



**EIV Technical Services, LLC**

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Fax: 802-244-5052

November 8, 2009

**Rutland Regional Planning Commission**

The Opera House  
67 Merchants Row  
PO Box 965  
Rutland, VT 05702

**Re: CUD Application  
VT Railway Bridge 219 over Otter Creek in Pittsford  
EIV Project #E1225**

To Whom It May Concern:

Please review the following materials detailing anticipated wetland impacts associated with a proposed bridge replacement project in Pittsford. The bridge to be replaced is over the Otter Creek on VT Railway's primary north-south line near Omya's processing facility in Florence. It handles a relatively high volume of rail traffic and is considered to be damaged beyond repair.

The attached narrative and other supporting materials were provided to Alan Quackenbush, Coordinator of the State Wetlands Office at the VT Agency of Natural Resources, in support of a proposed Conditional Use of protected wetland area during the replacement of this failing railroad bridge. Providing these materials to local and regional planning commissions is a distribution requirement of the state wetland permitting process. Adjoining landowners in the project area have also been notified of the proposed work and of the location of these distributed application materials.

Please find the following enclosed for your review:

- USGS Locus Map
- Project Area Wetlands and Impacts graphic
- Existing Wetland Area Photos
- July, 2009 Project Area Aerial Photo
- VHB Proposed Environmental Impact Areas
- VHB Design Plan Sheets (3) and Mainline Cross-Section Sheet
- Vermont Conditional Use Determination Application form
- Vermont Wetland Evaluation Forms
- R. Popp letter of June 6, 2005.
- Town Parcel maps

The project's Least Environmentally Damaging Practicable Alternative (LEDPA) still involves impacts to an ecologically significant wetland. This alternative entails building a new bridge upstream of the old one and then diverting rail traffic over it with new railway sections approaching from each bank. After the new bridge is in service, the old bridge, abutments and short sections of the abandoned railroad will be removed to restore a larger hydraulic opening for the Otter Creek downstream of the new crossing. The realigned section of track approaching the new crossing location from the north will impact Wetland 2, a mature silver-maple/green-ash and

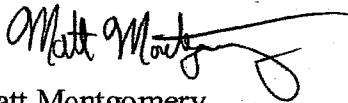
ostrich fern floodplain forest. Mature examples of this natural community type are considered uncommon in the state by the VT Nongame Natural Heritage Program.

Some of the mature trees in and around the project area could also provide habitat for the Indiana Bat (*Myotis sodalis*). The bat, which is federally listed as endangered, may utilize the area as roosting habitat during summer feeding, although their presence was not confirmed during mist netting survey conducted in the project area during July of 2006. The bat survey results and the overall project have been reviewed and approved by the US Fish and Wildlife Service. The timing of tree removal will coincide with the bat's inactive period to eliminate the risk of harming one of these protected bats.

Originally designed in 2006, the project's updated 2010 design includes a new siding that creates additional rail car storage, and has a new track layout that would accommodate 59-mph Amtrak passenger service. The project has earmarked federal funding to pay for its construction and a compensatory on-site mitigation plan has been developed for the project's unavoidable wetland impacts. We anticipate that the mitigation approach will satisfy requirements set forth by the US Army Corps of Engineers based on a recent site meeting on the proposed mitigation area. Martha Abair is the US ACOE Project Manager assigned to the project.

Please contact me with any questions about the proposed work.

Sincerely,  
**EIV Technical Services, LLC**



Matt Montgomery  
Ecologist

enc.

cc  
Helen McKinlay, Pittsford Town Clerk  
Alan Quackenbush, VT ANR, Wetlands Office  
Glenn Gingras, VTrans Environmental

VERMONT WETLAND RULES

CONDITIONAL USE DETERMINATION APPLICATION

Title 10 V.S.A., Chapter 37, Section 905

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Application Last Revised:  
6/24/02  
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OFFICE USE ONLY

INTRODUCTION

The following questions must be answered in order for this application to be considered complete. If you have questions on any portion of this form, please call the Vermont Wetlands Office at (802)241-3770 for assistance. Please note that there is a non-refundable fee effective July 1, 2002 (see Section 19) as required by the Vermont General Assembly (3 V.S.A. § 2822(j)(26)). Early consultation with the Wetlands Program may result in a reduction of the wetland area impacted. A pre-application site visit is required in order to call this application complete.

NAMES

1. Applicant: Vermont Agency of Transportation (VTrans), Operations Divison  
Address: One National Life Drive, Montpelier, VT 05633  
Phone: 802-828-2663, Richard Tetreault, Director of Program Development
  
2. Landowner(s) (if different):  
James Buzzell et al.. of 593 Kendall Hill Rd. Brandon, VT 05733, Carmella Carter et al.. of 41 Prospect St. Rutland, VT 05701, and the Town of Pittsford. (See attached tax parcel maps) VTrans will be conducting work within its existing railroad right-of-way, and plans to purchase additional property and obtain easements to expand its right-of way where necessary.

(If landowner is other than the applicant, attach copies of any easements, agreements, or other documents conveying permission, and an agreement with the landowner(s) stating who will be responsible for meeting the terms and conditions of the Conditional Use Determination.)

3. Representative: Matt Montgomery, Ecologist  
EIV Technical Services, LLC

Address: 93 South Main St.; Waterbury, VT 05676  
Phone: (802) 244-7453

PROJECT DESCRIPTION

4. Location: (*Street Address*)

The project area is in Rutland County approximately 0.3 miles east of the village of Florence and approximately 1.5 miles northeast of Pittsford Village. The proposed work location is at milepost 64.9 of Vermont Railway's primary North-South line just west of where it currently crosses the Otter Creek. The site is approximately 2700 feet southerly of the Kendall Hill Road rail crossing. (See attached site plans)

5. Acres owned by applicant and landowner at project site:

Currently there is approximately 3 linear acres of railroad right-of-way in the project area. The balance of the work will occur on portions of the following parcels: James Buzzell et al, 150.2 acres and Town of Pittsford, 31.4 acres (See attached tax maps.) VTrans is planning to purchase and conserve 17 acres of floodplain from the Buzzell family for an on-site wetland mitigation.

Acres involved in project:

An estimated 2.4 acres will be disturbed during the new bridge construction and rail realignment. Approximately 2 acres will be disturbed when removing the existing bridge abutments and portions of the existing rail bed to mitigate the project's floodplain impacts. A wetland mitigation area is proposed on a portion of the adjacent Buzzell parcel. This proposed mitigation involves an additional 17 acres.

6. Project purpose:

The primary purpose of the project is to create a safe and enduring railroad crossing structure over Otter Creek. A secondary purpose is to create replacement railcar storage with a new siding spur. Both objectives are to be met while minimizing interruptions to the existing rail service.

7. General project description (*include number and size of buildings; number of lots; length of roads; type of sewage disposal;etc.*):

The proposed activity consists of constructing a new railroad bridge to replace the failing structure currently in use. The proposed location is approximately 80-ft upstream of the existing bridge (See attached field survey and design plans). This provides the shortest crossing distance over the Otter Creek and allows rail traffic to be maintained on the existing bridge during construction. The new bridge design will allow the mid-span support pier to be placed on the top of the left bank, instead of mid-channel. This will eliminate bank scour issues that arose with the old crossing structure.

According to VTrans bridge engineers, the existing structure's load bearing capacity is significantly compromised and is considered to be in a condition of



imminent failure. All trains crossing it are required to do so at no more than 10mph. The new bridge and rail realignment is designed to accommodate heavier trains and travel speeds of up to 59mph.

Federal safety guidelines require a slight reconfiguration of the Kendall Hill Road crossing with the higher speed track and this reconfiguration will impact an existing rail siding there. A new siding section is proposed to replace some of this lost rail car storage. The location of the new siding is just west of the new rail section approaching the replacement bridge from the north. A substantial amount of fill will be required to create this siding and when realigning the railroad to the new bridge location. A gain of 12-17 vertical feet is required in order to match the grade of the existing track in the area.

After rail traffic has been successfully diverted over the new permanent crossing, the old bridge, abutments, and central pier will be removed. Significant portions of the rail, ties, ballast and sub-ballast fill along the old alignment will also be removed. Rail bed removal will extend ~220 linear feet from the Otter creek on the southern side of the crossing and ~80 linear feet on the northern side. Most of this excavated material will be stockpiled on railroad property in Rutland before being reused on a future rail project.

VTrans considers the project to be high priority due to relatively frequent and heavy rail traffic on the line and anticipates the project's construction to begin in fall of 2010.

OTHER INFORMATION

8. Are any other federal, state or local permits required for this project, and if so have they been applied for or obtained?

	Required	Applied for	Obtained
US Army Corps of Engineers Permit	[X]	[X]	[ ]
401 Water Quality Certification	[X]	[ ]	[ ]
VT Act 250 Permit	[ ]	[ ]	[ ]
VT Stormwater Discharge Permit	[ ]	[ ]	[ ]
VT Lakes and Ponds Permit	[ ]	[ ]	[ ]
VT Stream Alteration Permit	[X]	[X]	[ ]
Local Zoning Permit	[ ]	[ ]	[ ]
Other: _____	[ ]	[ ]	[ ]
_____			
_____			

9. Attach the following information to the application:

- [X] Location map (project area marked on a USGS topographic map or Vermont Significant Wetlands Map)
- [X] Site plan(s) including existing conditions, proposed work, erosion controls, and wetland and buffer zone boundaries (see Sections 3.2 and 4.6 of the Vermont Wetland Rules for description of methodology).
- [X] Any other narratives or documents that the application intends to rely upon in support of the proposed Conditional Use.
- [X] Photos of wetland, if available.

10. List the names and complete mailing addresses of all persons owning property within or adjacent to the wetland or buffer zone in question.

Name; Mailing Address with Zip Code

Mrs. Frank Buzzell of 593 Kendall Hill Rd. Brandon, VT 05733; Carmella Carter of 41 Prospect St. Rutland, VT 05701; and the Town of Pittsford with municipal offices at 426 Plains Road, Pittsford, VT 05763.

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Attach additional sheets if necessary.

#### WETLAND AND BUFFER ZONE IMPACTS

11. Complete the following for the wetland in question. 18
- a. Size of wetland (to nearest 1/2 acre): <sup>16.4</sup> Wetland 1 = ~57 acres, Wetland 2 = ~7 acres, Wetland 3 = ~2.5 acres.
- b. Check the dominant type of wetland present:
- WL 3 open water    WL 2 marsh    WL 1 wet meadow  
WL 3 shrub swamp    WL 2 forested swamp  
 bog or fen    beaver influenced wetland  
WL 3 other (explain): The open water of WL 3 (visible on the attached aerial photo) is due to an impounding effect of the existing railroad fill ballast on its southwestern edge.

- c. Name of all streams, rivers, lakes, and ponds adjacent to the wetland and approximate distance from proposed activity:

Otter Creek is the only named and significant water body in the project area. The proposed work involving wetland impacts will extend directly to the upper banks of the creek. Vermont ANR Stream Alterations approval for the work proposed in the channel was obtained in 2006.

- d. Approximate the percentage of each of the following cover types in the area surrounding the wetland:

50% forested                      \_\_\_\_\_ agriculture  
25% old field                      10% open water  
\_\_\_\_\_ lawn                      \_\_\_\_\_ residential  
10% commercial or industrial  
\_\_\_\_\_ road

5% other (specify) The railroad bed's sub-ballast fill determines at least one boundary of each of the three delineated wetlands in project area.

12. Complete the following for the portion of the wetland and buffer zone in the area of proposed impact.

- a. Area of impact in wetland (sq ft): If the project is constructed as proposed, there would be ~74,100 ft<sup>2</sup> or 1.7 acres of permanent impact and ~27,200 ft<sup>2</sup> or 0.6 acres of temporary impact to WLs 1 and 2,

Area of impact in buffer zone (sq ft): and ~56,200ft<sup>2</sup> or 1.29 acres\* of permanent impact and 9100ft<sup>2</sup> or 0.21 acres of temporary impact to wetland buffer zones.

\*Since the existing railroad bed defines wetland boundaries, the railroad itself comprises much of the wetland buffer zone and is included in this impact estimate. The rail bed provides no functional benefit as a buffer to the wetlands in the project area however, and work in this corridor should not be considered true buffer zone impacts. Some of the proposed work in this area (removing portions of the existing rail, ballast, fill, and bridge abutments) will create a more functional buffer zone.

- b. Check the type of wetland present (check all that apply):

WL 3 open water      WL 2 marsh      WL 1 wet meadow  
WL 3 shrub swamp      WL 2 forested swamp  
\_\_\_\_\_ bog or fen      \_\_\_\_\_ beaver influenced wetland  
\_\_\_\_\_ other (explain):

- c. Description of dominant vegetation:

Wetland 1 is a wet meadow/emergent marsh community dominated by Phalaris arundinace (reed canarygrass). Wetland 2 includes floodplain forest, forested swamp, and emergent marsh communities dominated by Acer saccharinum (silver maple), Matteucia struthiopteris (ostrich fern), and Carex crinita (fringed sedge). Wetland 3 is primarily open water with a shrub-swamp border dominated by Alnus incana (speckled alder), Acer rubrum (red maple), and Onoclea sensibilis (sensitive fern).

- d. Description of soils in the wetland and buffer zone (from Soil Conservation Service soil surveys or site investigations):

According to USDA Soil Survey, WL 1 encompasses a Saco mucky silt loam, a Limerick silt loam, a Hamlin silt loam, and a Teel silt loam. Most of the proposed impact area from the railroad realignment would be to the Saco mucky silt loam section. The drainage classes for the mapped types range from somewhat poorly drained (Teel) to very poorly drained (Saco). Field observations generally matched the characteristics listed for all types. Artificial draining of the area for agricultural use is evident and ditches can be plainly seen on the enclosed aerial photo. Wetland area 3 buffers WL1 1 to the north and east, Otter Creek to the south and west.

Wetland 2 is found on soil mapped as Teel Silt Loam with a sandy substratum. Again, field observations verified characteristics of the mapped soil type in this wetland. Middlebury loam buffers the wetland area to the east, Otter Creek flows along its southern edge, and a Belgrade Silt Loam at 8-15% slope buffers the area to the west.

Soil survey maps depict WL 3 as being made up of two similar yet distinct soil types. It is shown as a Stockbridge gravelly silt loam being flanked on either side by Windsor loamy sands with slopes ranging from 3-25% over the entire area. Field observations however determined soil texture in the wetland to be a mucky silt loam. Soils observed in the adjacent upland buffer east of WL 3 matched the mapped slopes and soil texture of the Windsor series. It is not surprising that WL 3 and WL 1 were observed to have the same soil type as they likely functioned as a single wetland prior to construction of the railroad.

- e. Check the characteristics of the wetland which apply:

<u>WL 3</u>	flooded most of the time
<u>WL 1 &amp; 2</u>	standing water during at least part of the growing season
	water impounded by beavers
<u>WL 3</u>	soils are saturated during at least part of the growing season
	dry most of the year

- f. Description of the buffer zone:

On the southern side of Otter Creek, the railroad bed is a common boundary that both WL 1 and WL 3 share, so there is no functional buffer zone between them. These two wetlands were likely contiguous prior to the railroad's construction.

Otter Creek borders WL 1 to the south, east and west while the railroad borders it to the north. The railroad borders WL 3 to the south and west while it is protected by a forested upland buffer to the northeast. This buffer is dominated by *Rhus* (staghorn sumac), *Pinus strobus* (white pine), and a *Solidago* (goldenrod) species. There is an

active sand quarrying operation further up gradient of WL 3.

On the northern side of Otter Creek the railroad bed sub-ballast also generally defines the borders of WL 2, forming an acute triangle opening to the northern bank of the creek. (See the attached aerial photos and site plan.) Just beyond the railroad line, and bordering the wetland, there is a forested floodplain area and an upland forest that provides some buffer.

13. Describe in detail all work that is proposed within the wetland or buffer zone, including erosion control measures, referencing attached plans where appropriate. For the involved wetlands, their eastern boundaries were generally determined to be the toe of fill slope along the current railroad bed's sub-ballast. All fill material used during construction will therefore be considered a wetland impact. (See attached site plans). When constructing the new rail approaches, a substantial amount of fill will be required in order to match the grade of the existing track in the area. The anticipated footprint of this fill was used to calculate the project's permanent wetland impact area.

Two wetland areas will be impacted from the proposed work. The first area, WL 1, is south of Otter Creek and is a wet meadow that has been partially drained with ditching for agricultural use, primarily the production of hay forage. The second area, WL 2, on the north side of Otter Creek includes a mature, silver maple/ostrich fern riverine floodplain forest, forested swamp, and a small emergent marsh.

The proposed work in both wetland areas is uncomplicated. It involves felling and removing the trees presently growing in the corridor of the proposed new rail alignment and siding spur, then filling with enough soil and stone ballast in the swath to create a stable base that matches the grade of the existing railroad. The new rail sections would divert rail traffic from the existing line over the replacement bridge and the rail siding would replace lost railcar storage that would be lost from the reconfigured intersection at Kendall Hill Road. The proposed active siding for railcar storage is to be situated in WL 2, west of the relocated mail line. Hydraulic analysis indicates that this additional section of rail bed will not significantly affect the watershed's floodwater flow or storage capacity.

When construction of the new bridge is complete, Vermont Railway anticipates that constructing the new rail bed could be completed by one of their crews in 5-7 days. Very little soil disturbance is planned or anticipated during the activity. Most of the heavy equipment used for the proposed work would be operating off of the pre-existing rail or the newly laid track.

The old bridge, its abutments, and central pier will be removed once rail traffic has been successfully diverted over the new permanent crossing. Substantial portions of the abandoned railroad sections will be removed after construction to increase the hydraulic opening at the crossing location and mitigate for the project's floodplain impacts. Approximately 4100 yds<sup>3</sup> of ballast and sub-ballast material will be removed along 300 linear feet of the original alignment.

Some of this material is known to contain elevated levels of compounds considered hazardous. The compounds are primarily derived from herbicides and wood preservatives, which are commonly found in soils along railroad corridors. As stated previously, most of this excavated material will be stockpiled on railroad property before being reused on a future rail project.

14. Before this section is completed it will be necessary to determine for which functions the wetland in question is significant. The functional criteria for evaluating a wetland's significance are described in Section 5 of the Vermont Wetland Rules. The Vermont Wetland Evaluation form is available through the Wetlands Office to help determine which functions may be significant.

Demonstrate how the project as proposed will avoid any undue adverse impacts on each of the functions. Refer to plans and other attached documents as necessary.

- a. Water storage for floodwater and storm runoff:  
Since WLS 1 and 2 are directly adjacent to the channel of Otter Creek, they both provide storage for floodwaters. The creek does not directly border wetland 3 so it may serve to provide storage of floodwater to some degree but it is less important for this function than WLS 1 and 2. Wetland 3 is also on the downstream side of the railroad and since its bed of ballast fill has altered the hydrology of the site, this wetland is less subject to inundation when the Creek level flows over its banks during flood stage events.

The cumulative surface area of the involved wetlands however, constitutes less than one percent of the upstream watershed area of Otter Creek. It is therefore presumed that these wetlands are not significant for reducing the magnitude or frequency of downstream flooding. (Vermont Wetland Rules sec. 5.1a(6))

Wetland 3 is situated down gradient of an active sand quarrying operation so it may also provide some storage capacity for this area's storm water runoff. There will be no permanent impacts to this wetland during or after the proposed work so its ability to perform this function will not be compromised. Once the new crossing is operational and the 220 linear feet of unneeded ballast is removed, the surface area of this wetland will increase and actually gain storage capacity to treat both storm and floodwater.

- b. Surface and ground water protection:  
The project location centers approximately 1600 feet downstream and NNE of the Florence-Pittsford public water supply wellhead. The nearest delineated boundary of its surrounding Source Protection Area is 1000 feet from the existing trestle over Otter Creek. (See attached Source Protection Area map.) The proposed work zone is sufficiently down gradient of the wellhead that any groundwater recharge occurring in the project area would be isolated from the public water supply.

Wetland 3 has the capacity to slightly improve surface water quality by intercepting overland flow originating from the active sand quarry before it enters Otter Creek, allowing the stormwater's sediment and nutrient load to diminish. This function could be enhanced by the proposed ballast removal on the south side of the Creek.

Since the railroad and Otter Creek border the other two wetlands they are unable to intercept, or purify, any overland flow before it reaches the active channel. These wetlands however do help enhance both surface and groundwater quality by retaining and filtering floodwaters when they overflow the banks of Otter Creek. The wetlands' contribution to ground water recharge and protection however, is insignificant when compared to the flow volume and continual recharge by Otter Creek itself.

After a relatively small decrease in storage capacity due to lost surface area, these functions for WLS 1 and 2 would continue unimpaired following the proposed work.

- c. Fisheries habitat:  
None of the wetlands are significant for this function. Besides Otter Creek, the most important body of open water in the project area is found in WL 3. It is an isolated, and potentially spring-fed shallow pool with no connection to the active channel. Its water surface elevation has been observed to vary widely between site visits. The ditches through WL 1 flood during spring runoff and after heavy precipitation events but like the shallow pool of WL 3, they are too ephemeral to be useful fisheries habitat.

- d. Wildlife and migratory bird habitat:  
All wetlands in the project area are significant for this function. They all display physical characteristics indicative of habitat diversity. Wetland 1, the wet meadow, provides resting and staging for waterfowl migration and provides good amphibian breeding habitat. Wetland 2 is a mature forested swamp that also provides good amphibian breeding habitat. They are both contiguous to Otter Creek.

