Species Habitat:

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

☐ Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function.

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

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

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

☐ There is creditable documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department;

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

List name of species and ranking:

12.1. Subject Wetland Contribution to RTE Habitat:

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

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

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

13. Education and Research in Natural Sciences:

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

☐ Owned by or leased to a public entity dedicated to education or research.

☐ History of use for education or research.

☐ Has one or more characteristics making it valuable for education or research.

13.1. Subject Wetland Education and Research Potential:
Explain how the subject wetland contributes to the function listed above.

13.2 Statement of No Undue Adverse Impact to *Education and Research in Natural Sciences*:
Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

14. Recreational Value and Economic Benefits:

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

☐ Used for, or contributes to, recreational activities.

☐ Provides economic benefits.

☐ Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law.

☐ Used for harvesting of wild foods.

Comments:

14.1. Subject Wetland Recreational and Economic Value:
Explain how the subject wetland contributes to the value listed above.

14.2. Statement of No Undue Adverse Impact to *Recreational Value and Economic Benefits*:
Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

15. Open Space and Aesthetics:

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

☐ Can be readily observed by the public; and

☐ Possesses special or unique aesthetic qualities; or

☐ Has prominence as a distinct feature in the surrounding landscape;

☐ Has been identified as important open space in a municipal, regional or state plan.

Comments:

15.1. Subject Wetland Aesthetic Value:
Explain how the subject wetland contributes to the value listed above.

15.2. Statement of No Undue Adverse Impact to *Open Space and Aesthetics:*
Explain how the proposed project will not result in any undue, adverse impact to this value. Include any avoidance, minimization, or compensation measures relevant to this value.

16. Erosion Control Through Binding and Stabilizing

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

▣ Erosive forces such as wave or current energy are present and any of the following are present as well:

▣ Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force.

▣ Good interspersion of persistent emergent vegetation and water along course of water flow.

☐ Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control.

What type of erosive forces are present?

☐ Lake fetch and waves

▣ High current velocities:

☐ Water level influenced by upstream impoundment

Erosion Control Through Binding and Stabilization Continued...

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

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

☐ The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force.

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

☐ The stream contains high sinuosity.

☐ Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor.

16.1. Subject Wetland Contribution to Erosion Control:
Explain how the subject wetland contributes to the function listed above.

The proposed wetland is located adjacent to the Connecticut River, with an emergent marsh island/bar separating the wetland from the river.

16.2. Statement of No Undue Adverse Impact to *Erosion Control:*
Explain how the proposed project will not result in any undue, adverse impact to this function. include any avoidance, minimization, or compensation measures relevant to this function.

The project will only result in limited temporary impacts and will not impact the erosion control function of the wetland.

17. Project Description:

17.1. Overall Project Purpose:
Description of the basic project and why it is needed. Partial projects with no clear purpose will not be accepted.
***For example:** six-lot residential subdivision; expansion of an existing commercial building, building a single-family residence.*

The project involves the construction of a new bridge on a new alignment, carrying NH Route 119 over the Connecticut River between the towns of Hinsdale, NH and Brattleboro, VT. The existing bridge structures were originally constructed in 1920 and rehabilitated in 2003. These structures have deteriorated and are functionally obsolete due to vertical clearance and roadway widths. The proposed project will provide a safe, functionally efficient, and cost-effective transportation corridor across the Connecticut River. Associated roadway work in Vermont will include drainage upgrades and stormwater treatment.

17.2. Description of Project Component Impacting Wetland or Buffer:
Explain in general terms which portions of the project will impact wetlands or buffer zones.
***For example:** Cross the wetland with a driveway to construct a residential subdivision, upgrade existing road through buffer to improve access, extend a trail system.*

The temporary impacts to the wetland and buffer are associated with construction access for drainage work.

17.3. Acreage of Parcel(s) or Easements(s):
Acreage of subject property.

The proposed wetland and buffer impacts are located within the right-of-way of the New England Central Railroad, a linear transportation

17.4. Acreage of Project Area:
Acreage of area involved in the project.

Approximately 5 acres

18. Project Details:
Provide details regarding specific impacts to the wetland and buffer zone.

.

18.1. Specific Impacts to Wetland and Buffer Zone Dimensions:
List portions of the project that will specifically impact the wetland or buffer zone and their dimensions. ***For example:*** *driveway crossing with 16' wide fill; installation of buried sewer force main with 5' trench Including fill footprint; addition of Stormwater outfall which directs flow to northern portion of wetland*

Approximately 2,500 sq ft of temporary impact in this wetland and 2,613 sq ft of temporary impacts to the wetland buffer for construction access needed for drainage work. The project will include construction of a gravel wetland, and water from this treatment area will be carried by a pipe that is located adjacent to Vernon Street (Route 142) and then jacked under the railroad to outlet into the wetland along the river. Construction access is needed within the buffer and wetland to install the drainage pipe. A temporary construction trestle will be located within the wetland to provide access.

18.2. Bridges and Culverts:
Culvert circumference, length, placement and shapes, or bridge details. List any stream alteration permits that are required or obtained where perennial streams or rivers are involved.

A drainage pipe will be jacked under the railroad between VT Route 142 and the railroad embankment.

A stream alteration permit is not required for this project.

18.3. Construction Sequence:
Describe any details pertaining to the work planned in the wetland and buffer in terms of sequence or phasing that is relevant. Describe the construction limits of disturbance, how those will be marked, and check to ensure these are shown on the site plans as well.

The duration of the overall project will be approximately 4 years, with work in VT lasting up to 3 years. Drainage work will be completed in one season within that timeframe. Access to install the proposed drainage pipe under the railroad will likely be from a temporary trestle in the wetland to provide a stable platform from which the pipe jacking could occur. Access to the site will be achieved off the railroad embankment. Clearing will occur within the wetland buffer to facilitate access; however, stumps will not be removed. Limits of disturbance are shown on the enclosed plans, which will be provided to the Contractor.

18.4. Stormwater Design**
List any stormwater permits obtained or applied for. Describe stormwater and/or erosion controls proposed. ***** Erosion prevention is required to prevent sediment from entering the wetland.***

The project will require a VT Construction Stormwater Permit. Erosion and sediment control measures will be installed around all work areas to prevent adverse effects to the wetland and river during construction.

18.5. Permanent Demarcation of Limit of Impacts**
Describe any boulders, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. *****Permanent demarcations are required for projects with ongoing activities in or near wetlands or buffer zones such as houses, yards, woody clearing or parking areas, and needs to be depicted on the site plans.***

The impacts to the wetlands are temporary and therefore will not require permanent demarcations.

19. Wetland and Buffer Zone Impacts:

19.1. Wetland Impacts:

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

Permanent Wetland Fill	s.f.
Temporary Wetland Impact	2500 s.f.
Other Permanent Wetland Impact ***(this number includes clearing of woody vegetation, dredging, and does not include fill)***	s.f.
Total Wetland Impact:	2500 s.f.

Describe in detail the proposed impact to wetlands
For example: *Fill for road crossing, temporary impacts for trench and fill related to utility installation.*

General narrative required here

Approximately 2,500 sq ft of temporary impact in this wetland for construction access needed for drainage work. Access will be obtained via a temporary trestle.

19.2. Buffer Zone Impacts:

Summarize the square footage of impact in the appropriate category.

Temporary Buffer Impact	2613 s.f.
Permanent Buffer Impact	s.f.
Total Buffer Impact:	2613 s.f.

Describe in detail the proposed impact to buffer zones
For example: Addition of fill along roadway embankment extending into buffer zone.

General narrative required here

Approximately 2,613 sq ft of temporary impact in this wetland for construction access needed for drainage work. Clearing will occur within the wetland buffer to facilitate access; however, stumps will not be removed.

