VERMONT

State of Vermont *Agency of Transportation*
Policy, Planning & Intermodal Development Division
Policy, Planning and Research Bureau
Development Review & Permitting Services Section
Barre City Place, 219 North Main Street [phone] 802-636-0037
Barre, VT 05641 [ttd] 800-253-0191
vtrans.vermont.gov

December 16, 2019

Cross Vermont Trail Association Inc
Greg Western
Po Box 116
Montpelier, VT 05601

Subject: Berlin, US2, L.S. 0063+88 ~ 0072+86 LT and Barre Town L.S. 0+00 ~ L.S. 3+70 LT and East Montpelier, US2, L.S. 0000+00 ~ 0065+47 LT

Dear Mr. Western:

Your application for a permit to work within the State Highway right-of-way to construct a bike trail on private and public lands, including a bridge and associated appurtenances, a trailhead parking lot and an elevated walkway has been processed by this office and is enclosed. Work under this permit coincides with the following projects funded under VTrans Municipal Assistance Bureau projects- East Montpelier Cross Vermont Trail STP EH06(3); Cross Vermont Trail STP CVRT(1); Montpelier-Berlin STP CVRT (2); Berlin-East Montpelier STP CVRT(3) and East Montpelier STP EH 10(17).

Authorization to proceed to construction shall be contingent on the receipt of the following documents two weeks prior to the day of the pre-construction meeting between the permit holder and their representatives, the Contractor and VTrans representatives;

- **Each Contractor's signature as a co-applicant to the Agency's 19 V.S.A. § 1111 Permit submitted for the referenced project.**
- **Copies of all deeds, easements, agreements and any survey plats created for this project.**
- **A separate 19 V.S.A. § 1111 Permit issued to any associated landowner where proposed access/ parking areas connected to VTrans state highway right-of-way are being developed for this project.**
- **A copy of any revisions to the project plans and specifications referenced in, and attached to, this permit.**
- **A copy of the required certificate of insurance to show that the minimum coverages required for this permit are in effect.**

A preconstruction meeting to discuss work to be completed must be held prior to the Permit Holder's employees or contractor beginning work to each individual project within this proposal. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such meeting. The telephone number in St. Johnsbury is (802) 748-6670.

Sincerely,

E-SIGNED by Nathan Covey
on 2019-12-17 13:52:57 GMT

Nathan Covey
Permit Coordinator
Permitting Services

Enclosures
cc: Town of Berlin
Town of Barre
Town of East Montpelier
District Environmental Coordinator # 5
Central Vermont Regional Planning Commission
District Transportation Office #7

T.G.

PERMIT ID# 42188

FOR AGENCY USE ONLY

Town:	Berlin	Town:	Barre Town	Town:	East Montpelier
Route:	US 2	Route:	US 2	Route:	US 2
Mile Marker:	1.21-1.38 LT	Mile Marker:	0.0 - 0.07 LT	Mile Marker:	0.0 - 1.24 LT
Log Station:	63+88 - 72+86 LT	Log Station:	0+00 - 3+70 LT	Log Station:	0+00 - 65+47 LT

VERMONT AGENCY OF TRANSPORTATION

State Highway Access and Work Permit

Applicant to Complete

Owner's/Applicant's Name, Address, E-mail & Phone No. Cross Vermont Trail Association, PO Box 116, Montpelier, VT 05601; greg@crossvermont.org; 802-498-0079

Co-Applicant's Name, Address, E-mail & Phone No. (if different from above) n/a

The location of work (town, highway route, distance to nearest mile marker or intersection & which side)
entering ROW 940 ft W 0020-1207-0000 and exiting ROW 745 ft W 0020-1207-0140

Description of work to be performed in the highway right-of-way (attach plan) Construction of Cross Vermont Trail and trailhead parking lot. Plan attached.

Property Deed Reference Book: n/a Page: n/a (only required for Permit Application for access)

Fee $ n/a (fees do not apply for residential or agricultural purposes)

Is a Zoning Permit required? Yes ☐ No ☑ - If Yes, # but LOI for 1111 is prerequisite to determine

Is a 30 VSA § 248 permit required? Yes ☐ No ☑ - If Yes, #

Is an Act 250 permit required? Yes ☑ No ☐ - If Yes, # LOI for 1111 is prerequisite to begin apply

Other permit(s) required? Yes ☑ No ☐ - If Yes, name and # of each LOI for 111 is prerequisite

Date applicant expects work to begin summer 20 18

Owner/Applicant: Greg Western (Print name above) Position Title: Executive Director

Sign in Shaded area:		Date:	2017-12-04

Co-Applicant: _____ (Print name above) Position Title: _____

Sign in Shaded area:		Date:	

INSTRUCTIONS: -Contact the Development Review and Permitting Services Section (802.828.2653) or your local area Transportation Maintenance District Office to determine your issuing authority. The issuing authority will determine what plans, fee and other documents are required to be submitted with your Vermont Statutes Annotated, Title 19, Section 1111, permit application request.
- Original signatures are required on an original Form. The Owner/Applicant and Co-Applicant (if applicable) declares under the pains and penalty of perjury that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

FEE: -See **Fee Schedule** for applicable administrative processing and application review fee.

PERMIT APPROVAL

This covers only the work described below: Permission is granted to work within the State Highway right-of-way to construct a bike trail on private and public lands, including a bridge and associated appurtenances, a trailhead parking lot and an elevated walkway. Work under this permit coincides with the following projects funded under VTrans Municipal Assistance Bureau projects- East Montpelier Cross Vermont Trail STP EH06(3); Cross Vermont Trail STP CVRT(1); Montpelier-Berlin STP CVRT (2); Berlin-East Montpelier STP CVRT(3) and East Montpelier STP EH 10(17), at the location indicated, in accordance with the attached plan and permit special conditions.

The work is subject to the restrictions and conditions on the reverse page, plus the Special Conditions stated on the attached page(s).

Date work is to be completed December 1, 2021 Date work accepted: _____

E-SIGNED by Craig Keller on 2019-12-18 19:22:24 GMT

By _____ Issued Date December 16, 2019 By: _____

Authorized Representative for Secretary of Transportation DTA or Designee

NOTICE: **This permit covers only the Vermont Agency of Transportation's jurisdiction over this highway under Vermont Statutes Annotated, Title 19, Section 1111.** It does not release the petitioner from the requirements of any other statutes, ordinances, rules or regulations. This permit addresses only access to, work within, and drainage affecting the state highway. It does not address other possible transportation issues, such as access to town highways, use of private roads, and use of railroad crossings. If relevant to the proposed development, such issues must be addressed separately.

No work shall be done under this permit until the owner/applicant has contacted the District Transportation Office at:

District #7 1068 US Route 5, Suite 2, St. Johnsbury, Vermont 05819 (802) 748-6670

July 1, 2016 (All previously dated editions are not valid)

RESTRICTIONS AND CONDITIONS

DEFINITIONS:

"Agency" means the Vermont Agency of Transportation (a/k/a VTrans).
"Engineer" means the authorized agent of the Secretary of Transportation.
"Owner/Applicant" means the party(s) to whom the permit is to be issued.
"Co-Applicant" means the party who performs the work, if other than Owner/Applicant or a secondary Owner/Applicant under a joint permit application.
"Permit Holder" means the party who currently owns the lands abutting the highway that are the subject of the permit.

GENERAL:

By accepting this permit, or doing any work hereunder, the Owner/Applicant agrees to comply with all of the restrictions and conditions and any imposed special conditions. If the Owner/Applicant is aggrieved by the restrictions and conditions or special conditions of the permit, they shall submit a written request for consideration to the Engineer within 30-days of permit issuance and prior to starting any work. No work will be authorized by the Agency, or performed under the permit, until the dispute is fully resolved.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Permit Holder or his/her contractor must telephone Dig Safe at 811 at least 48 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, please note that the Agency and many municipalities <u>are not</u> members of Dig Safe and will need to have their utility facilities investigated with due diligence prior to starting excavation activities in or on the State Highway right-of-way.

The Permit Holder is to have a supervisory representative present any time work is being done in or on the State Highway right-of-way. A copy of this permit and Special Conditions must be in the possession of the individual performing this work for the Permit Holder.

Except with the specific, written permission of the District Transportation Administrator, all work in the State Highway right-of-way shall be performed during normal daylight hours and shall cease on Sunday, on all holidays (which shall include the day before and the day following), during or after severe storms, and between December 1 and April 15. These limitations will not apply for the purposes of maintenance, emergency repairs, or proper protections of the work which includes, but not limited to, the curing of concrete and the repairing and servicing of equipment.

The Owner/Applicant shall be responsible for all damages to persons or property resulting from any work done under this permit, even if the Applicant's Contractor performs the work. All references to the Owner/Applicant also pertain to the Co-Applicant.

The Owner/Applicant must comply with all federal and state statutes or regulations and all local ordinances controlling occupancy of public highways. In the event of a conflict, the more restrictive provision shall apply.

The Owner/Applicant must, in every case where there is a possibility of injury to persons or property from blasting, use a pre-approved Blasting Plan. All existing utility facilities shall be protected from damage or injury.

The Owner/Applicant shall erect and maintain barriers needed to protect the traveling public. The barriers shall be properly lighted at night and must be MUTCD (Manual on Uniform Traffic Control Devices) compliant.

All temporary and permanent traffic control measures and devices shall be MUTCD compliant.

The Owner/Applicant shall not do any work or place any structures or obstacles within the State Highway right-of-way, except as authorized by this permit.

The Owner/Applicant may pay the entire cost of the salary, subsistence and traveling expenses of any inspector appointed by the Engineer to supervise such work.

The Engineer may modify or revoke the permit at any time for safety-related reasons, without rendering the Agency or the State of Vermont liable in any way.

In addition to any other enforcement powers that may be provided for by the law, the Engineer may suspend this permit until compliance is obtained. If there is continued use or activity after suspension, the Engineer may physically close the work area and take corrective action to protect the safety of the highway users.

The Permit Holder shall be responsible to rebuild, repair, restore and make good all injuries or damage to any portion of the highway right-of-way that has been brought about by the execution of the permitted work, for a minimum period of eighteen (18) months after final inspection by the District.

Any approved variance from the permitted plans is to be recorded on "as-builts" with copies provided to both the Chief of Permitting Services and the District Transportation Administrator.

ACCESS:

This permit (if for access) does not become effective until the owner/applicant records in the office of the appropriate municipal clerk, the attached "Notice of Permit Action"

As development occurs on land abutting the highways, the Agency may revoke a permit for access and require the construction of other access improvements such as the combination of access points by adjoining owners.

Under Vermont Statutes Annotated, Title 19, Section 1111, no deed purporting to subdivide land abutting a state highway can be recorded unless all the abutting lots so created are in accordance with the standards of Section 1111.

The Permit Holder acknowledges and agrees that neither this permit nor any prior pattern of use creates an ownership interest or other form of right in a particular configuration or number of accesses to or through the highway right-of-way, and that the right of access consists merely of a right to reasonable access the general system of streets, and is not a right to the most convenient access or any specific configuration of access.

DRAINAGE:

The Owner/Applicant shall install catch basins and outlets as may be necessary, in the opinion of the Engineer, to preclude interference with the drainage of the state highway. Direct connections shall <u>not</u> be allowed without written approval.

UTILITY WORK; CUTTING AND TRIMMING TREES:

The Owner/Applicant shall obtain the written consent of the adjoining owners or occupants or, in the alternative, an order from the State Transportation Board in accordance with, Vermont Statutes Annotated, Title 30, Section 2506, regarding cutting of or injury to trees.

In general, all utilities shall be located adjacent to the State Highway right-of-way boundary line and shall be installed without damaging the highway or the highway right-of-way. No pole, push-brace, guy wire or other aboveground facilities shall be placed closer than 10 feet to the edge of traveled-way. If the proposed utility facilities are in conflict with the above, each location is subject to the approval of the Engineer.

Poles and appurtenances shall be located out of conflict with intersection sight distance, guardrail, ditches, signs, culverts, etc.

Where the cutting or trimming of trees is authorized by permit, all debris resulting from such cutting and trimming shall be removed from the State Highway right-of-way.

Open cut excavation for highway crossings is NOT the option of the Applicant, and may be utilized only where attempted jacking, drilling, or tunneling methods fail or are impractical. The Owner/Applicant shall obtain an appropriate modification of the highway permit from the Engineer before making an open cut.

JOINT PERMITS:

A joint permit application is required when more than one party will be involved with the construction, maintenance, and/or operation of the facility being constructed under this permit. Examples include, but are not limited to, joint ownership or occupancy of a utility pole line and construction of a municipal utility line by a contractor. Both utility companies, and in the second case, the municipality and the contractor, must be joint applicants.

SPECIAL CONDITIONS

Authorization to proceed to construction shall be contingent on the receipt of the following documents two weeks prior to the day of the pre-construction meeting between the permit holder and their representatives, the Contractor and VTrans representatives;

- **Each Contractor's signature as a co-applicant to the Agency's 19 V.S.A. § 1111 Permit submitted for the referenced project.**
- **Copies of all deeds, easements, agreements and any survey plats created for this project.**
- **A separate 19 V.S.A. § 1111 Permit issued to any associated landowner where proposed access/ parking areas connected to VTrans state highway right-of-way are being developed for this project.**
- **A copy of any revisions to the project plans and specifications referenced in, and attached to, this permit.**
- **A copy of the required certificate of insurance to show that the minimum coverages required for this permit are in effect.**

This permit is granted subject to the restrictions and conditions on the back of the permit, with particular attention given to the Special Conditions listed below. This permit pertains only to the authority exercised by the Vermont Agency of Transportation (Agency) under Vermont Statutes Annotated, Title 19, Section 1111, and does not relieve the Permit Holder from the requirements of otherwise applicable statutes, rules, regulations or ordinances (*e.g.,* Act 250, zoning, etc.). The Permit Holder shall observe and comply with all Federal and State laws and local bylaws, ordinances, and regulations in any manner affecting the conduct of the work and the action or operation of those engaged in the work, including all orders or decrees as exist at present and those which may be enacted later by bodies or tribunals having jurisdiction or authority over the work, and the Permit Holder shall defend, indemnify, and save harmless the State and all its officers, agents, and employees against any claim or liability arising from or based on the violation of any such law, bylaws, ordinances, regulations, order, or decree, whether by the Permit Holder in person, by an employee of the Permit Holder, by a person or entity hired by the Permit Holder, or by a Subcontractor or supplier.

The Permit Holder shall accomplish all work under this permit in accordance with the project plans and contract documents entitled EAST MONTPELIER STP EH10(17) dated August 2018 (excerpt of plan sheets attached); and any future revisions or amendments to these plans, the COOPERTIVE AGREEMENT BETWEEN THE STATE OF VERMONT AGENCY OF TRANSPORTATION AND THE CROSS VERMONT TRAIL ASSOCIATION FOR ADVANCEMENT OF MUNICIPAL ASSISTANCE PROJECT EAST MONTPELIER STP EH10(17), CONTRACT #EH0033 AND ALL SUBSEQUENT AMENDMENTS.

The Permit Holder shall accomplish all work under this permit in accordance with the project plans and contract documents entitled EAST MONTPELIER CROSS VERMONT TRAIL STP EH06(3); CROSS VERMONT TRAIL STP CVRT(1); MONTPELIER-BERLIN STP

CVRT(2); BERLIN-EAST MONTPELIER STP CVRT(3) dated August 2018 (excerpt of plan sheets attached); and any future revisions or amendments to these plans, the COOPERTIVE AGREEMENT BETWEEN THE STATE OF VERMONT AGENCY OF TRANSPORTATION AND THE CROSS VERMONT TRAIL ASSOCIATION FOR ADVANCEMENT OF MUNICIPAL ASSISTANCE PROJECT EAST MONTPELIER STP EH10(17), CONTRACT #CA0188 AND ALL SUBSEQUENT AMENDMENTS.

A preconstruction meeting to discuss work to be completed must be held prior to the Permit Holder's employees or contractor beginning work for each individual project. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such meeting.

Please note that the Vermont Agency of Transportation is not a member of Dig Safe. The Permit Holder shall also contact Dan Ertel, State Signal Supervisor, at (802) 343-2188. Mr. Ertel will need to locate and mark all existing buried utility facilities owned by the Agency near the location of the proposed work.

Upon completion of the work, the Permit Holder shall be responsible to schedule and hold a final inspection. The Permit Holder is required to notify the District Transportation Administrator five (5) working days in advance of such inspection.

Permit holder is advised VTrans is assessing slope stability and pavement conditions at approximate L.S. 0+00 LT within the project EAST MONTPELIER STP EH10(17). Results of the assessment may affect current plan submittals and may require plan modifications.