- e. Hydrophytic vegetation habitat:  
Wetland 2 is significant for this function. This complex supports a riverine floodplain forest and a forested swamp dominated by mature *Acer saccharinum* (silver maple) and *Matteucia struthiopteris* (ostrich fern). Vermont's Nongame

Natural Heritage Program lists this community type as 'uncommon'. This WL could provide habitat for rare hydrophytic plant species, however none were encountered during two botanical surveys conducted by EIV Technical Services.

Proposed impacts to this area have been minimized to the most practicable extent possible but some impact is unavoidable with the chosen alternative. Impacts to this community are planned to be mitigated onsite with a wetland enhancement.

f. Threatened and endangered species habitat:

There are no documented occurrences of threatened or endangered plant and animal species in the project area according to the VT Nongame Natural Heritage Program (NGNHP). According to Scott Darling of the VT Fish and Wildlife Department (VTFWD) however, it is reasonable to assume that the Indiana Bat (*Myotis sodalis*), which is federally listed as endangered, could utilize some of the mature trees in and around Wetland 2 as roosting habitat during summer feeding. Comprehensive survey work for the species was requested by Susi von Oettingen of the US Fish and Wildlife Service (USFWS). Bat surveys were conducted in accordance to USFWS standard protocol during summer of 2006 and the presence of Indiana bats on the site was not confirmed. The results of the survey satisfied concerns of the USFWS as long as the trees to be removed are cut during the bat's inactive period.

The calcareous nature of some soils in the Otter Creek Valley have the potential to promote chemically unique, i.e. basic, wetland habitat. There is a possibility that unique wetland plant species do occur in the project area for this reason. At the request of the VT-Nongame Natural Heritage Program (VT NNHP), a threatened and endangered plant survey was conducted to determine if any such species occur on the site. EIV Technical Services compiled a comprehensive plant species list for the project area from botanical surveys carried out during both the 2005 and 2006 growing seasons. (attached)

The 2005 survey focused on the project's impact area north of Otter Creek to determine if any sensitive plant species occur in WL 2. The 2006 survey included both the impact area and proposed mitigation acreage on the southern side of Otter Creek. Wetland 2 was found to contain the least disturbed and most mature habitat of the three delineated wetlands in the project area. No legally protected plant species were encountered in the WL during the botanical survey. Very few exotic species were observed throughout the area. Care will be taken during construction to minimize the introduction of non-native species to the site.

No threatened or endangered species were encountered in WL 1, the drained agricultural field/wet meadow. Due to the relatively recent and repeated disturbance of this WL it is



- a. Can the proposed activity practicably be located on an upland portion of the site or on another site owned, controlled or available to satisfy the basic project purpose? (*Explain*).

The goal of the project is to create an enduring railroad crossing structure over Otter Creek. Along the current railroad alignment, the trestle's existing abutments and pier are considered damaged beyond repair and need to be replaced. Since this is an active rail line that supports at least four trains each day transporting between 8000-9000 tons of product, it is not practical to close the line in order to replace the abutments on the existing alignment.

If the line were closed, product from Vermont industries could not reach its market, as there is no alternative transport infrastructure that could feasibly accommodate the volumes involved. Some freight could be transported using other means such as being rerouted on alternate track, and some could be carried by heavy truck, increasing traffic on the already congested US RT 7 corridor. These additional transport costs and lost revenue are estimated by Vermont Railway to be about \$500,000 per day.

Closing the line to reconstruct bridge 219 on the existing alignment would eliminate new wetland impacts, however, it would also make VTrans liable for all of Vermont Railway's additional transportation costs and revenue losses. It is necessary, therefore, to meet the project goal while keeping rail closures to an absolute minimum. The proposed alternative will meet this goal.

- b. Demonstrate how all practicable measures have been taken to avoid or minimize adverse impacts on protected functions, including project redesign or project scale back.

If rail service were to be maintained during any of the 'On-Alignment' bridge reconstruction options, wetland impacts would still result from the installation of a temporary rail bed and temporary crossing structure to accommodate train traffic. The 'Off-Alignment Option-B' that is currently proposed by VTrans will allow the existing bridge to accommodate rail traffic during the construction of a new permanent structure.

Placing the new crossing structure on the upstream side of the existing alignment will avoid any impacts to WL 3. It will also minimize direct impacts to Otter Creek by providing the shortest possible crossing distance and will eliminate the need for a center support pier in the active channel. The supporting pier beneath the existing bridge has caused a substantial discharge of sediment into the water body from the scour on the left bank.

The new proposed rail alignment will be located as close as possible to the existing for ease of construction and to minimize the length of the relocation. This will allow a portion of the existing ballast material to support the new

unlikely that protected species occur within the impact areas of WL 1.

Bob Popp, botanist with the VT-NNHP independently visited the site in May 2005. He observed no legally protected plant species occurring in the impact areas. Mr. Popp did comment on the presence of very few exotic species within WL 2 and noticed two individuals of an uncommon herbaceous species, *Trillium cernuum*, growing along the existing track.

- g. Education and research in natural science: None of the wetlands in the project area currently provide this function. There are no known publications specifically referencing them. The recognized community type and relatively undisturbed nature of WL 2 make it potentially valuable for this function but currently it is unutilized.
- h. Recreational value and economic benefit: None of the wetlands in the project area provide this function. Wetland 1 was drained and ditched to facilitate its agricultural use so it may provide a degree of economic benefit, but this is not due to any inherent wetland qualities. Otter Creek, which borders WL 1 and WL 2, provides substantial recreational opportunities to the public, primarily fishing and boating. These opportunities will be only temporarily affected by the proposed work.
- i. Open space and aesthetics: None of the wetlands in the project area are significant for this function. Wetland 1 does provide some open space but since it is surrounded by private land, the public is not able to readily observe it. Wetland 2 is also a distinct feature in the surrounding landscape, but again it is not readily visible to the public.
- The primary vantage of the viewing public as they pass through the project area would likely be from a small watercraft on the water's surface of Otter Creek. Very little, if any, of the wetlands in the project area are visible from the water's surface.
- j. Erosion control through binding and stabilizing the soil: Wetlands 1 and 2 are significant for this function because they are adjacent to Otter Creek and may help to stabilize its banks during high flow events. The proposed work will not impair their ability to continue performing this function. The mid-span support pier of the existing structure has caused substantial scouring and mass wasting of the left bank. (see attached survey section) Its removal will eliminate this source of sediment discharge to Otter Creek.
15. Demonstrate by narrative and reference to plans that the following mitigation measures have been used to achieve no undue adverse impacts to the protected wetland functions.



19. 3 V.S.A. § 2822(j)(26) FEES:  
 Conditional Use Determination  
 Minimum application fee \$ 50.00  
 Plus  
 Proposed wetland impact  
 (74,100 sq. ft. X \$0.07 per sq. ft.) \$ 5187.00  
 Proposed buffer zone impact  
 (56,200 sq. ft. X \$0.05 per sq. ft.) \$ 2810.00  
 Total fee enclosed \$ exempt

Note: If application is for the conversion of Class Two wetlands or wetland buffers to cropland, the maximum fee is \$200.00.


Please make check payable to: State of Vermont

Send with complete application to:

Department of Environmental Conservation  
 103 South Main Street  
 Building 10N - Wetlands  
 Waterbury, VT 05671-0408

**SIGNATURES**

19. I hereby certify that the information provided above or attached to this application is true and accurate to the best of my knowledge. I recognize that by signing this application I am giving consent to employees of the state to enter the subject property for the purpose of processing this application.

Signature of Applicant	Date	
 MONTGOMERIE	11/8/10	Signature

unavoidable wetland impact. Prior to the proposed work, VTtrans plans to purchase and enhance portions of a 17 acre parcel in the floodplain adjacent to the project area. Since success rates for the compensatory replacement of forested wetlands are low, and there will be a significant temporal loss of function, a large mitigation area is appropriate to ensure that there will be no net loss of wetland acreage and that there will be an eventual replacement of lost functions.

Despite widespread ditching efforts on much of the 17 acre parcel, extensive wetland hydrology still exists. The area is therefore a viable site for both enhancing the existing wetland acreage and restoring an unknown amount of wetland hydrology that may have existed on the property before the ditching.

After acquiring and conserving this parcel, the proposed mitigation approach is straightforward. It will consist of enhancing existing wetland habitat in WL 1 by managing *Phalaris arundinaceae* and establishing a forested wetland community in its place, restoring historic wetland habitat by plugging drainage ditches, and removing vehicular access to the area. These measures will not require long-term intervention and should result in the establishment of a forested wetland community on the parcel to replace the functions and values lost by the proposed rail bridge replacement project.

VTtrans is prepared to allocate funds for the monitoring and any required maintenance management of these compensation measures. This monitoring and management will continue for a minimum of five years from the date of completion.

#### DISTRIBUTION

17. Submit the original request for conditional use determination to the Wetlands Office, Division of Water Quality, 103 South Main Street, 10 North, 2nd Floor, Waterbury, VT 05671-0408. Notification of receipt will be sent to the applicant once a complete application has been received by the Wetlands Office.
18. After receiving notification of completeness from the Wetlands Office, send a complete copy of the application to the Town Clerk and Regional Planning Commission. Also, send copies of the location map, a description of the specific action(s) for which conditional use determination is sought, the supporting narratives, and a listing of where complete copies of the request have been filed to:
  - a. the municipal planning commission and/or conservation commission; and
  - b. all persons owning property within or adjacent to the wetland or buffer zone (item 10. of the application).

#### FEES

rail and will also minimize impacts to WL1 and WL2 by decreasing the footprint of new fill placement. Approximately 1.5 acres of each of these wetlands will be impacted by sub-ballast fill for the railroad re-alignment in the 'Off-Alignment Alternative 2 - Option A' proposal.

Although none were captured during the summer 2006 bat survey, the mature tree species found in WL 2 could provide summer breeding and feeding habitat that is suitable for the federally protected Indiana Bat, *Myotis sodalis*. The proposed work will avoid any direct impacts to this endangered species by removing trees during the species' inactive period of the year.

- c. For wetlands that have been disturbed, what steps will be taken to restore impacted functions (e.g. plantings, seeding, mulching exposed soil, removal of fill, etc.) During construction, undisturbed wetland areas will be isolated using construction fence, protected by appropriate phasing, and implementing approved BMPs. This shall include sediment control materials and erosion prevention measures as needed.

Any wetland or wetland buffer areas temporarily disturbed will be shallowly re-graded to match the existing contours if necessary, and planted with native tree and shrub stock appropriate to the locale. Following the woody material planting, disturbed areas will be seeded with a non-invasive conservation mix and covered with weed free mulch to stabilize the site until the local native species re-vegetate the area.

The wetland buffer areas will be planted with species suited to drier habitats, wetland areas with species better suited for hydric soil. The upland and buffer seeding mix will be similar to the 'New England Erosion Control/Restoration Mix for moist sites' developed by New England Wetland Plants, Inc. Following seeding, the areas will be mulched with certified weed free hay.

All waste soil and unused fill ballast will be removed from the project area by train or truck and temporarily stockpiled in an approved holding area for later use, or disposed of in an approved waste soil disposal area. Each area will have a comprehensive Erosion Prevention and Sediment Control Plan in place at the time of use. The location of these areas has yet to be determined.

16. Wetland compensation (creating replacement wetlands) is a measure to mitigate adverse impacts on protected functions that will only be possible in rare cases for specific functions (see Section 8.5c of the Vermont Wetland Rules). If a compensation plan is part of this proposal, demonstrate by narrative and reference to plans how the steps in Section 8.5c(1)-(7) will be met. All efforts to avoid and minimize wetland impacts in the project area have been exhausted, therefore a compensatory mitigation is being proposed for the 1.7 acres of

WETLANDS 1, 2, + 3

VERMONT WETLAND EVALUATION FORM

Project Name: VT RAILWAYS BRIDGE 219 Project #: E1225

Date: 11/03/04 Investigator: MATT MONTGOMERY, EIV TECH.

SUMMARY OF FUNCTIONAL EVALUATION

1. Water Storage for Flood Water and Storm Runoff
2. Surface and Ground Water Protection
3. Fisheries Habitat
4. Wildlife and Migratory Bird Habitat
- WLD  5. Hydrophytic Vegetation Habitat
- WLD  6. Threatened and Endangered Species Habitat
7. Education and Research in Natural Sciences
8. Recreational Value and Economic Benefits
9. Open Space and Aesthetics
10. Erosion Control Through Binding and Stabilizing the Soil

**NOTE:** *This form has been developed by the Department of Environmental Conservation, as a preliminary field checklist. Under Section 4.7 of the Vermont Wetland Rules, the Department of Environmental Conservation is given the authority to issue informal opinions as to which functions, if any, are provided by a significant wetland. Although the Department may use this form as part of its evaluation of a particular wetland, completion of this form does not constitute a determination by the Department. Please contact the wetlands office at 241-3770 with questions about this form or about determining the functions that are provided by any particular wetland. Formal determinations are made by the Water Resources Board.*

1.

### Water Storage for Flood Water and Storm Runoff

The wetland is likely not to be significant if a, b or c apply:

a. Wetland surface area is less than 1% of watershed.

area of wetland x 100 = \_\_\_\_\_ x 100 + \_\_\_\_\_ %  
watershed area

b. Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.

c. The wetland's storage capacity is created primarily by beaver dams or other temporary structures.

d. Are any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, that could be impacted by a loss or reduction of the water storage function:

- 1. Developed public or private property;
- 2. Stream banks susceptible to scouring and erosion;
- 3. Important habitat for aquatic life.

If so, the wetland is likely to be significant if any of the following conditions are met:

e. Constricted outlet or no outlet and an unconstricted inlet;

f. Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters during peak flows and facilitates water removal by evaporation and transpiration;

g. If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods;

h. Ratings of High or Moderate for Floodflow Alteration Effectiveness and Opportunity using the Wetland Evaluation Technique.

Describe any characteristics of the watershed that may increase the volume of runoff reaching the wetland, such as large urbanized areas, relatively impervious

YES, HOWEVER



soils or steep slopes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2.

### Surface and Ground Water Protection

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

WLI ✓

- a. The wetland recharges a well head or aquifer protection area or a Class I or Class II ground water area;
- \_\_\_\_\_ b. Reduces levels of contaminants in surface waters which recharge underlying or adjacent ground waters;
- \_\_\_\_\_ c. Contributes to the flows of Class A surface waters;
- \_\_\_\_\_ d. Enhances or protects water quality through chemical action or by the removal of nutrients (3 of the following 6):
  - \_\_\_\_\_ constricted or no outlets;
  - \_\_\_\_\_ water sampling indicates removal of pollutants or nutrients;
  - \_\_\_\_\_ fine mineral soils and alkalinity not low;
  - \_\_\_\_\_ no dead forest or shrub areas, and no ditches or channels that confine water;
  - \_\_\_\_\_ low water velocity through dense, erect vegetation;
  - \_\_\_\_\_ hydroperiod permanently flooded or saturated.
- \_\_\_\_\_ e. Enhances or protects water quality by the retention or removal of sediments or organic matter, or by moderating the adverse water quality effects of soil erosion or stormwater runoff; no artificial channelization of the wetland, no soil tillage and any one of the following:
  - \_\_\_\_\_ constricted or no outlet;
  - \_\_\_\_\_ water sampling indicates retention of sediments or organic matter;
  - \_\_\_\_\_ wetlands in depositional environments with erect, persistent vegetation wider than 20 feet;
  - \_\_\_\_\_ wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
- \_\_\_\_\_ f. Ratings of High or Moderate for Sediment Retention or Nutrient Removal using the Wetland Evaluation Technique.

Describe any land uses or characteristics of the watershed 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; feet dots; parking lots or heavily traveled road; and septic systems.

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**3. Fisheries Habitat**

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

- a. Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged);
- b. Documented spawning habitat for northern pike;
- c. 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.
- d. Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonid species.

Comments: \_\_\_\_\_

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4.

**Wildlife and Migratory Bird Habitat**

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

- a. Habitat to support one or more breeding pairs or broods of waterfowl;
- b. Supports or has the resting, staging or roosting habitat to support waterfowl migration;

- c. Provides a nest site, a buffer for a nest site or feeding habitat for great blue heron, black-crowned night heron, green-backed heron or snowy egret;
- d. Supports or has the habitat to support one or more breeding pairs of any of the following species of birds: Virginia rail, sora rail, common moorhen (gallinule), American coot, snipe, horned grebe, marsh wren, Wilson's warbler, rusty blackbird, bay-breasted warbler, blue-gray gnatcatcher, black tern, Cape May warbler, Lincoln's sparrow, Tennessee Warbler, American bittern, pied-billed grebe, least bittern, northern harrier, short-eared owl, black-backed woodpecker, three-toed woodpecker, spruce grouse, and Cerulean warbler;
- e. Contains evergreen trees and provides winter or necessary feeding habitat for white-tailed deer;
- f. Provides necessary feeding habitat for black bear or moose;
- g. Contains evidence that it is used by muskrat, otter or mink;   
 → 5 INDIVIDUALS OBSERVED 06/07/05 HBM
- h. Supports an active beaver dam, one or more lodges, or evidence of us in two or more consecutive years by an adult beaver population;
- i. Provides habitat that supports the reproduction of Jefferson salamander, blue-spotted salamander, yellow-spotted salamander or other uncommon amphibians;
- j. Supports or has the habitat to support breeding populations of mountain dusky salamander, four-toed salamander, Fowler's toad or other species of similar significance;
- k. Supports or has the habitat to support populations of any of the following reptile species: wood turtle, map turtle, stinkpot turtle or spotted turtle;
- l. Meets four or more of the following conditions indicative of wildlife habitat diversity:
  - 1. three or more wetland vegetation classes (greater than 1/2 acre) present (not including wet meadows);

WLD ✓

2. the dominant vegetation class is marsh or swamp;

✓

3. located contiguous to a lake, pond, river or stream; OTTIE CREEK

✓

4. 50% or more surrounded by forest, agricultural land, old field or open land;

WLD ✓

5. emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water; and

6. one of the following:

i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;

ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;

iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;

m. Owned by state and federal government and managed as a wildlife area; and

n. Contains evidence that it is used by wetland dependent wildlife species.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5.

**Hydrophytic Vegetation Habitat**

Wetlands that are bogs, fens, alpine peatlands or black gum swamps are automatically significant for this function. The wetland is also likely to significant if any of the following conditions are met:

✓

a. Best known county example of one of the following: deep marsh dominated by rushes or cattails,

shallow marsh, shrub swamp, wooded swamp dominated by hardwoods cedars or spruce/fir-tamarack;

- b. Provides habitat for rare species of hydrophytic vegetation;
- c. Contains one or more plant species at their range limits; and
- d. Contains disjunct plant species 40 miles or more from the nearest population.

Species or communities of concern:

SILVER MAPLE / OSTROCK FERN FLOODPLAIN FOREST COMMUNITY

6.

### Threatened and Endangered Species Habitat

Wetlands that contain species on the federal or state threatened or endangered lists are automatically significant for this function. The wetland is also likely to be significant if either of the following apply:

- a. There is creditable documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists;
- b. There is creditable documentation that threatened or endangered species have been present in past 10 years.

Name of species and ranking: INDIANA BAT, MYOTIS SODALIS  
FEDERALLY ENDANGERED

X

### Education and Research in Natural Sciences

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

- a. Owned by or leased to a public entity dedicated to education or research;
- b. History of use for education or research, or scientific papers exist on the wetland; and
- c. Has one or more characteristics making it valuable for education or research.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

~~8.~~ **Recreational Value and Economic Benefits**

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

- \_\_\_ a. Used for or contributes to recreational activities;
- \_\_\_ b. Provides economic benefits;
- \_\_\_ c. Provides important habitat for fish or wildlife which can be fished, hunted or trapped; and
- \_\_\_ d. Used for harvesting of wild foods.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

~~9.~~ **Open Space and Aesthetics**

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

- \_\_\_ a. Can be readily observed by the public;
- \_\_\_ b. Possesses special or unique aesthetic qualities as open space; and
- \_\_\_ c. Has prominence as a distance feature in the surrounding landscape.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**10. Erosion Control through Binding and Stabilizing the Soil**

The wetland is likely to be significant if there are erosive forces present and any of the following characteristics are present:

- ✓ \_\_\_ a. Forested or shrub wetland adjacent to a lake, river or stream;  
GIFER CREEK
- \_\_\_ b. Dense, erect vegetation greater than 20 feet wide;

- c. Wetland substrate exposed to erosive forces is rubble, cobble or gravel;
- d. Good interspersions of persistent emergent vegetation and water along course of stream flow;
- e. Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control:
- f. Ratings of High or Moderate for Sediment Stabilization using the Wetland Evaluation Technique.

What type of erosive forces are present:

- Lake fetch and waves: \_\_\_\_\_
- ✓ ~~High~~ current velocities: \_\_\_\_\_
- ~~Water~~ level influenced by upstream impoundment: \_\_\_\_\_

MODERATE FLOW / HIGH VOLUME DURING FLOODING PERIODS

ERS:jl

es\241-1015.91





Vermont Department of Fish and Wildlife  
5 Perry St. Suite 40  
Barre, VT. 05641-4266

Nongame and Natural Heritage Program  
6 June 2005

Chris Slesar  
National Life Bldg – Drawer 33  
Montpelier, VT. 05633

Dear Chris:

I was able to visit the site of the proposed Pittsford Bridge replacement on 26 May of this year. The floodplain forest at the site would be a "B-rain" example which would make it of state significance.