19.3. Cumulative Impacts:

List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland.
For example: *Increased noise from parking lot, vegetation management, inputs from stormwater pond outlet, reduction in flood storage volume from the addition of fill from the project.*

All impacts to the wetland and buffer will be temporary. The project will result in a net increase in impervious surface of 0.4 acres. A gravel wetland will be constructed as part of the project, and is designed to treat runoff from 1.1 acres of pavement. Therefore, the project should result in a net benefit to water quality.

20. Mitigation Sequence:

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

20.1. Avoidance of Wetland Impacts:

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

The only impact to wetlands will be from the construction of a drainage pipe to outlet the proposed gravel wetland. The pipe cannot be located beyond the wetland as the proposed pipe location is the lowest point in the project area. The construction access will only result in temporary impacts to the wetland.

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

The only impact to wetlands will be from the construction of a drainage pipe to outlet the proposed gravel wetland. The pipe cannot be located beyond the wetland as the proposed pipe location is the lowest point in the project area. The construction access will only result in temporary impacts to the wetland.

20.2. Avoidance to the Impact to Functions and Values:

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

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

Impacts will be minimized by retaining all stumps within the wetland buffer, gaining access via a temporary trestle rather than filling the wetland, and installing appropriate erosion and sediment control measures during construction.

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

Impacts to the wetland are temporary and required for construction access for drainage work. The project is not expected to result in impacts to the functions and values of the wetland.

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

There are no permanent impacts associated with the project. The project will result in temporary impacts required for construction access for drainage work. The impacts could not be avoided due to geographical constraints as the wetland is the lowest point of the project area.

20.3. Minimization and Restoration:

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

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

Impacts will be minimized by retaining all stumps within the wetland buffer, gaining access via a temporary trestle rather than filling the wetland, and installing appropriate erosion and sediment control measures during construction. The proposed gravel wetland will treat stormwater runoff, resulting a net benefit in water quality.

Minimization and Restoration Continued…

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

Restoration Narrative:
For example: *Planting along the stream.*

There are no permanent impacts to the wetland or its functions and values associated with the project.

Quantification of Restoration:

Wetland Area (sqft)	Buffer Area (sqft)	Functions/Values Addressed

20.4. Compensation:

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

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

21. Wetland Determination:

*All applications for impacts to presumptive, unmapped, non-contiguous wetlands **require** a wetland determination for Class II. Please answer the following questions for applications involving a wetland determination. **GIS shapefiles must be included for determinations.***

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

21.1. Reason for Petition:

Please choose one from the dropdown menu.

<Choose One>

21.2. Determination Narrative:

*Please provide any narrative to support the petition for a wetland determination here, including previous decisions by the Secretary or Water Board. Determinations are made based on an evaluation of the functions and values present. Add a narrative description on the functions listed in section 8 of this application and described in section 5 of the Vermont Wetland Rules. **For example:** Wetland provides water storage and surface water protection because it is large in size, concave, and naturally vegetated.*

21.3 Vermont Significant Wetland Inventory (VSWI) Mapping Attribute Information:

*If attribute data is not included with the shapefile it is **required** to be listed here.*
Please select/add wetland attribute information to be included on the VSWI from the drop-down list below.
For information on how to create a shapefile from the VSWI go to our website:
http://dec.vermont.gov/watershed/wetlands/maps

Wetland Attributes		Wetland Attributes	
Wetland ID	C	**Wetland ID**	
Wetland Type 1*	PEM1-Palustrine, Emergent, Persistent	**Wetland Type 1***	<Choose One>
Wetland Type 2*	PUB4-Palustrine, Unconsolidated Bottom,	**Wetland Type 2***	<Choose One>
Wetland Type 3*	<Choose One>	**Wetland Type 3***	<Choose One>
Water Regime*	<Choose One>	**Water Regime***	<Choose One>
Special Modifiers*	<Choose One>	**Special Modifiers***	<Choose One>
Wetland Class	<Choose One>	**Wetland Class**	<Choose One>
Mapping Organization	<Choose One>	**Mapping Organization**	<Choose One>
Map Source	<Choose One>	**Map Source**	<Choose One>
Mapping Method	<Choose One>	**Mapping Method**	<Choose One>
Additional Notes		**Additional Notes**	

*Cowardin, L.M., Carter, V., Golet, F.C., and LaRoe, E.T. (1979). "Classification of wetlands and deepwater habitats of the United States," U.S. Fish and Wildlife Service, Office of Biological Services, FWS/OBS-79/31/ Washington, DC

http://www.fws.gov/wetlands/data/wetland-codes.html

22. Supporting Materials:

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

22.1. **Location Map:

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

Date	Title
July 2018	USGS Location Map

22.2. **Site Plan(s):

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

Title	Author	Date	Date of Last Revision
Vermont Wetland Plans	New Hampshire DOT	March 2019	

22.3. **U.S. Army Corps of Engineer Wetland Delineation Forms:

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

Attachment #/Title	Range of Collection Dates	Vegetation Cover Types	# of Paired Plots
A wetland delineation form was			
not prepared as the majority			
of the wetland was surface			
water			

22.4. Other Supporting Documents:

Provide any other documentation that supports the application. Wetland Evaluation Forms must be included with multiple wetland applications.
Other Examples include but are not limited to: *Photographs, easements, agreements, restoration/plan, GIS shapefiles, additional ACOE forms.*

Date	Last Revision	Author	Title
5/2/2019		McFarland Johnson	Supplemental Project Description
4/8/2019		McFarland Johnson	ANR Field Review Summary
11/15/2018		McFarland Johnson	Vermont Rare Plant Signoff Correspondance
12/28/2018		McFarland Johnson	Photo Log
12/31/2018		McFarland Johnson	Abutter Contact Information
7/2/2018		McFarland Johnson	Vermont Wetland Classification Form and Attachments

VERMONT
Department of Environmental Conservation

OFFICIAL NOTICE

Hello Neighbor,

This letter is an official notice that the VT Agency of Transportation intends to apply for one or more permits from the Agency of Natural Resources, Department of Environmental Conservation (DEC). Because your property borders the location of the activity as described below, Vermont law requires the applicant to provide you with notice of the application(s).

Once each application has been submitted and deemed complete by DEC to begin the review, it will be posted to the DEC Environmental Notice Bulletin (ENB) at ENB.VERMONT.GOV, where you may register to receive notifications to stay informed as each application moves through the review process. Although the application(s) may not yet be received or processed by the DEC upon receipt of this letter from the applicant below, you may register now to receive notifications using a specified mile/distance radius from your address location *(see next page for detailed instructions on how to register).*

In the meantime, you may also contact the property owner/applicant with questions about the activity using the contact information provided below. For background, the permit process includes a public comment period and an opportunity to request a public meeting, all which can be done through the ENB link above once permit applications are posted. Note that to appeal a final permit decision you must submit comments during the public comment period.

For additional information please visit the following website: DEC.VERMONT.GOV/PERMITS/ENB/GENERAL. For general questions or assistance with registering on the ENB please call DEC's main line at (802) 828-1535 and plan to provide the permit types that are being applied for as listed below.