The Permit Holder is responsible for all trail maintenance (beyond the edge of paved shoulder) including but not limited to plowing and surface restoration of trail and associated parking areas, culverts and drainage swales, bridges, elevated walkways signage and all incidental items.

The Permit Holder shall be responsible for all highway maintenance. Any future highway maintenance affected by the CVTA bike trail will allow VTrans to be financially reimbursed by CVTA for any associated costs; Including but not limited to plowing, culvert maintenance, walk bridge relocation or any other trail-related conflicts which compromise safety of the traveling public. If the Permit Holder fails to properly maintain its facility and the burden fails on the Agency, the Agency may seek reimbursement of all expenses.

Permit Holder shall restore any damage to highway infrastructure created by the proposed construction, including but not limited to guardrail, drainage, pavement, erosion and signage as required by the District Transportation Administrator.

Any work within the highway rights of way that is not addressed by the included plans or project specifications shall be done in accordance with the Vermont Agency of Transportations, "2018 Standard Specifications for Construction", with the latest amendments and all applicable Vermont Agency of Transportation Standard Drawings

including E-121 (copy attached). If a discrepancy between the included plans and all Agency specifications is identified, the more stringent specification shall be used.

Roadway shoulder areas must be maintained free of unnecessary obstructions, including parked vehicles, at all times while work is being performed under this permit.

Two-way traffic shall be maintained at all times unless permission is granted from the District Transportation Administrator. Whenever two-way, one-lane controlled traffic is authorized to be maintained by the Applicant's Contractor, **the traveling public shall not be delayed more than 10 minutes.**

All grading within the State Highway right-of-way associated with the proposed construction shall be subject to inspection and approval by the District Transportation Administrator or his or her staff. The Permit Holder shall be responsible for ensuring that all grading work in or on the State Highway right-of-way complies with applicable statutes, rules, regulations or ordinances.

The Permit Holder shall replace any disturbed state property bounds. These bounds must be reset by a land surveyor licensed in the State of Vermont.

In areas to be grass covered, the Permit Holder shall restore turf by preparing the area and applying the necessary topsoil, limestone, fertilizer, seed, and mulch, all to the satisfaction of the District Transportation Administrator. The Permit Holder shall be responsible for ensuring that all turf restoration work in or on the State Highway right-of-way is in compliance with applicable statutes, rules, regulations or ordinances. The permit holder shall be responsible for maintaining all turfed areas along the trail.

In the event of the Permit Holder's failure to complete all the work, approved under this permit, by the "work completion date," the Agency, in addition to any other enforcement powers that may be provided for by law, may suspend this permit until compliance is obtained. If there is continued use or activity after suspension, the Agency may physically close the driveway or access point if, in the Agency's opinion, safety of highways users is or may be affected.

The Permit Holder shall promptly and unconditionally pay for full repair and restoration of any and all damages to existing underground utility facilities (meaning <u>any</u> underground pipe, conduit, wire or cable, including appurtenances) that have been brought about by the execution of the permitted work. The Permit Holder also is required to pay for any costs to repair the highway following and resulting from any repairs to existing utilities occurring as a result of the work covered by this permit. Except with the specific, written permission of the Engineer, the Permit Holder or his or her contractor shall expose all underground facilities to verify their location and depth, at each location where the authorized boring or drilling work crosses a facility; and at reasonable intervals when closely paralleling a facility. Whenever possible, existing facilities should be crossed at a perpendicular angle. The Permit Holder shall be responsible for obtaining the modification of this permit, if necessary, for any additional survey work before initiating boring or drilling operations under the permit. The Agency will treat the Permit Holder's failure to fully, promptly, and conscientiously comply with all of conditions of this paragraph, including but not limited to the

obligation to pay for repairs, as grounds for the Agency to refuse to grant any further requests by the Permit Holder for any other permits for subsurface work unless the Permit Holder furnishes irrevocable financial security, in a type and an amount deemed sufficient by the Agency in its sole discretion, prior to such future subsurface work.

he Permit Holder shall at a minimum install and maintain erosion prevention and sediment control measures in accordance with the Low Risk Site Handbook for Erosion Prevention and Sediment Control published by the Vermont Department of Environmental Conservation for the purposes of preventing sediment transport into the Agency's State Highway right of way and stormwater management systems or surface waters of the State. All disturbed earth areas having erosion potential must be temporarily or permanently stabilized, as soon as practicable or within seven (7) days of disturbance or, if precipitation is forecast sooner. Ditches or slopes steeper than 1:3 shall make use of appropriate biodegradable erosion matting composed of planar woven natural fiber. Stabilization measures constructed in the State Highway right-or-way shall be in compliance with the current version of the Vermont Agency of Transportation Standard Specifications for Construction.

Any vegetation removal in the State Highway right-of-way proposed within Stream/Riparian Buffer Zones shall conform to all Local, State, and Federal Regulatory requirements for Stream Buffer Protection. Vegetation removal in the State Highway right-of-way must be pre-approved by the District Transportation Administrator.

The Permit Holder shall verify the appropriate safety measures needed, prior to construction, so proper devices and/or personnel are available when and as needed. Traffic control devices, shall be in conformance with the MUTCD (Manual on Uniform Traffic Control Devices), Agency standards and any additional traffic control deemed necessary by the District Transportation Administrator. The Permit Holder's failure to utilize proper measures shall be considered sufficient grounds for the District Transportation Administrator to order cessation of the work immediately.

The Permit Holder will perform construction in such a way as to minimize conflicts with normal highway traffic. When two-way traffic cannot be maintained, the Permit Holder shall provide a sign package that conforms to the MUTCD (Manual on Uniform Traffic Control Devices) or Agency standards, as well as trained Flaggers. The District Transportation Administrator may require a similar sign package with trained Flaggers whenever it is deemed necessary for the protection of the traveling public. In addition, the District Transportation Administrator may require the presence of Uniform Traffic Officers (UTOs); moreover, the presence of UTOs shall not excuse the Permit Holder from its obligation to provide the sign package and Flaggers.

When traffic control becomes so complex that the traffic control cannot be accomplished using Agency standards, the Permit Holder must submit a traffic control plan to the Agency's Permitting Services office for Agency approval prior to beginning work.

The Permit Holder shall ensure that all workers exposed to the risks of moving highway traffic and/or construction equipment wear high-visibility safety apparel meeting the requirements of

ISEA (International Safety Equipment Association) "American National Standards for High-Visibility Safety Apparel," and labeled as ANSI (American National Standards Institute) 107-2004, or latest revisions, for Performance Class 2 or 3 requirements. A competent person - one designated by the Permit Holder's Contractor to be responsible for worker safety within the activity area of the State highway right-of-way -shall select the appropriate class of garment. The Engineer may suspend this permit until compliance is obtained.

Independence; Liability: The Permit Holder will act in an independent capacity and not as officers or employees of the State.

The Permit Holder shall defend the State and its officers and employees against all claims or suits arising in whole or in part from any act or omission of the Permit Holder or of any agent of the Permit Holder. The State shall notify the Permit Holder in the event of any such claim or suit, and the Permit Holder shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit.

After a final judgment or settlement, the Permit Holder may request recoupment of specific defense costs and may file suit in the Washington Superior Court requesting recoupment. The Permit Holder shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Permit Holder.

The Permit Holder shall indemnify the State and its officers and employees in the event that the State, its officers or employees become legally obligated to pay any damages or losses arising from any act or omission of the Permit Holder.

Insurance: Before beginning any work under this Permit the Permit Holder must provide certificates of insurance to show that the following minimum coverages are in effect. It is the responsibility of the Permit Holder to maintain current certificates of insurance on file with the State for the duration of work under the Permit. No warranty is made that the coverages and limits listed herein are adequate to cover and protect the interests of the Permit Holder for the Permit Holder's operations. These are solely minimums that have been established to protect the interests of the State.

Workers' Compensation: With respect to all operations performed under the Permit, the Permit Holder shall carry workers' compensation insurance in accordance with the laws of the State of Vermont.

General Liability and Property Damage: With respect to all operations performed under the Permit, the Permit Holder shall carry general liability insurance having all major divisions of coverage including, but not limited to:

Premises - Operations
Products and Completed Operations
Personal Injury Liability
Contractual Liability

The policy shall be on an occurrence form and limits shall not be less than:

$2,000,000 Per Occurrence
$2,000,000 General Aggregate
$2,000,000 Products/Completed Operations Aggregate
$ 50,000 Fire/Legal Liability

Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

Automotive Liability: The Permit Holder shall carry automotive liability insurance covering all motor vehicles, including hired and non-owned coverage, used in connection with the Permit. Limits of coverage shall not be less than: $1,000,000 combined single limit.

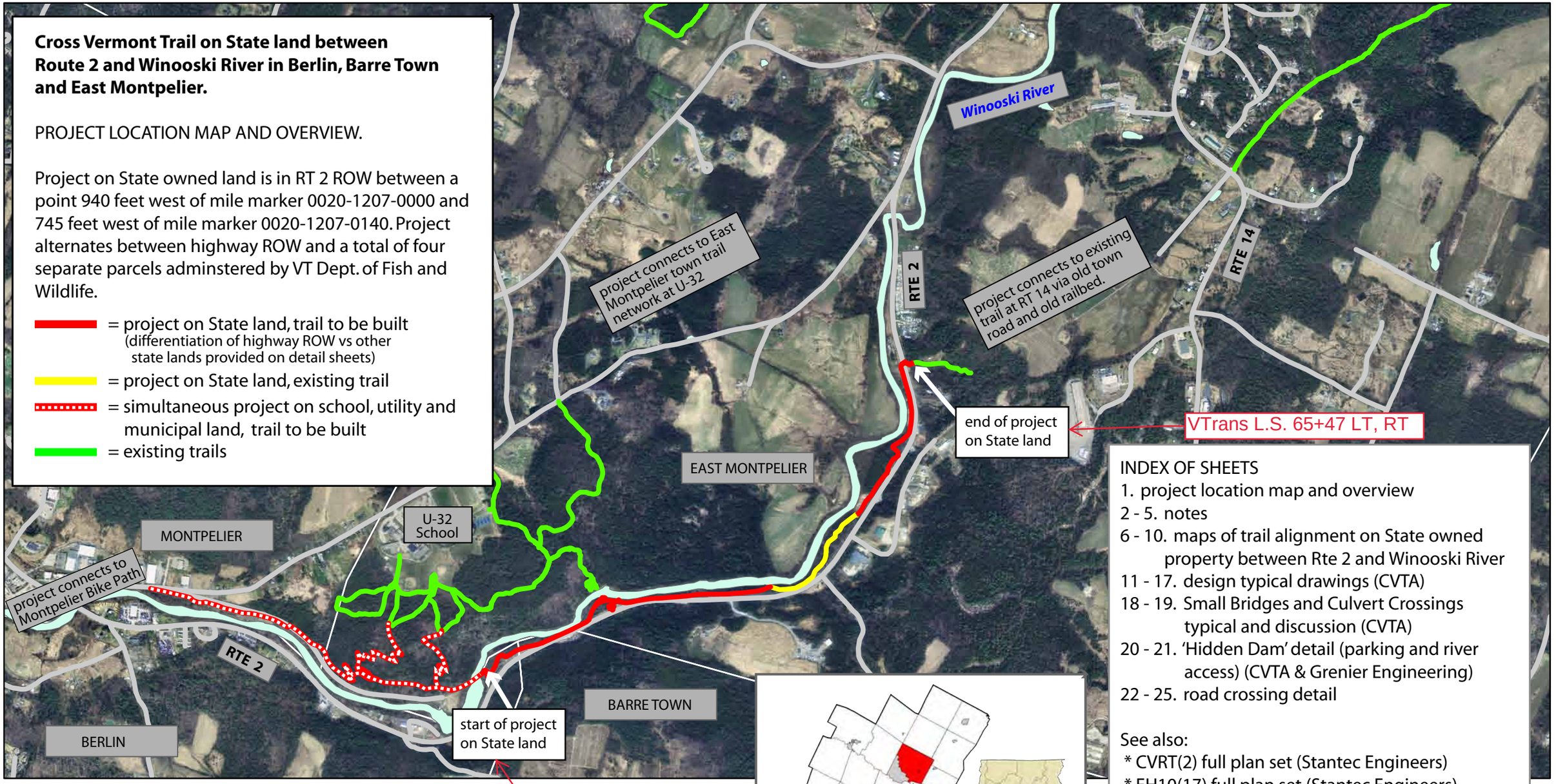
Permit Holder shall name the State of Vermont and its officers and employees as additional insureds for liability arising out of this Permit.

Cross Vermont Trail on State land between Route 2 and Winooski River in Berlin, Barre Town and East Montpelier.

PROJECT LOCATION MAP AND OVERVIEW.

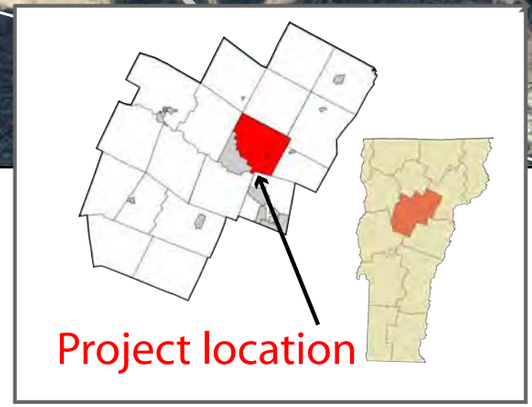
Project on State owned land is in RT 2 ROW between a point 940 feet west of mile marker 0020-1207-0000 and 745 feet west of mile marker 0020-1207-0140. Project alternates between highway ROW and a total of four separate parcels adminstered by VT Dept. of Fish and Wildlife.

- = project on State land, trail to be built (differentiation of highway ROW vs other state lands provided on detail sheets)
- = project on State land, existing trail
- = simultaneous project on school, utility and municipal land, trail to be built
- = existing trails



INDEX OF SHEETS

See also:
* CVRT(2) full plan set (Stantec Engineers)
* EH10(17) full plan set (Stantec Engineers)



0 0.25 0.5 1 Miles

Prepared by Cross Vermont Trail Association (CVTA), 12/2017.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

Background.
The goal of the Cross Vermont Trail is to create a network of community trails, interconnected statewide, that join neighborhoods, schools and wild natural areas – for transportation, recreation, fitness and appreciation of the natural world – following the Winooski River and Wells River valleys, across Vermont.

This project on State owned land (including the US RT 2 ROW and neighboring parcels under jurisdiction of Department of Fish and Wildlife as differentiated in detail below) between Route 2 and the Winooski River in Berlin, Barre Town and East Montpelier is at the center of work that will connect the Central Vermont path (including Montpelier, Berlin, Barre and Barre Town) with the Montpelier & Wells River rail trail that begins at Rte 14 in East Montpelier and continues in various forms all the way to the New Hampshire border. This connection is the keystone piece of the state wide Cross Vermont Trail route. Most of the work needed to make a statewide trail network will happen incrementally and in small scale ways. However, to connect from Montpelier across East Montpelier to Plainfield we need to complete a project on a much larger scale. This project is the result of several scoping studies carried out in conjunction with VTrans and many years of subsequent planning.

The overall project will be assembled from many smaller pieces – with different funding sources, different parties involved in design and construction, and different landowners. It is now time to coordinate all these different pieces and move forward to build the trail.

The project on State owned land alternates between highway ROW and parcels administered by Vt Department of Fish and Wildlife.
The project runs between Rte 2 and the Winooski River for about 8,365 feet. All of the land between Route 2 and the Winooski River, that is involved in the trail project, is owned by the State (including the US RT 2 ROW and neighboring parcels under jurisdiction of Department of Fish and Wildlife as differentiated in detail below).

The trail departs and reenters the highway ROW numerous times over the length of the project. From west to east, the project enters the VTrans ROW 940 feet west of mile marker 0020-1207-0000 and departs the ROW 745 feet west of mile marker 0020-1207-0140. Between these points, the length of trail within the highway ROW is about 6,280 feet. Where the trail is in the highway ROW, it is generally well clear of the highway itself, as the ROW here is quite wide. ROW location was plotted onto project maps by CVTA using as base reference US RT 2 prior project plans provided to CVTA by VTrans ROW section.

Outside of the highway ROW the State owned land is administered by Vermont Department of Fish and Wildlife (VDFW). The land administered by VDFW is composed of several parcels which were formerly part of the old Route 2 ROW (prior to the construction of the modern Route 2 in the early 1960s). These "surplus parcels" were assigned to VDFW administration by Executive Orders, recorded in town land records in 1972. In the town land records, the parcels are labeled #140D, #140E, #140F and #140G.