The total forested floodplain is less than the 10.7 hectares depicted on the National Wetlands Inventory Map since the area delineated includes some areas of emergent marsh and scrub shrub wetlands as well as some upland. However, the total wetland area of all kinds likely exceeds eight hectares. The portion to the east of the Florence rail spur nearest to Otter Creek is the best developed portion of the Silver Maple – Ostrich Fern Riverine Floodplain Forest. Here the canopy is dominated by mature silver maple and green ash with an understory primarily of ostrich fern and wood nettle. At the north end of the area between the two sets of tracks the wetland is mostly emergent marsh that transitions to scrub shrub and finally to floodplain forest as you proceed south.

To the west of the Florence spur the floodplain forest continues along an unnamed tributary of Otter Creek. Here the forest becomes younger with areas of upland intermixed in places. There is evidence of ATV traffic in this portion of the wetland. It also appears that mine spoils may be entering the wetland where it narrows before turning to the northwest. I did not visit the portion of the wetland to the north of here. The floodplain forest along this unnamed stream has evidence of previous beaver activity which would explain its earlier successional state.

The area between the existing tracks that will be displaced by the proposed new alignment appears quite natural although there was a large area of standing water present during my visit. It is unclear whether this ponding is natural or the result of the trestle impounding floodwater. Considering the presence of tracks on either side of the forest, it presently contains relatively few exotics; only the herbaceous moneywort was common. Future work in this area is likely to increase the presence of exotics unless extreme caution is exercised and even that may not be enough. However, it is possible that the proposed removal of the existing trestle could restore the connection of a portion of the floodplain forest to Otter Creek resulting in more hydrologic conditions.

EIV Technical Services  
93 South Main Street  
Waterbury, VT 05676

JUN - 7 2005

PROGRAM DEVELOPMENT

Although I did not conduct a wildlife survey, I did note the birds that were present and the list is quite extensive. The following were all noted as indicated:

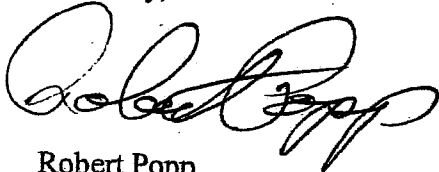
N. Oriole – Singing (S)	American Redstart - S
Gray Catbird – S	Least Flycatcher - S
Common Yellowthroat – S	Red eyed Vireo - S
Yellow Warbler – S	Ovenbird - S
Bl. Cap Chickadee – Observed (O)	Downy Woodpecker - O
Belted Kingfisher – Calling ©	Scarlet Tanager - O
Tufted Titmouse – S	Robin – S
Eastern Wood Pewee – S	Veery – S
Grackle – S	Hairy Woodpecker – O
Blue gray Gnatcatcher	
Woodcock	

Mallard with 8 – 10 ducklings in impounded area between the two sets of tracks. The gnatcatcher is considered to be an uncommon nester in the state. Also it should be noted that a total of five mature woodcock were flushed from a single area where they were presumably feeding.

A single rare plant species was note during the visit. Two individuals of the nodding trillium (*Trillium cernuum*) were located along the tracks that are proposed to be removed. While not legally protected, we would still have concerns about any impacts to this species. I could provide a more precise location for these plants if that is needed.

Please let me know if you need any further information from me. I am copying both the Army Corps of Engineers and EPA on this correspondence at their request. I understand that EIV will also be conducting an inventory of the site; please forward a copy of their report to me when it is completed.

Sincerely,



Robert Popp  
Program Botanist

CC: Marte Lefebvre, ACOE  
Beth Alafat, EPA



**FINAL HYDRAULIC STUDY  
Pittsford HPP ABRB(9)**



The existing conditions model demonstrates that the water surface elevation overtops the railroad at Q25 and greater events. Similarly, providing a proposed structure on the existing railroad profile, it is not possible to increase the span length sufficiently to pass the Q100 event without overtopping the railroad, demonstrating that the existing bridge does not have a considerable backwater affect on the Otter Creek.

Removing the sag vertical curve from the existing railroad profile, effectively raising the bridge approximately 3', improves the hydraulic performance of the bridge by allowing the Q2.33 and Q10 events to pass under the bridge. The Q25 and Q50 events act under pressure flow and the Q100 overtops the railroad. By comparison, the existing bridge only allows the Q2.33 event to pass under the bridge. The Q10 event acts under pressure flow while the Q25 and greater events overtop the railroad.

Adjusting the railroad profile in order to raise the bridge sufficiently to provide 1' of freeboard from the Q100 water surface elevation to the low structure elevation would require raising the railroad profile approximately 9' at the bridge. While this would provide the desirable freeboard, this alternative would not be constructible while maintaining railroad operations on the existing railroad alignment, as required by the railroad, due to embankment conflicts between the existing railroad alignment and the proposed embankment. This alternative would greatly increase wetland and property impacts and would be cost prohibitive as it would require constructing new 20' tall embankments. Additionally a dramatic increase in the railroad profile would introduce safety concerns by creating a downhill grade towards the Kendall Hill Road crossing to the north of the bridge and would adversely impact railroad switching operations between the mainline and the OMYA industrial lead at this location.

The recommended bridge configuration is a 190' thru truss span over the main channel, with a 45' nested plate girder north approach span. The railroad profile should be adjusted approximately 3' at the bridge thereby eliminating the existing sag vertical curve providing a 0% grade on the bridge and approaches.

Elevating the bridge profile and the low structure elevation generates an increase in the Q100 water surface elevation of 1" immediately upstream of the bridge. Raising the profile in this manner does not provide 1' of freeboard to the Q100 water surface elevation, nor does it eliminate weir flow during the Q100 event. The recommended bridge configuration does however reduce the weir flow by approximately 73% and also allows the Q2.33 and Q10 events to flow under the bridge unobstructed due to the additional waterway opening.

In conclusion, we recommend the following:

1. Provide a 190' thru truss span over the main channel, with a 45' nested plate girder north approach span and;
2. Eliminate the existing sag vertical curve thereby raising the proposed profile approximately 3' at the bridge.

Please contact us if you have any questions or if we may be of further assistance.



FINAL HYDRAULIC STUDY  
Pittsford HPP ABRB(9)



VTR Bridge No. 219 Bridge Replacement over Otter Creek  
Pittsford, VT

To: Doug Zorzi, P.E., VTrans Project Manager

From: Greg Goodrich, P.E., Project Engineer

Date: February 1, 2010

---

**MEMORANDUM**

We have completed a hydraulic study for the VTR Bridge No. 219 over Otter Creek, as requested by VTrans. We used the HEC-RAS computer program to perform the analysis along this reach of the Otter Creek, using all available project survey limits. The following five conditions were modeled:

1. Maintain existing bridge low structure elevation and determine the appropriate span length to obtain a Q100 water surface elevation within 0.1 ft of the existing condition, and an average channel velocity within 15% of the existing condition channel velocity.
2. Using the existing railroad profile and low structure elevation, determine the span length required to pass the Q100 event (i.e. no railroad overtopping at Q100).
3. Using the existing railroad profile and low structure elevation, determine the span length required to provide 1' of freeboard from the Q100 water surface elevation to the low structure elevation.
4. Determine the span length required to provide 1' of freeboard by removing the sag vertical curve from the bridge, thereby providing a level railroad approach and bridge crossing (note that due to the known characteristics of this reach of the Otter Creek, removing the sag from the railroad profile may not be sufficient profile change to provide 1' of freeboard above the Q100 water surface elevation).
5. Determine the span length and railroad profile required to provide 1' of freeboard from the Q100 water surface elevation to the low structure elevation.

Comparing the existing conditions at Q100 with the proposed conditions as outlined above yielded the following results:

Removing the existing bridge and replacing it with a new bridge of similar size immediately upstream of the existing bridge does not significantly change the water surface elevations upstream. This is due to the vast amount of water storage upstream of the bridge. Modeling the above referenced conditions clearly demonstrated that the bridge is not acting as a significant restriction to the Otter Creek, therefore making sizable span length adjustments or providing additional relief spans to a structure spanning the main channel does not considerably improve the water surface elevations upstream of the bridge.



RAILROAD SIDING NARRATIVE  
Pittsford HPP ABRB(9)



VTR Bridge No. 219 Bridge Replacement over Otter Creek  
Pittsford, VT

To: Doug Zórzi, P.E., VTrans Project Manager  
From: Greg Goodrich, P.E., Project Engineer  
Date: February 1, 2010

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**MEMORANDUM**

We have prepared a railroad siding design and development narrative for the VTR Bridge No. 219 bridge replacement project over Otter Creek, as requested by VTrans. This narrative takes into consideration multiple stakeholders and agencies that are either directly or indirectly affected by this project.

For the purposes of this memorandum, regardless of the direction of true north, the track direction is referred to as north or south. For example, a location referred to as “south of the bridge” is a track location on the west side of Otter Creek.

**Need for a Siding:**

By design, the proposed mainline railroad alignment will be shifted west of the existing railroad alignment in order to accommodate the 60 mph design speed required by Amtrak for future passenger rail service through the corridor. This new alignment requires that the existing crossover connecting the mainline track to the OMYA industrial lead be relocated from its existing location south of the Kendall Hill Road crossing to a point north of the crossing. By relocating the crossover, the existing turnout for Track 2 (the existing storage track west of the industrial lead) must be relocated to the north, thus shortening the amount of storage available on Track 2.

During previous coordination meetings with the Railroad, we discussed the viability of reducing the total storage along Track 2 as a result of necessary track modifications. The Railroad explained that they could not sustain a loss of storage, and that in fact they had a significant need for additional storage at this location due to demand on the corridor by OMYA, their largest customer the Vermont, relative to the current storage capacity. This particular location is also one of the busiest locations on the Vermont Railway network, which adds a heightened sensitivity to overall railroad operations, functionality, and safety. The need for recovering lost storage, and if possible providing additional storage at this location was apparent.

**Siding Location Study:**

Five siding alternatives were considered during the preliminary design phase of this project:





**RAILROAD SIDING NARRATIVE  
Pittsford HPP ABRB(9)**



1. The first alternative reconfigures the existing mainline track north of the existing bridge (immediately south of Kendall Hill Road) for use as a storage siding. This alternative would provide a net increase in storage capacity of 14 cars. Considerations include:
  - The existing track must be realigned to the east in order to maintain the required minimum clearance to the proposed alignment.
  - Locating the turnout to the north of Kendall Hill Road, which requires reconstruction of the entire road crossing including new signalization as well as roadway work along Kendall Hill Road.
  - Access to the siding would be from the mainline track, which is not desirable as mainline train movements would be interrupted while switching to the siding.
  - This configuration presents safety concerns. Connecting the siding directly to the mainline track at the inside of a curve is a site distance safety issue for northbound trains; this is a particular concern when passenger rail service is operating in the corridor.
  
2. The second alternative considered a new Track 3 parallel to Track 2 north of Kendall Hill Road. This alternative would provide a net increase in storage capacity of 20 cars. Considerations include:
  - Location and functionality is more desirable than the previous alternative, as the siding will be accessed from the industrial lead.
  - ROW acquisition will be required for two additional parcels. These property owners are not being impacted as a part of the current scope of this project.
  - Construction of Track 3 will require significant slope impacts as the track will be cut in the direction of a hill.
  
3. The third alternative reconfigures the existing mainline track south of the existing bridge for use as a storage siding. This alternative would provide a net increase in storage capacity of 12 cars. Considerations include:
  - Approximately 550 feet of existing track must be realigned to the east of the proposed mainline alignment in order to provide proper clearance to the mainline track. The turnout must be located south of the proposed alignment horizontal curve.
  - Access to the siding would be from the mainline track, which is not desirable as mainline train movements would be interrupted while switching to the siding.
  - This configuration presents safety concerns. Connecting the siding directly to the mainline track at the inside of a curve is a site distance safety issue for southbound trains; this is a particular concern when passenger rail service is operating in the corridor.
  - ROW acquisition will be required for two additional parcels. These parcels are not being impacted as a part of the current scope of this project.



## RAILROAD SIDING NARRATIVE Pittsford HPP ABRB(9)



- This location is not in close proximity to the existing storage track north of Kendall Hill Road. Operationally this would present problems for the railroad as it would separate their storage facilities by over ½ mile.
  - This location will impact an existing wetland located to the east of the existing mainline track. This wetland is not being impacted as a part of the current scope of this project.
4. The fourth alternative considered a new siding track parallel to the existing industrial lead, south of Kendall Hill Road between the industrial lead and the proposed mainline alignment. This alternative would provide a net increase in storage capacity of 11 cars. Considerations include:
- Location and functionality is desirable as the siding will be accessed from the industrial lead.
  - ROW impacts will be present, however the parcel, belonging to the Town of Pittsford, is already being acquired as a part of the current scope of this project, as the parcel will be impacted by the proposed mainline alignment. This land was previously donated to the Town, and is landlocked by the railroad therefore it is not wanted by the Town.
  - This configuration will impact the wetland between the industrial lead and the mainline track.
  - This location is one of two favored by the Railroad as the siding is in close proximity to the existing storage siding and all train movements will occur separate from the mainline track movements, which improves both safety and railroad operations.
5. The fifth alternative, designated as Siding “A”, consists of a new siding track between the industrial lead and the proposed mainline alignment, similar to the previous alternative, except that the siding diverts in a southeasterly direction towards the proposed mainline track. This alternative would provide a net increase in storage capacity of 14 cars. Considerations include:
- Similar to the previous alternative, this siding configuration will impact the Town of Pittsford ROW parcel; however this parcel is already being acquired as part of this project regardless of the presence of a siding.
  - Proximity of the siding to the proposed mainline track, in conjunction with the revised proposed mainline alignment generates fewer final slope impacts than originally anticipated in the Engineering Scoping Report submitted in 2005.
  - Similar to the previous alternative, this location is preferred by the Railroad as the siding is in close proximity to the existing storage siding and all train movements will occur separate from the mainline track movements, which improves both safety and railroad operations.

### Other considerations driving the alternative evaluation process:

- Minimizing the overall wetland impacts, both temporary and permanent, is a significant consideration in choosing a siding configuration. In order to construct the bridge, the Contractor will need to gain access to the north side of the bridge site. The only means for a contractor to access this side of the bridge will be for them to cross over the industrial lead and access over the proposed Siding “A” alignment. Therefore at a minimum the wetland in this area will be impacted at least on a temporary basis, which would require tree removal, clearing and grubbing.



## RAILROAD SIDING NARRATIVE Pittsford HPP ABRB(9)



- Simply restoring lost storage capacity by creating a siding that is two cars long is not practical from a Railroad functionality and cost standpoint. A two car siding would not be useful. Additionally, the most significant cost component to construct a siding is the cost of turnouts, therefore creating a siding that is both in a location usable to the railroad and sizable enough to provide the functionality they need to operate is a major factor in choosing a siding location and configuration.
- Safety is a major concern for the Railroad and the State of Vermont. With passenger rail service on the horizon for this corridor it is important to keep as much yard movement off of the mainline track as possible. Providing a siding that is accessed from the industrial lead is a significant goal for improving railroad operational safety at this location, which is one of the busiest locations on the line.

### **Recommendation:**

Siding “A”, the fifth alternative considered, is the recommended siding location and configuration. This location is preferred by the railroad, reduces overall ROW impacts as it does not impact land not already being acquired as part of this project, and while it does impact wetlands, the overall impacts are minimized by locating the siding in close proximity to the proposed mainline track. Although the siding will create a permanent wetland impact, it is anticipated that the contractor will need to access to the site at this location, thereby creating a temporary impact which will require tree cutting, clearing and grubbing.

Other locations considered require significant additional ROW impacts, impact wetlands that are not already being impacted by this project, create railroad and public safety concerns, and are not operationally equivalent to providing a siding at the preferred location.

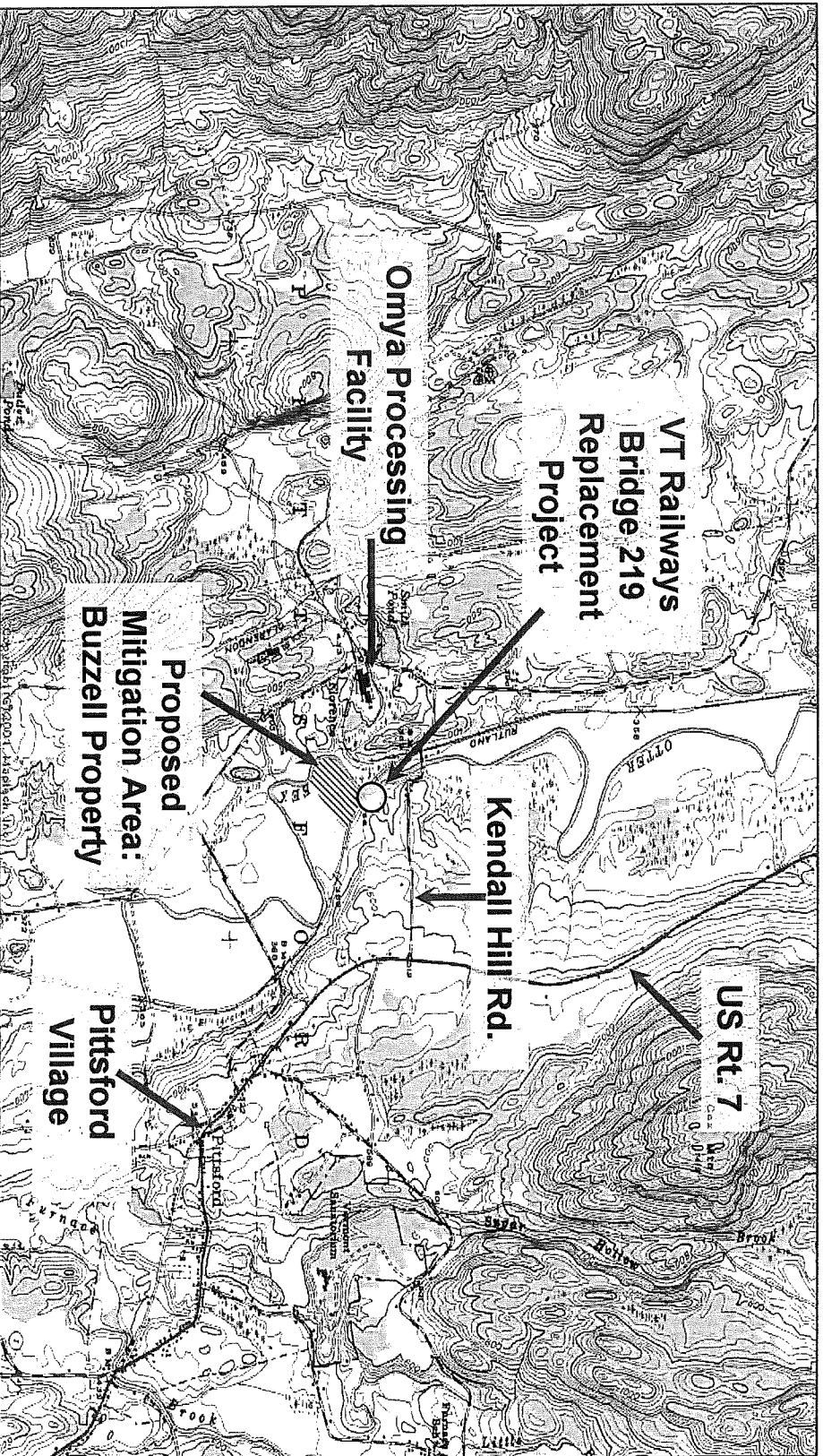
Siding “A” provides a reasonable balance for all parties involved. This project reduces the net car storage capacity on Track 2, which should be mitigated by creating a usable, practical siding at a location suitable to the railroad. It reduces overall wetland impacts (temporary and permanent), and provides logical access and construction staging location for the contractor. Additionally, improving the railroad at this location also shows commitment to OMYA, a major industrial and economic engine in the State.

We recommend construction of Siding “A” as detailed above and as currently shown in the plans.

Please contact us if you have any questions or if we may be of further assistance.



# VT Railway Bridge 219 Replacement Project, Pittsford VT Locus Map



Pittsford HPP-ABRB (9)

VT ANR Conditional Use Determination

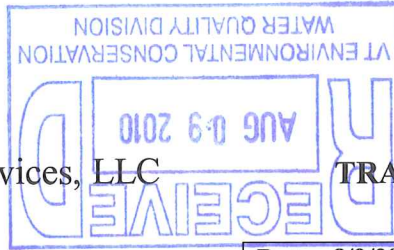
July, 2010

EIV Technical Services, LLC





EIV Technical Services, LLC TRANSMITTAL



93 South Main Street  
Waterbury, VT 05676  
802.244.7453  
FAX 802.244.5052

Date: 8/9/2010	EIV#: 1225
RE: Pittsford Rail Bridge Replacement VT ANR CUD Application	

To: Alan Quackenbush  
VT DEC – Wetlands Office  
103 South Main St; Building 10 North  
Waterbury VT 05671

2010-097

We are sending you:

Attached     Plans     Diskettes     Copy of Letter  
 Prints     Information Requested     CUD Application form

Copies	Date	No.	Description
1	8/9/10		Hard Copy of Application form and plan sheets

These are being transmitted as checked below:

For approval     Approved as submitted     Resubmit \_\_\_ copies for approval  
 For your use     Approved as noted     Submit \_\_\_ copies for distribution  
 As requested     Returned for corrections     Return \_\_\_ corrected prints  
 For review/comment     For bids due \_\_\_\_\_  
 Other Hard copy of data previously submitted during week of 8/2/10

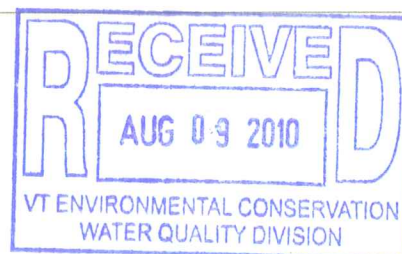
Remarks: Let me know if you need another set of the supplemental application materials that were included with our previous submittal.