PROPERTY OWNER(S)/APPLICANT(S) NAME

Vermont Agency of Transportation

PROPERTY OWNER(S)/APPLICANT(S) CONTACT INFORMATION (MUST PROVIDE TELEPHONE NUMBER AND/OR EMAIL)

james.brady@vermont.gov

PROPOSED ACTIVITY STREET ADDRESS/ROUTE

VT Route 142

PROPOSED TOWN(S)

Brattleboro

PERMIT TYPE(S) (INDICATE FOR EACH PERMIT TYPE NEW OR RENEWAL)

Vermont Individual Wetlands Permit

VERMONT
Department of Environmental Conservation

To register on the ENB and set up your subscription: please go through the following steps. There are illustrated instructions on Page 12 of the ENB User Guide:

1. Go to ENB.VERMONT.GOV
2. Click **Register** on the upper right-hand side of the home page
3. Enter the required information (name, email address and create password) and click Register
4. You will receive an email confirmation for your email address. Once confirmed you will be able to log-in and set up your subscription.
5. Log into ENB and then click **My Subscription** at the top left-hand side of the home page
6. Click **Modify Alerts** on the My Subscription page
7. Click **Edit** for Alert #1
8. Choose the permits being applied for from the **Activity Types of Interest** list by checking the check boxes.
9. Next, choose the location using **Distance from a Point** and click the map icon to set your location.
10. Enter your own address, including Town in the **Search Address** field and set the distance large enough to capture the project activity (1 mile, 5 miles, etc.)
11. Click **OK** once the radius has been set
12. Click **SAVE** on the next page, then Click **OK** to return the main subscription page.
13. Once you receive an alert for an activity, you can choose to **Follow** the activity from your subscription page.
14. For additional instructions see the **User Guide** on ENB.VERMONT.GOV.
15. For help with registration please contact the ENB Administrator: ANR.ENBAdministrator@vermont.gov.

Field Review Summary

Christine J. Perron

From: Christine J. Perron
Sent: Wednesday, August 08, 2018 2:01 PM
To: 'Chalmers, Rebecca'
Subject: Hinsdale-Brattleboro 12210C - VT Wetlands

Hi Rebecca,

Thanks for meeting with us in Brattleboro this morning to discuss the proposed temporary impacts to the wetland along the Connecticut River. As we discussed, we anticipate approximately 2,500 sq ft of temporary impact in this wetland for construction access needed for drainage work associated with the new Route 119 bridge between Hinsdale and Brattleboro. The project will include construction of a gravel wetland, and water from this treatment area will be carried by a pipe that is located adjacent to Vernon Street (Route 142) and then jacked under the railroad to outlet into the wetland along the river. Construction access is needed within the wetland to install the drainage pipe. Impacts within the 50' wetland buffer have not yet been determined but are expected to be minimal.

Here's a summary of what we discussed at the project site:

1. You asked if it was feasible to move the proposed drainage outlet further south so that impacts to the wetland could be avoided. I will discuss this with NHDOT. If it's not feasible, I will document why impacts could not be avoided when we submit the permit application.
2. The area of tree clearing in the wetland buffer should be included as an impact in the permit application. Stumps will be left in place so clearing would be a temporary impact.
3. Erosion control measures should be described in the permit application.

Please let me know if I have missed any key discussion items.

It was nice meeting you today. Thanks again,
Christine

Christine Perron, CWS
Project Manager • Senior Environmental Analyst
McFarland Johnson
53 Regional Drive • Concord, NH 03301
OFFICE: 603-225-2978 ext. 128
www.mjinc.com

Vermont Wetland Classification Form

Wetland Classification Form

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
WETLANDS PROGRAM

Full Name: Stephen Hoffmann
Relationship to Project/Land: Consultant
Phone Number: 603-225-2978
Mailing Address (optional): 53 Regional Drive, Concord, NH 03301
Location Description and Closest E911 Address (please include map):

The wetland is located along the Connecticut River in Brattleboro, approximately 1,200 feet south of the Brattleboro Road (NH Route 119) crossing (see attached Location Map).

Wetland _C_(id) was assessed on _June 05, 2018. Attach a map of the investigation area.

Check one of the following:

☒ The entire wetland was assessed in the field.

❑ The wetland extends off the property and I have used imagery and mapping to complete my assessment.

The wetland was found to have the following characteristics (check all that apply):

☒ Wetland area assessed was within a Vermont Significant Wetlands Inventory (VSWI) mapping unit;
❑ Wetland area is contiguous with a VSWI mapping unit;
☒ §4.6(a) over half an acre in size;
❑ §4.6(b) contains woody vegetation and is adjacent to a stream, river, or open body of water;
❑ §4.6(c) contains dense, persistent non-woody vegetation and is adjacent to a stream, river, or open body of water;
❑ §4.6(d) is a vernal pool that provides amphibian breeding habitat;
❑ §4.6(e) is a headwater wetland;
❑ §4.6(f) adjacent to impaired waters and the impairment is related to wetland water quality functions;
☒ §4.6(g) the wetland contains a species that appears in the NNHP database as rare, threatened, endangered or uncommon; or is a natural community type that is rare or uncommon; Threatened or Endangered species habitat located in the Connecticut River and well as rare species
❑ §4.6(h) has been previously designated as a significant wetland.

Wetland Characteristic Notes:

The wetland is adjacent to the Connecticut River. The western edge of the wetland boundary follows to the toe-of-slope of a steep railroad embankment. The majority of this wetland consists of an area of open water, with a narrow strip of palustrine emergent marsh approximately 50-80 feet wide that is dominated by broad leaf cattail separating this backwatered area from the main channel of the river. There are a few small trees and shrubs growing on this peninsula, suggesting that it is a permanent feature located above the ordinary highwater mark.

Wetland Classification Form Continued for Wetland ID:

Check one of the following:

- ☒ The wetland is Class II based on the above observed characteristics and will be treated as Class II with a protected 50 foot buffer zone.
- ❑ The wetland is Class II based on the above observed characteristics. I request that the Agency consider it Class III due to a lack of significant functions or values. (attach a Functions and Values checklist)
- ❑ The wetland is Class III based on the lack of observation of any of the above. The wetland will be treated as Class III.
- ❑ The wetland is Class III based on the lack of observation of any of the above. I request that the Agency consider it Class II based on one or more observed significant functions or values. (attach a Functions and Values checklist)

Wetland Classification Notes or Sketch:

See attached photographs and figures.

Delineated Class II Wetland (MJ June 2018)