The VDFW ROW process.
CVTA will conclude two agreements with VDFW. First, a license for all the work on all four parcels. Second, a "construction and maintenance" agreement specific to the work on parcel #140D as shown on plans drawn by Stantec Engineers (as required by federal funding for the STP CVRT(2) portion of the work). This is the same ROW process employed by VDFW for the "Island Line" trail, and also for the State owned sections of the Cross Vermont Trail in Newbury.

The VTrans State Highway Access and Work Permit Application.
The Cross Vermont Trail project within the US RT 2 ROW in Berlin, Barre Town and East Montpelier needs a single overarching Letter of Intent to issue an 1111 permit. Because the environmental permitting for the project is required to be done as a whole, an overarching LOI from VTrans is prerequisite for CVTA to apply for trail construction permits in the highway ROW.

To that end, CVTA is submitting an 1111 application that includes: a summary of the overarching project (prepared by CVTA), full plan sets by consultant Stantec Engineers for the portions of the overarching project that are within the VTrans MAB process (STP CVRT(2), EH06(03, and EH10(17); additional plans prepared by CVTA for the portion of the trail to be built by CVTA without VTrans funding (simple plans to include at minimum enough detail to show the layout of the trail and its relationship to US Route 2 and other highway infrastructure, typical sections of the trail, offsets of the trail from Route 2 and plotting the existing ROW), and further plans developed by Grenier Engineering for proposed trailhead parking lot at the "Hidden Dam" location.

We understand that the LOI for the overarching project will be conditioned on the requirement that final details of each project phase will need final approval before each is constructed.

For the most part, Cross Vermont Trail will NOT be in State Highway ROW's, aside from this project.
The Cross Vermont Trail exists now in many locations, including the location of the project described in this application, as a signed bike route on State Highways including portions of Route 2, 232 and 302. In the past CVTA has been asked by VTrans as to whether or not CVTA is requesting to build a bike path along side the entire length of Routes 2, 232 and 302 state wide. Let me be clear – we are not. The trail project along Route 2 in Berlin, Barre Town and East Montpelier is the only location in the statewide Cross Vermont Trail route where we anticipate the need to build a significant length of trail within the highway ROW. Currently, the Cross Vermont Trail route is signed on many miles of State Highway – Rte's 2, 232 and 302 – as a "bike route" (not a trail). As our name suggests, we would rather be a trail and not an on road bike route. To that end, ultimately, new trails will be built that remove all of the route not only from highways, but also from highway ROWs. However, it is easy to predict that there will be a few bottleneck locations where connecting pieces of trail would need to be built within the highway ROW to make a continuous trail. In some locations (such as Rickers Mill in Groton, and Route 302 in Wells River Village) the land ownership along the future trail corridor is similar to East Montpelier and involves both highway ROW and other state entities; and for these locations CVTA will prepare and submit detailed proposals as needed in the future.

Cross Vermont Trail is multi-use, non-motorized, accessible.
In general terms, the trail standard described for this project is: width is at least 3 feet, typically 5 feet, and at most 8 feet; surface is firm (crushed stone); grade is gradual (maximum of 8% and generally 5% or less.)

Sequenced construction over several years.
Project will be built over the course of several years. The trail will not be open to the public until the whole project is complete with logical termini. Partial sections of trail, as built, will be blocked with barriers and signs. CVTA will also include information about the closed status of the trail and the timeline for opening it in media, trail guides, etc. Some components of project will be built by contractors (Winooski River bridge and approach, portions of the Stantec designed boardwalk, the parking lot at Hidden Dam). The remainder will be built by CVTA working with volunteers and youth conservation corps crews. All individuals working in the State ROW will be required to be equipped with appropriate safety apparel and shall by covered by CVTA's or contractor's liability insurance per State required minimums. The known construction timeline for the work proposed within the State ROW is – assuming an LOI for State Highway Access and Work Permit is granted in 2018, after which other necessary permitting can be completed by CVTA, then work on EH10(17) project will be bid out and completed 2019, the Hidden Dam parking will also be bid out and completed in 2019 and would then act as staging area for trail work to be performed by CVTA; work on CVRT(2)/EH06(3) (Winooski Bridge) will be bid out in 2019 and completed by 2020, and other work to be performed by CVTA will be completed incrementally over the course of 2019, 2020 and 2021, with overall project completion in 2021.

Project includes trailhead parking, new access from Rte 2.
Trailhead parking is included in the project in order to address need for safe controlled access from the highway to the trail. Parking also resolves a pre-existing need to address current unsafe and uncontrolled access to this site for river access – a historic use previously approved by VTrans in concept as a part of an agreement between VTrans and VDFW. Trailhead parking is within the larger CVTA project, but is not included in the federally funded portion of the project design administered through the VTrans MAB. Funding for parking is from other sources secured by CVTA. Parking would be built as the first element in the CVTA built portion of the trail project, and would act as a staging area for the construction of the trail itself. See additional detail notes and design for trailhead parking, attached below.

Parking at this location is specifically needed at this location - it is not possible to meet the need addressed by this parking with parking outside of the highway ROW elsewhere - as there is no other location physically available outside of the highway ROW except at locations many miles distant. The purpose of the trailhead parking at this location is to provide access from the highway to the trail in a safe controlled manner. Trailheads many miles distant from the highway will not serve this purpose.

In addition, parking is proposed at this specific location because of historic and ongoing public use of the site, which manifests by parking currently occurring informally on the shoulder of the road, to access the land adjacent to the river for angling, boating, and walking along the river. Survey of river access and use by Vermont Department of Fish and Wildlife conducted 7/1/2015 to 6/30/2016 (Project No. F-36-R-18) found that this section of the Winooski River is one of the most heavily utilized for public access of all sections along the Winooski, and furthermore that it is the only section of the river where volume of public use and access to the river was measured as increasing over the course of long term surveys conducted 1998 - 2016. Additional supporting documentation for value of this site for river access: 2010 correspondance with Rich Kirn, Fisheries Biologist; 2012 Winooski River basin plan (Vt ANR); 2012 Winooski Access survey (Friends of the Winooski River).

The proposed access and parking corrects a current condition at this site. Parking at this location is pre-existing. Currently, cars are commonly observed to be parked on the shoulder of the road at this location, during warmer months. The proposed access and parking will replace the informal on shoulder parking with a formal, safe and correct, access and parking. In addition, currently some people park at an established pull out on the far side of the road from the river, in order to access the land along the river, which necessitates undesired pedestrian crossing of the Route 2 at this location with high speeds and poor sight lines.

The general concept of parking at this location is of long standing, and has been approved repeatedly in the past. Parking at this location for the purpose of river access dates to the construction of the current alignment of Route 2 in the early 1960s and the creation of this property in its current form by the abandonment of the old Route 2 infrastructure. In 1972 Vermont Agency of Transportation and Vermont Fish and Wildlife Department recorded in the East Montpelier land records an agreement that parking for public access to land along the river would be continued at this site. Because of this history, the inclusion of improved parking facility at this site has been included in the Cross Vermont Trail planning since the inception of the Cross Vermont Trail project in the mid 1990s. An 1111 permit was granted for trailhead parking lot and access to Route 2 in 1997 as a part of the initial work on the Cross Vermont Trail project. Because of delays in other areas of the project, the parking was never built; those delays are resolved and so we are now applying anew for the permit.

The size of the proposed lot is correct for the need and purpose. Eight car parking lots are typical along the the Cross Vermont Trail route at locations comparable to this one. Comparable locations include parking and access from state highways that serve both as trailheads and as locations for river access.

The trailhead parking at this location specifically resolves comments made on EH10(17) plans by VTrans 2/18/2017 which stated a need to provide information on trailhead parking. Comments received consisted of the following. Nate (nathan.covey@vermont.gov): "... it questions safety as where people will park to get to this future attraction as is there a need to design access points every so often to get from highway to trail." Kristin Driscoll (kristin.driscoll@vermont.gov): "Agreed. Seems like a walk way to no where at the minute. This is a busy road and there is a pull off just across from here. This is a 50MPH zone, I'd hate to see people trying to cross/park here to use this...." The parking as proposed will address the need for periodic access from highway to trail and will address the need to avoid creating an incentive for pedestrians to cross the road at this location.

Parking at this location is located within the highway ROW - because the highway ROW is exeptionally wide at this location. Parking is located clear of the area currently or historically used for highway operation. The access and entrance drive to the parking will be in full compliance with B-71 standards and any other requirements made by VTrans and so will have no adverse impact on the maintenance or operation of the highway. Of course at any time in the future, as needed, VTrans may at its sole discretion require that the parking be temporarily or permanently closed if there is a highway maintenance or operation need that requires so, or if in the judgement of VTrans the parking is being misused or has fallen into disrepair. And of course, it shall be clear that the responsibility for construction, maintenance and operation of the access and parking shall be fully CVTA's responsibility and it shall be clear that VTrans is assuming no responsibility at all for this structure, as is the case, of course, with the entirety of the trail project. CVTA shall be responsible for all maintenance. Maintenance will include the surface of the access and parking lot, the trimming of vegetation, and other items as required by VTrans at VTrans' sole discretion. It is proposed that the parking lot will not be maintained for winter use (as the trail will also not be maintained for winter use). Furthermore, it is noted that this proposal for parking within the highway ROW is of a similar nature to other parking also commonly allowed in the highway ROW, which are for public and transportation purposes, such as the Long Trail trailhead parking in Bolton, and numerous park and ride facilities. The parking area will be open to the general public and shall not be signed or designated for exclusive use by any group or entity other than the general public.

Traffic Control.
Engineer designed sections will have specific traffic control plans supplied by engineering firm (Stantec.) "Hidden Dam" trailhead parking will have specific traffic control plan provided by construction contractor or otherwise as required by VTrans.

On CVTA designed sections, all work will be greater than deflection distance behind guardrails or greater than 15' from the shoulder of road, or both. For this, MUTCD requires "TA-1, work beyond the shoulder." CVTA has appropriate signs available for use as specified by TA-1, and access to certified personnel to install the signage each work day. During construction, CVTA will stage vehicles and equipment at and access work sites from Hidden Dam parking (not the road shoulder).

Delivery to the shoulder of the road of materials for construction, will happen a few times over the course of the project. During previous deliveries for the already built section of trail, traffic control was provided by VTrans district and their method was flaggers stopped both lanes of traffic temporarily while delivery trucks dumped material to the side of the shoulder, then machinery moved the material to a point beyond the shoulder. Over the course of the project, there will be several days total of delivery in this manner. CVTA will provide to VTrans specific traffic control plans as required and hire qualified contractors for the work within the highway during the deliveries.

Some trail construction has already been done.
A section of trail in the Rte 2 ROW and on VDFW parcel #140G was partially built starting in 2004 with assistance from the VTrans district garage and VTrans funded VYCC crews and also with grant funding from, and in consultation with, VDFW. It is 1,650 feet long; beginning 1,505 feet west of mile marker 0020|1207|0080 and ending 145 feet east of that point. At that time, numerous small bridges were also constructed along the trail alignment as detailed in the project description below. The current project will include completing planned work on this section.

A second section of existing trail has been built adjacent to the highway ROW, on land owned by the Town of East Montpelier. It will be the continuation of the Cross Vermont Trail east to Route 14 and the start of the existing rail trail.

Project includes maintenance of check dams in drainages and erosion control structures related to the trail.
On the Department of Fish and Wildlife parcel #140G, the section of trail that was built starting in 2004 also included installation of check dams and erosion control structures on gullies, downhill of the road, crossed by the trail. In addition to maintaining and operating the trail over time, CVTA is also committed to maintain these check dams and other erosion control structures incidental to the trail corridor on the property of the Fish and Wildlife Department. Within the Highway ROW, the attached project information includes description of

minimal work only as needed and immediately related to construction and maintenance of small bridges spanning culvert outlets (any other work related to erosion control that may be proposed in the future would require future permits and shall not be done without proper permitting.)

Vegetation management.
CVTA is requesting permission to manage vegetation outside of the area maintained by VTrans along the highway shoulder, between the highway and the river. In addition to vegetation management associated directly with operation of the trail (keeping trail itself clear of vegetation, while promoting vegetation to the side of the trail), we wish to work actively to reduce invasive plants and promote native plants more broadly within the trail corridor and the riparian buffer. This will improve the trail experience, and has other benefits.

Planting of riparian vegetation is proposed between the trail and the Winooski River, at the locations on CVTA plans where "Filled Bench Typical" and "Walled Bench Typical" are indicated. Trees and shrubs will be planted to define trail edge, stabilize slope and improve riparian buffer, throughout the area adjacent to this typical, between the trail and the Winooski River, on the river side of the trail, in compliance with relevant standard: “Planting Guidance for the Revegetation of Riparian Areas in Vermont” (Vermont Dept Fish & Wildlife, 2016)

Riparian Buffer.
Trail is designed to be clear of riparian buffer 50 feet from top of bank of Winooski. There are exceptions, reviewed by VDFW in early stages of project planning:

- The approach to the Winooski bridge, portage trails, and access to fishing platform are within buffer as a matter of course
- Locations where there is less than 50 feet between Route 2 and the river bank, trail is built with a boardwalk, and within area that is already clear of significant vegetation, for minimal impact on buffer values.
- Locations where existing pavement of old Route 2 is used to provide access to the river without the need for significant new construction.

As noted above, CVTA will also actively improve the riparian buffer area adjacent to the trail corridor by controlling invasive plants and promoting beneficial trees.

Trail will be maintained by CVTA.
Per John Lemieux and Jon Kaplan as follow up to April 27, 2017 meeting: "Jon Kaplan has followed up with Contract Administration and Permitting to pursue this issue. The intent is to incorporate the required statements, specifying the responsible party for maintenance of the trail, into the State Highway Access & Work Permit. This would alleviate the need to establish a new agreement and result in a more practical approach to this issue. For the plans, we simply mention that additional statements will be incorporated into the State Highway Access & Work Permit to specify the responsible party for maintenance of the trail."

History of project scoping – specifically, trail alignment between road and river in Barre Town, the EH10(17) project.

Trail alignment between Route 2 and Winooski River was identified by conceptual alignment analysis for Cross Vermont Trail, STP TECH (1) S EMP-94-017, completed March 8, 1996 by Pinkham Engineering Associates. In 1999 alignment was confirmed and refined by consultant Bob White under contract to National Park Service Rivers and Trails Program. In 2005 funding was secured to begin design of proposed alignment. Design began in 2007. At 9/13/2007 pre-design meeting the idea of crossing to the south side of the road was considered for inclusion in the design consultant's scope. The representative of the VTrans District in attendance at the meeting, Tom Anderson, requested that this NOT be included in project scope. The District did not want the trail to cross the road in the vicinity of the Berlin/Barre Town line. Conceptual plans were reviewed by VTrans in 2008, no concern about alignment was expressed. Preliminary plans were reviewed by VTrans in 2011, no concern about alignment was expressed, except for the District who again expressed a preference that the trail not intersect with highway in vicinity of Berlin/Barre Town line. Prior to contracting with Stantec to advance the design to final plans, additional input was solicited by CVTA from VTrans including District, and no concerns about alignment were expressed. Currently, we have final plans are ready to proceed with final ROW, permitting and construction.

In any case, an alignment on the south side of the road would be undesirable for numerous reasons including:

- multiple crossings of Route 2 and of town roads and commercial drives would be less safe and less generally useable as a trail as compared to the continuous off road trail between the road and the river with only one crossing of Rte 2
- difficult terrain which is steep, wet and bisected by significant drainages, the alignment on the south side of the road has numerous bottlenecks where it is not clear if trail construction is possible at all
- the purpose of the trail is to provide access to natural areas such as the public land along the Winooski River whereas the area south of the road is private property and an industrial zone with a trash transfer station and various commercial developments.

Water Quality Permitting

Construction General Permit and Stormwater Operation Permit applications are required to include the larger Cross Vermont Trail project, beyond the federal funded projects. To accomplish this, all water quality permitting is being done with local funding with consultant Grenier Engineering. Stantec's plans for the federally funded projects include sufficient minimal detail to direct EPSC measures that will be required of contractors on federal projects.

Yes, we know that the highway is plowed in the winter.
And that the plowed snow will accumulate on the trail, where the trail is adjacent to the highway. Cross Vermont Trail is not maintained for winter use. Trail users will be informed of this in trail guides and on trailhead information.

This is not the snowmobile trail.
A VAST trail crosses Rte 2 and bridges the Winooski River in the vicinity of Mile Marker 0020|1207|0140. Cross Vermont Trail is unrelated to this snowmobile trail. The section of Cross Vt Trail in this project is strictly non-motorized. Cross Vt Trail cannot be coaligned with the VAST trail in this area because of terrain used by the VAST trail (steep) and because of conflicting land use (snowmobile trail crosses agricultural fields). In other locations, Cross Vt Trail and VAST trails are coaligned successfully. But not here.