CC:  By: Matt Montgomery



**Matthew Montgomery**

**From:** Matthew Montgomery [mmontgomery@eivtech.com]  
**Sent:** Friday, August 06, 2010 12:40 PM  
**To:** 'alan.quackenbush@state.vt.us'  
**Subject:** Pittsford Rail Bridge 219 Replacement  
**Attachments:** 07.26.10 Br. 219 CUD.pdf; VHB Materials.pdf



Hi Alan-

I just left you a voice mail message about the CUD application packet for the Pittsford Rail bridge project. I spoke to you briefly about it last week. In April 2006, I originally sent you a complete application packet for the same project. The project now has a slightly new design (to accommodate faster moving trains) and earmarked federal funding for its construction. We have also developed a compensatory on-site mitigation plan for the project's unavoidable wetland impacts. We anticipate that our mitigation approach will satisfy COE requirements based on a recent site meeting on the proposed mitigation area.

Here is a brief update on the two major changes between the original design that you were introduced to in 2006, and the current design:

The first change is that the updated design places the new rail sections much closer to the existing rail bed than was originally considered possible back in 2006. This allows a smaller fill footprint, faster moving trains, and a substantial (about one-half) reduction in overall wetland impact area relative to the original design.

The second change is that a rail car siding has now been incorporated into the design. Its proposed location is to be along the west side of the track and north of the Otter Creek – right in the forested wetland that was the impact area of primary concern. The design engineers tell me that logistically, it is the only place that works and satisfies federal rail safety criteria. This effectively increases the impact area in this wetland back up to the level proposed in 2006, about 1.5 acres.

So the new design results in no net change in impact area on the north side of Otter Creek, a ~50% reduction in impact on the south side, and an overall decrease in the project's total wetland impact.

I have attached an updated CUD application form and the project's new design plans provided by VHB. The VHB materials include a survey of the entire project area, proposed cross-sections, and impact area calculation sheets that illustrate differences between the current design and the 2006 design. I copied you on the electronic Mitigation Plan submission that I made to Marty Abair last week. All other supporting materials associated with the application packet are unchanged.

Let me know if you still have these supplemental application materials that I sent you with our original submission or if you would like me to provide you with additional copies. I will provide you with a hardcopy version of the CUD application early next week.

Thanks. Have a good weekend.

Matt

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Matthew Montgomery  
Ecologist/Soil Scientist  
EIV Technical Services, LLC  
93 South Main Street  
Waterbury, VT 05676  
off: 802-244-7453  
cell: 802-793-3109  
fax: 802-244-5052  
[mmontgomery@eivtech.com](mailto:mmontgomery@eivtech.com)

8/9/2010

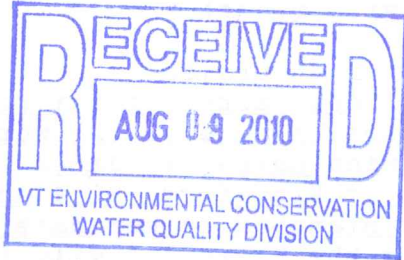




VERMONT WETLAND RULES

CONDITIONAL USE DETERMINATION APPLICATION

Title 10 V.S.A., Chapter 37, Section 905



\*\*\*\*\*  
file number: 2010-097  
date received: 8.9.10  
[ ] complete  
[ ] incomplete  
date completed: \_\_\_\_\_  
Check #:  
Check amount:  
Check from:  
DEC receiver: \_\_\_\_\_  
Application Last Revised:  
6/24/02  
\*\*\*\*\*  
OFFICE USE ONLY

**INTRODUCTION**

The following questions must be answered in order for this application to be considered complete. If you have questions on any portion of this form, please call the Vermont Wetlands Office at (802)241-3770 for assistance. Please note that there is a non-refundable fee effective July 1, 2002 (see Section 19) as required by the Vermont General Assembly (3 V.S.A. § 2822(j)(26). Early consultation with the Wetlands Program may result in a reduction of the wetland area impacted. A pre-application site visit is required in order to call this application complete.

**NAMES**

1. Applicant: Vermont Agency of Transportation (VTrans), Operations Divison  
Address: One National Life Drive, Montpelier, VT 05633  
Phone: 802-828-2663, Richard Tetreault, Director of Program Development
2. Landowner(s) (if different):  
James Buzzell et al.. of 593 Kendall Hill Rd. Brandon, VT 05733, Carmella Carter et al.. of 41 Prospect St. Rutland, VT 05701, and the Town of Pittsford. (See attached tax parcel maps) VTrans will be conducting work within its existing railroad right-of-way, and plans to purchase additional property and obtain easements to expand its right-of way where necessary.

(If landowner is other than the applicant, attach copies of any easements, agreements, or other documents conveying permission, and an agreement with the landowner(s) stating who will be responsible for meeting the terms and conditions of the Conditional Use Determination.)

3. Representative: Matt Montgomery, Ecologist  
EIV Technical Services, LLC

Address: 93 South Main St.; Waterbury, VT 05676  
Phone: (802) 244-7453

**PROJECT DESCRIPTION**

4. Location: *(Street Address)*

The project area is in Rutland County approximately 0.3 miles east of the village of Florence and approximately 1.5 miles northeast of Pittsford Village. The proposed work location is at milepost 64.9 of Vermont Railway's primary North-South line just west of where it currently crosses the Otter Creek. The site is approximately 2700 feet southerly of the Kendall Hill Road rail crossing. (See attached site plans)

5. Acres owned by applicant and landowner at project site:

Currently there is approximately 3 linear acres of railroad right-of-way in the project area. The balance of the work will occur on portions of the following parcels: James Buzzell et al, 150.2 acres and Town of Pittsford, 31.4 acres (See attached tax maps.) VTrans is planning to purchase and conserve 17 acres of floodplain from the Buzzell family for an on-site wetland mitigation.

Acres involved in project:

An estimated 2.4 acres will be disturbed during the new bridge construction and rail realignment. Approximately 2 acres will be disturbed when removing the existing bridge abutments and portions of the existing rail bed to mitigate the project's floodplain impacts. A wetland mitigation area is proposed on a portion of the adjacent Buzzell parcel. This proposed mitigation involves an additional 17 acres.

6. Project purpose:

The primary purpose of the project is to create a safe and enduring railroad crossing structure over Otter Creek. A secondary purpose is to create replacement railcar storage with a new siding spur. Both objectives are to be met while minimizing interruptions to the existing rail service.

7. General project description *(include number and size of buildings; number of lots; length of roads; type of sewage disposal; etc.):*

The proposed activity consists of constructing a new railroad bridge to replace the failing structure currently in use. The proposed location is approximately 80-ft upstream of the existing bridge (See attached field survey and design plans). This provides the shortest crossing distance over the Otter Creek and allows rail traffic to be maintained on the existing bridge during construction. The new bridge design will allow the mid-span support pier to be placed on the top of the left bank, instead of mid-channel. This will eliminate bank scour issues that arose with the old crossing structure.

According to VTrans bridge engineers, the existing structure's load bearing capacity is significantly compromised and is considered to be in a condition of



imminent failure. All trains crossing it are required to do so at no more than 10mph. The new bridge and rail realignment is designed to accommodate heavier trains and travel speeds of up to 59mph.

Federal safety guidelines require a slight reconfiguration of the Kendall Hill Road crossing with the higher speed track and this reconfiguration will impact an existing rail siding there. A new siding section is proposed to replace some of this lost rail car storage. The location of the new siding is just west of the new rail section approaching the replacement bridge from the north. A substantial amount of fill will be required to create this siding and when realigning the railroad to the new bridge location. A gain of 12-17 vertical feet is required in order to match the grade of the existing track in the area.

After rail traffic has been successfully diverted over the new permanent crossing, the old bridge, abutments, and central pier will be removed. Significant portions of the rail, ties, ballast and sub-ballast fill along the old alignment will also be removed. Rail bed removal will extend ~220 linear feet from the Otter creek on the southern side of the crossing and ~80 linear feet on the northern side. Most of this excavated material will be stockpiled on railroad property in Rutland before being reused on a future rail project.

VTrans considers the project to be high priority due to relatively frequent and heavy rail traffic on the line and anticipates the project's construction to begin in fall of 2010.

#### OTHER INFORMATION

8. Are any other federal, state or local permits required for this project, and if so have they been applied for or obtained?

	Required	Applied for	Obtained
US Army Corps of Engineers Permit	[X]	[X]	[ ]
401 Water Quality Certification	[X]	[ ]	[ ]
VT Act 250 Permit	[ ]	[ ]	[ ]
VT Stormwater Discharge Permit	[ ]	[ ]	[ ]
VT Lakes and Ponds Permit	[ ]	[ ]	[ ]
VT Stream Alteration Permit	[X]	[X]	[ ]
Local Zoning Permit	[ ]	[ ]	[ ]
Other: _____	[ ]	[ ]	[ ]
_____			
_____			

9. Attach the following information to the application:

- [X] Location map (project area marked on a USGS topographic map or Vermont Significant Wetlands Map)
- [X] Site plan(s) including existing conditions, proposed work, erosion controls, and wetland and buffer zone boundaries (see Sections 3.2 and 4.6 of the Vermont Wetland Rules for description of methodology).
- [X] Any other narratives or documents that the application intends to rely upon in support of the proposed Conditional Use.
- [X] Photos of wetland, if available.

10. List the names and complete mailing addresses of all persons owning property within or adjacent to the wetland or buffer zone in question.

Name; Mailing Address with Zip Code

Mrs. Frank Buzzell of 593 Kendall Hill Rd. Brandon, VT 05733; Carmella Carter of 41 Prospect St. Rutland, VT 05701; and the Town of Pittsford with municipal offices at 426 Plains Road, Pittsford, VT 05763.

A

Attach additional sheets if necessary.

**WETLAND AND BUFFER ZONE IMPACTS**

- 11. Complete the following for the wetland in question.
  - a. Size of wetland (to nearest 1/2 acre): Wetland 1 = ~57 acres, Wetland 2 = ~7 acres, Wetland 3 = ~2.5 acres.
  - b. Check the dominant type of wetland present:
    - WL 3 open water      WL 2 marsh      WL 1 wet meadow
    - WL 3 shrub swamp    WL 2 forested swamp
    - \_\_\_\_\_ bog or fen      \_\_\_\_\_ beaver influenced wetland
    - WL 3 other (explain): The open water of WL 3 (visible on the attached aerial photo) is due to an impounding effect of the existing railroad fill ballast on its southwestern edge.



- d. Description of soils in the wetland and buffer zone (from Soil Conservation Service soil surveys or site investigations):

According to USDA Soil Survey, WL 1 encompasses a Saco mucky silt loam, a Limerick silt loam, a Hamlin silt loam, and a Teel silt loam. Most of the proposed impact area from the railroad realignment would be to the Saco mucky silt loam section. The drainage classes for the mapped types range from somewhat poorly drained (Teel) to very poorly drained (Saco). Field observations generally matched the characteristics listed for all types. Artificial draining of the area for agricultural use is evident and ditches can be plainly seen on the enclosed aerial photo. Wetland area 3 buffers WL 1 to the north and east, Otter Creek to the south and west.

Wetland 2 is found on soil mapped as Teel Silt Loam with a sandy substratum. Again, field observations verified characteristics of the mapped soil type in this wetland. Middlebury loam buffers the wetland area to the east, Otter Creek flows along its southern edge, and a Belgrade Silt Loam at 8-15% slope buffers the area to the west.

Soil survey maps depict WL 3 as being made up of two similar yet distinct soil types. It is shown as a Stockbridge gravelly silt loam being flanked on either side by Windsor loamy sands with slopes ranging from 3-25% over the entire area. Field observations however determined soil texture in the wetland to be a mucky silt loam. Soils observed in the adjacent upland buffer east of WL 3 matched the mapped slopes and soil texture of the Windsor series. It is not surprising that WL 3 and WL 1 were observed to have the same soil type as they likely functioned as a single wetland prior to construction of the railroad.

- e. Check the characteristics of the wetland which apply:

<u>WL 3</u>	flooded most of the time
<u>WL 1 &amp; 2</u>	standing water during at least part of the growing season
	water impounded by beavers
<u>WL 3</u>	soils are saturated during at least part of the growing season
_____	dry most of the year

- f. Description of the buffer zone:

On the southern side of Otter Creek, the railroad bed is a common boundary that both WL 1 and WL 3 share, so there is no functional buffer zone between them. These two wetlands were likely contiguous prior to the railroad's construction.

Otter Creek borders WL 1 to the south, east and west while the railroad borders it to the north. The railroad borders WL 3 to the south and west while it is protected by a forested upland buffer to the northeast. This buffer is dominated by *Rhus* (staghorn sumac), *Pinus strobus* (white pine), and a *Solidago* (goldenrod) species. There is an

active sand quarrying operation further up gradient of WL 3.

On the northern side of Otter Creek the railroad bed sub-ballast also generally defines the borders of WL 2, forming an acute triangle opening to the northern bank of the creek. (See the attached aerial photos and site plan.) Just beyond the railroad line, and bordering the wetland, there is a forested floodplain area and an upland forest that provides some buffer.

13. Describe in detail all work that is proposed within the wetland or buffer zone, including erosion control measures, referencing attached plans where appropriate. For the involved wetlands, their eastern boundaries were generally determined to be the toe of fill slope along the current railroad bed's sub-ballast. All fill material used during construction will therefore be considered a wetland impact. (See attached site plans). When constructing the new rail approaches, a substantial amount of fill will be required in order to match the grade of the existing track in the area. The anticipated footprint of this fill was used to calculate the project's permanent wetland impact area.

Two wetland areas will be impacted from the proposed work. The first area, WL 1, is south of Otter Creek and is a wet meadow that has been partially drained with ditching for agricultural use, primarily the production of hay forage. The second area, WL 2, on the north side of Otter Creek includes a mature, silver maple/ostrich fern riverine floodplain forest, forested swamp, and a small emergent marsh.

The proposed work in both wetland areas is uncomplicated. It involves felling and removing the trees presently growing in the corridor of the proposed new rail alignment and siding spur, then filling with enough soil and stone ballast in the swath to create a stable base that matches the grade of the existing railroad. The new rail sections would divert rail traffic from the existing line over the replacement bridge and the rail siding would replace lost railcar storage that would be lost from the reconfigured intersection at Kendall Hill Road. The proposed active siding for railcar storage is to be situated in WL 2, west of the relocated mail line. Hydraulic analysis indicates that this additional section of rail bed will not significantly affect the watershed's floodwater flow or storage capacity.

When construction of the new bridge is complete, Vermont Railway anticipates that constructing the new rail bed could be completed by one of their crews in 5-7 days. Very little soil disturbance is planned or anticipated during the activity. Most of the heavy equipment used for the proposed work would be operating off of the pre-existing rail or the newly laid track.

The old bridge, its abutments, and central pier will be removed once rail traffic has been successfully diverted over the new permanent crossing. Substantial portions of the abandoned railroad sections will be removed after construction to increase the hydraulic opening at the crossing location and mitigate for the project's floodplain impacts. Approximately 4100 yds<sup>3</sup> of ballast and sub-ballast material will be removed along 300 linear feet of the original alignment.

Some of this material is known to contain elevated levels of compounds considered hazardous. The compounds are primarily derived from herbicides and wood preservatives, which are commonly found in soils along railroad corridors. As stated previously, most of this excavated material will be stockpiled on railroad property before being reused on a future rail project.

14. Before this section is completed it will be necessary to determine for which functions the wetland in question is significant. The functional criteria for evaluating a wetland's significance are described in Section 5 of the Vermont Wetland Rules. The Vermont Wetland Evaluation form is available through the Wetlands Office to help determine which functions may be significant.

Demonstrate how the project as proposed will avoid any undue adverse impacts on each of the functions. Refer to plans and other attached documents as necessary.

- a. Water storage for floodwater and storm runoff:  
Since WLS 1 and 2 are directly adjacent to the channel of Otter Creek, they both provide storage for floodwaters. The creek does not directly border wetland 3 so it may serve to provide storage of floodwater to some degree but it is less important for this function than WLS 1 and 2. Wetland 3 is also on the downstream side of the railroad and since its bed of ballast fill has altered the hydrology of the site, this wetland is less subject to inundation when the Creek level flows over its banks during flood stage events.

The cumulative surface area of the involved wetlands however, constitutes less than one percent of the upstream watershed area of Otter Creek. It is therefore presumed that these wetlands are not significant for reducing the magnitude or frequency of downstream flooding. (Vermont Wetland Rules sec. 5.1a(6))

Wetland 3 is situated down gradient of an active sand quarrying operation so it may also provide some storage capacity for this area's storm water runoff. There will be no permanent impacts to this wetland during or after the proposed work so its ability to perform this function will not be compromised. Once the new crossing is operational and the 220 linear feet of unneeded ballast is removed, the surface area of this wetland will increase and actually gain storage capacity to treat both storm and floodwater.

b. Surface and ground water protection:

The project location centers approximately 1600 feet downstream and NNE of the Florence-Pittsford public water supply wellhead. The nearest delineated boundary of its surrounding Source Protection Area is 1000 feet from the existing trestle over Otter Creek. (See attached Source Protection Area map.) The proposed work zone is sufficiently down gradient of the wellhead that any groundwater recharge occurring in the project area would be isolated from the public water supply.

Wetland 3 has the capacity to slightly improve surface water quality by intercepting overland flow originating from the active sand quarry before it enters Otter Creek, allowing the stormwater's sediment and nutrient load to diminish. This function could be enhanced by the proposed ballast removal on the south side of the Creek.

Since the railroad and Otter Creek border the other two wetlands they are unable to intercept, or purify, any overland flow before it reaches the active channel. These wetlands however do help enhance both surface and groundwater quality by retaining and filtering floodwaters when they overflow the banks of Otter Creek. The wetlands' contribution to ground water recharge and protection however, is insignificant when compared to the flow volume and continual recharge by Otter Creek itself.

After a relatively small decrease in storage capacity due to lost surface area, these functions for WLs 1 and 2 would continue unimpaired following the proposed work.

c. Fisheries habitat:

None of the wetlands are significant for this function. Besides Otter Creek, the most important body of open water in the project area is found in WL 3. It is an isolated, and potentially spring-fed shallow pool with no connection to the active channel. Its water surface elevation has been observed to vary widely between site visits. The ditches through WL 1 flood during spring runoff and after heavy precipitation events but like the shallow pool of WL 3, they are too ephemeral to be useful fisheries habitat.

d. Wildlife and migratory bird habitat:

All wetlands in the project area are significant for this function. They all display physical characteristics indicative of habitat diversity. Wetland 1, the wet meadow, provides resting and staging for waterfowl migration and provides good amphibian breeding habitat. Wetland 2 is a mature forested swamp that also provides good amphibian breeding habitat. They are both contiguous to Otter Creek.

e. Hydrophytic vegetation habitat:

Wetland 2 is significant for this function. This complex supports a riverine floodplain forest and a forested swamp dominated by mature *Acer saccharinum* (silver maple) and *Matteucia struthiopteris* (ostrich fern). Vermont's Nongame

Natural Heritage Program lists this community type as 'uncommon'. This WL could provide habitat for rare hydrophytic plant species, however none were encountered during two botanical surveys conducted by EIV Technical Services.

Proposed impacts to this area have been minimized to the most practicable extent possible but some impact is unavoidable with the chosen alternative. Impacts to this community are planned to be mitigated onsite with a wetland enhancement.

f. Threatened and endangered species habitat:

There are no documented occurrences of threatened or endangered plant and animal species in the project area according to the VT Nongame Natural Heritage Program (NGNHP). According to Scott Darling of the VT Fish and Wildlife Department (VTFWD) however, it is reasonable to assume that the Indiana Bat (*Myotis sodalis*), which is federally listed as endangered, could utilize some of the mature trees in and around Wetland 2 as roosting habitat during summer feeding. Comprehensive survey work for the species was requested by Susi von Oettingen of the US Fish and Wildlife Service (USFWS). Bat surveys were conducted in accordance to USFWS standard protocol during summer of 2006 and the presence of Indiana bats on the site was not confirmed. The results of the survey satisfied concerns of the USFWS as long as the trees to be removed are cut during the bat's inactive period.

The calcareous nature of some soils in the Otter Creek Valley have the potential to promote chemically unique, i.e. basic, wetland habitat. There is a possibility that unique wetland plant species do occur in the project area for this reason. At the request of the VT-Nongame Natural Heritage Program (VT NNHP), a threatened and endangered plant survey was conducted to determine if any such species occur on the site. EIV Technical Services compiled a comprehensive plant species list for the project area from botanical surveys carried out during both the 2005 and 2006 growing seasons. (attached)

The 2005 survey focused on the project's impact area north of Otter Creek to determine if any sensitive plant species occur in WL 2. The 2006 survey included both the impact area and proposed mitigation acreage on the southern side of Otter Creek. Wetland 2 was found to contain the least disturbed and most mature habitat of the three delineated wetlands in the project area. No legally protected plant species were encountered in the WL during the botanical survey. Very few exotic species were observed throughout the area. Care will be taken during construction to minimize the introduction of non-native species to the site.