50' Class II Wetland Buffer

VSWI Wetlands Advisory Layer

Advisory Wetland

VSWI Wetlands Class Layer

Class 1 Wetland

Class 2 Wetland

Photo Number, Location, and Direction

NH Department of Transportation

Hinsdale-Brattleboro, 12210C

VT WETLAND CLASSIFICATION

SCALE :	DATE :	FIGURE :
1 inch = 150 feet	JUNE 2018	1

McFarland Johnson

Supplemental Project Description

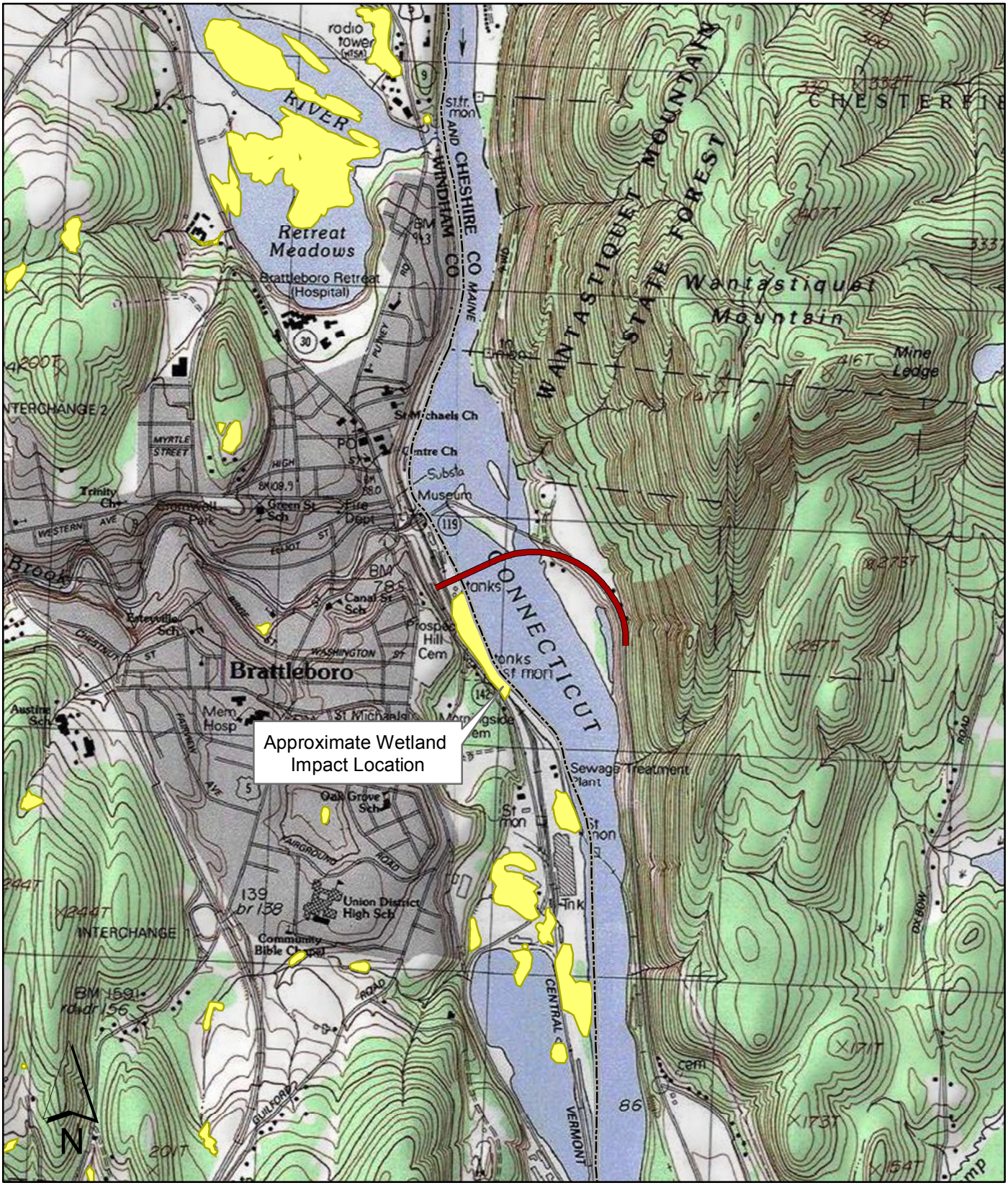
Supplemental Project Description

The project entails the construction of a new 1,809-foot bridge carrying NH Route 119 over the Connecticut River on new alignment south of the two existing bridges that currently carry this route over the river between the towns of Hinsdale, NH and Brattleboro, VT. The existing bridges will be retained for bicycle and pedestrian use. The project includes all associated approach and drainage work on NH Route 119 and VT Route 142.

The proposed bridge will be constructed on a new alignment, approximately 1,000' downstream from the existing bridges. The new bridge will be an 8-span, curved steel girder structure with a typical cross section of two 12' travel lanes, two 8' shoulders, and one 6' sidewalk, for a rail-to-rail width of 46'.

The new bridge will tie into VT Route 142 south of the existing 119/142 intersection. The roadway in VT will be raised to gain clearance over the railroad. Overall, the project will be adding 0.8 acres of new impervious and removing 0.4 acres of existing impervious, for a net increase of 0.4 acres. A proposed gravel wetland in VT will treat runoff from 1.1 acres of pavement. The treatment system will discharge to a backwatered wetland adjacent to the Connecticut River. This is the only wetland within the Vermont portion of the project. Temporary impacts to this Class II wetland and its buffer will be required for construction access to install the drainage pipe. A temporary trestle will be used in the wetland to provide a stable work platform. There will be no grubbing within the buffer and no fill in the wetland or buffer. All impacts will be temporary. An alternative location for the drainage pipe to avoid wetland impacts is not possible since the proposed location is the low spot for the drainage system.

Location Map



Proposed Bridge Alignment

Approx State Line

Class 1 Wetland

Class 2 Wetland

NH DEPARTMENT OF TRANSPORTATION

HINSDALE, NH - BRATTLEBORO, VT, 12210C

USGS LOCATION MAP

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	JULY 2019	1

McFarland Johnson

Photographs

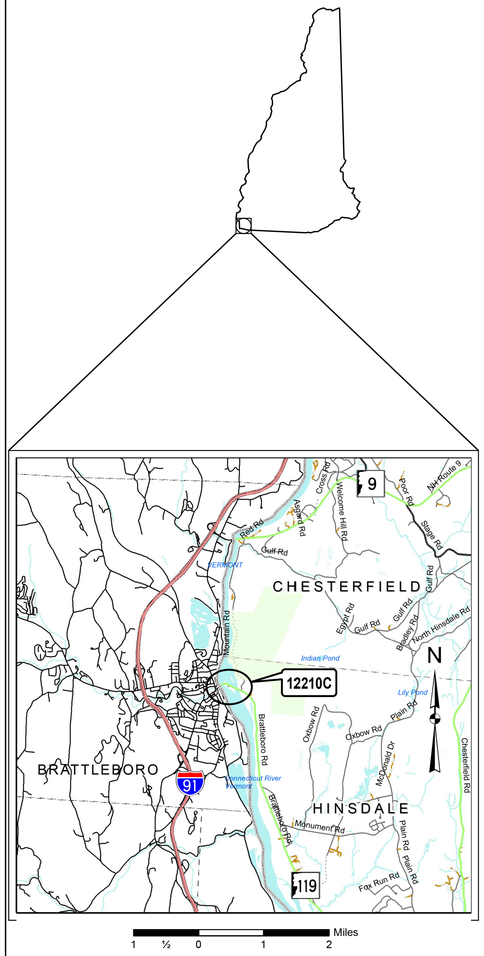
Project Plans

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

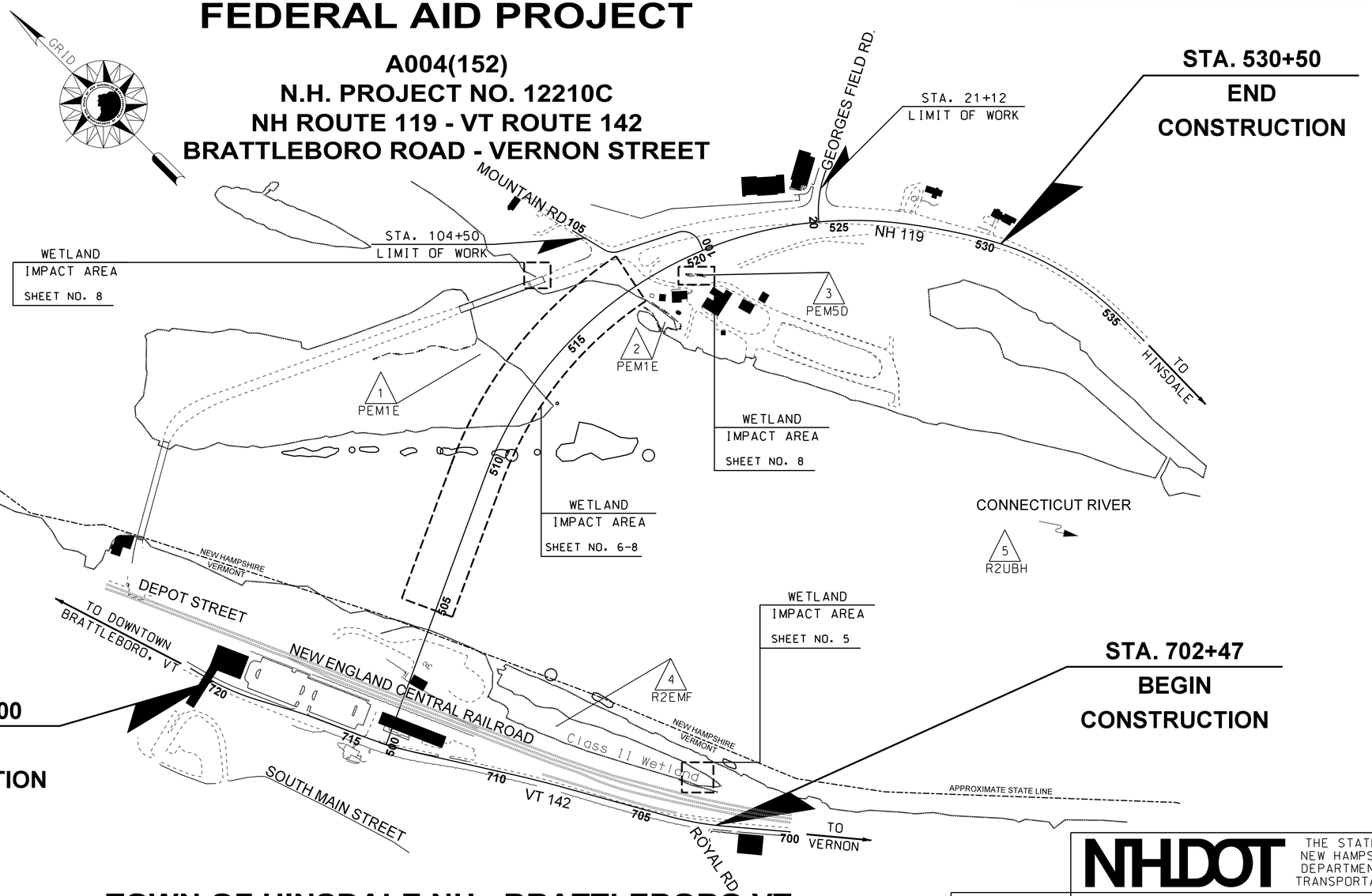
VERMONT WETLANDS PLANS
FEDERAL AID PROJECT