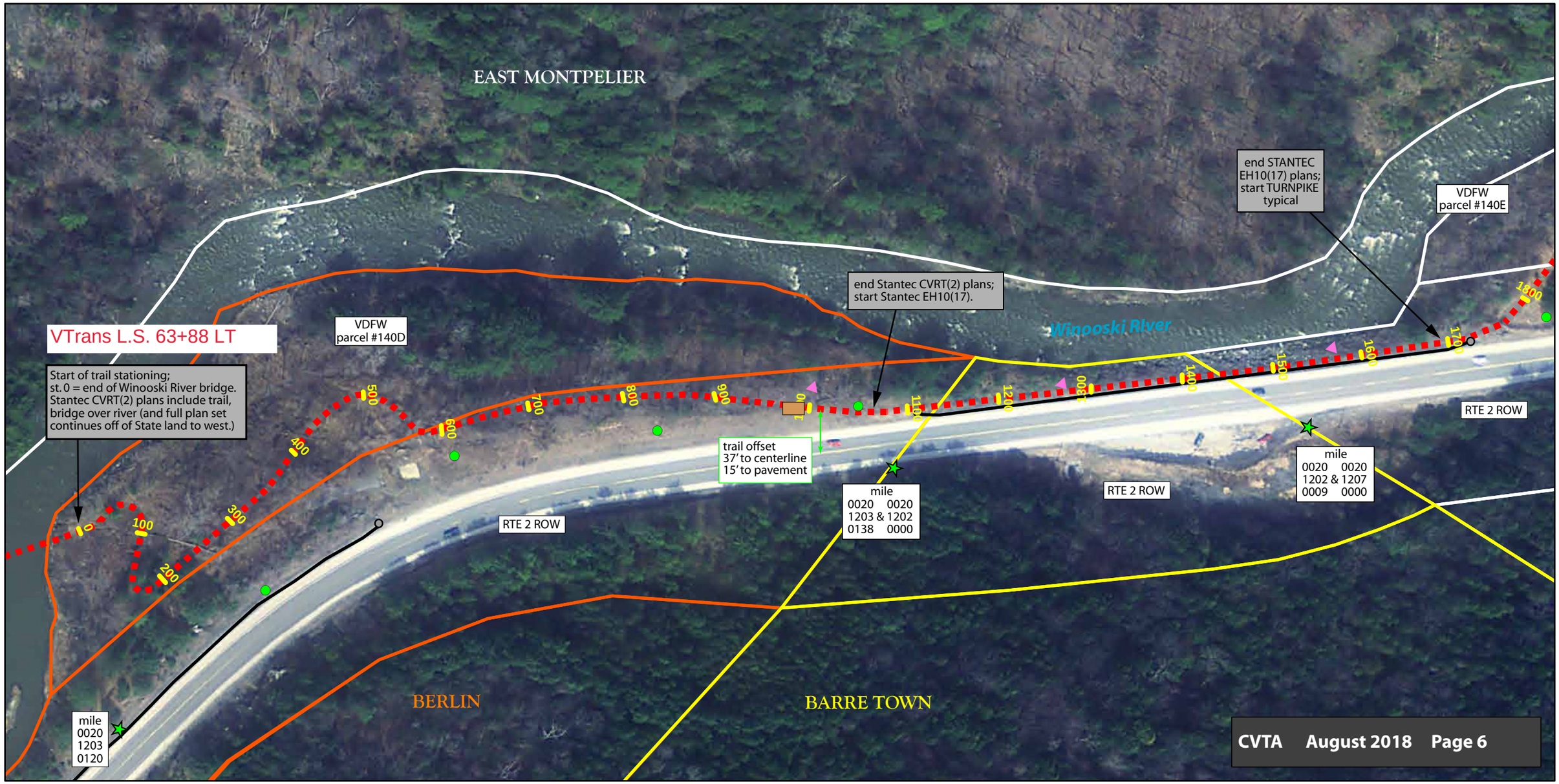
NOTES (4 of 4)

Tables provided as summary, for those who may find the summary format convenient, of information which is also shown graphically on project maps.

ROAD OFFSET		
where	trail lf st	location relative to MM 0020-1207-0000
start < 15' edge of pavement and not behind guardrail	1015	515 ft W
end < 15' edge of pavement and not behind guardrail	1110	420 ft W
	95	***the approach to the narrowest area between road and river (the Stantec drawn plans)***
start < 15' edge of pavement and not behind guardrail	8350	420 ft W
end < 15' edge of pavement and not behind guardrail	8365	167 ft E
	15	***the intersection with the road***
	110	**TOTAL < 15' edge of pavement and not behind guardrail**
start < 15' from edge of pavement but behind guardrail	1110	790 ft W
end < 15' from edge of pavement but behind guardrail	1700	1365 ft W
	590	
start < 15' from edge of pavement but behind guardrail	2430	
end < 15' edge of pavement but behind guardrail	3005	intersection of trail with road at 6647 ft E (and 745 ft W of MM 0020-1207-0140)
	575	
	1165	**TOTAL < 15' from edge of pavement but behind guardrail**
start of log, end of bridge	0	
end > 15' from edge of pavement	1015	
	1015	
start > 15' from edge of pavement	1700	
end > 15' from edge of pavement	2430	
	730	
start > 15' from edge of pavement	3005	
end > 15' from edge of pavement	8350	
	5345	
	7090	**TOTAL > 15' from edge of pavement**

RIPARIAN BUFFER		
where	trail lf st	notes
start of log, end of bridge	0	
end within 50' riparian buffer	88	
	88	***approach to Winooski River bridge***
start within 50' riparian buffer	1150	
end within 50' riparian buffer	1700	
	550	***boardwalk where highway fill abuts river bank***
start within 50' riparian buffer	2025	
end within 50' riparian buffer	2755	
	730	***on old Rte 2, to provide river access; and boardwalk where highway fill abuts river bank***
start within 50' riparian buffer	4225	
end within 50' riparian buffer	4425	
	200	***on old Rte 2, to provide river access***
	1568	**TOTAL length of trail within 50' Riparian Buffer.**

ADMINISTERING ENTITY		
where	trail lf st	
start of log, end of bridge	0	
end within VDFW parcel #140D	580	
	580	***TOTAL length of trail on VDFW parcel #140D***
start within VDFW parcel #140E	1850	
end within VDFW parcel #140E	2275	
	425	***TOTAL length of trail on VDFW parcel #140E***
start within VDFW parcel #140F	4260	
end within VDFW parcel #140F	4385	
	125	***TOTAL length of trail on VDFW parcel #140F***
start within VDFW parcel #140G	5045	
end within VDFW parcel #140G	6000	
	955	***TOTAL length of trail on VDFW parcel #140G***
	2085	**TOTAL all VDFW parcels**
		location relative to MM 0020-1207-0000
start within VTrans ROW	580	940 ft W
end within VTrans ROW	1850	280 ft E
	1270	
start within VTrans ROW	2275	680 ft E
end within VTrans ROW	4260	2625 ft E
	1985	
start within VTrans ROW	4385	2740 ft E
end within VTrans ROW	5045	3425 ft E
	660	
start within VTrans ROW	6000	4390 ft E
end of log at shoulder of Rte 2	8365	6647 ft E (and 745 ft W of MM 0020-1207-0140)
	2365	
	6280	**TOTAL length of trail within highway ROW**



CROSS VERMONT TRAIL Map 1 of 5

Trail alignment:

small wooden trail bridge

0 125 250 500 Feet

Prepared by Cross Vermont Trail Association (CVTA), 8/2018.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

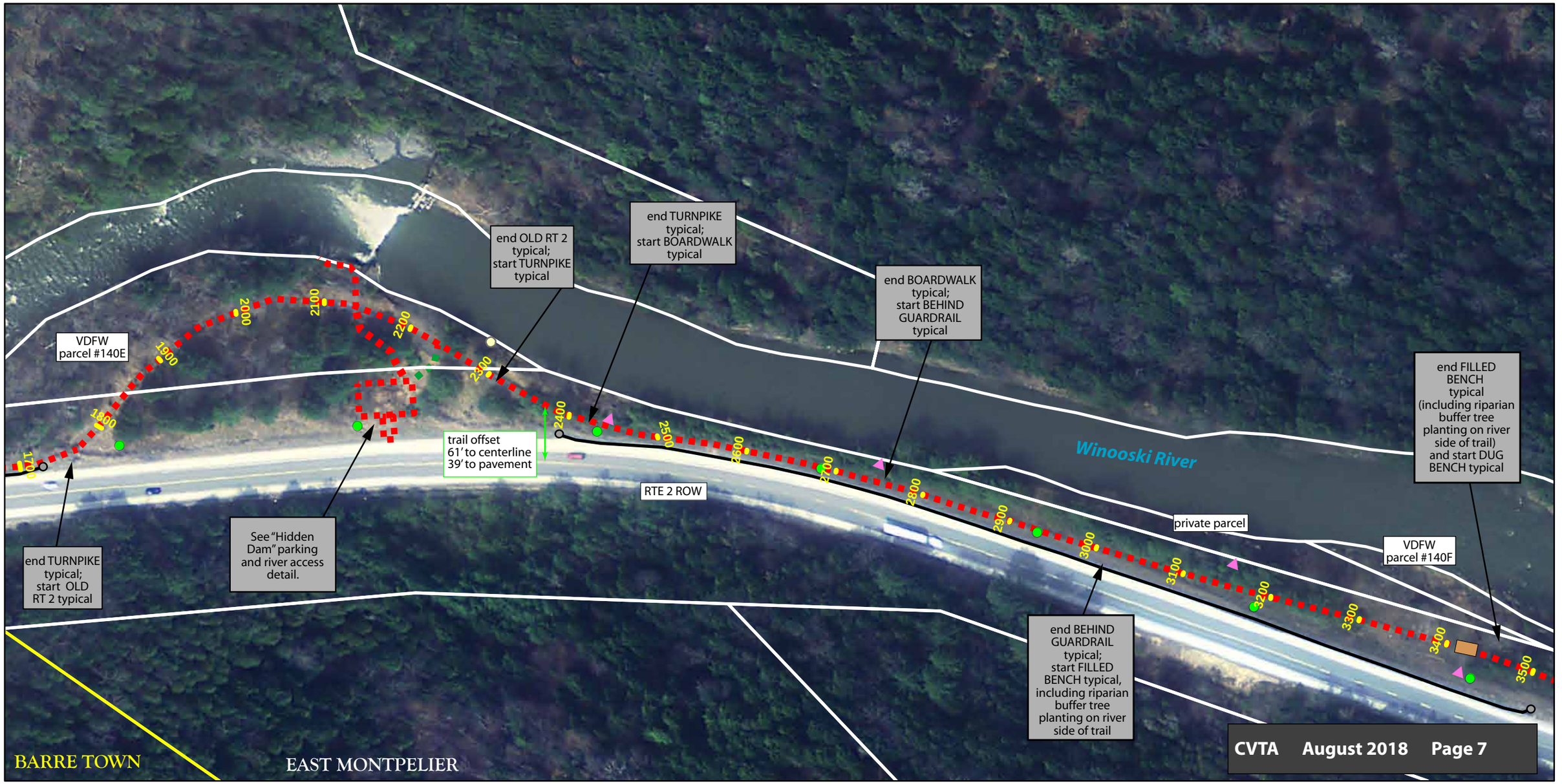
highway culvert outlet

highway drain inlet

utility pole

mile marker

highway guard rail



CROSS VERMONT TRAIL Map 2 of 5

Trail alignment and trailhead parking location:

small wooden trail bridge

N

0 125 250 500 Feet

Prepared by Cross Vermont Trail Association (CVTA), 8/2018.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

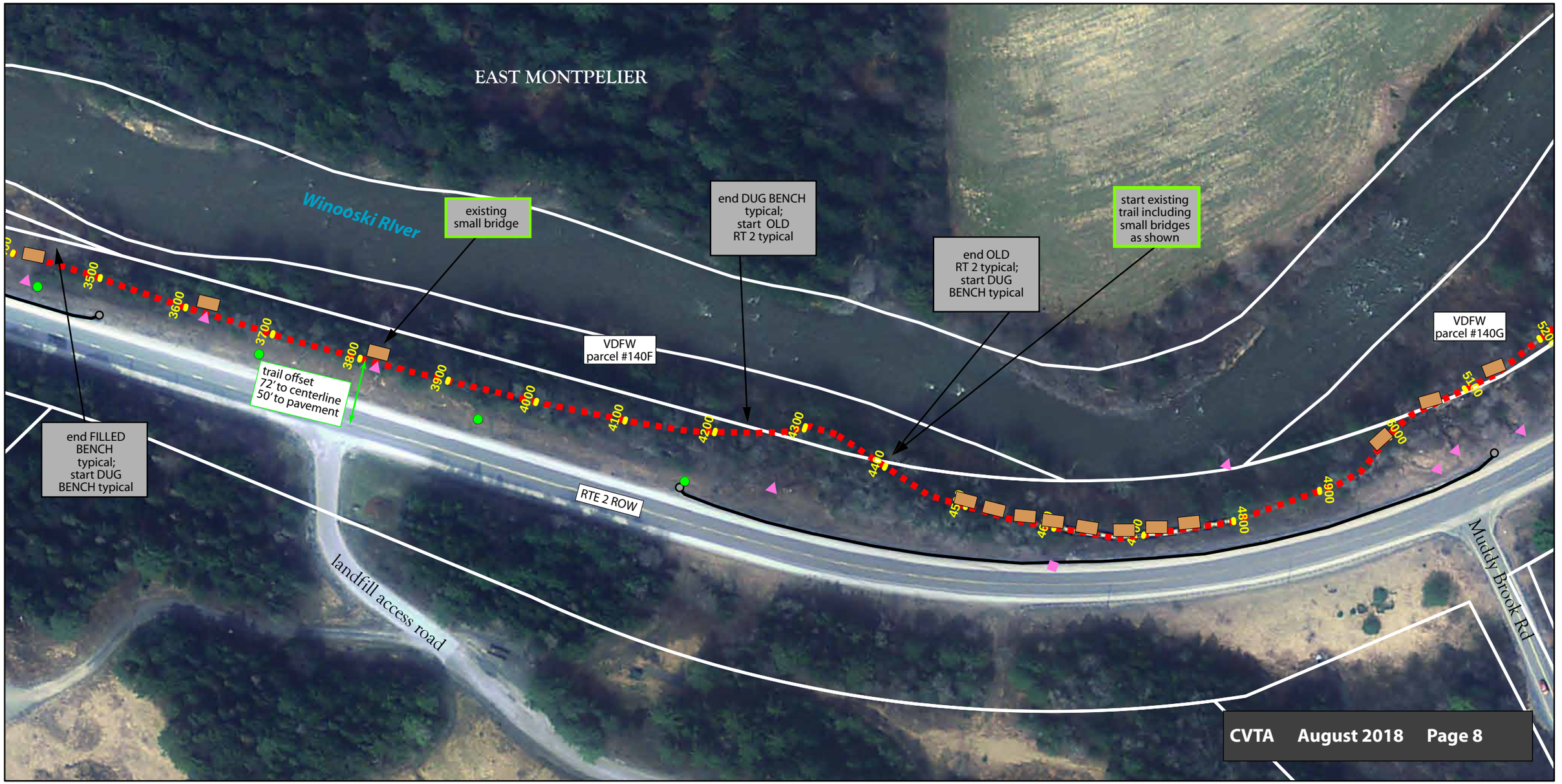
highway culvert outlet

highway drain inlet

utility pole

mile marker

highway guard rail



CROSS VERMONT TRAIL Map 3 of 5

Trail alignment:

small wooden trail bridge

N

0 125 250 500 Feet

Prepared by Cross Vermont Trail Association (CVTA), 8/2018.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