No threatened or endangered species were encountered in WL 1, the drained agricultural field/wet meadow. Due to the relatively recent and repeated disturbance of this WL it is



unlikely that protected species occur within the impact areas of WL 1.

Bob Popp, botanist with the VT-NNHP independently visited the site in May 2005. He observed no legally protected plant species occurring in the impact areas. Mr. Popp did comment on the presence of very few exotic species within WL 2 and noticed two individuals of an uncommon herbaceous species, *Trillium cernuum*, growing along the existing track.

- g. Education and research in natural science: None of the wetlands in the project area currently provide this function. There are no known publications specifically referencing them. The recognized community type and relatively undisturbed nature of WL 2 make it potentially valuable for this function but currently it is unutilized.
- h. Recreational value and economic benefit: None of the wetlands in the project area provide this function. Wetland 1 was drained and ditched to facilitate its agricultural use so it may provide a degree of economic benefit, but this is not due to any inherent wetland qualities. Otter Creek, which borders WL 1 and WL 2, provides substantial recreational opportunities to the public, primarily fishing and boating. These opportunities will be only temporarily affected by the proposed work.
- i. Open space and aesthetics: None of the wetlands in the project area are significant for this function. Wetland 1 does provide some open space but since it is surrounded by private land, the public is not able to readily observe it. Wetland 2 is also a distinct feature in the surrounding landscape, but again it is not readily visible to the public.
- The primary vantage of the viewing public as they pass through the project area would likely be from a small watercraft on the water's surface of Otter Creek. Very little, if any, of the wetlands in the project area are visible from the water's surface.
- j. Erosion control through binding and stabilizing the soil: Wetlands 1 and 2 are significant for this function because they are adjacent to Otter Creek and may help to stabilize its banks during high flow events. The proposed work will not impair their ability to continue performing this function. The mid-span support pier of the existing structure has caused substantial scouring and mass wasting of the left bank. (see attached survey section) Its removal will eliminate this source of sediment discharge to Otter Creek.

15. Demonstrate by narrative and reference to plans that the following mitigation measures have been used to achieve no undue adverse impacts to the protected wetland functions.

- a. Can the proposed activity practicably be located on an upland portion of the site or on another site owned, controlled or available to satisfy the basic project purpose? (*Explain*).

The goal of the project is to create an enduring railroad crossing structure over Otter Creek. Along the current railroad alignment, the trestle's existing abutments and pier are considered damaged beyond repair and need to be replaced. Since this is an active rail line that supports at least four trains each day transporting between 8000-9000 tons of product, it is not practical to close the line in order to replace the abutments on the existing alignment.

If the line were closed, product from Vermont industries could not reach its market, as there is no alternative transport infrastructure that could feasibly accommodate the volumes involved. Some freight could be transported using other means such as being rerouted on alternate track, and some could be carried by heavy truck, increasing traffic on the already congested US RT 7 corridor. These additional transport costs and lost revenue are estimated by Vermont Railway to be about \$500,000 per day.

Closing the line to reconstruct bridge 219 on the existing alignment would eliminate new wetland impacts, however, it would also make VTrans liable for all of Vermont Railway's additional transportation costs and revenue losses. It is necessary, therefore, to meet the project goal while keeping rail closures to an absolute minimum. The proposed alternative will meet this goal.

- b. Demonstrate how all practicable measures have been taken to avoid or minimize adverse impacts on protected functions, including project redesign or project scale back.

If rail service were to be maintained during any of the 'On-Alignment' bridge reconstruction options, wetland impacts would still result from the installation of a temporary rail bed and temporary crossing structure to accommodate train traffic. The 'Off-Alignment Option-B' that is currently proposed by VTrans will allow the existing bridge to accommodate rail traffic during the construction of a new permanent structure.

Placing the new crossing structure on the upstream side of the existing alignment will avoid any impacts to WL 3. It will also minimize direct impacts to Otter Creek by providing the shortest possible crossing distance and will eliminate the need for a center support pier in the active channel. The supporting pier beneath the existing bridge has caused a substantial discharge of sediment into the water body from the scour on the left bank.

The new proposed rail alignment will be located as close as possible to the existing for ease of construction and to minimize the length of the relocation. This will allow a portion of the existing ballast material to support the new

rail and will also minimize impacts to WL1 and WL2 by decreasing the footprint of new fill placement. Approximately 1.5 acres of each of these wetlands will be impacted by sub-ballast fill for the railroad re-alignment in the 'Off-Alignment Alternative 2 - Option A' proposal.

Although none were captured during the summer 2006 bat survey, the mature tree species found in WL 2 could provide summer breeding and feeding habitat that is suitable for the federally protected Indiana Bat, *Myotis sodalis*. The proposed work will avoid any direct impacts to this endangered species by removing trees during the species' inactive period of the year.

- c. For wetlands that have been disturbed, what steps will be taken to restore impacted functions (e.g. plantings, seeding, mulching exposed soil, removal of fill, etc.) During construction, undisturbed wetland areas will be isolated using construction fence, protected by appropriate phasing, and implementing approved BMPs. This shall include sediment control materials and erosion prevention measures as needed.

Any wetland or wetland buffer areas temporarily disturbed will be shallowly re-graded to match the existing contours if necessary, and planted with native tree and shrub stock appropriate to the locale. Following the woody material planting, disturbed areas will be seeded with a non-invasive conservation mix and covered with weed free mulch to stabilize the site until the local native species re-vegetate the area.

The wetland buffer areas will be planted with species suited to drier habitats, wetland areas with species better suited for hydric soil. The upland and buffer seeding mix will be similar to the 'New England Erosion Control/Restoration Mix for moist sites' developed by New England Wetland Plants, Inc. Following seeding, the areas will be mulched with certified weed free hay.

All waste soil and unused fill ballast will be removed from the project area by train or truck and temporarily stockpiled in an approved holding area for later use, or disposed of in an approved waste soil disposal area. Each area will have a comprehensive Erosion Prevention and Sediment Control Plan in place at the time of use. The location of these areas has yet to be determined.

16. Wetland compensation (creating replacement wetlands) is a measure to mitigate adverse impacts on protected functions that will only be possible in rare cases for specific functions (see Section 8.5c of the Vermont Wetland Rules). If a compensation plan is part of this proposal, demonstrate by narrative and reference to plans how the steps in Section 8.5c(1)-(7) will be met. All efforts to avoid and minimize wetland impacts in the project area have been exhausted, therefore a compensatory mitigation is being proposed for the 1.7 acres of

unavoidable wetland impact. Prior to the proposed work, VTrans plans to purchase and enhance portions of a 17 acre parcel in the floodplain adjacent to the project area. Since success rates for the compensatory replacement of forested wetlands are low, and there will be a significant temporal loss of function, a large mitigation area is appropriate to ensure that there will be no net loss of wetland acreage and that there will be an eventual replacement of lost functions.

Despite widespread ditching efforts on much of the 17 acre parcel, extensive wetland hydrology still exists. The area is therefore a viable site for both enhancing the existing wetland acreage and restoring an unknown amount of wetland hydrology that may have existed on the property before the ditching.

After acquiring and conserving this parcel, the proposed mitigation approach is straightforward. It will consist of enhancing existing wetland habitat in WL 1 by managing *Phalaris arundinacae* and establishing a forested wetland community in its place, restoring historic wetland habitat by plugging drainage ditches, and removing vehicular access to the area. These measures will not require long-term intervention and should result in the establishment of a forested wetland community on the parcel to replace the functions and values lost by the proposed rail bridge replacement project.

VTrans is prepared to allocate funds for the monitoring and any required maintenance management of these compensation measures. This monitoring and management will continue for a minimum of five years from the date of completion.

#### DISTRIBUTION

17. Submit the original request for conditional use determination to the Wetlands Office, Division of Water Quality, 103 South Main Street, 10 North, 2nd Floor, Waterbury, VT 05671-0408. Notification of receipt will be sent to the applicant once a complete application has been received by the Wetlands Office.
18. After receiving notification of completeness from the Wetlands Office, send a complete copy of the application to the Town Clerk and Regional Planning Commission. Also, send copies of the location map, a description of the specific action(s) for which conditional use determination is sought, the supporting narratives, and a listing of where complete copies of the request have been filed to:
  - a. the municipal planning commission and/or conservation commission; and
  - b. all persons owning property within or adjacent to the wetland or buffer zone (item 10. of the application).

#### FEES

19. 3 V.S.A. § 2822(j)(26) FEES:  
 Conditional Use Determination  
 Minimum application fee \$ 50.00  
 Plus  
 Proposed wetland impact  
 (74,100 sq. ft. X \$0.07 per sq. ft.) \$ 5187.00  
 Proposed buffer zone impact  
 (56,200 sq. ft. X \$0.05 per sq. ft.) \$ 2810.00  
 Total fee enclosed \$ exempt

Note: If application is for the conversion of Class Two wetlands or wetland buffers to cropland, the maximum fee is \$200.00.



Please make check payable to: State of Vermont

Send with complete application to:

Department of Environmental Conservation  
 103 South Main Street  
 Building 10N - Wetlands  
 Waterbury, VT 05671-0408

**SIGNATURES**

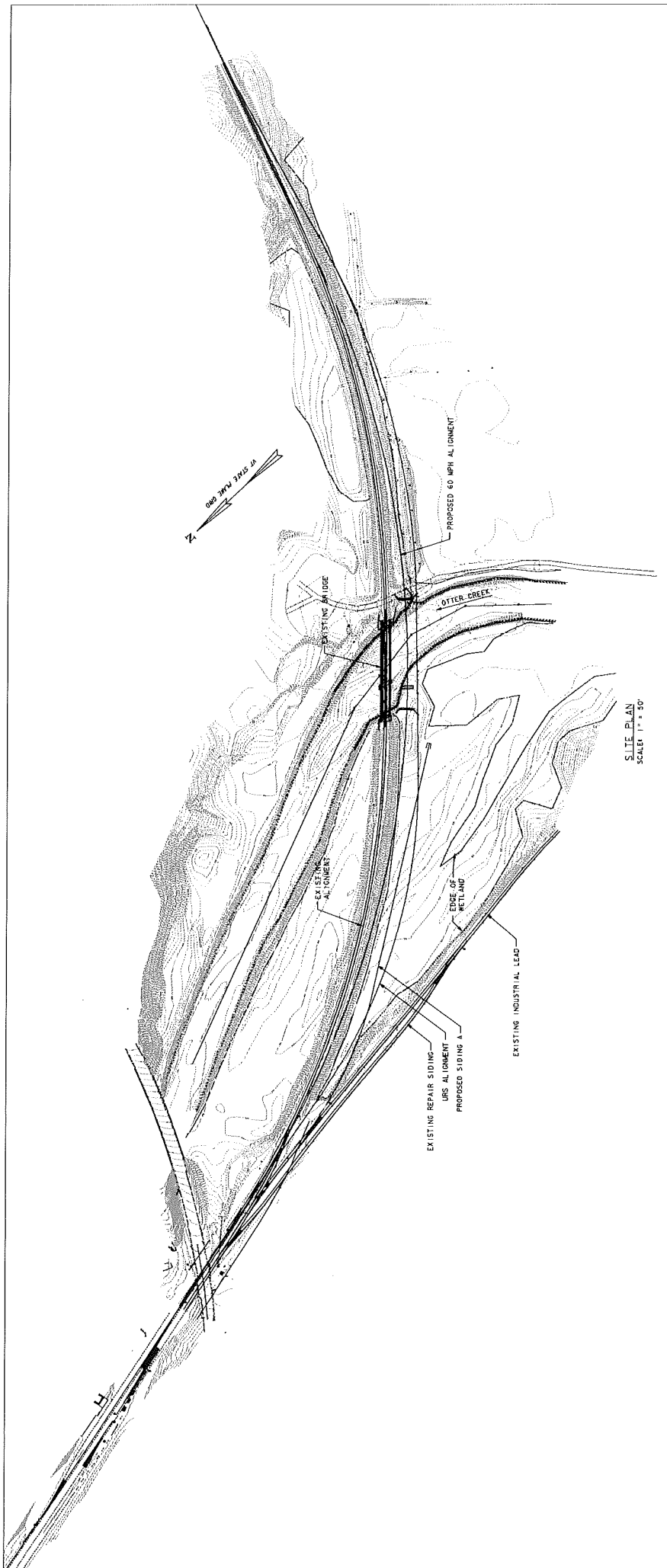
19. I hereby certify that the information provided above or attached to this application is true and accurate to the best of my knowledge. I recognize that by signing this application I am giving consent to employees of the state to enter the subject property for the purpose of processing this application.

\_\_\_\_\_  
 Signature of Applicant  
  
 \_\_\_\_\_  
 REPRESENTATIVE  


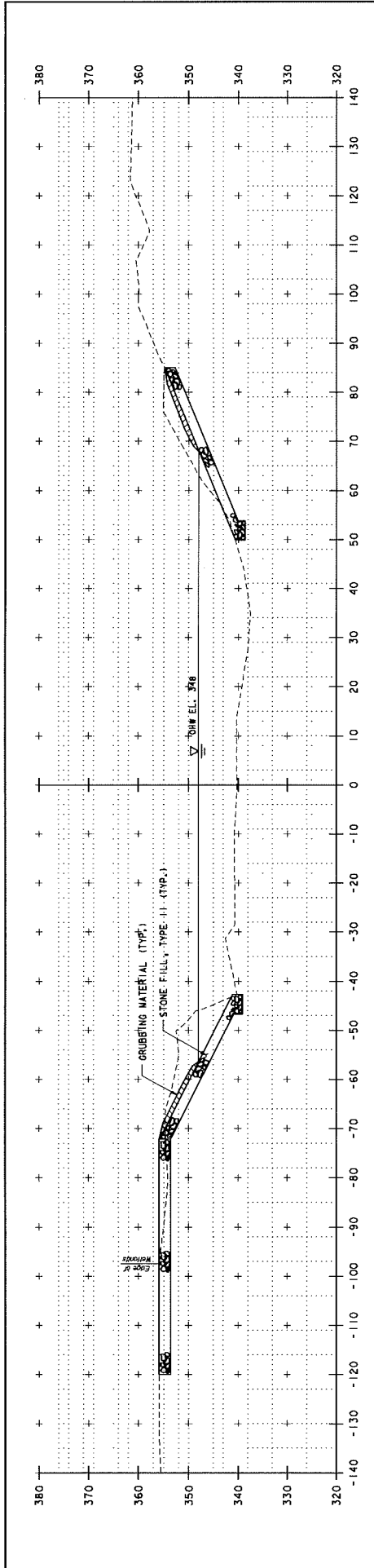
\_\_\_\_\_  
 Date  
 August 6, 2010  
 \_\_\_\_\_

Signature

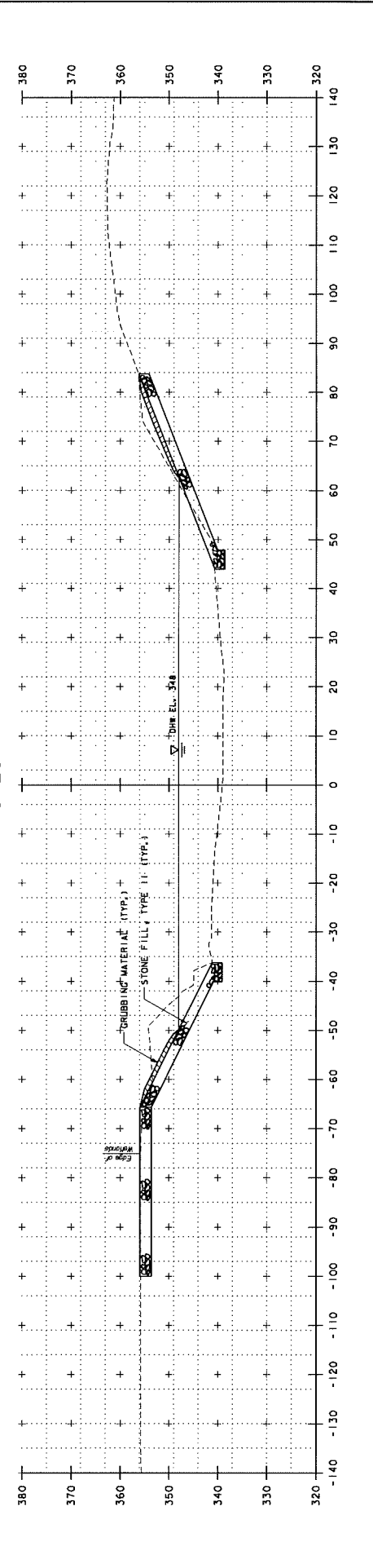




SITE PLAN  
SCALE: 1" = 50'



8+25

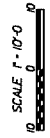


8+00

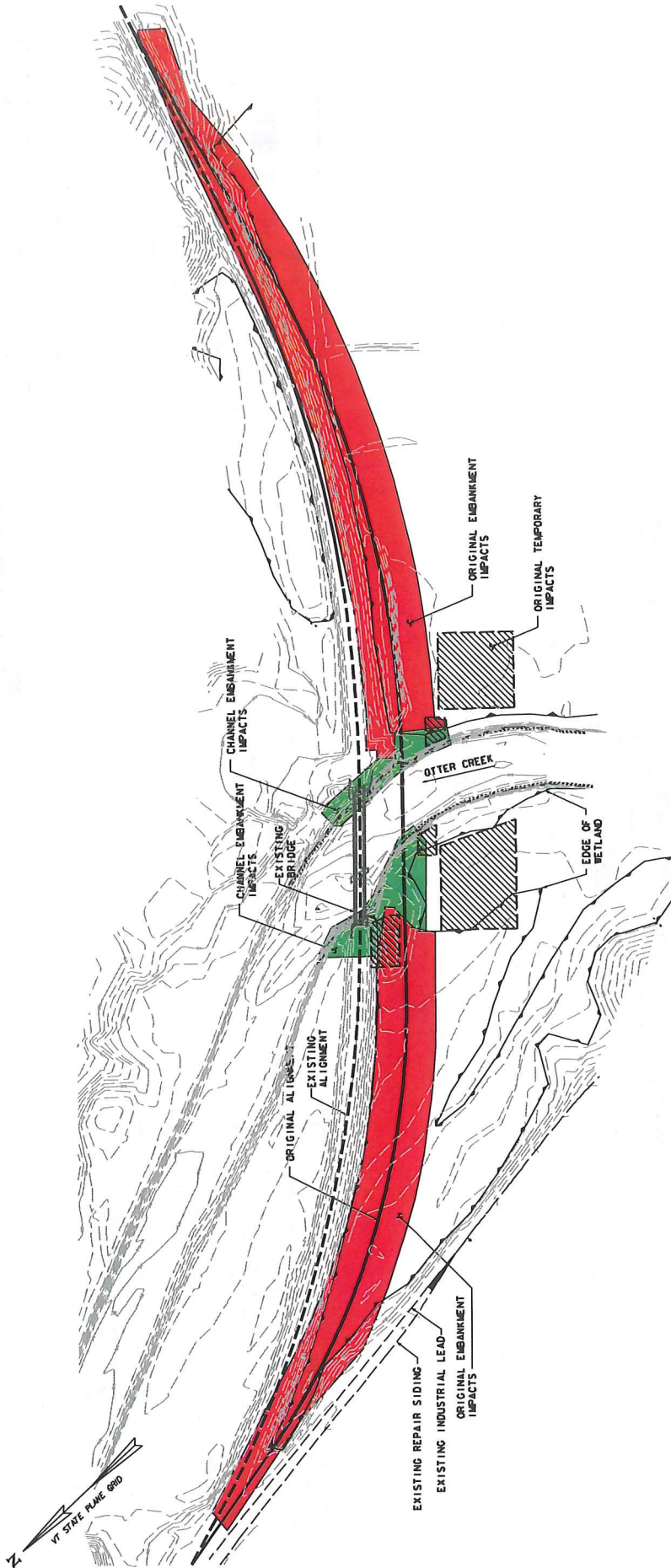
CHANNEL SECTIONS

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)

FILE NAME: #FILE#  
 PROJECT LEADER: M.A. COLGAN  
 DESIGNED BY: G.S. GOODRICH  
 CHECKED BY: G.S. GOODRICH  
 SHEET 48 OF 52







LEGEND	
[Green Box]	CHANNEL EMBANKMENT IMPACTS
[Red Box]	ORIGINAL EMBANKMENT IMPACTS
[Hatched Box]	ORIGINAL TEMPORARY IMPACTS

ORIGINAL SCOPING REPORT IMPACT AREAS



SUMMARY OF ORIGINAL PERMANENT IMPACTS	
EMBANKMENT IMPACT AREA*	188,600 SF (4.33 ACRES)
CHANNEL EMBANKMENT IMPACT AREA*	23,800 SF (0.55 ACRES)
WETLAND IMPACT AREA (TOTAL)*	132,900 SF (3.05 ACRES)