A004(152)
N.H. PROJECT NO. 12210C
NH ROUTE 119 - VT ROUTE 142
BRATTLEBORO ROAD - VERNON STREET

DESIGN DATA	NH 119 - VT 142
AVERAGE DAILY TRAFFIC 20 20	8900 - 2600
AVERAGE DAILY TRAFFIC 20 40	11000 - 3200
PERCENT OF TRUCKS	5.1% - 11.2%
DESIGN SPEED	35mph - 30mph
LENGTH OF PROJECT	3050ft - 1625ft



LOCATION MAP



TOWN OF HINSDALE NH - BRATTLEBORO VT

COUNTY OF CHESHIRE - WINDHAM

SCALE: 1" = 200'

FOR CONSTRUCTION AND ALIGNMENT DETAILS - SEE CONSTRUCTION PLANS

WETLANDS DELINEATED BY:
CHRISTINE PERRON,
MCFARLAND JOHNSON
2017.2018

DRAWN BY CRR DATE 11/2018
CHECKED BY TWC DATE 12/2018

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:

DIRECTOR OF PROJECT DEVELOPMENT — DATE

APPROVED:

ASSISTANT COMMISSIONER AND CHIEF ENGINEER — DATE

DRAWING NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210FSW_VT	A004(152)	12210C	1	9

12210FSW_VT.dgn Default 5/14/2019 11:01:52 AM "n34twc"

DRAINAGE

MANHOLE
CATCH BASIN — cb
DROP INLET — di
(existing) (PROPOSED)

DRAINAGE PIPE (existing) — (label size & type)
DRAINAGE PIPE (PROPOSED)
UNDERDRAIN (existing) W/ FLUSHING BASIN — fb — (label size & type)
UNDERDRAIN (PROPOSED) W/ FLUSHING BASIN
show direction of flow
HEADER (existing & PROPOSED) — (with stone outlet protection)
END SECTION (existing & PROPOSED) — METAL or PLASTIC — RCP
OPEN DITCH (PROPOSED)
EROSION CONTROL/ STONE SLOPE PROTECTION

BOUNDARIES / RIGHT-OF-WAY

RIGHT-OF-WAY LINE — (label type)
RR RIGHT-OF-WAY LINE
PROPERTY LINE
PROPERTY LINE (COMMON OWNER)
TOWN LINE — BOW / CONCORD
COUNTY LINE — COOS / GRAFTON
STATE LINE — MAINE / NEW HAMPSHIRE
NATIONAL FOREST
CONSERVATION LAND — LC
BENCH MARK / SURVEY DISK
BOUND — bnd — (PROPOSED)
STATE LINE/ TOWN LINE MONUMENT — S/L — T/L
NHDOT PROJECT MARKER
IRON PIPE OR PIN — ip
DRILL HOLE IN ROCK — dh
TAX MAP AND LOT NUMBER — 156 / 14 — 1642/341 — 6.80 Ac.±
PROPERTY PARCEL NUMBER — 12
HISTORIC PROPERTY — H

UTILITIES

	existing	PROPOSED
TELEPHONE POLE		
POWER POLE		
JOINT OCCUPANCY		
MISCELLANEOUS/UNKNOWN POLE		
GUY POLE OR PUSH BRACE		
LIGHT POLE		
LIGHT ON POWER POLE		
LIGHT ON JOINT POLE		

(plot point at face not center of symbol)

POLE STATUS:
REMOVE, LEAVE, PROPOSED, OR TEMPORARY
AS APPLICABLE e.g.:

R — L — P+04 25.0' — T+04 25.0'

RAILROAD — (label ownership)
RAILROAD SIGN
RAILROAD SIGNAL
UTILITY JUNCTION BOX — jb — JB
OVERHEAD WIRE — OW — (label type)

UNDERGROUND UTILITIES

	existing	PROPOSED
WATER (on existing lines label size, type and note if abandoned)	W	PW
SEWER	S	PS
TELEPHONE	T	PT
ELECTRIC	E	PE
GAS	G	PG
LIGHTING	L	PL
INTELLIGENT TRANSPORTATION SYSTEM	ITS	PITS
FIBER OPTIC	FO	PFO
WATER SHUT OFF	WSO	WSO
GAS SHUT OFF	GSO	GSO
HYDRANT	HYD	HYD

MANHOLES

SEWER	MHS
TELEPHONE	MHT
ELECTRICAL	MHE
GAS	MHG
UNKNOWN	

TRAFFIC SIGNALS / ITS

	existing	PROPOSED
MAST ARM (existing)		30' MA (NOTE ANGLE FROM ℄)
OPTICOM RECEIVER		
OPTICOM STROBE		
TRAFFIC SIGNAL		
PEDESTAL WITH PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON UNIT		
SIGNAL CONDUIT	C — C — C	PC — PC — PC
CONTROLLER CABINET	cc	CC
METER PEDESTAL	mp	MP
PULL BOX	pb	PB
LOOP DETECTOR (QUADRUPOLE)		(label size)
LOOP DETECTOR (RECTANGULAR)		(label size)
CAMERA POLE (CCTV)		
FIBER OPTIC DELINEATOR	fod	FOD
FIBER OPTIC SPLICE VAULT		SVF
ITS EQUIPMENT CABINET	its	ITS
VARIABLE SPEED LIMIT SIGN		
DYNAMIC MESSAGE SIGN		
ROAD AND WEATHER INFO SYSTEM		

CONSTRUCTION NOTES

CURB MARK NUMBER - BITUMINOUS	B-1
CURB MARK NUMBER - GRANITE	G-1
CLEARING AND GRUBBING AREA	A
DRAINAGE NOTE	1
EROSION CONTROL NOTE	A
FENCING NOTE	A
GUARDRAIL NOTE	1
ITS NOTE	1
LIGHTING NOTE	A
TRAFFIC SIGNAL NOTE	1

STATE OF NEW HAMPSHIRE
HINSDALE NH - BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	stdsymb1_2	12210C	2	9