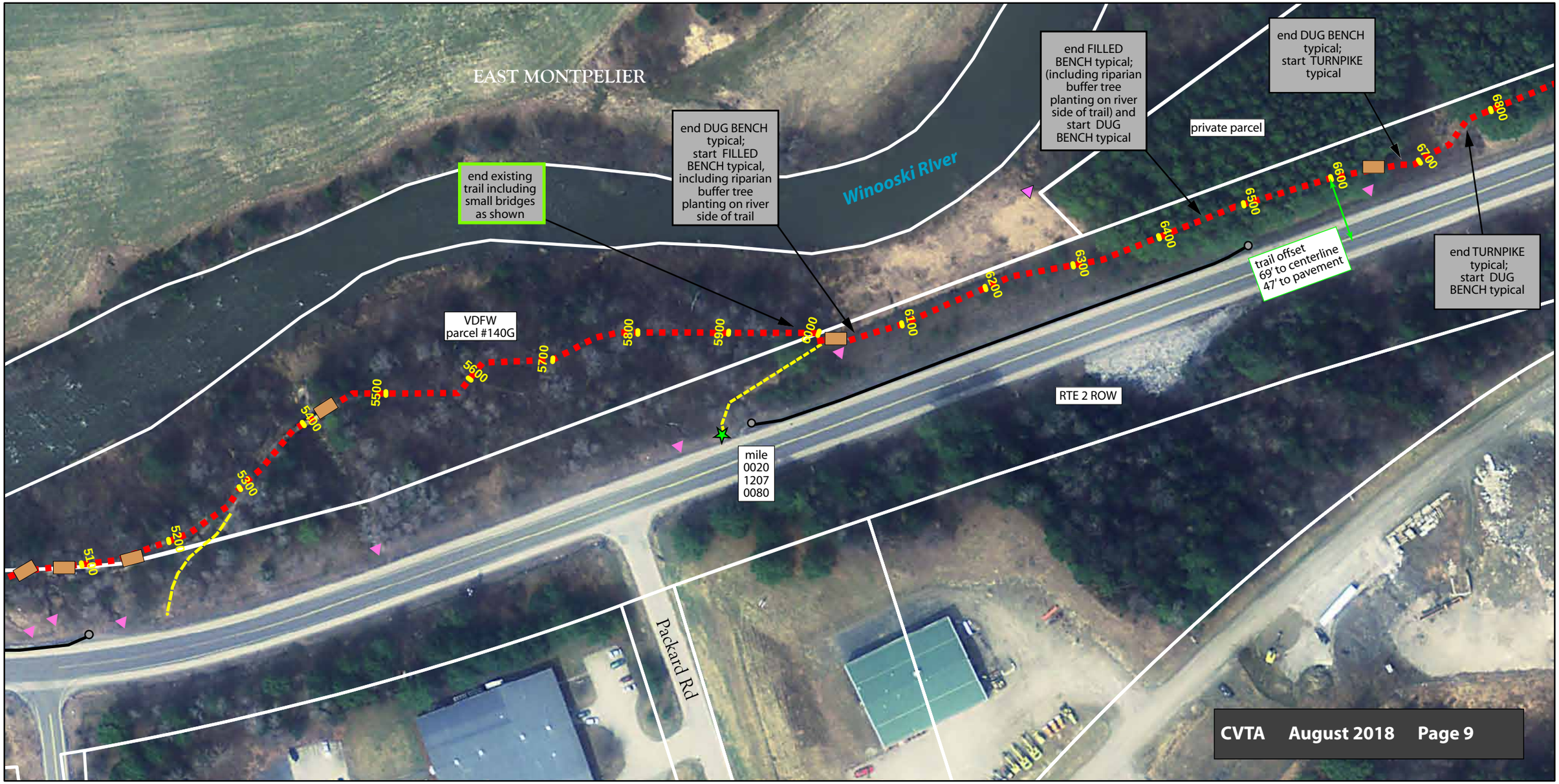
highway culvert outlet

highway drain inlet

utility pole

mile marker

highway guard rail



CROSS VERMONT TRAIL Map 4 of 5

Trail alignment:

(existing) construction access trails:

small wooden trail bridge

N

0 125 250 500 Feet

Prepared by Cross Vermont Trail Association (CVTA), 8/2018.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

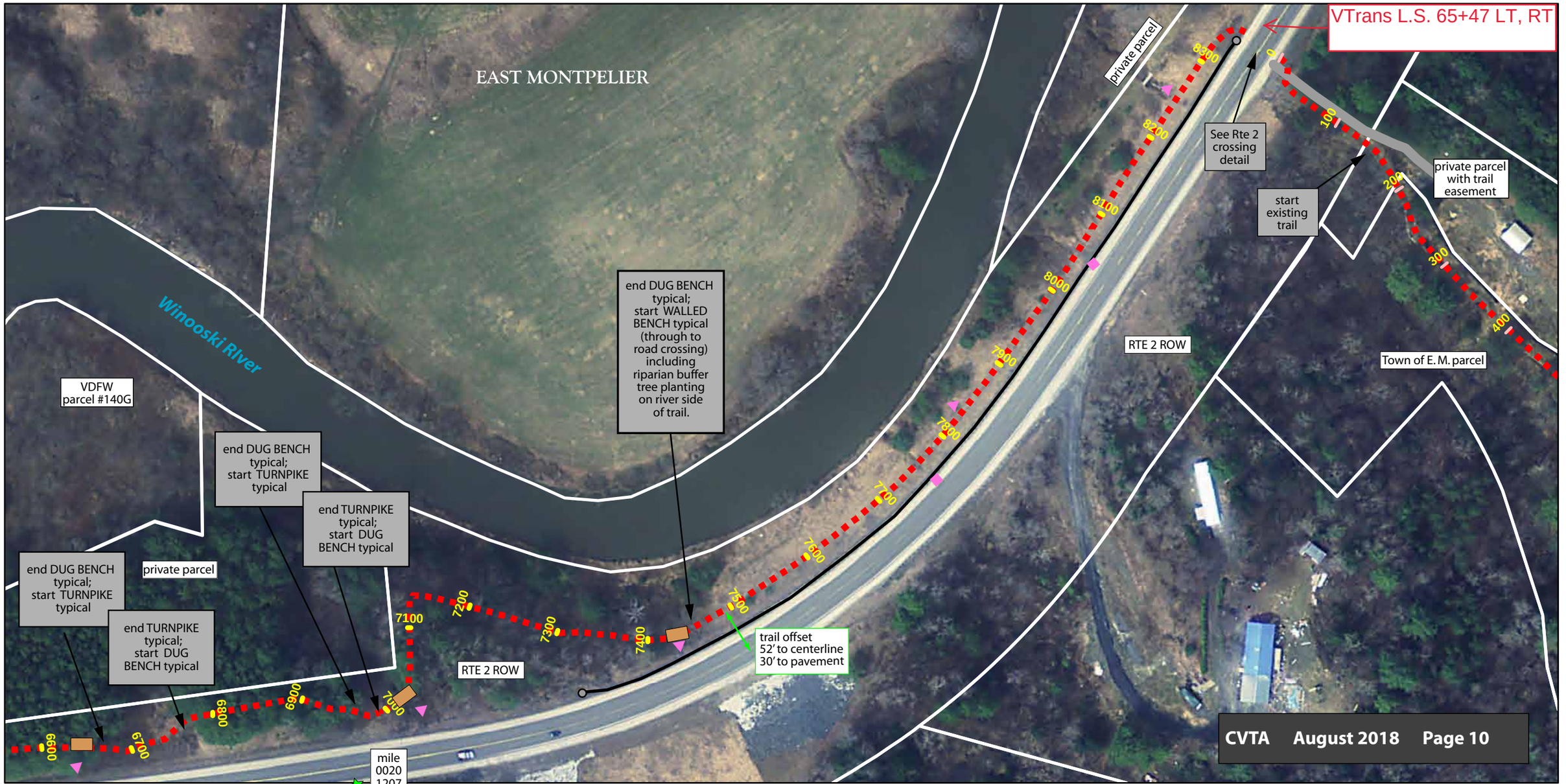
highway culvert outlet

highway drain inlet

utility pole

mile marker

highway guard rail



CROSS VERMONT TRAIL Map 5 of 5

Trail alignment:

small wooden trail bridge

0 125 250 500 Feet

Prepared by Cross Vermont Trail Association (CVTA) 8/2018.
Data Source VCGI, CVTA. Information depicted for planning puposes only.

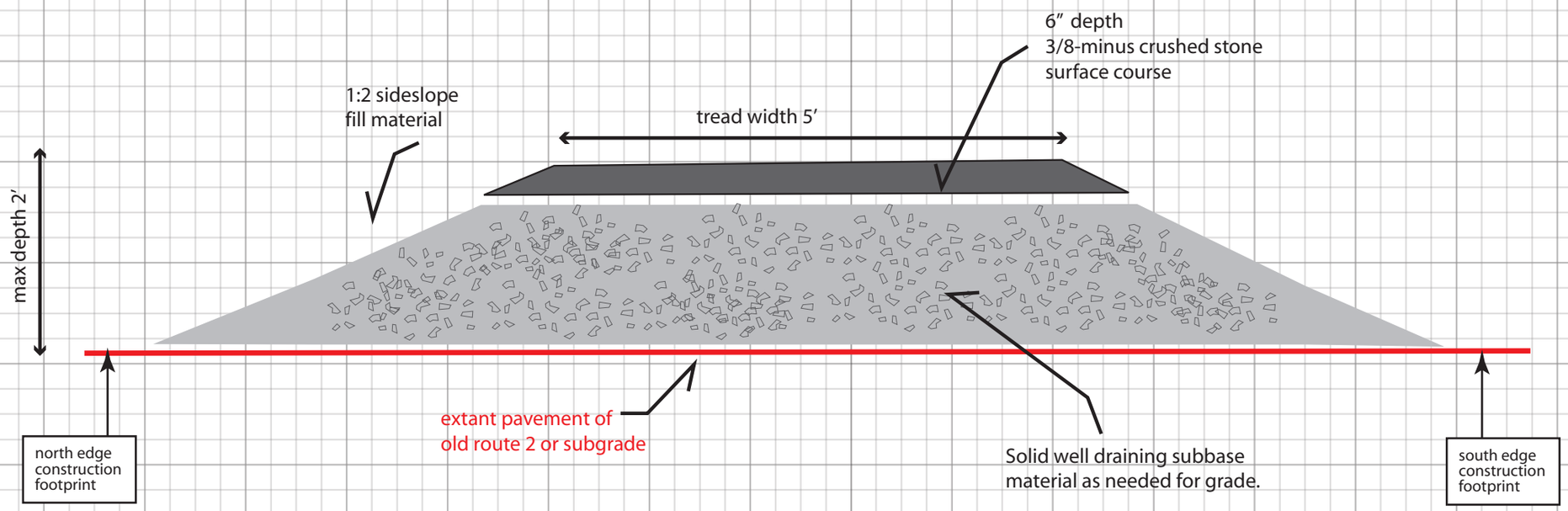
highway culvert outlet

highway drain inlet

utility pole mile marker

highway guard rail

TITLE: TURNPIKE



The purpose of the TURNPIKE is to transition from Stantec design to start of old rte pavement typical, and then to make the grade change from the old rte 2 pavement by the "hidden dam" to the boardwalk behind the guardrail along the modern rte 2. The total height of material ranges from zero (even with old pavement) to two feet. The total width of area of filled ranges from five feet to thirteen feet.

LOCATION:
* Trail linear feet station 1700 to 1785 on Map #1 and #2.
* Trail linear feet station 2275 to 2415 on Map #2.
* Trail linear feet station 6650 to 6760 on Map #4.
* Trail linear feet station 6950 to 7010 on Map #5.

← WINOOSKI RIVER > 50' trail station 1700-1785 and < 50' trail station 2275-2415 (measured from north edge of construction footprint.)

Shoulder US RT 2 > 15' from south edge of construction footprint. →

= one foot

TITLE: OLD RT 2

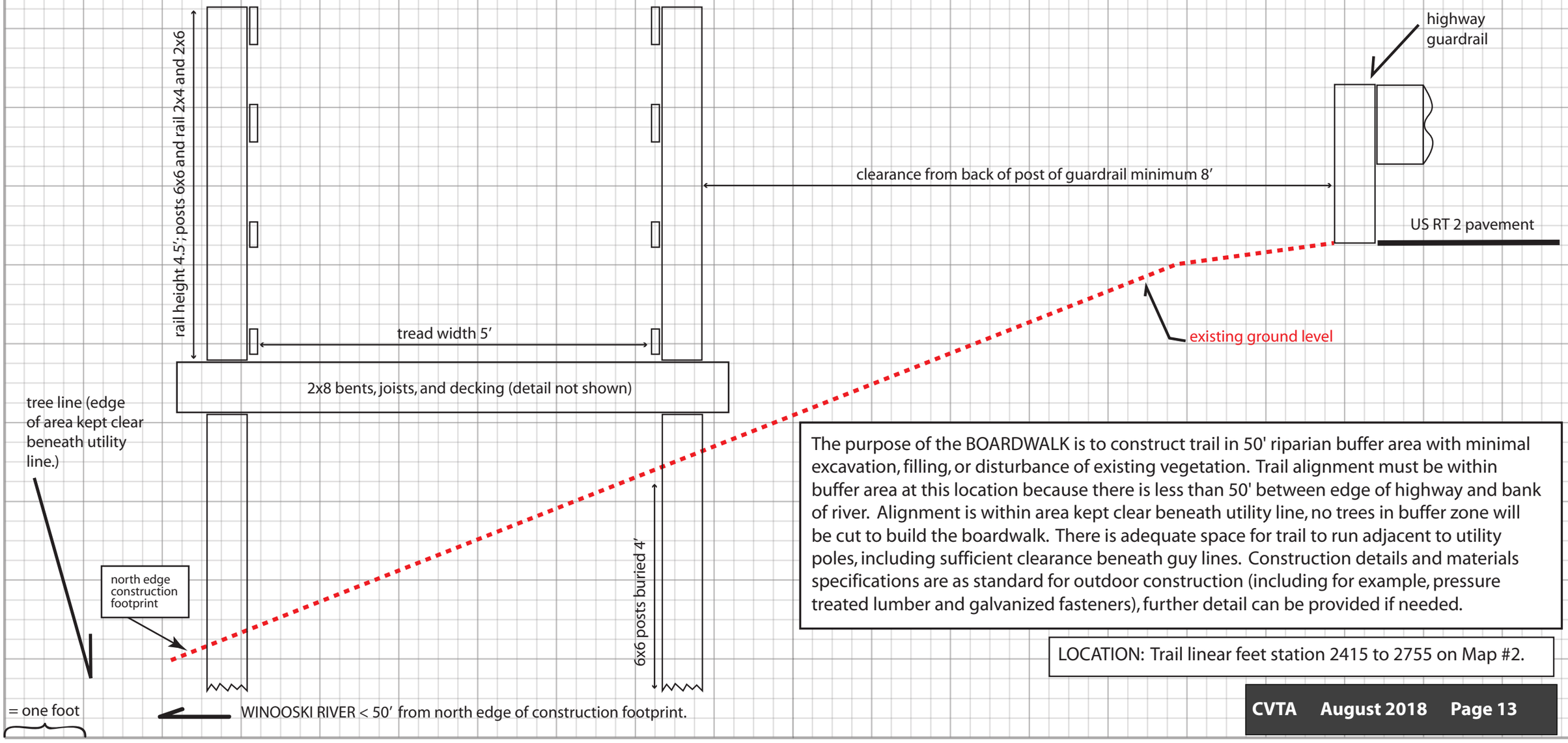
Old Rte 2 pavement by "hidden dam" on Map #2.

Old Rte 2 box culvert on Map #3.

The purpose of the OLD RT 2 sections is to make use of extant portions of the old highway that are available for use as a trail. Modern Route 2 was built in the early 1960s and some of the old road along the river banks was left in place. Two sections are used by the proposed trail route. Both are within the 50' riparian buffer - they allow the trail to provide periodic access to the edge of the water for people wishing to access the river for fishing or other purposes, with minimal new construction needed in the riparian buffer zone. The OLD RT 2 sections are on Map #2 where a significant length of trail can be placed on still clear pavement, and on Map #3 where an old highway concrete box culvert can be used by the trail to cross a drainage with no new construction needed.

LOCATION:
* Trail linear feet station 1785 to 2275 on Map #2.
* Trail linear feet station 4260 to 4385 on Map #3.