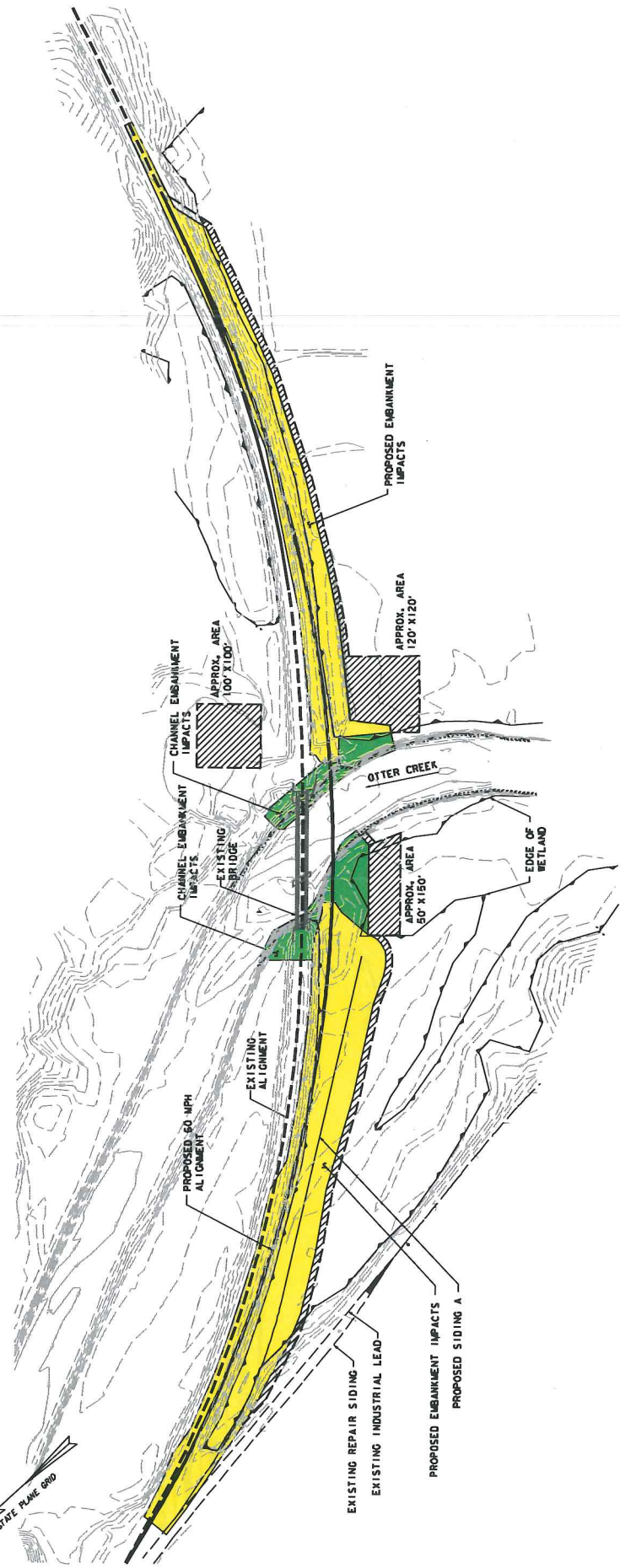
SUMMARY OF ORIGINAL TEMPORARY IMPACTS	
TEMPORARY IMPACT AREA (TOTAL)*	33,400 SF (0.77 ACRES)
TEMPORARY IMPACT AREA (WITHIN WETLAND)*	15,700 SF (0.36 ACRES)

DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (99)

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)  
 FILE NAME: 2059145 JHC IMPACTS.DGN  
 PLOT DATE: 2-22-10  
 DRAWN BY: J.W. COLEK  
 DESIGNED BY: R.S. COORICH  
 CHECKED BY: T.S. BRYANT  
 SHEET: 1 OF 3  
 ORIGINAL EMBANKMENT IMPACTS



Vermont Hydrological & Environmental Services, Inc.



SUMMARY OF PROPOSED PERMANENT IMPACTS	
EMBANKMENT IMPACT AREA =	136,700 SF (3.14 ACRES)
CHANNEL EMBANKMENT IMPACT AREA =	23,900 SF (0.55 ACRES)
WETLAND IMPACT AREA (TOTAL) =	74,400 SF (1.71 ACRES)

SUMMARY OF PROPOSED TEMPORARY IMPACTS	
TEMPORARY IMPACT AREA (TOTAL) =	46,050 SF (1.06 ACRES) *
TEMPORARY IMPACT AREA (WITHIN WETLAND) =	26,900 SF (0.62 ACRES) *

\* AREAS QUANTIFIED ARE PROPOSED TEMPORARY IMPACT AREAS THAT FALL OUTSIDE OF THE PERMANENT IMPACT AREAS (AREAS IN ADDITION TO PERMANENT IMPACTS).

PROPOSED EMBANKMENT IMPACT AREAS



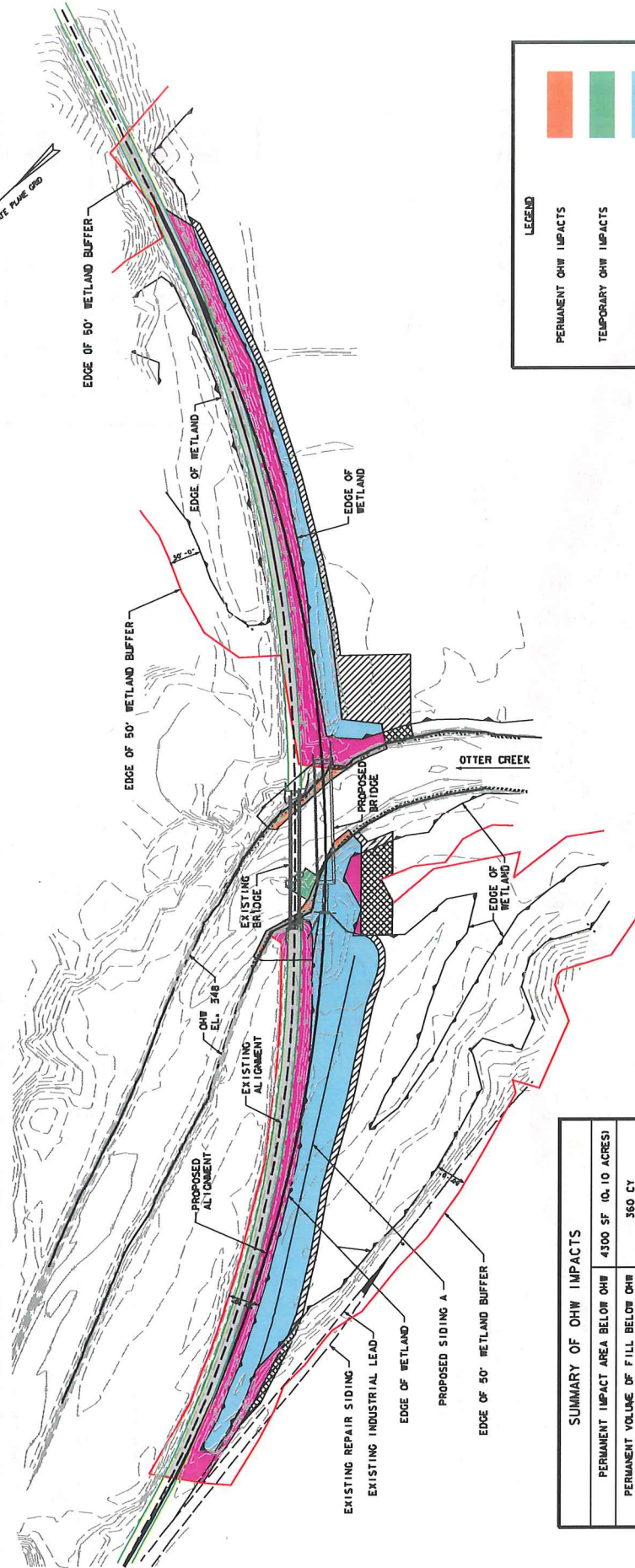
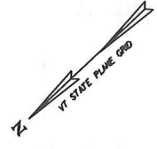
LEGEND	
	CHANNEL EMBANKMENT IMPACTS
	PROPOSED EMBANKMENT IMPACTS
	PROPOSED TEMPORARY IMPACTS

DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (99)

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)  
 FILE NAME: 2025146 IMPACTS.DGN  
 PROJECT LEADER: J.W. GOLEY  
 DESIGNED BY: G.S. COORICH  
 CHECKED BY: T.S. BRYANT  
 SHEET 2 OF 3

**Yonasson Henggen Brustolin, Inc.**





**LEGEND**

[Orange Box]	PERMANENT OHW IMPACTS
[Green Box]	TEMPORARY OHW IMPACTS
[Blue Box]	PERMANENT WETLAND IMPACTS
[Hatched Box]	TEMPORARY WETLAND IMPACTS
[Pink Box]	PERMANENT BUFFER IMPACTS
[Cross-hatched Box]	TEMPORARY BUFFER IMPACTS
[Grey Box]	BALLOASTED AREA WITHIN BUFFER (AREA EXCLUDED FROM IMPACT CALCULATIONS)

PROPOSED ENVIRONMENTAL IMPACT AREAS



**SUMMARY OF OHW IMPACTS**

PERMANENT IMPACT AREA BELOW OHW	4300 SF (0.10 ACRES)
PERMANENT VOLUME OF FILL BELOW OHW	360 CY
TEMPORARY IMPACT AREA BELOW OHW	1200 SF (0.03 ACRES)
TEMPORARY VOLUME OF FILL BELOW OHW	345 CY

**SUMMARY OF WETLAND IMPACTS**

PERMANENT WETLAND IMPACT AREA	74100 SF (1.70 ACRES)
TEMPORARY WETLAND IMPACT AREA	27200 SF (0.62 ACRES)

**SUMMARY OF WETLAND BUFFER IMPACTS**

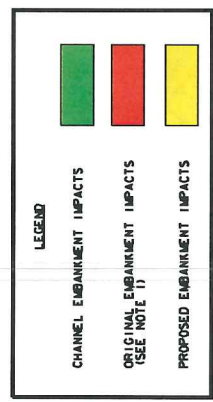
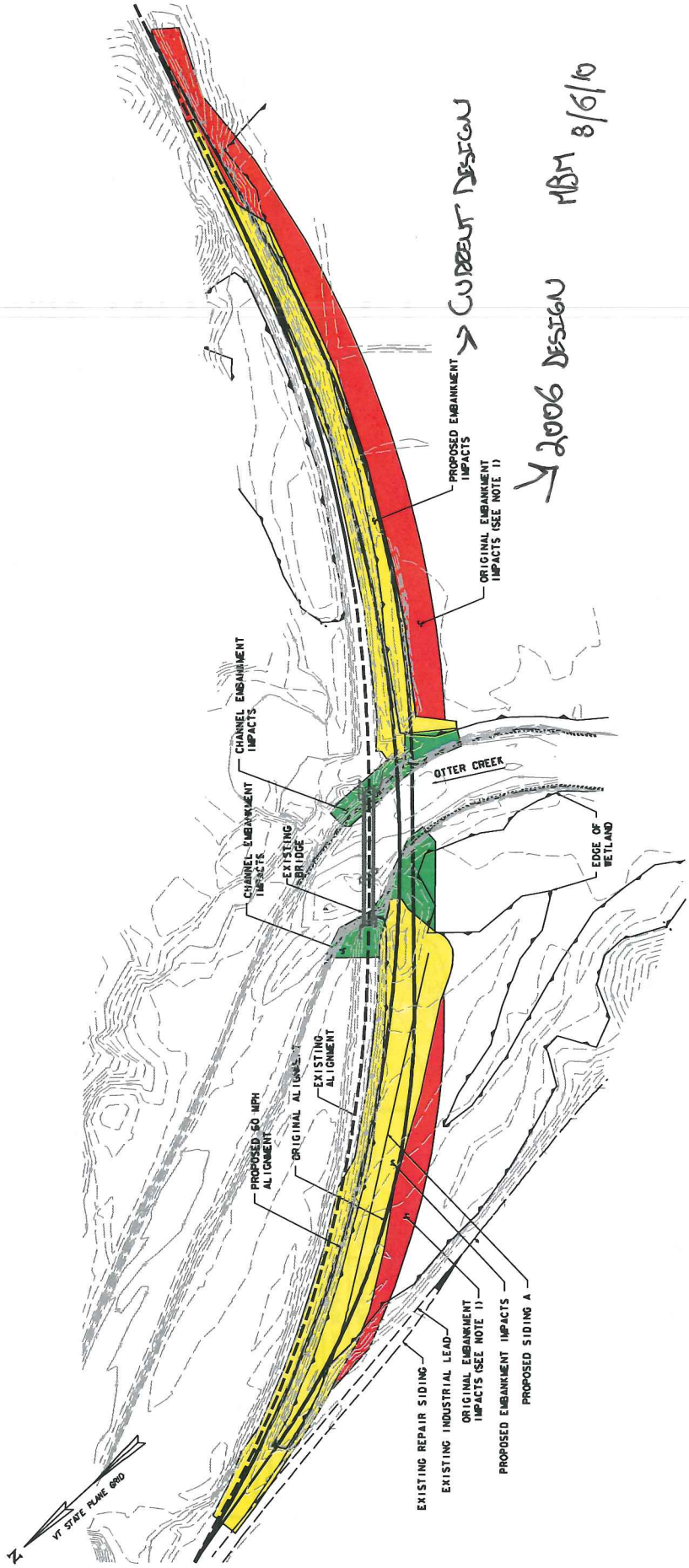
PERMANENT WETLAND BUFFER IMPACT AREA	56200 SF (1.29 ACRES)
TEMPORARY WETLAND BUFFER IMPACT AREA	9100 SF (0.21 ACRES)

**DATUM**

VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (99)

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)  
 FILE NAME: 2030146 WET-BUFFER IMPACTS.DGN  
 DRAWN BY: J. C. GOODRICH  
 DESIGNED BY: J. C. GOODRICH  
 CHECKED BY: J. C. GOODRICH  
 SHEETS 1 OF 1





COMBINED IMPACT AREAS  
SCALE 1" = 50'-0"

**IMPACT AREA COMPARISON SUMMARY**

AREAS	ORIGINAL	PROPOSED	CHANGE	% CHANGE
EMBANKMENT IMPACT AREAS*	188,600 SF (4.33 ACRES)	136,700 SF (3.14 ACRES)	-51,900 SF (-1.19 ACRES)	-27%
CHANNEL EMBANKMENT IMPACT AREAS*	23,900 SF (0.55 ACRES)	23,900 SF (0.55 ACRES)	0 SF (0.00 ACRES)	0%
PERMANENT WETLAND IMPACT AREAS*	132,900 SF (3.05 ACRES)	74,400 SF (1.71 ACRES)	-58,500 SF (-1.34 ACRES)	-44%

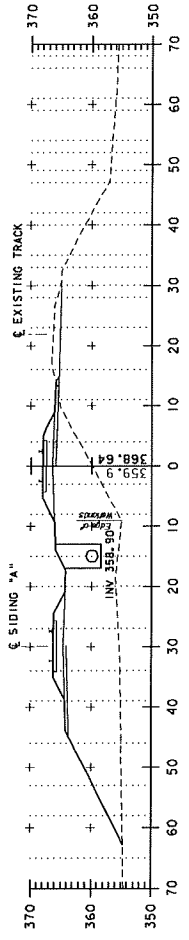
**NOTES!**

1. ORIGINAL EMBANKMENT IMPACT LIMITS SHOWN ON THIS SHEET ARE OUTSIDE OF THE PROPOSED LIMITS. FOR COMPLETE ORIGINAL EMBANKMENT IMPACT LIMITS SEE SHEET 1 OF 3.

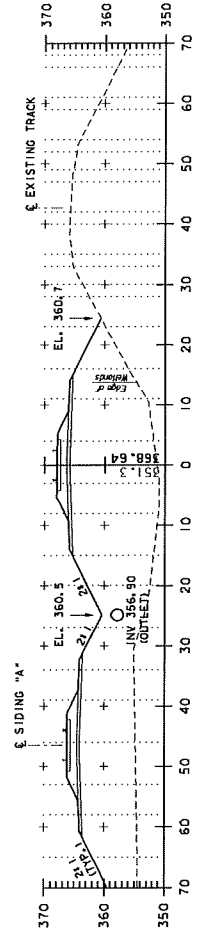
PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)  
 FILE NAME: 20091116 HWG/IMPACTS.DGN  
 PROJECT LEADER: M.A. COLGAN  
 DESIGNED BY: C.S. GOODRICH  
 CHECKED BY: T.S. BRYANT  
 PLOT DATE: 9-22-10  
 DRAWN BY: J.W. GOLEK  
 SHEET 3 OF 3

DATUM  
 VERTICAL: NAVD 88  
 HORIZONTAL: NAD 83 (99)

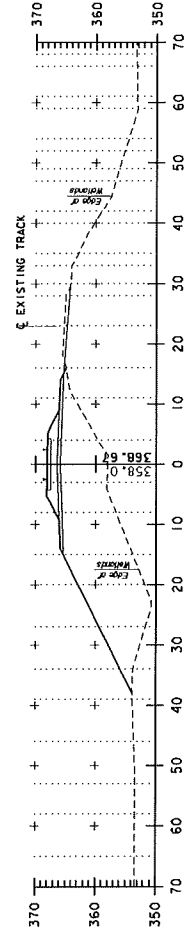
**YHHS** *Yonasson Hangen Brustlin, Inc.*



3429+00



3425+00



3418+00

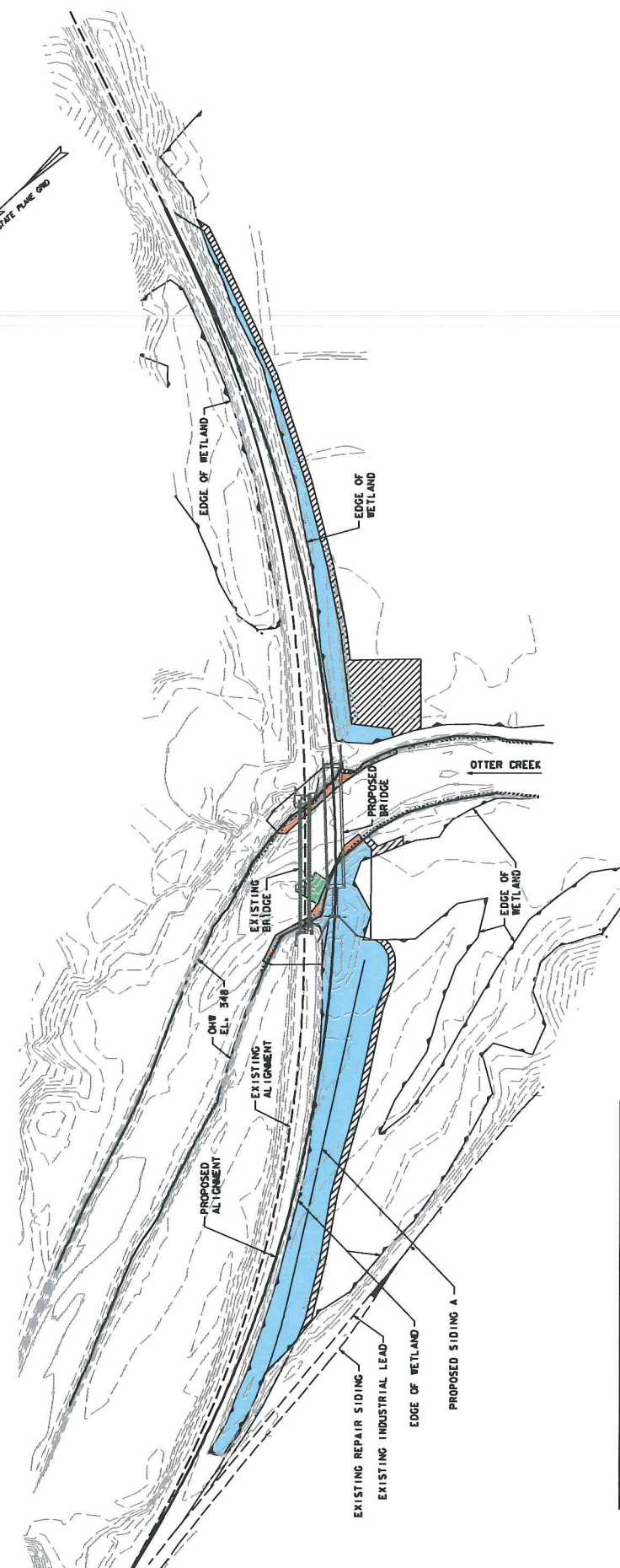
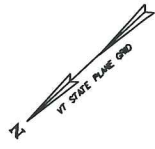


Vanasse Hangen Brustlin, Inc.