GENERAL

EDGE OF PAVEMENT — PROPOSED ROADWAY
TRAVELED WAY — existing roadway — (pavement removed outside slope lines)

DRIVEWAYS — (label surface type)

BUILDINGS — (building to be removed)
(label house or type of building)

FOUNDATION — (label type)

LEACH FIELD — leach field

BRIDGE CROSSINGS — STREAM — OVERPASS

STEPS AND WALK — (label type)

INTERMITTENT WATER COURSE

SHORE LINE — river/stream — pond — (label name of water body)

POTENTIAL WET AREA SYMBOL

BRUSH OR WOODS LINE

TREES (PLANS) — (deciduous) (coniferous) (stump)

TREE OR STUMP (CROSS-SECTIONS) — (show station, circumference in feet & type)

HEDGE — (label type)

MONITORING WELL — mon W

WELL — W

FLAG POLE — fp

ORIGINAL GROUND (TYPICALS)

ROCK OUTCROP

ROCK LINE (TYPICALS & SECTIONS ONLY)

GUARDRAIL (label type) — existing — PROPOSED — bgr — cgr

JERSEY BARRIER

CURB (LABEL TYPE)

STONE WALL

RETAINING WALL (LABEL TYPE) — (points toward retained ground)

FENCE (LABEL TYPE)

SIGNS — (single post) — (double post)

GAS PUMP — gp

FUEL TANK (ABOVE GROUND) — ft (label size & type)

STORAGE TANK FILLER CAP — fc

SEPTIC TANK — S

GRAVE — gr

MAILBOX — mb

VENT PIPE — vp

SATELLITE DISH ANTENNA — da

PHONE — ph

GROUND LIGHT/LAMP POST — gl — lp

BORING LOCATION — B

TEST PIT — TP

INTERSTATE NUMBERED HIGHWAY — 293

UNITED STATES NUMBERED HIGHWAY — 3

STATE NUMBERED HIGHWAY — 102

SHORELAND - WETLAND

WETLAND DESIGNATION AND TYPE — 2 PUB2E

DELINEATED WETLAND — DW
ORDINARY HIGH WATER — OHW
TOP OF BANK — TOB
TOP OF BANK & ORDINARY HIGH WATER — TOBOHW
NORMAL HIGH WATER — NHW
WIDTH AT BANK FULL — WBF
PRIME WETLAND — PWET
PRIME WETLAND 100' BUFFER — PWET100
NON-JURISDICTIONAL DRAINAGE AREA — NJDA
COWARDIN DISTINCTION LINE — CDL
TIDAL BUFFER ZONE — TBZ
DEVELOPED TIDAL BUFFER ZONE — DTBZ
HIGHEST OBSERVABLE TIDE LINE — HOTL
MEAN HIGH WATER — MHW
MEAN LOW WATER — MLW
VERNAL POOL — VP
SPECIAL AQUATIC SITE — SAS
REFERENCE LINE — REF
WATER FRONT BUFFER — WB50
NATURAL WOODLAND BUFFER — NWB150
PROTECTED SHORELAND — PS250
INVASIVE SPECIES LABEL — I.S. I — I.S. II
INVASIVE SPECIES — INV

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY — FP500
100 YEAR FLOODPLAIN BOUNDARY — FP100
FLOODWAY — FW

ENGINEERING

CONSTRUCTION BASELINE — 30 — 31 — 32

PC. PT. POT (ON CONST BASELINE)

PI (IN CONSTRUCTION BASELINES)

INTERSECTION OR EQUATION OF TWO LINES

ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)

PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)

CLEARING LINE — SLOPE LINE

SLOPE LINE

SLOPE LINE (FILL)

SLOPE LINE (CUT)

PROFILES AND CROSS SECTIONS:
ORIGINAL GROUND ELEVATION (LEFT) — 72.5
FINISHED GRADE ELEVATION (RIGHT) — 79.14

STATE OF NEW HAMPSHIRE
HINSDALE NH - BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	stdsymb1_2	12210C	3	9

REVISIONS AFTER PROPOSAL	DESCRIPTION	STATION	DATE	NUMBER

SDR PROCESSED		DATE	5/2019	
NEW DESIGN	ALK	DATE	5/2019	
SHEET CHECKED	TWC	DATE		
AS BUILT DETAILS		DATE		

WETLAND IMPACT SUMMARY - VERMONT

WETLAND NUMBER	WETLAND CLASS-IFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION			COMMENTS
			PERMANENT				TEMPORARY		PERMANENT			
			(NON-WETLAND)		(WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL	
			SF	LF	SF	LF	SF	LF	LF	LF	LF	
4	R2EMF	A					2500	50				TEMPORARY CONSTRUCTION (PIPE JACKING)
	BUFFER						2613	50				TEMPORARY CONSTRUCTION (PIPE JACKING)
		TOTAL					5113	100				

VERMONT IMPACTS

PERMANENT IMPACTS: 0 SF
TEMPORARY IMPACTS: 5113 SF

TOTAL IMPACTS: 5113 SF
(0.117 ACRES)

WETLAND IMPACT SUMMARY - NEW HAMPSHIRE

WETLAND NUMBER	WETLAND CLASS-IFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION			COMMENTS
			PERMANENT				TEMPORARY		PERMANENT			
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL	
			SF	LF	SF	LF	SF	LF	LF	LF	LF	
5	R2UBHh	B1					69498	115				TEMPORARY BRIDGE CONSTRUCTION ACCESS (TRESTLE) *SEE NOTE 1 BELOW
4	BANK	B2					1529	62				TEMPORARY BRIDGE CONSTRUCTION ACCESS (TRESTLE) *SEE NOTE 1 BELOW
5	R2UBHh	C			6563	209					209	PIERS IN RIVER
1	PEM1E	D					13020	---				TEMPORARY CONSTRUCTION EASEMENT (TRESTLE OVER ISLAND)
1	PEM1E	E			1364	---						PIER ON ISLAND
4	BANK	F	570	50						50		PIER
3	PEM5D	G			295	---						ROADWAY EMBANKMENT
2	BANK	H	63	7						7		PIPE OUTLET / STONE APRON
5	R2UBHh	I			891	22					22	BOAT LAUNCH IN CONNECTICUT RIVER
6	PFO1E											
8	R4SB4	K			212	105					134	BOAT LAUNCH ACCESS DRIVE/SLOPES
7	PFO1E	L			3742	---						BOAT LAUNCH ACCESS DRIVE/SLOPES
9	BANK	M	1011	97						91		BOAT LAUNCH TO CONNECTICUT RIVER
		TOTAL	1644	154	13067	336	84047	177				

NEW HAMPSHIRE IMPACTS

PERMANENT IMPACTS: 14711 SF
TEMPORARY IMPACTS: 84047 SF

TOTAL IMPACTS: 98758 SF
(2.267 ACRES)

*NOTE 1: THIS AREA IS FOR THE FOOTPRINT OF THE TEMPORARY ACCESS TRESTLE OVER THE CONNECTICUT RIVER. DIRECT IMPACTS TO THE RIVER WILL BE APPROXIMATELY 560 PILES (14"X14") WHICH WILL BE DRIVEN INTO THE RIVER BANK TO SUPPORT THE ACCESS TRESTLE. THIS IS APPROXIMATELY 765 SF OF RIVER AND BANK IMPACTS.