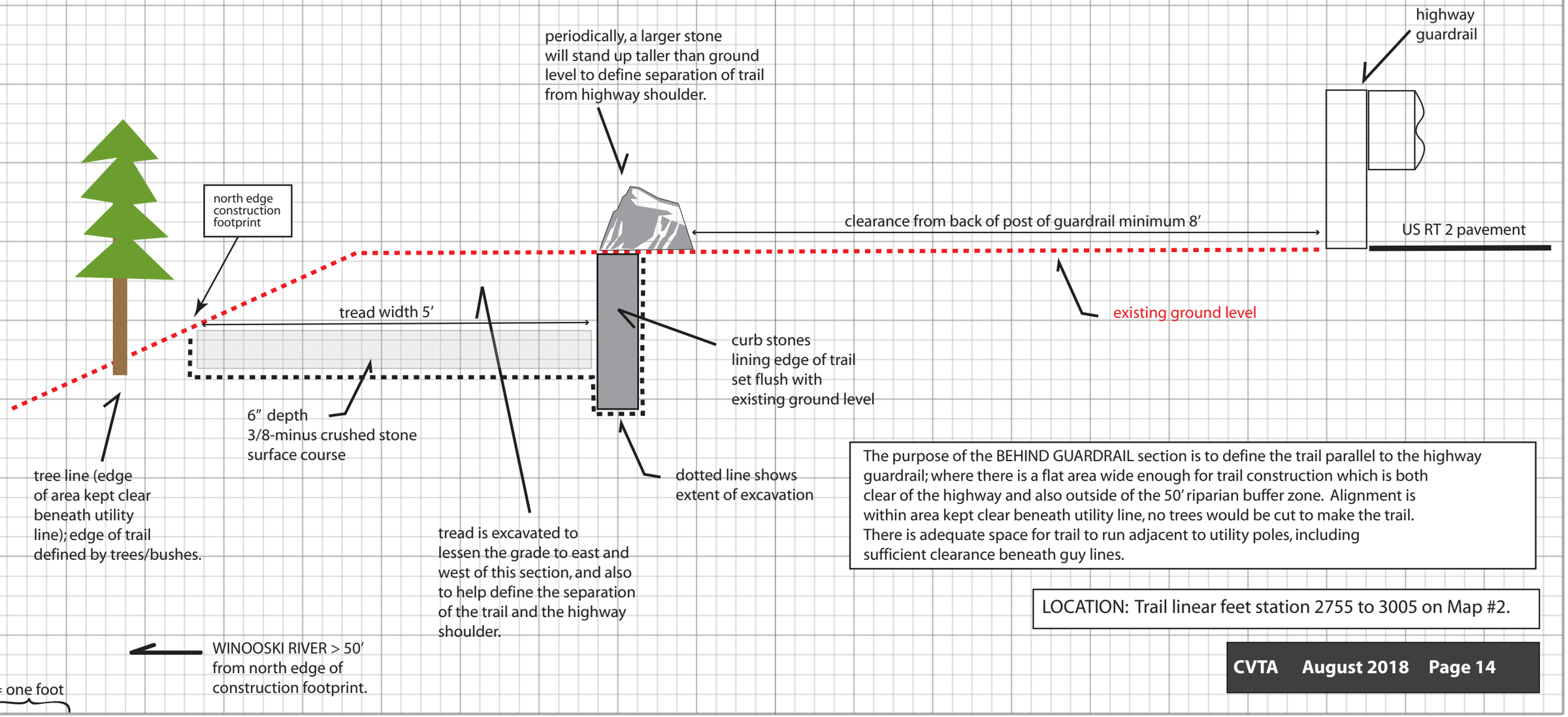
TITLE: BOARDWALK



The purpose of the BOARDWALK is to construct trail in 50' riparian buffer area with minimal excavation, filling, or disturbance of existing vegetation. Trail alignment must be within buffer area at this location because there is less than 50' between edge of highway and bank of river. Alignment is within area kept clear beneath utility line, no trees in buffer zone will be cut to build the boardwalk. There is adequate space for trail to run adjacent to utility poles, including sufficient clearance beneath guy lines. Construction details and materials specifications are as standard for outdoor construction (including for example, pressure treated lumber and galvanized fasteners), further detail can be provided if needed.

LOCATION: Trail linear feet station 2415 to 2755 on Map #2.

TITLE: BEHIND GUARDRAIL

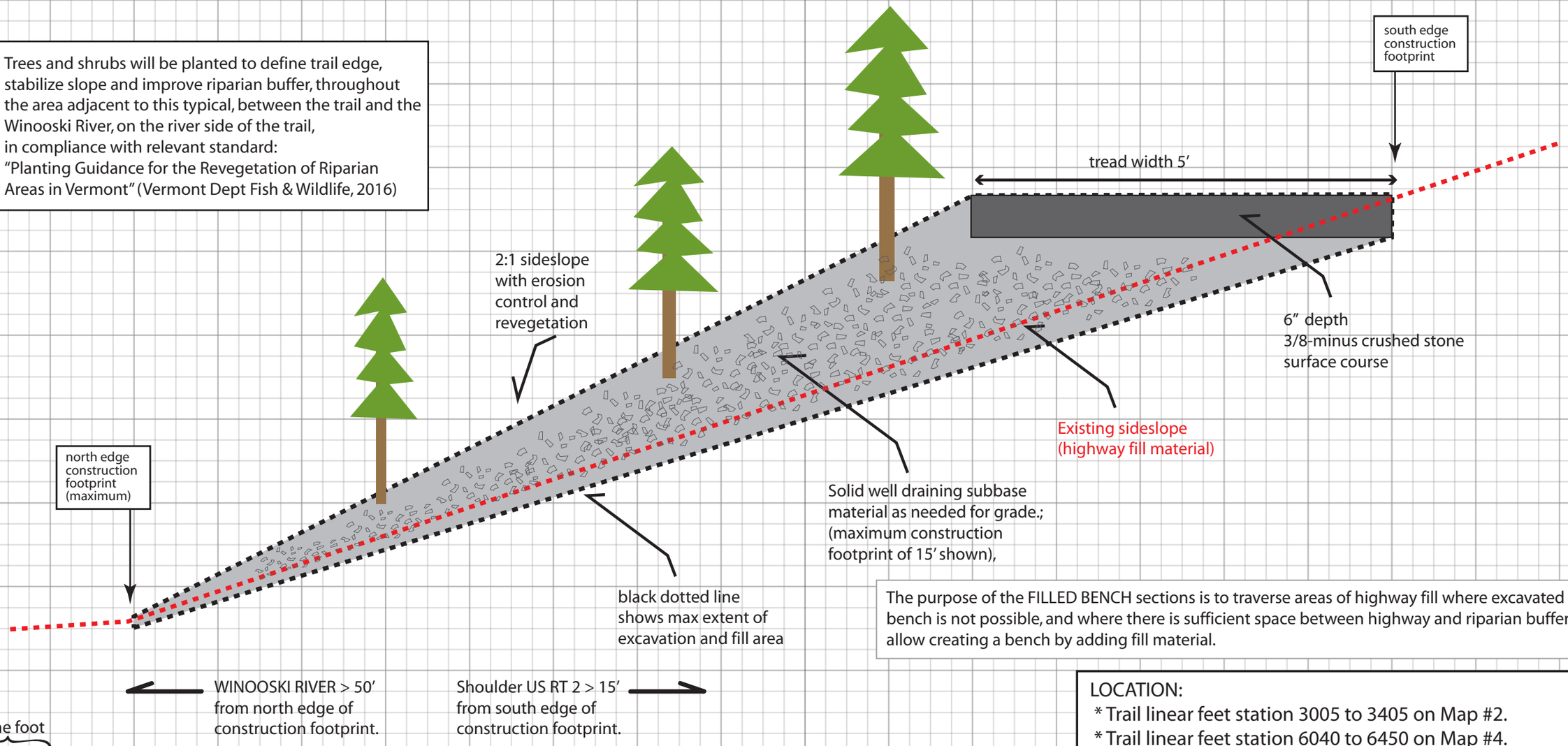


The purpose of the BEHIND GUARDRAIL section is to define the trail parallel to the highway guardrail; where there is a flat area wide enough for trail construction which is both clear of the highway and also outside of the 50′ riparian buffer zone. Alignment is within area kept clear beneath utility line, no trees would be cut to make the trail. There is adequate space for trail to run adjacent to utility poles, including sufficient clearance beneath guy lines.

LOCATION: Trail linear feet station 2755 to 3005 on Map #2.

TITLE: FILLED BENCH

Trees and shrubs will be planted to define trail edge, stabilize slope and improve riparian buffer, throughout the area adjacent to this typical, between the trail and the Winooski River, on the river side of the trail, in compliance with relevant standard: "Planting Guidance for the Revegetation of Riparian Areas in Vermont" (Vermont Dept Fish & Wildlife, 2016)



The purpose of the FILLED BENCH sections is to traverse areas of highway fill where excavated bench is not possible, and where there is sufficient space between highway and riparian buffer to allow creating a bench by adding fill material.

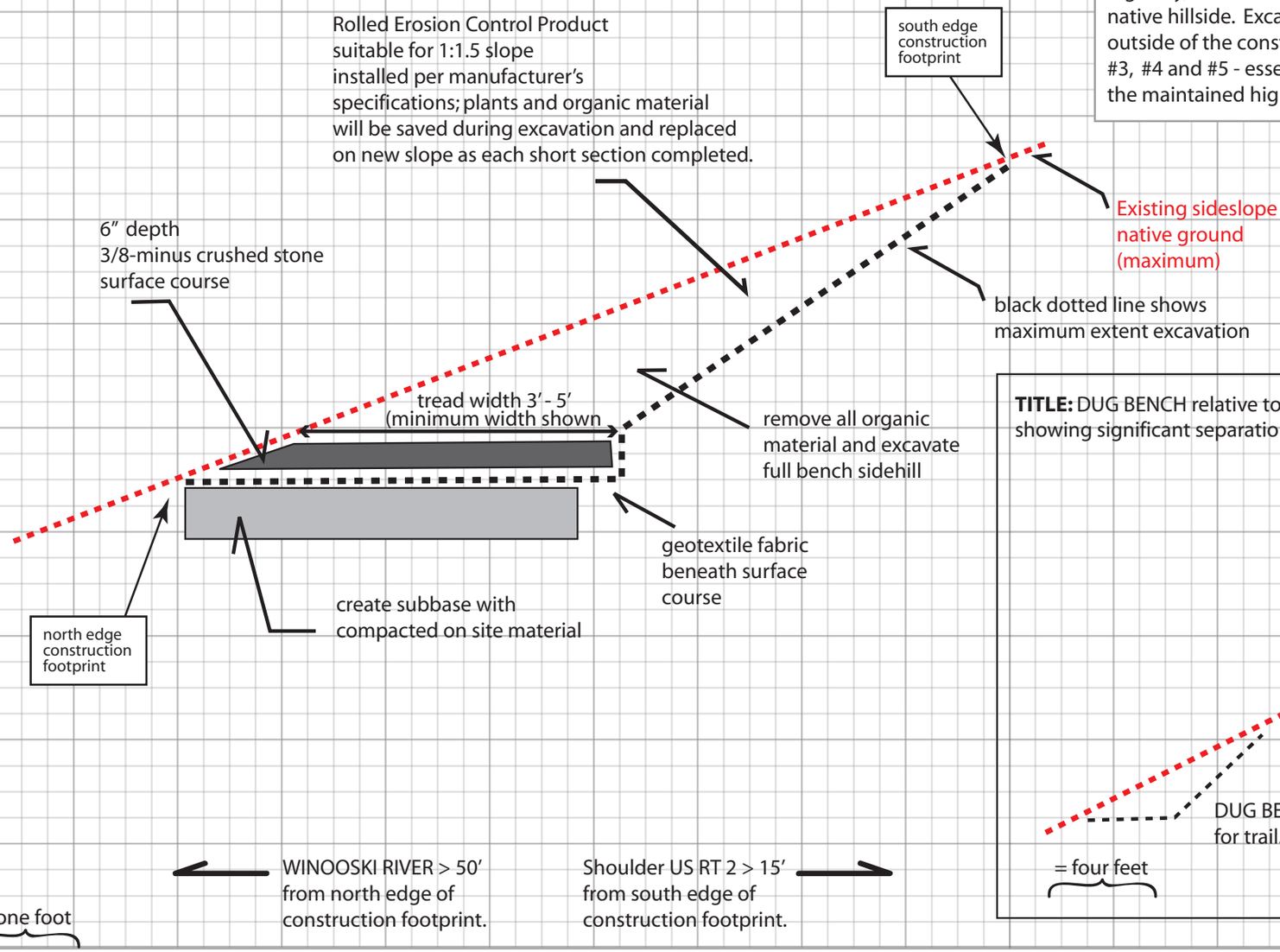
LOCATION:
* Trail linear feet station 3005 to 3405 on Map #2.
* Trail linear feet station 6040 to 6450 on Map #4.

Notes:
* The Filled Bench locations are within the highway ROW, as shown on Maps #2 and #4.
* If there is a washout, the slope will be built back by VTrans to previous conditions prior to trail construction as required for the road; any maintenance required for the trail is clearly the responsibility of Cross Vermont Trail Association.
* Fill required for trail is relatively insignificant amount and in any case shall not have negative impact on the stability of the existing highway embankment.

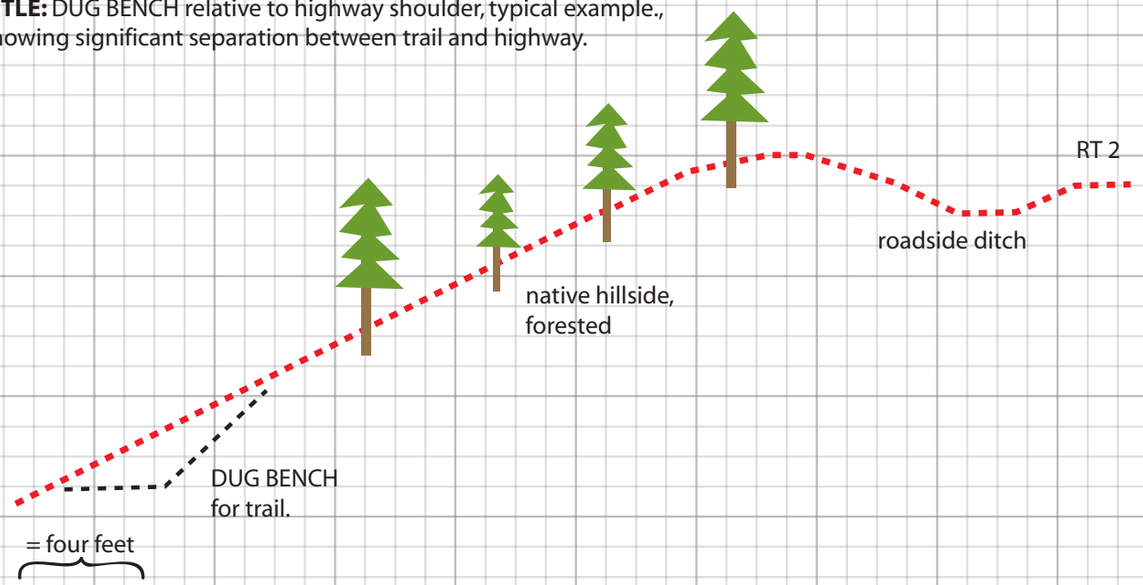
TITLE: DUG BENCH

The purpose of the DUG BENCH sections is to traverse areas where trail route is well removed from highway, and where there is sufficient space clear of riparian buffer, to allow excavating the trail in native hillside. Excavation will be done primarily with hand tools, with minimal need to impact site outside of the construction footprint shown. There are numerous sections of DUG BENCH on Maps #3, #4 and #5 - essentially everywhere that the trail route is shown within the treeline, outside of the maintained highway corridor (though much of this is within the highway's legal ROW).

LOCATION:
* Trail linear feet station 3405 to 4260 on Map #3.
* Trail linear feet station 4385 to 6040 on Map #3 and #4.
* Trail linear feet station 6450 to 6650 on Map #4.
* Trail linear feet station 6760 - 6950 and 7010 -7430 on Map #5.