VTR 219 MAINLINE TRACK

PROJECT NAME: PITTSFORD YTR BR 219 OVER OTTER CREEK	FILE NAME: 203614635.mxd	PLOT DATE: 2-23-10
PROJECT NUMBER: HPP ABR819	PROJECT LEADER: M.A. COLLAN	DRAWN BY: B.J. MASSE
	DESIGNED BY: D. W. PECK	CHECKED BY: G.S. GOODRICH
		MAINLINE CROSS SECTIONS
		SHEET 1 OF 1





**LEGEND**

<span style="display:inline-block; width:15px; height:15px; background-color:orange;"></span>	PERMANENT OHW IMPACTS
<span style="display:inline-block; width:15px; height:15px; background-color:green;"></span>	TEMPORARY OHW IMPACTS
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue;"></span>	PERMANENT WETLAND IMPACTS
<span style="display:inline-block; width:15px; height:15px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></span>	TEMPORARY WETLAND IMPACTS

**PROPOSED ENVIRONMENTAL IMPACT AREAS**

SCALE 1" = 80'-0"

**SUMMARY OF OHW IMPACTS**

PERMANENT IMPACT AREA BELOW OHW	4300 SF (0.10 ACRES)
PERMANENT VOLUME OF FILL BELOW OHW	360 CY
TEMPORARY IMPACT AREA BELOW OHW	1200 SF (0.03 ACRES)
TEMPORARY VOLUME OF FILL BELOW OHW	345 CY

**SUMMARY OF WETLAND IMPACTS**

PERMANENT WETLAND IMPACT AREA	74100 SF (1.70 ACRES)
TEMPORARY WETLAND IMPACT AREA	27200 SF (0.62 ACRES)

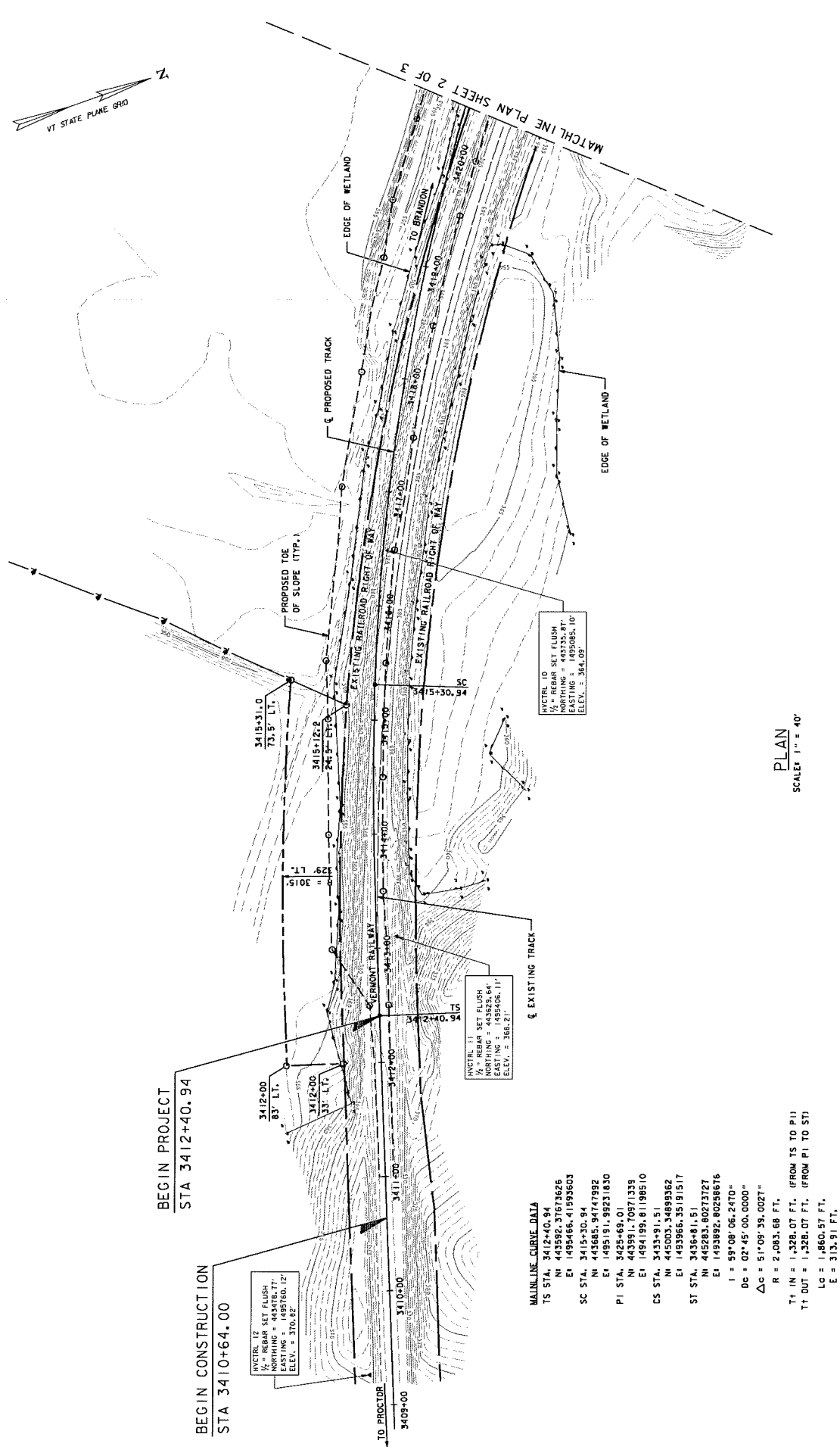
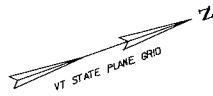
DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (99)



PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (9)  
 FILE NAME: 2036146 WET IMPACTS.DGN  
 PROJECT LEADER: M.A. COLGAN  
 DESIGNED BY: G.S. GOODRICH  
 CHECKED BY: G.S. GOODRICH  
 SHEET 1 OF 1

PLOT DATE: 02-18-10  
 DRAWN BY: B.J. MASSE  
 CHECKED BY: G.S. GOODRICH  
 SHEET 1 OF 1





BEGIN PROJECT  
STA 3412+40.94

BEGIN CONSTRUCTION  
STA 3410+64.00

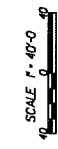
INSTR. 12  
SET ALICE  
NORTHING = 443428.77  
EASTING = 1485760.12  
ELEV. = 370.82

INSTR. 11  
REBAR SET FLUSH  
NORTHING = 443428.64  
EASTING = 1485408.11  
ELEV. = 386.27

INSTR. 10  
SET FLUSH  
NORTHING = 443735.87  
EASTING = 1485085.10  
ELEV. = 354.09

MAINLINE CURVE DATA  
TS STA. 3412+40.94  
NI 443592.37673626  
EI 1495466.41593603  
SC STA. 3415+30.94  
NI 443685.34747892  
EI 1495191.98231830  
PI STA. 3425+69.01  
NI 443891.70571339  
EI 1494199.81198510  
CS STA. 3433+91.51  
NI 445003.34899362  
EI 1493966.35191517  
ST STA. 3436+81.51  
NI 445283.80273727  
EI 1493892.80258676  
I = 59°08'06.2470"  
Dc = 02°45'00.0000"  
Δc = 51°05'38.0027"  
R = 2,083.68 FT.  
T1 IN = 1,328.07 FT. (FROM TS TO PI)  
T1 OUT = 1,328.07 FT. (FROM PI TO ST)  
Lc = 1,860.57 FT.  
E = 313.51 FT.  
M IN = 03°59'13.6222"  
Lc IN = 290.00 FT.  
M OUT = 03°59'13.6222"  
Lc OUT = 290.00 FT.

PLAN  
SCALE 1" = 40'



PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
PROJECT NUMBER: HPP ABR6 (9)  
FILE NAME: z030460n.dgn  
PROJECT LEADER: M. A. COLGAN  
DESIGNED BY: G. S. GOODRICH  
CHECKED BY: K. G. KRETSCH  
DRAWN BY: B. J. MASSE  
PLOT DATE: 1/8/200  
SHEET 5 OF 52









SLIDING "A" CURVE DATA  
SEE PLAN SHEET 2 OF 3  
FOR CURVE DATA.

HYCTRL. 4  
1/2" REBAR SET FLUSH  
EXISTING = 145398.41'  
ELEV. = 368.75'

INDUSTRIAL LEAD STA. 28+03.45  
P.S. PROPOSED LEFT-HAND  
#10 TURNOUT

REMOVE AND SALVAGE  
EXISTING CROSSOVER

PROPOSED TOE  
OF SLOPE (TYP.)

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

EXISTING RAILROAD  
RIGHT OF WAY

HYCTRL. 5  
1/2" REBAR SET FLUSH  
NORTHING = 445383.83'  
ELEV. = 367.866, 05'

STA. 3437+96.79  
P.S. PROPOSED LEFT-HAND  
#15 CROSSOVER  
(SEE NOTE 2)

REMOVE AND SALVAGE  
EXISTING TURNOUT

REMOVE AND SALVAGE  
205' ± OF EXISTING TRACK

STA. 3440+97.95  
P.S. PROPOSED LEFT-HAND  
#10 TURNOUT (SEE NOTE 2)

INDUSTRIAL LEAD  
#2 TRACK

STA. 3440+82.70  
P.S. PROPOSED LEFT-HAND  
#15 CROSSOVER

END PROJECT  
STA 3436+81.51

END CONSTRUCTION  
STA 3443+78.16

MAINLINE CURVE DATA  
SEE PLAN SHEET 1 OF 3  
FOR CURVE DATA.

LEGEND:

P.S. = POINT OF SWITCH

E.L.T. = END OF LONG TIES

P.S.

E.L.T.

TURNOUT

E.L.T.

CROSSOVER

P.S.

E.L.T.

EXISTING TURNOUT TO BE REMOVED

E.L.T.

EXISTING TURNOUT TO BE REMOVED

E.L.T.

EXISTING TURNOUT TO BE REMOVED

E.L.T.

EXISTING TURNOUT TO BE REMOVED

PLAN  
SCALE 1" = 40'

SCALE 1" = 40'

- NOTES:
- BEGIN RAIL TRANSITION TO MATCH EXISTING TOP OF RAIL 50 FEET BEYOND PROPOSED POINT OF SWITCH. MAXIMUM SLOPE FOR RAIL TRANSITION NOT TO EXCEED 1 INCH IN 31 FEET.
  - BEGIN RAIL TRANSITION TO MATCH EXISTING TOP OF RAIL 50 FEET BEYOND PROPOSED END OF LONG TIES. MAXIMUM SLOPE FOR RAIL TRANSITION NOT TO EXCEED 1 INCH IN 31 FEET.

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
PROJECT NUMBER: HPP ABRB (9)

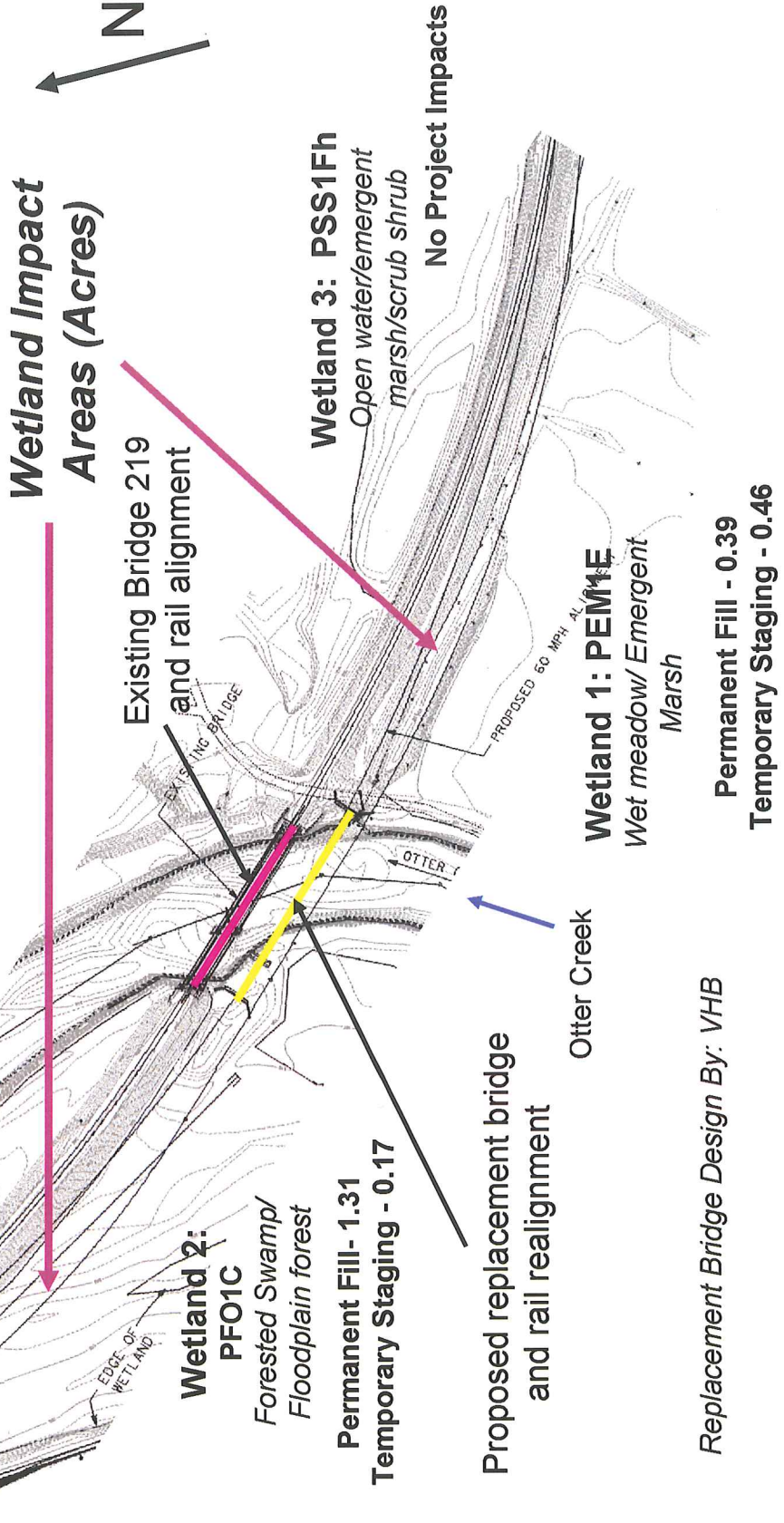
FILE NAME: 203046.mxd  
PROJECT LEADER: M. A. COLGAN  
DESIGNED BY: G.S. GOORITCH  
PLAN (3 OF 3)

YHHS Vanasse Hangen Brustlin, Inc.

PLOT DATE: 1/8/2010  
DRAWN BY: B. J. MASSE  
CHECKED BY: K. G. KRETSCH  
SHEET 7 OF 52

# VT Railway Bridge 219 Replacement Project, Pittsford VT

## Project Area Wetlands and Impacts





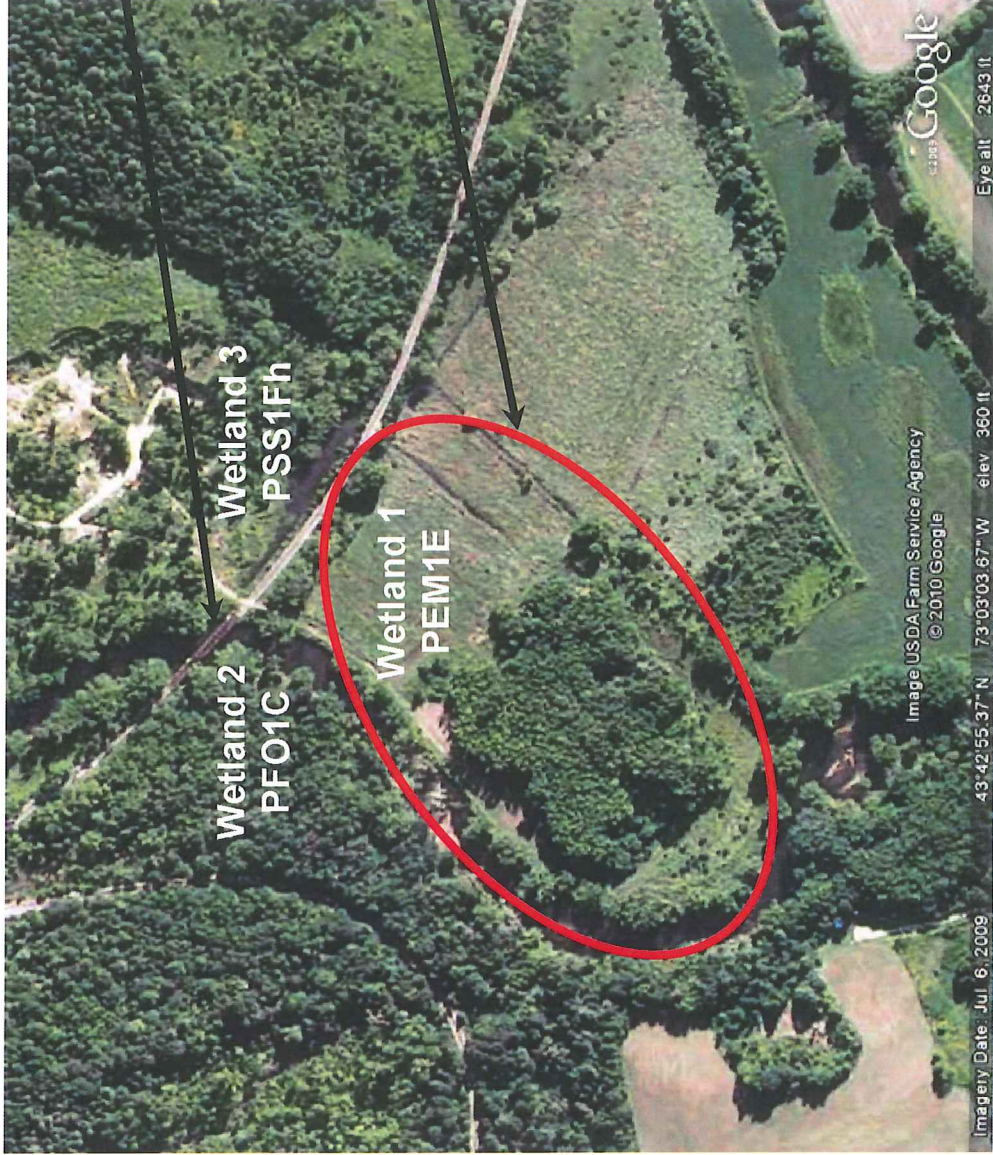








# VT Railway Bridge 219 Replacement Project, Pittsford VT Aerial Photo (detail) and Location Information



VT Railways  
Bridge 219

Wetland 2  
PFO1C

Wetland 3  
PSS1Fh

Wetland 1  
PEM1E

Proposed 17 Acre  
On-site Mitigation Area

Hydrologic Unit Code for  
Impact and Mitigation  
Areas:  
Otter Creek - 02010002

Pittsford HPP-ABRB (9)

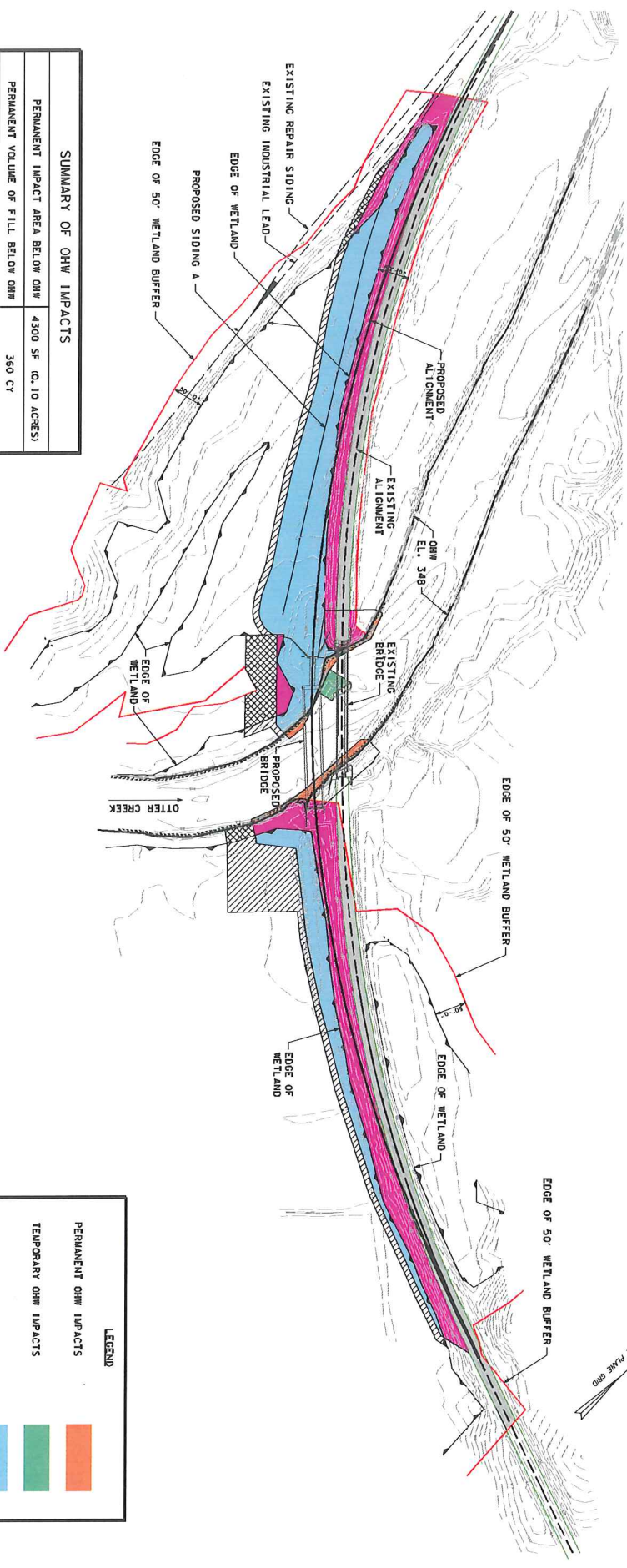
July, 2010

VT ANR Conditional Use Determination

EIV Technical Services, LLC







PROPOSED ENVIRONMENTAL IMPACT AREAS  
SCALE 1" = 80'-0"