WETLAND CLASSIFICATION CODES

PEM1E	PALUSTRINE, EMERGENT, PERSISTENT, SEASONALLY FLOODED/SATURATED
PEM5D	PALUSTRINE, EMERGENT, PHRAGMITES AUSTRAILS, CONTINUOUSLY SATURATED
PFO1E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
R2EMF	RIVERINE, LOWER PERENNIAL, EMERGENT, SEMIPERMANENTLY FLOODED
R2UBHh	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, PERMANENTLY FLOODED, DIKED/IMPOUNDED
R4SB4	RIVERINE, INTERMITTENT, STREAMBED, SAND
BANK	BANK
BUFFER	50 FT BUFFER AREA ADJACENT TO DELINEATED WETLAND (VT)

STATE OF NEW HAMPSHIRE
HINSDALE NH - BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT SUMMARY SHEET

OGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210Cwetplans	12210C	4	9

VT IMPACT PERMITTING PLAN SYMBOLOGY

OHW IMPACTS

- OHW TEMPORARY
- OHW PERMANENT
- OHW SECONDARY

WETLAND IMPACTS

- WETLANDS TEMPORARY
- WETLANDS PERMANENT
- WETLANDS SECONDARY

WETLAND BUFFER IMPACTS (VT ANR ONLY)

- WETLANDS BUFFER TEMPORARY
- WETLANDS BUFFER PERMANENT

AREA/BOUNDARY LINESTYLE SYMBOLOGY

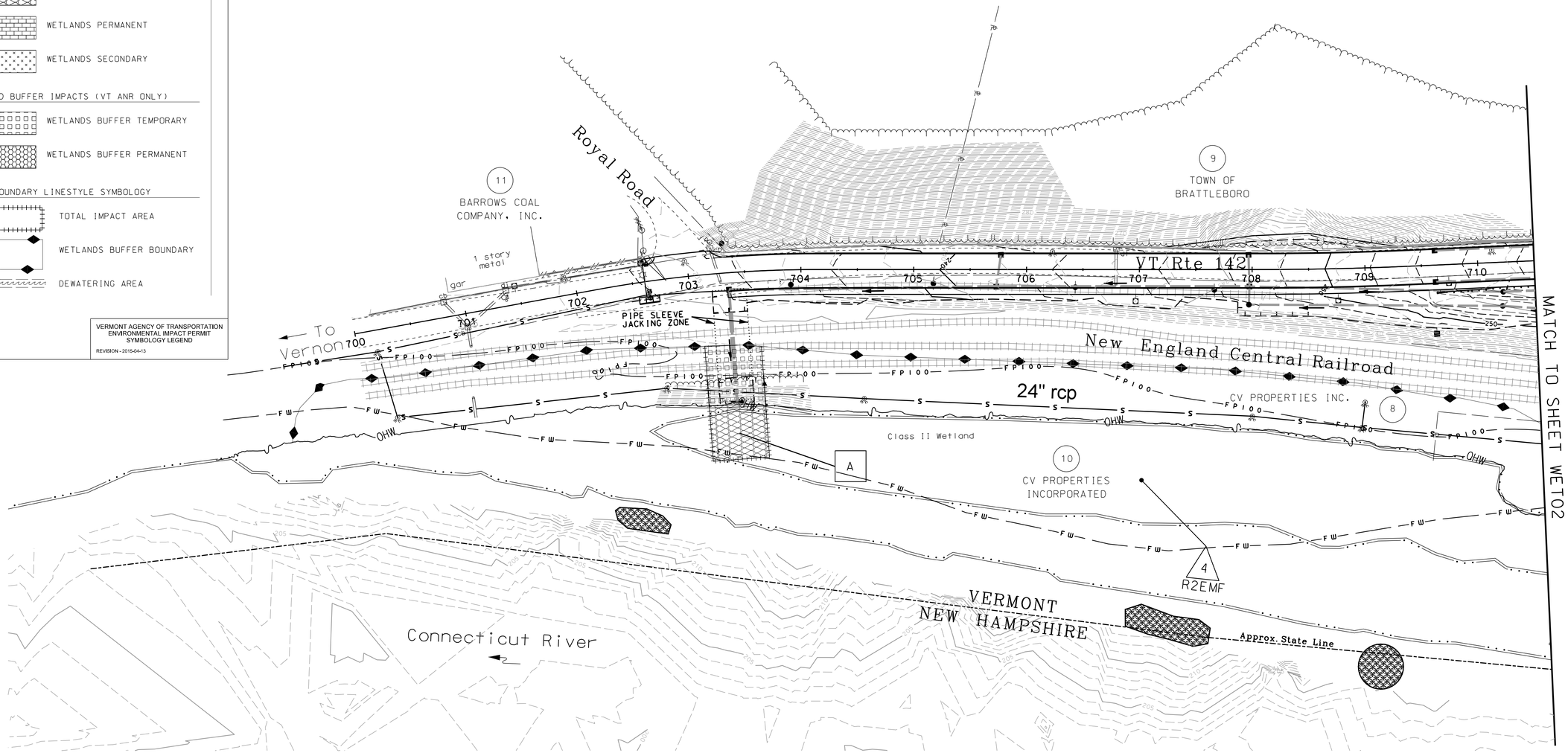
- TOTAL IMPACT AREA
- WETLANDS BUFFER BOUNDARY
- DEWATERING AREA

VERMONT AGENCY OF TRANSPORTATION
ENVIRONMENTAL IMPACT PERMIT
SYMBOLOGY LEGEND
REVISION - 2015-04-13

RARE PLANTS LEGEND

- LONG-LEAVED PONDWEED
- GRASS-LEAVED MUD-PLANTAIN
- GRASS-LEAVED MUD-PLANTAIN AND LONG-LEAVED PONDWEED

GRID



50 0 50 100
SCALE IN FEET

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION
		STATION
		STATION

SDR PROCESSED	PLAN PREP	DATE 7/2017
NEW DESIGN	TWC	DATE 3/2019
SHEET CHECKED	ALK	DATE 3/2019
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
HINSDALE NH – BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210Cwetplans	12210C	5	9

LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

△ # WETLAND DESIGNATION NUMBER

WETLAND IMPACT LOCATION

SOUTH MAIN ST.

3 CV PROPERTIES INC.

1 HOLSTEIN ASSOCIATION U.S.A., INC.

7 ROACH, VICTORIA J.

2 MARLBOROUGH COLLEGE CORPORATION

5 BAST INVESTMENT COMPANY, LLC

12 BARROWS COAL COMPANY, INC.

13 BARROWS COAL COMPANY, INC.

BARROWS COAL COMPANY, INC.

Barrow's & Fisher Oil

New England Central Railroad

Depot Street

VERMONT
NEW HAMPSHIRE

Approx. State Line

Connecticut River

5 R2UBHh

24" rcp

12" cip

24" dip

2 story crossover between buildings

to downtown Brattleboro Vt.

1000gal propane tank

4 bay garage storage

mf shed on conc block piers

1 story wood

5 story brick

wood bar

MATCH TO SHEET WET01

MATCH TO SHEET WET03

MATCH TO SHEET WET03

C

B1

50 0 50 100
SCALE IN FEET

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	DATE	STATION

SDR PROCESSED	PLAN PREP	DATE 7/2017
NEW DESIGN	TWC	DATE 3/2019
SHEET CHECKED	ALK	DATE 3/2019
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
HINSDALE NH - BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210Cwetplans	12210C	6	9

12210Cwetplans.dgn WET02 5/14/2019 11:01:58 AM "n34twc"

EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
   1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
   1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
   1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
   1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
   1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WQ 1500 REQUIREMENTS (HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM)
   1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.

2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
   2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
   2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
   2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
   2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
      (A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
      (B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
      (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
      (D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED
   2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
   2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
   2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
   2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30" AND MAY 1" OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
      (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
      (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
      (C) AFTER NOVEMBER 30" INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
      (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDOT THAT MEETS THE REQUIREMENTS OF ENV-WQ 1505.02 AND ENV-WQ 1505.05.
      (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WQ 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30".

GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
   3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
   3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
   3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
   3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
   3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.

4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
   4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
   4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
   4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1" THROUGH NOVEMBER 30", OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.