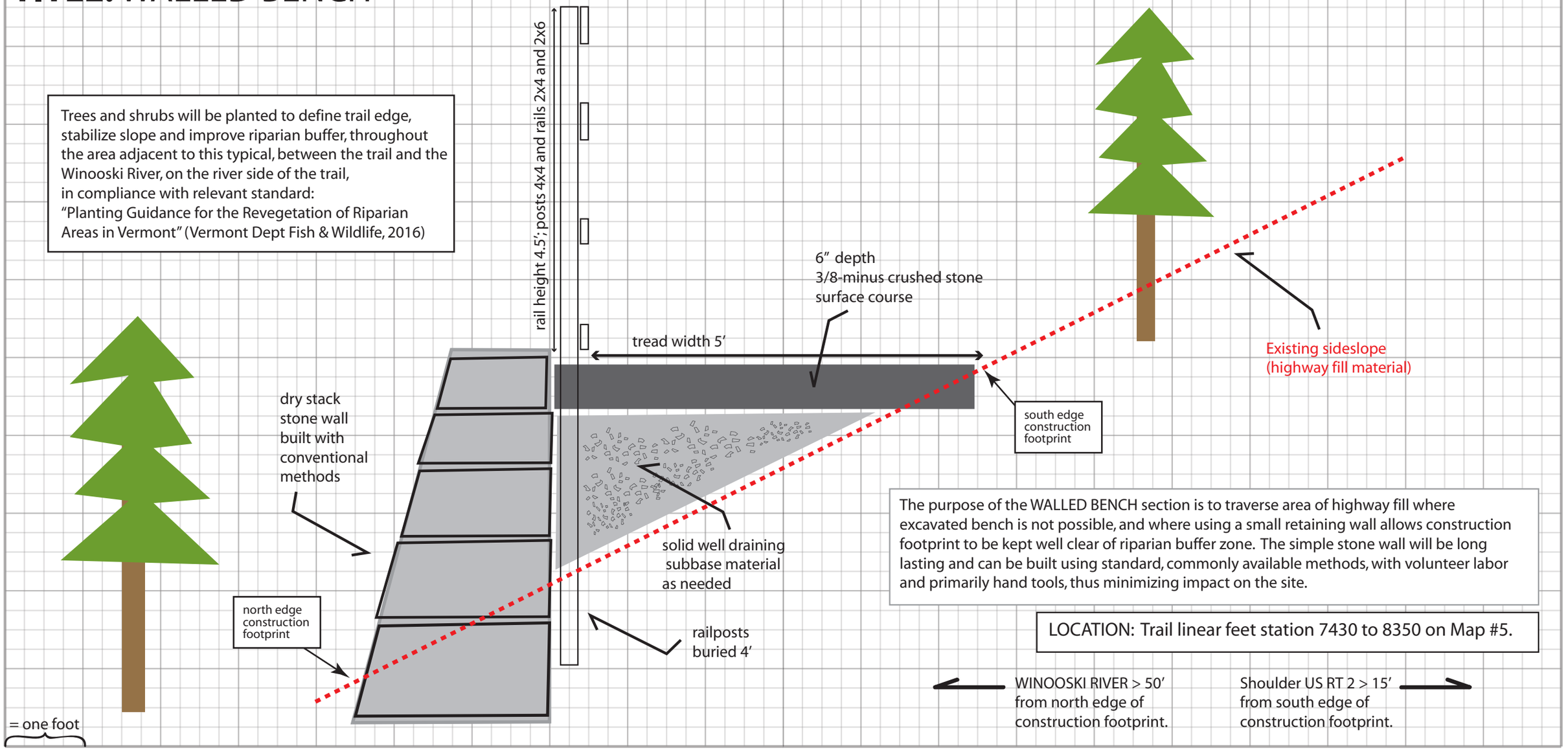


TITLE: DUG BENCH relative to highway shoulder, typical example., showing significant separation between trail and highway.



TITLE: WALLED BENCH

Trees and shrubs will be planted to define trail edge, stabilize slope and improve riparian buffer, throughout the area adjacent to this typical, between the trail and the Winooski River, on the river side of the trail, in compliance with relevant standard: "Planting Guidance for the Revegetation of Riparian Areas in Vermont" (Vermont Dept Fish & Wildlife, 2016)



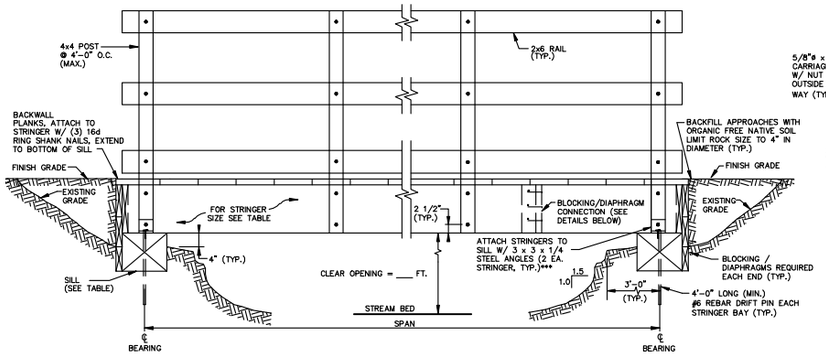
The purpose of the WALLED BENCH section is to traverse area of highway fill where excavated bench is not possible, and where using a small retaining wall allows construction footprint to be kept well clear of riparian buffer zone. The simple stone wall will be long lasting and can be built using standard, commonly available methods, with volunteer labor and primarily hand tools, thus minimizing impact on the site.

LOCATION: Trail linear feet station 7430 to 8350 on Map #5.

← WINOOSKI RIVER > 50' from north edge of construction footprint.

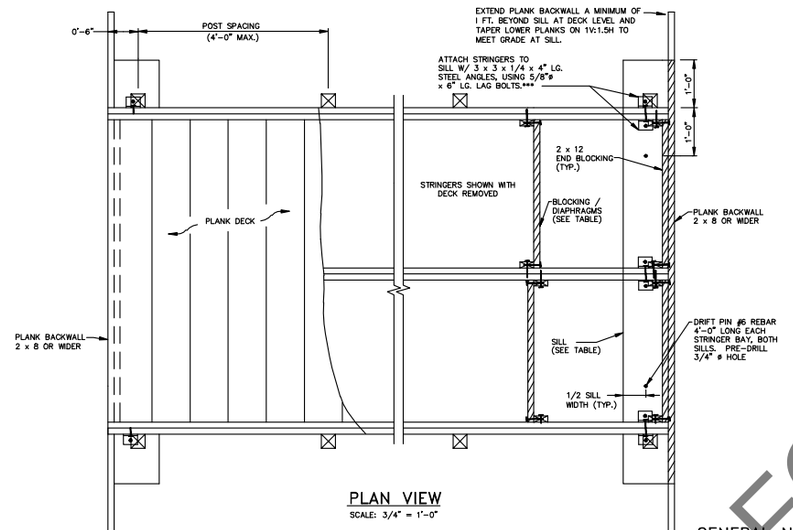
Shoulder US RT 2 > 15' from south edge of construction footprint. →

TITLE: SMALL WOODEN TRAIL BRIDGES



ELEVATION OF STRUCTURE

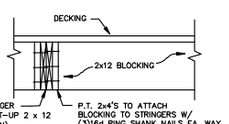
SCALE: 3/4" = 1'-0"



PLAN VIEW

SCALE: 3/4" = 1'-0"

*** FOR STEEL STRINGERS DRILL BOTTOM FLANGE FOR 5/8"ø LAG BOLTING TO SILLS IN LIEU OF USING 3X3X1/4 ANGLES. SLOT HOLES IN FLANGES TO ALLOW FOR TEMPERATURE MOVEMENT.

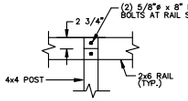


After gluing nail stringers together as follows:

[(2) 2X12's] TYP. EA. ADDITIONAL 2x12

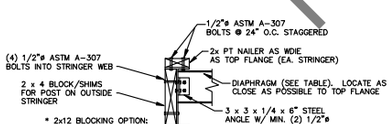
2 X 12/PSL STRINGER / BLOCKING DETAILS

NTS



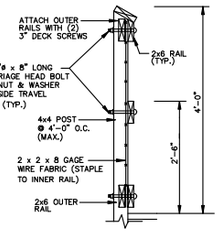
RAIL SPLICE DETAIL

FOR BRIDGE SPANS GREATER THAN 18 FEET ONLY

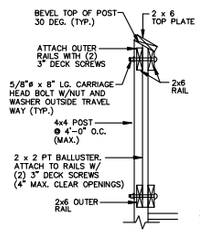


STEEL STRINGER/NAILER & DIAPHRAGM DETAIL

NTS



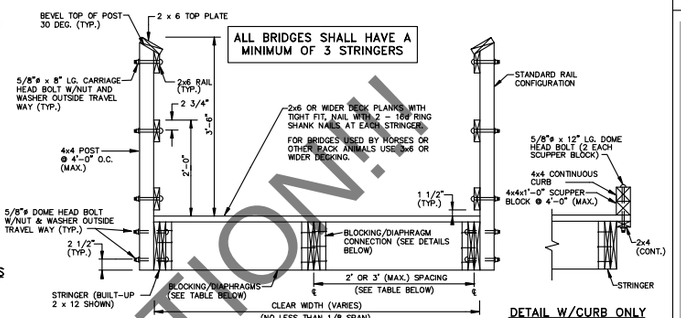
DETAIL W/RAIL AND WIRE FABRIC



DETAIL W/RAIL AND BALLUSTERS

RAILING NOTE:

Rail details shown above shall be used as determined by the Forest Engineer. Railing shall be required on all structures unless waived by the Forest Engineer. All structures without rail shall have 4x4 continuous curbing.



BRIDGE CROSS-SECTION

SCALE: 3/4" = 1'-0"

DETAIL W/CURB ONLY

STRINGER OPTION TABLE

SPAN (FT.)	DIM. LUMBER ** 2 FT. SPACING	WEIGHT (LBS.)	DIM. LUMBER ** 3 FT. SPACING	WEIGHT (LBS.)	BLK. PTS.	BLK. REQ'D	SILL REQ'D	PSL (PARALLAM) 2 FT. SPACING	WEIGHT (LBS.)	PSL (PARALLAM) 3 FT. SPACING	WEIGHT (LBS.)	BLK. PTS.	BLK. REQ'D	SILL REQ'D	STEEL BEAMS 2 FT. SPACING	WGT. (LBS.)	STEEL BEAMS 3 FT. SPACING	WGT. (LBS.)	DIA. PTS.	DIA. REQ'D	SILL REQ'D
8 or less	(1) 2 x 12 int. (1) 2 x 12 ext.	38 38	(2) 2 x 12 int. (1) 2 x 12 ext.	75 38	1/2	2 x 12	8 x 8														
10	(1) 2 x 12 int. (1) 2 x 12 ext.	47 47	(2) 2 x 12 int. (1) 2 x 12 ext.	94 47	1/2	2 x 12	8 x 8														
12	(2) 2 x 12 int. (1) 2 x 12 ext.	113 56	(2) 2 x 12 int. (2) 2 x 12 ext.	169 113	1/2	2 x 12	8 x 8														
14	(2) 2 x 12 int. (2) 2 x 12 ext.	131 131	(3) 2 x 12 int. (2) 2 x 12 ext.	197 131	1/2	2 x 12	8 x 8														
16	(3) 2 x 12 int. (2) 2 x 12 ext.	225 150	(3) 2 x 12 int. (2) 2 x 12 ext.	225 150	1/2	2 x 12	8 x 8														
18	(3) 2 x 12 int. (2) 2 x 12 ext.	253 169	(4) 2 x 12 int. (3) 2 x 12 ext.	338 253	1/3	2 x 12	8 x 8	3-1/2 x 12 int. 3-1/2 x 12 ext.	272 272	3-1/2 x 14 int. 3-1/2 x 14 ext.	320 320	1/3	2 x 12	8 x 8	W 10 x 12	216	W 12 x 14	252	1/2	C6x10.5	8 x 8
20	(4) 2 x 12 int. (2) 2 x 12 ext.	375 188	(5) 2 x 12 int. (3) 2 x 12 ext.	469 281	1/3	2 x 12	8 x 8	3-1/2 x 14 int. 3-1/2 x 14 ext.	356 356	3-1/2 x 14 int. 3-1/2 x 14 ext.	356 356	1/3	2 x 12	8 x 8	W 10 x 12	240	W 12 x 14	280	1/2	C6x10.5	8 x 8
22								3-1/2 x 14 int. 3-1/2 x 14 ext.	392 392	3-1/2 x 16 int. 3-1/2 x 16 ext.	447 447	1/3	2 x 12	8 x 8	W 12 x 14	308	W 12 x 22	308	1/2	C6x10.5	8 x 8
24								3-1/2 x 16 int. 3-1/2 x 16 ext.	487 487	3-1/2 x 18 int. 3-1/2 x 18 ext.	547 547	1/3	2 x 12	10 x 10	W 12 x 14	336	W 12 x 22	528	1/2	C6x12.5	10 x 10
26								3-1/2 x 16 int. 3-1/2 x 16 ext.	528 528	5-1/4 x 16 int. 3-1/2 x 16 ext.	793 528	1/4	2 x 12	10 x 10	W 12 x 22	572	W 14 x 26	676	1/3	C8x11.5	10 x 10
28								5-1/4 x 16 int. 3-1/2 x 16 ext.	854 568	5-1/4 x 18 int. 3-1/2 x 18 ext.	960 638	1/4	2 x 12	10 x 10	W 12 x 22	616	W 14 x 26	728	1/3	C8x11.5	10 x 10
30								5-1/4 x 16 int. 3-1/2 x 16 ext.	915 609	7 x 18 int. 3-1/2 x 18 ext.	1332 684	1/4	2 x 12	10 x 10	W 12 x 22	660	W 14 x 26	780	1/3	C8x11.5	10 x 10
32								5-1/4 x 18 int. 3-1/2 x 18 ext.	1098 730			1/4	2 x 12	10 x 10	W 14 x 26	832	W 16 x 31	992	1/3	C8x11.5	10 x 10
34								7 x 18 int. 3-1/2 x 18 ext.	1510 775			1/4	2 x 12	10 x 10	W 14 x 26	884	W 16 x 31	1054	1/3	C8x11.5	10 x 10
36															W 16 x 31	1116	W 18 x 35	1260	1/3	C9x13.4	10 x 10
38															W 16 x 31	1178	W 18 x 35	1330	1/3	C9.13.4	10 x 10
40															W 16 x 31	1240	W 18 x 35	1400	1/4	C9x13.4	12 x 12*
42															W 18 x 35	1470	W 21 x 44	1848	1/4	C10x15.3	12 x 12*
44															W 18 x 35	1540	W 21 x 44	1936	1/4	C10x15.3	12 x 12*
46															W 21 x 44	2024	W 24 x 55	2530	1/4	C12x20.7	12 x 12*
48															W 21 x 44	2112	W 24 x 55	2640	1/4	C12x20.7	12 x 12*
50															W 21 x 44	2200	W 24 x 55	2750	1/4	C12x20.7	12 x 12*

* Sills and bridge foundation require design by Forest Engineer ** Use full length stringers, no splices allowed.

GENERAL NOTES AND SPECIFICATIONS

Loading & Design Criteria

1. USE OF THIS PLAN; DETERMINATION OF STRINGER LENGTH, TYPE, AND SPACING; RAILING REQUIREMENTS; AND STRUCTURE HEIGHT ABOVE STREAM BED SHALL BE AS APPROVED BY THE FOREST ENGINEER. ANY MODIFICATIONS TO THIS PLAN MUST BE APPROVED BY THE REGIONAL BRIDGE ENGINEER.
2. Ground Snow Load – Pg = 70 PSF (reduced in combination with Pedestrian Load).
3. Deck Live Load – Pedestrian (AASHTO) = 85 PSF.
4. Posts & Rails – Post & Rails designed for AASHTO Pedestrian Load only.
5. Stringer Live Load Deflection Limits – Steel = L/500, Lumber = L/360.
6. Bridge structure shall meet ADA accessibility requirements for trails. Structure shall have a level cross slope with no more than a 5% grade along its length, minimum 36" clear width, minimum 42" rail height, minimum 3" curb height (if no rail), and minimum 80" overhead clearance. Spacing between decking planks shall not exceed 1/2" after seasoning. The maximum vertical elevation change between deck planks is 1/2". There shall be a smooth transition from the approach onto the bridge.

Specifications

1. AASHTO Standard Specification for Highway Bridges, 1996, 16th Edition.
2. IBC 2000 International Building Code, 2000 Edition.
3. National Design Specification for Wood Construction, 1997 Edition, by National Forest Products Assoc.
4. American Wood Preservers Association Standards, Waterborne Preservative Standard P5 Type A, Standard C2, and Standard C14.

Lumber

1. Lumber for solid sawn stringers, deck, backwall, rail, ballusters, posts, curbs, and mud sill shall be No. 2 or better Southern Yellow Pine pressure treated per AWPA Standards.
2. Drawings are prepared using S4S finished dimensions unless noted otherwise. If rough sawn lumber is used adjust dimensions as required.
3. All lumber shall be sawn and fabricated prior to pressure treatment with respective preservative.
4. PSL (parallel strand lumber) shall be Wolmanized Parallam type, service level 2, and CCA pressure treated to 0.60 pcf or approved equal.

Steel

1. Steel for stringers, and other structural sections, shall conform to ASTM A572 Grade 50. Steel angles shall meet ASTM A36. Shop prime with two coats of zinc oxide primer, after fabrication.
2. Once steel is situated in field, apply zinc oxide primer to all areas where primer had been removed due to placement.

Hardware

1. All bolts, washers, nuts and miscellaneous metal hardware shall be ASTM A307 hot dipped galvanized.
2. Fasteners shall be hot dipped galvanized ring shank nails or wood screws. Drift pins for sill shall be deformed No. 6 reinforcing bars meeting ASTM A615.

Glue

1. Apply glue between each lamination using a waterproof exterior adhesive compatible with the preservative treatment such as PL-500 by Contech or approved equal. Apply 3/8" continuous bead @ 1 1/2" o.c.