SUMMARY OF OHW IMPACTS	
PERMANENT IMPACT AREA BELOW OHW	4300 SF (0.10 ACRES)
PERMANENT VOLUME OF FILL BELOW OHW	360 CY
TEMPORARY IMPACT AREA BELOW OHW	1200 SF (0.03 ACRES)
TEMPORARY VOLUME OF FILL BELOW OHW	345 CY

SUMMARY OF WETLAND IMPACTS	
PERMANENT WETLAND IMPACT AREA	74100 SF (1.70 ACRES)
TEMPORARY WETLAND IMPACT AREA	27200 SF (0.62 ACRES)

SUMMARY OF WETLAND BUFFER IMPACTS	
PERMANENT WETLAND BUFFER IMPACT AREA	56200 SF (1.29 ACRES)
TEMPORARY WETLAND BUFFER IMPACT AREA	9100 SF (0.21 ACRES)

LEGEND	
PERMANENT OHW IMPACTS	[Orange box]
TEMPORARY OHW IMPACTS	[Green box]
PERMANENT WETLAND IMPACTS	[Blue box]
TEMPORARY WETLAND IMPACTS	[Pink box]
PERMANENT BUFFER IMPACTS	[Hatched box]
TEMPORARY BUFFER IMPACTS	[Cross-hatched box]
BALASTED AREA WITHIN BUFFER CALCULATIONS	[Grey box]

DATUM  
VERTICAL NAVD 88  
HORIZONTAL NAD 83 (99)

**VHB** Vanasse Hangen Brustlin, Inc.

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
PROJECT NUMBER: HPP ABRB (9)  
FILE NAME: 203116 WET-BUFFER IMPACTS.DGN  
PROJECT LEADER: M. A. COGAN  
DESIGNED BY: G. S. GOODRICH  
PROPOSED ENVIRONMENTAL IMPACTS  
PLOT DATE: 02-18-10  
DRAWN BY: B. J. MASSE  
CHECKED BY: G. S. GOODRICH  
SHEET: 1 OF 1



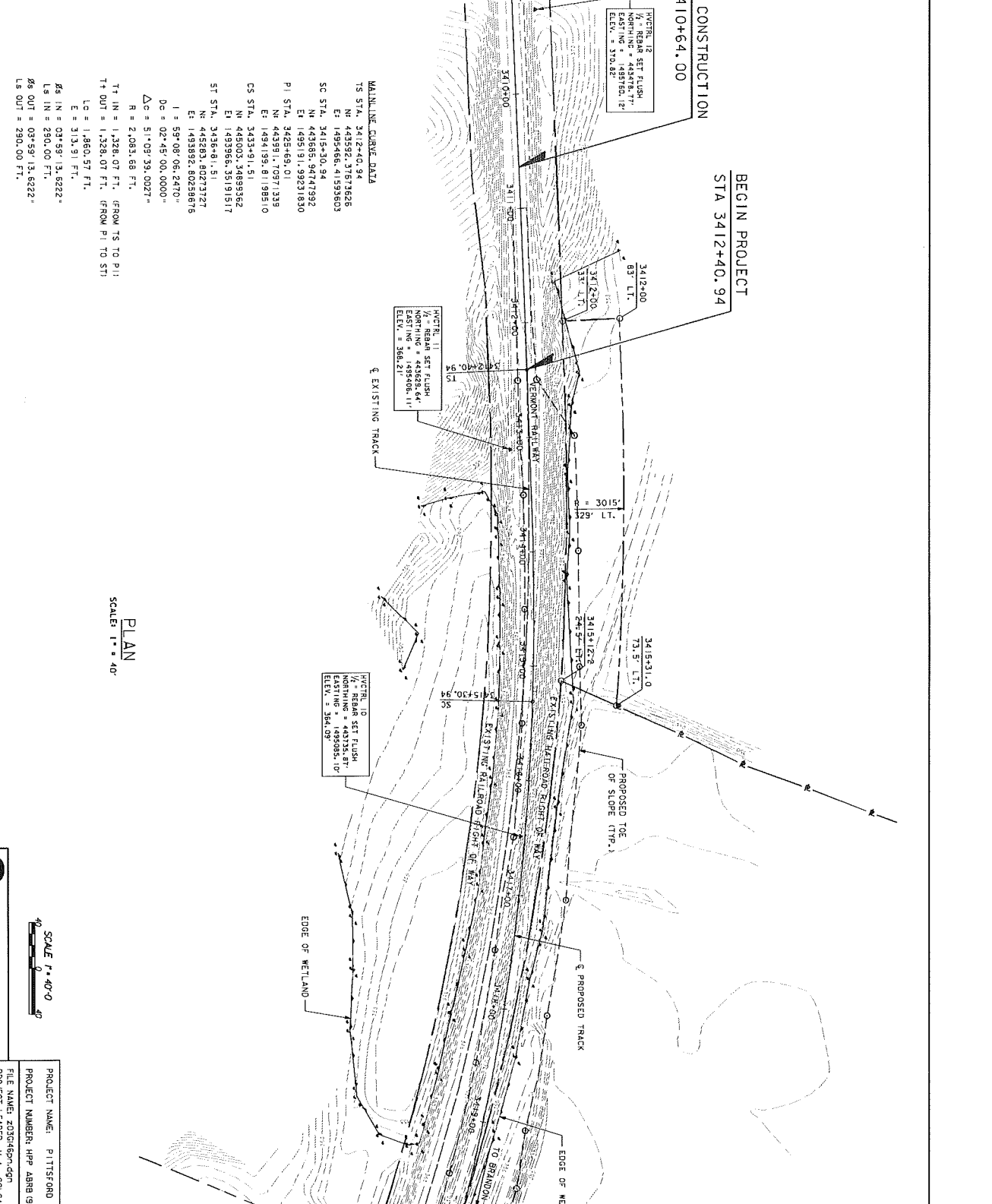
TO PROCTOR  
3409+00

BEGIN CONSTRUCTION  
STA 3410+64.00

BEGIN PROJECT  
STA 3412+40.94

TO BRANSON  
3426+00

MATCH LINE PLAN SHEET 2 OF 3



MAINLINE CURVE DATA

TS STA.	3412+40.94
Nt	443592.37873625
Et	1493498.41335803
SC STA.	3415+30.94
Nt	443685.944471932
Et	1493191.39231830
PI STA.	3425+65.01
Nt	443251.0871339
Et	1494195.81198310
CS STA.	3433+91.51
Nt	443002.34899652
Et	1493986.391915171
ST STA.	3436+81.51
Nt	442891.80213227
Et	1493892.6023876
L =	59'-08"-06", 247.0"
Dc =	02'-45"-00", 00.000"
Δs =	51'-09"-39", 0027.4"
R =	2,083.68 FT.
Tt IN =	1,328.07 FT. (FROM TS TO PI)
Tt OUT =	1,328.07 FT. (FROM PI TO ST)
Lt =	1,860.57 FT.
E =	313.91 FT.
Rs IN =	03'-59"-13, 6222.4"
Rs OUT =	03'-59"-13, 6222.4"
Ls OUT =	290.00 FT.

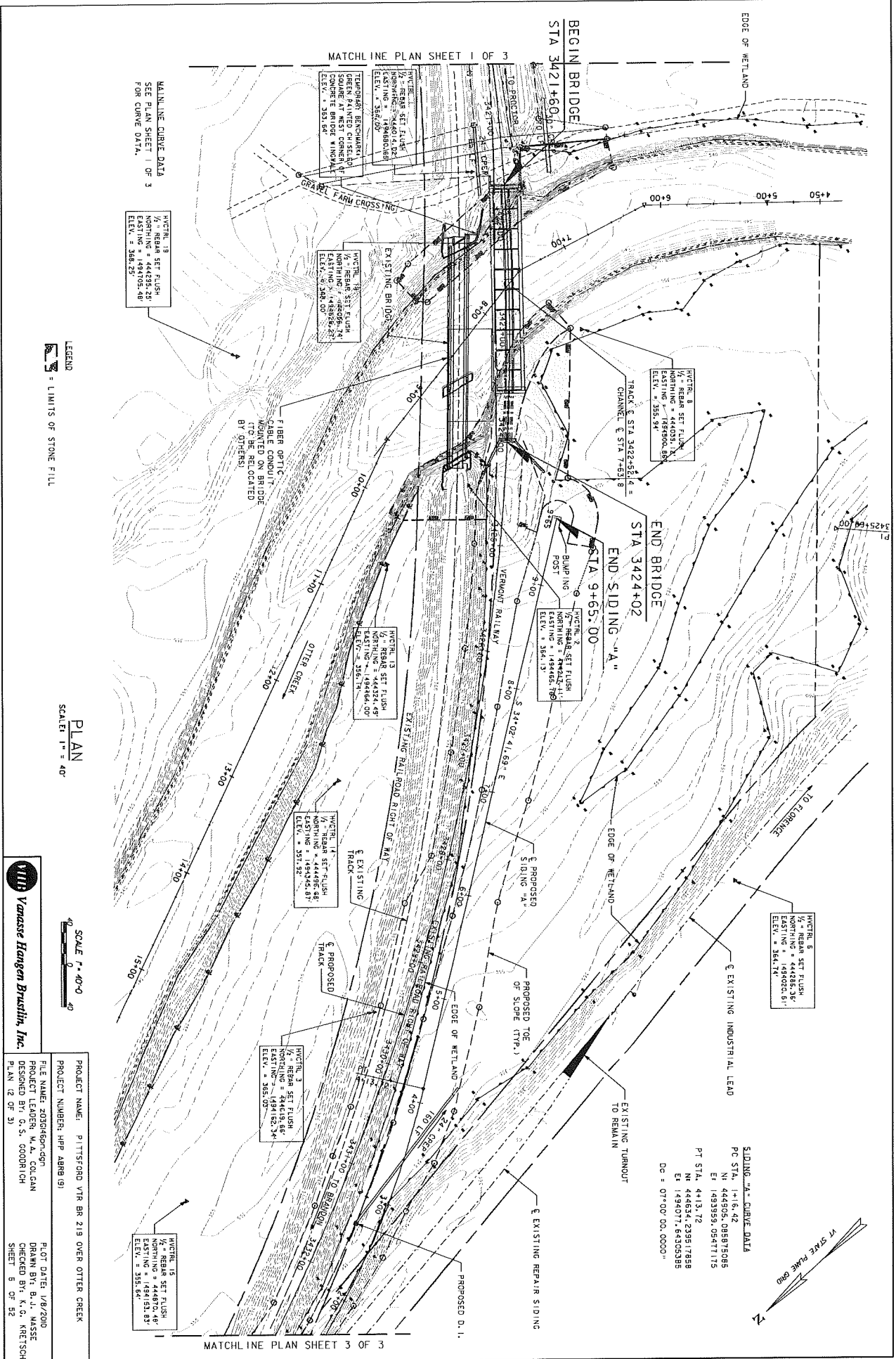
PLAN  
SCALE: 1" = 40'

SCALE 1" = 40'-0"

**VH** Vanasse Hangen Brustlin, Inc.

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRG (9)  
 FILE NAME: 2030469.dgn  
 PROJECT LEADER: W.A. COGAN  
 DESIGNED BY: G.S. GOODRICH  
 PLOT DATE: 1/8/2000  
 DRAWN BY: B.J. WASSER  
 CHECKED BY: K.G. KRETSCH  
 SHEET 5 OF 32





MATCHLINE PLAN SHEET 1 OF 3

VERTICAL CURVE DATA  
SEE PLAN SHEET 1 OF 3  
FOR CURVE DATA.

HICTRL 13  
1/2" REBAR SET FLUSH  
NORTHING = 444235.28  
ELEV. = 386.25

HICTRL 13  
1/2" REBAR SET FLUSH  
NORTHING = 444235.28  
ELEV. = 386.25

HICTRL 8  
1/2" REBAR SET FLUSH  
NORTHING = 444035.11  
ELEV. = 353.34

HICTRL 2  
1/2" REBAR SET FLUSH  
NORTHING = 149465.78  
ELEV. = 384.13

HICTRL 13  
1/2" REBAR SET FLUSH  
NORTHING = 444464.00  
ELEV. = 356.74

HICTRL 14  
1/2" REBAR SET FLUSH  
NORTHING = 444465.87  
ELEV. = 371.52

HICTRL 3  
1/2" REBAR SET FLUSH  
NORTHING = 444619.58  
ELEV. = 355.07

HICTRL 15  
1/2" REBAR SET FLUSH  
NORTHING = 444870.48  
ELEV. = 355.04

LEGEND  
= LIMITS OF STONE FILL

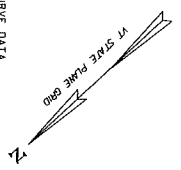
PLAN  
SCALE 1" = 40'

SCALE 1" = 40'-0"

**VH** Versasse Hengen Drushkin, Inc.

PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
PROJECT NUMBER: HPP 4A98.191  
FILE NAME: 203G469.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: G.S. GOODRICH  
PLAN 12 OF 31  
PLOT DATE: 1/8/2000  
DRAWN BY: B.J. MASSE  
CHECKED BY: K.G. KRETSCH  
SHEET 8 OF 52

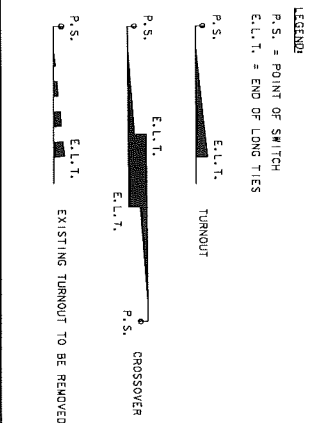
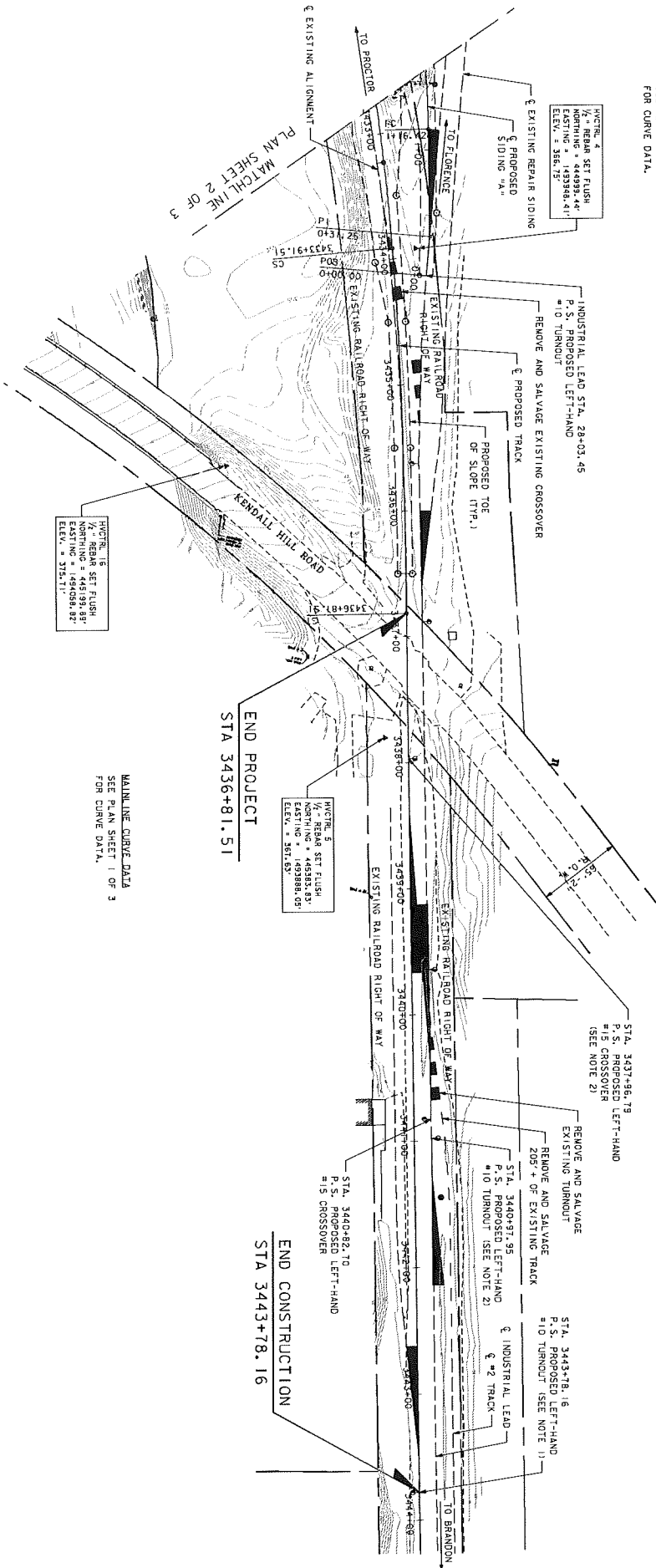
SIDING "A" - CURVE DATA  
PC STA. 1+15.42  
PT STA. 4+13.72  
NC 444634.239317858  
E1 14940771.615035385  
DC = 07+00 00.00000"



MATCHLINE PLAN SHEET 3 OF 3

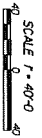


SLIDING "A" CURVE DATA  
SEE PLAN SHEET 2 OF 3  
FOR CURVE DATA.



MAINLINE CURVE DATA  
SEE PLAN SHEET 1 OF 3  
FOR CURVE DATA.

PLAN  
SCALE: 1" = 40'



**NOTES:**

- BEGIN RAIL TRANSITION TO MATCH EXISTING TOP OF RAIL SO FEET BEYOND PROPOSED POINT OF SWITCH, MAXIMUM SLOPE FOR RAIL TRANSITION NOT TO EXCEED 1 INCH IN 51 FEET.
- BEGIN RAIL TRANSITION TO MATCH EXISTING TOP OF RAIL 5 FEET BEYOND PROPOSED END OF LONG TIES MAXIMUM SLOPE FOR RAIL TRANSITION NOT TO EXCEED 1 INCH IN 51 FEET.

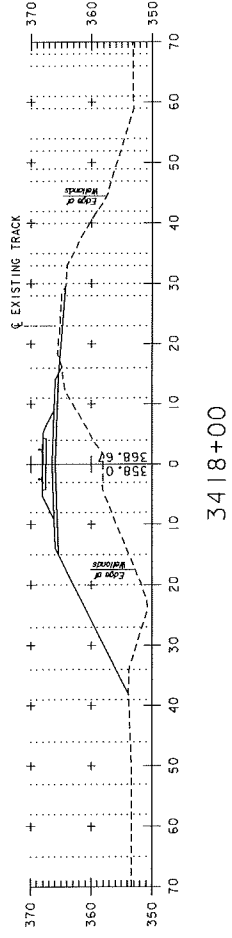
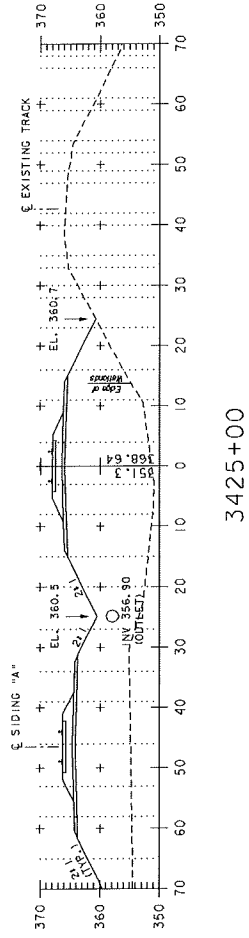
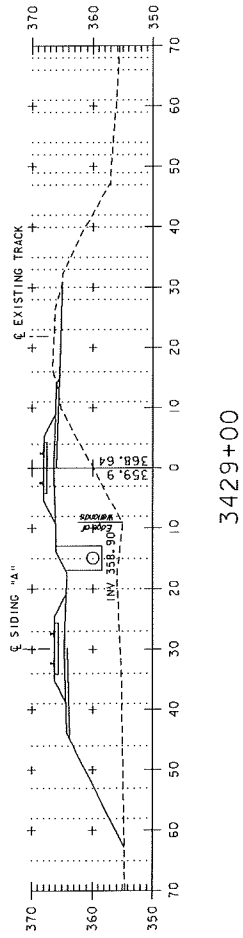
PROJECT NAME: PITTSFORD VTR BR 219 OVER OTTER CREEK  
PROJECT NUMBER: HPP ABRB (9)

FILE NAME: 2023G650.dgn  
PROJECT LEADER: M.A. COLGAN  
DESIGNED BY: G.S. DOORICH  
PLAN 13 OF 31

PLOT DATE: 1/9/2020  
DRAWN BY: B.J. MASSE  
CHECKED BY: K.G. KRETSCH  
SHEET 7 OF 52







SCALE 1" = 10'-0"

VTR 219 MAINLINE TRACK

PROJECT NAME: PITTSFORD YTR BR 219 OVER OTTER CREEK  
 PROJECT NUMBER: HPP ABRB (B)  
 FILE NAME: X03648XSM.GCO  
 PROJECT LEADER: M. A. COLGAN  
 DESIGNED BY: D. W. PECK  
 CHECKED BY: G. S. GOODRICH  
 SHEET 1 OF 1



Vanasse Hangen Brustlin, Inc.



# VT Railway Bridge 219 Replacement Project, Pittsford VT Locus Map