5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
   5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.
   5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
   5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
   5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
   5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.

6. PROTECT SLOPES:
   6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
   6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
   6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
   6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.

7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
   7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
   7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.

8. PROTECT STORM DRAIN INLETS:
   8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
   8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
   8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
   8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.

9. SOIL STABILIZATION:
   9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
   9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
   9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR. IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
   9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:
   10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WQ 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
   10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
   10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
   11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.
   11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
   11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.
   11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
   11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
   11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
   11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
   11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
   11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
   12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500: ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
   12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
   12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
   12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
   12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
   12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
   12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.

13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
   13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
   13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
   13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
   13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.

14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
   14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
   14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
   14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WQ 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

TABLE 1

GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES[2]				ROLLED EROSION CONTROL BLANKETS[3]			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES[1]												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES'	YES'	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

STATE OF NEW HAMPSHIRE
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DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLANS

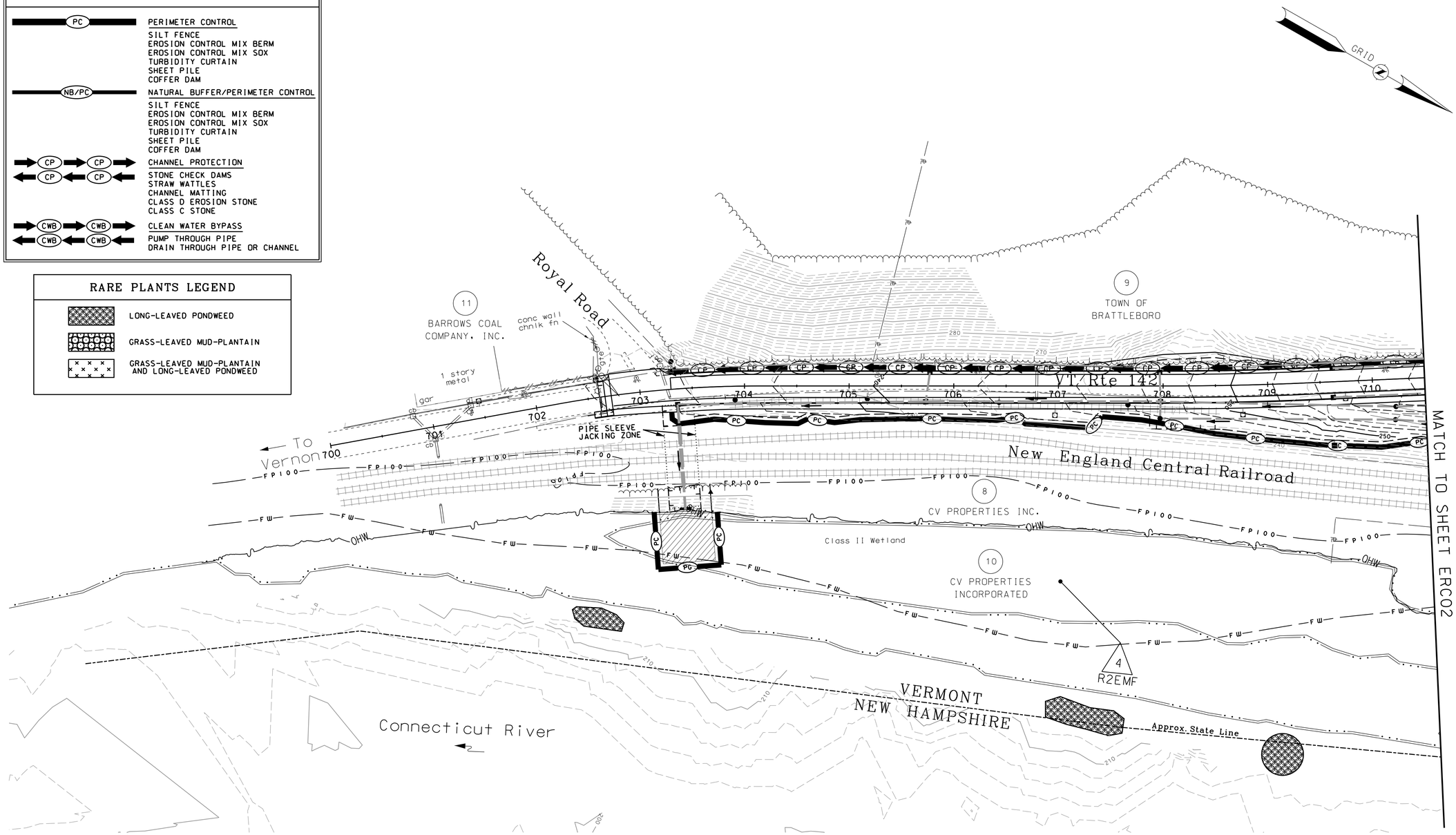
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	erosstrat	12210C	7	9

EROSION CONTROL PLAN LEGEND

PC	PERIMETER CONTROL
	SILT FENCE
	EROSION CONTROL MIX BERM
	EROSION CONTROL MIX SOX
	TURBIDITY CURTAIN
	SHEET PILE
	COFFER DAM
NB/PC	NATURAL BUFFER/PERIMETER CONTROL
	SILT FENCE
	EROSION CONTROL MIX BERM
	EROSION CONTROL MIX SOX
	TURBIDITY CURTAIN
	SHEET PILE
	COFFER DAM
CP CP	CHANNEL PROTECTION
CP CP	STONE CHECK DAMS
	STRAW WATTLES
	CHANNEL MATTING
	CLASS D EROSION STONE
	CLASS C STONE
CWB CWB	CLEAN WATER BYPASS
CWB CWB	PUMP THROUGH PIPE
	DRAIN THROUGH PIPE OR CHANNEL

RARE PLANTS LEGEND

- LONG-LEAVED PONDWEED
- GRASS-LEAVED MUD-PLANTAIN
- GRASS-LEAVED MUD-PLANTAIN AND LONG-LEAVED PONDWEED



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SCALE IN FEET

NUMBER	DATE	STATION

REVISIONS AFTER PROPOSAL

DESCRIPTION

SDR PROCESSED	PLAN PREP	DATE 7/2017
NEW DESIGN	TWC	DATE 12/2018
SHEET CHECKED	ALK	DATE 12/2018
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
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DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

EROSION CONTROL PLAN

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210Cerc	12210C	8	9

12210Cerc.dgn ERC01 5/14/2019 11:02:02 AM "n34twc"

SOUTH MAIN ST.

GRID

3
CV PROPERTIES INC.

1
HOLSTEIN
ASSOCIATION
U.S.A., INC.

7
ROACH, VICTORIA J.

2 story crossover between buildings

to downtown Brattleboro,Vt.

2
MARLBOROUGH
COLLEGE
CORPORATION

5 story brick

5
BAST INVESTMENT
COMPANY, LLC

New England Central Railroad

MATCH TO SHEET ERC01

12
BARROWS COAL
COMPANY, INC.

13
BARROWS COAL
COMPANY, INC.

14
BARROWS COAL
COMPANY, INC.

Depot Street

Barrow's &
Fisher Oil

VERMONT
NEW HAMPSHIRE

Approx. State Line

1 story wood

MATCH TO SHEET ERC03

Connecticut River

5
R2UBHh

MATCH TO SHEET ERC03

50 0 50 100
SCALE IN FEET

REVISIONS AFTER PROPOSAL	NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	PLAN PREP	DATE 7/2017
NEW DESIGN	TWC	DATE 12/2018
SHEET CHECKED	ALK	DATE 12/2018
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
HINSDALE NH - BRATTLEBORO VT
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

EROSION CONTROL PLAN

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12210Cerc	12210C	9	9

12210Cerc.dgn ERC02 5/14/2019 11:02:03 AM "n34twc"