Construction

1. Clear opening of bridge above the stream bed shall be determined by the Forest Engineer and approved by the governing Federal and State agencies as required.
2. Mud sills shall bear on native soil or ledge rock free from compressible organic material and capable of supporting the bridge under full load. Provide uniform bearing under entire length of sill. Other foundation conditions require approval by a Forest Engineer.
3. Stringers with camber shall be positioned so that camber is up and knots near the edge will be in the top half of the stringers.
4. Deck planks shall be laid heart side down.
5. Railing shall be required on all structures unless waived by Forest En

General Notes

The purpose of the SMALL WOODEN TRAIL BRIDGES is to clear span minor drainages downhill from highway culvert and ditch outflows. No trail construction will impede highway drainage. These short span bridges do not require engineering, and will be built with volunteer labor, using hand tools, based on US Forest Service basic bridge guidelines. Where needed, simple timber cribs will be built as abutments. The SMALL WOODEN TRAIL BRIDGES will be located as indicated on Maps #3, #4 and #5. All of the locations are offset greater than 15 feet from the edge of highway pavement.

No.	Revision/Issue	Date
4		
3		
2		
1		

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-9
EASTERN REGION

Project Name
STANDARD PEDISTRIAN AND CC SKI TRAIL BRIDGE

COR

Drawing Title
STRUCTURAL PLAN & DETAILS

Drawn: J. W. Kamb	Project: Standard
Checked: J. S. Groenier	Drawing No. S-1
CAD File No. RSSTDTRAILBRDG.dwg	
Date: April 17, 2006	
Scale: as noted	

TITLE: CLEARANCE FROM HIGHWAY CULVERTS

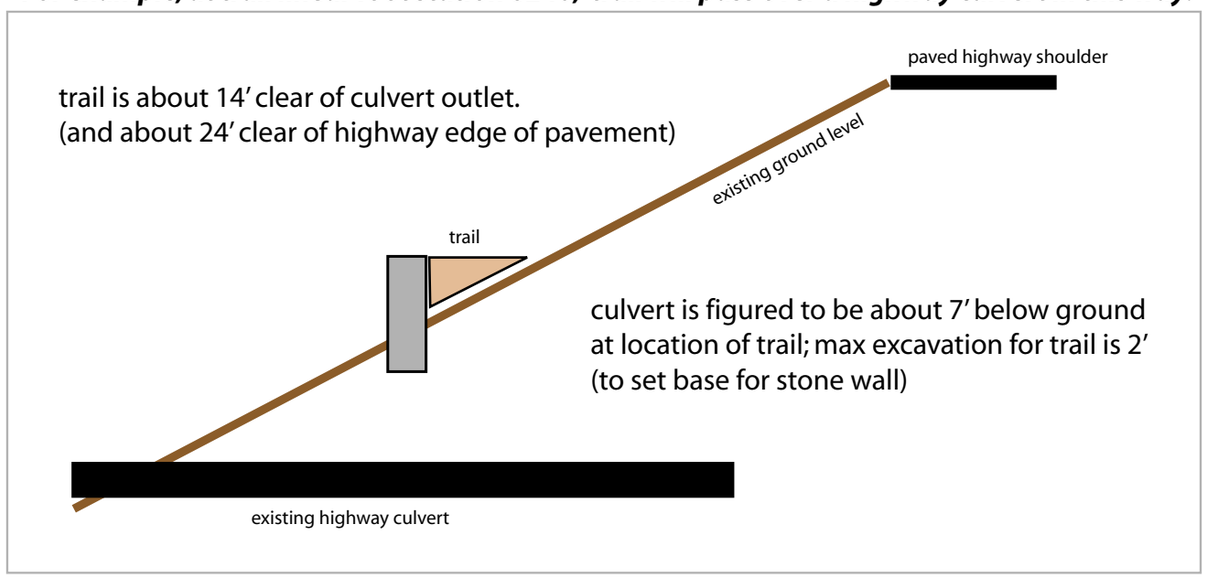
There is no impact on highway culverts by trail construction. There is no restriction caused by trail on future maintenance by VTrans of highway culverts.

CVTA understands that the trail will cross over numerous highway culverts and that in the future, maintenance of culverts – or any other work needed within the highway ROW – may impact the trail. As with all future highway maintenance, it is understood that future maintenance of highway culverts will have precedence over the trail, at the sole discretion of VTrans. Maintenance or reconstruction of highway culverts by VTrans will restore site to condition prior to trail construction, and any additional work needed to restore trail upon completion of culvert work by VTrans will be clearly the responsibility of Cross Vermont Trail Association and not the responsibility of VTrans.

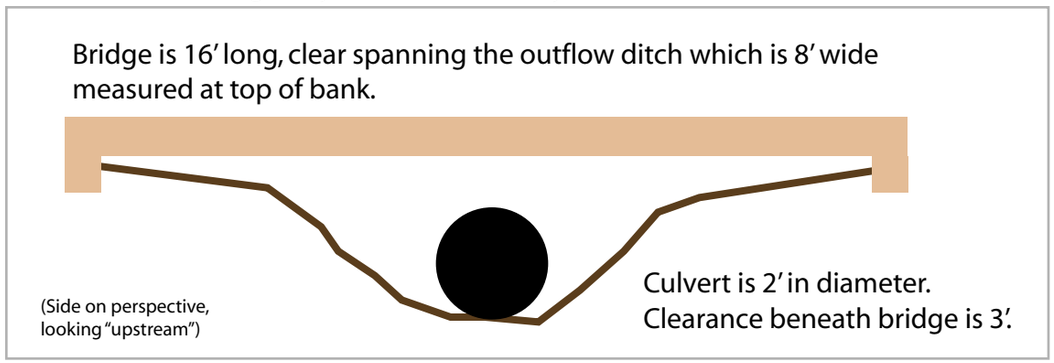
Current location of all culvert outlets in the project area have been verified with GPS and are shown on the attached maps as a GIS layer. Culvert outlets are shown for the purpose of representing that all trail work in the current proposal will be clear of and have no impact on the current culverts and their current function. In locations where the trail crosses over existing culverts, which are located deep within highway fill, trail construction will involve only insignificant excavation that clearly will have no impact on culverts. In locations where trail is located downhill of culvert outlets, the outflow of the culverts will be clear spanned by bridges of sufficient length such that the current function of the culvert outflow will continue without any impediment.

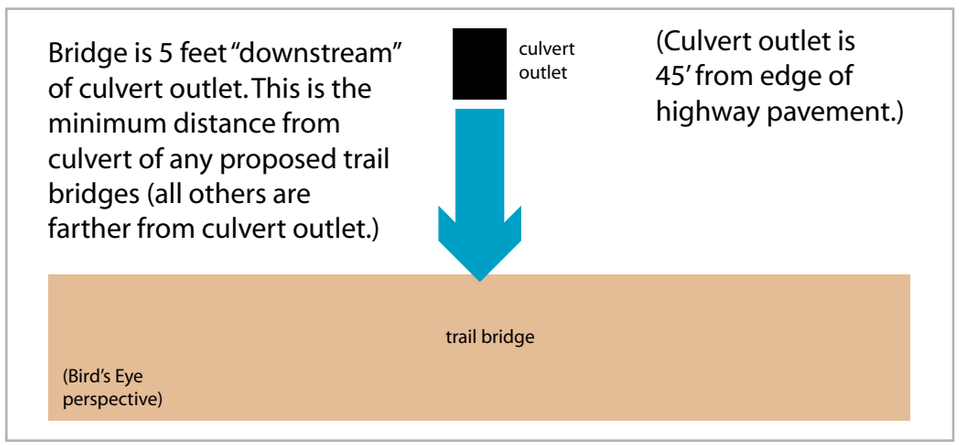
Clearance of trail work from highway culverts is illustrated in these sketch plan typical drawings.

For example, at trail linear foot station 8240, trail will pass over a highway culvert in this way:



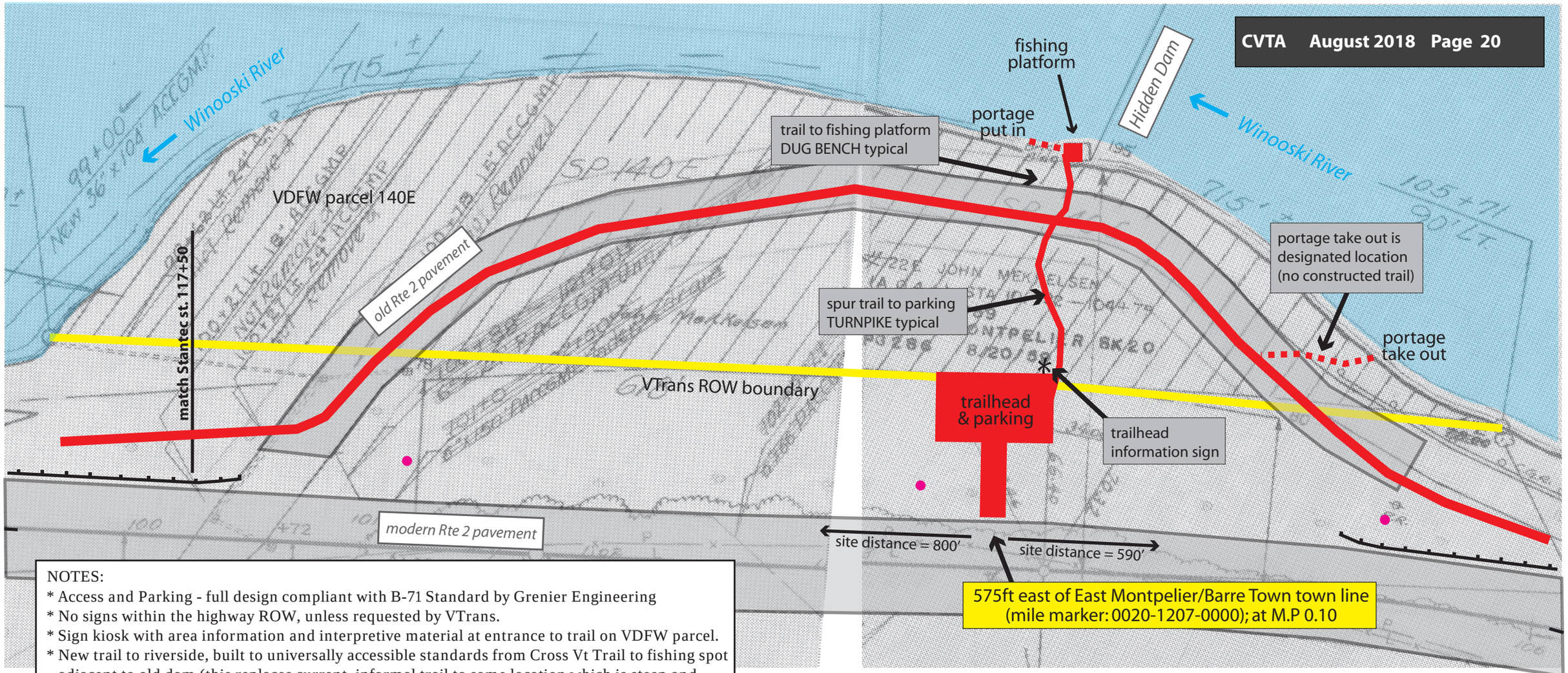
At trail linear foot station 3815 one of the existing trail bridges spans the outflow of a highway culvert in this way:





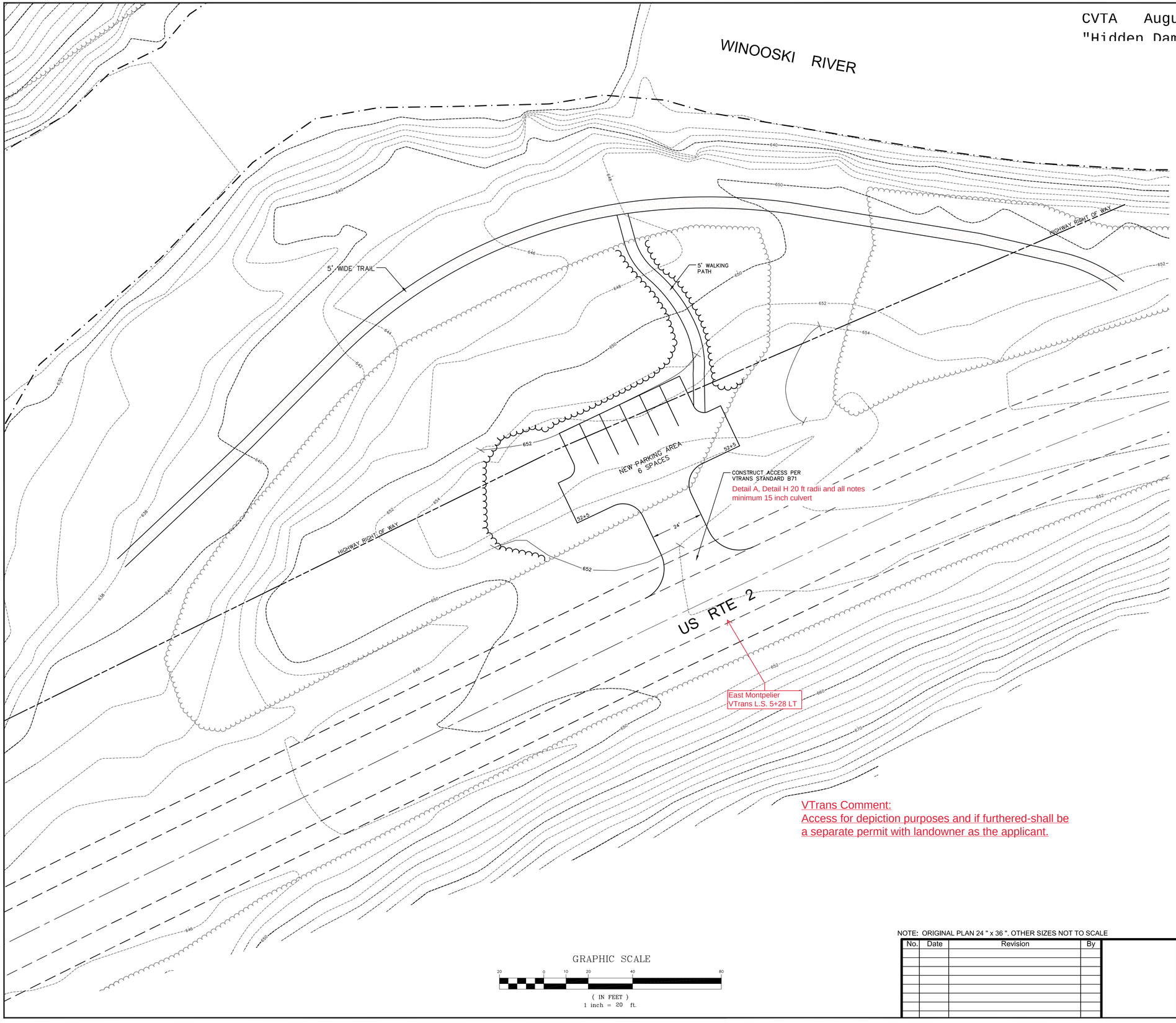
CROSS VERMONT TRAIL **Old Rte 2 project "Hidden Dam" parking and river access detail**

Summary - to use the mostly extant portion of old Route 2 as a connecting piece of the Cross Vermont Trail. And also to recognize the traditional use of this location to access the Winooski for recreation by building a portage trail and accessible fishing platform, and a trailhead and parking to provide safe, formal access from the road. Cross Vermont Trail project proposal by CVTA, August 2018. Underlying plan is "State of Vermont, Department of Highways, Berlin-Barre-East Montpelier Project F-028-3(3) (Rte 2) Record Plans approved February, 1959" - highlighting the locaion of old Route 2, extant at site.



NOTES:

* Access and Parking - full design compliant with B-71 Standard by Grenier Engineering
* No signs within the highway ROW, unless requested by VTrans.
* Sign kiosk with area information and interpretive material at entrance to trail on VDFW parcel.
* New trail to riverside, built to universally accessible standards from Cross Vt Trail to fishing spot adjacent to old dam (this replaces current, informal trail to same location which is steep and eroding); constructed by excavating into existing contour, with no filling required.
* Portage locations designated based on safe boating guidelines, no formal trails constructed.
* Fishing platform design details will be as per VDFW requirements.
* Cross Vermont Trail along old Rte 2 pavement.
* See following page for scale layout plan by Grenier Engineering.



VTrans Comment:
Access for depiction purposes and if furthered-shall be a separate permit with landowner as the applicant.

LEGEND

- EDGE OF RIGHT OF WAY
- CENTERLINE OF ROAD
- EDGE OF ROAD/DRIVE
- EDGE OF RIVER
- 652 EXISTING CONTOURS
- 652 FINISHED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE

NOTE
EXISTING LIDAR CONTOURS & TOPOGRAPICAL FEATURES PROVIDED BY OTHERS AND WERE NOT SURVEYED/FIELD VERIFIED BY THIS OFFICE.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NOTE: ORIGINAL PLAN 24 " x 36 ", OTHER SIZES NOT TO SCALE

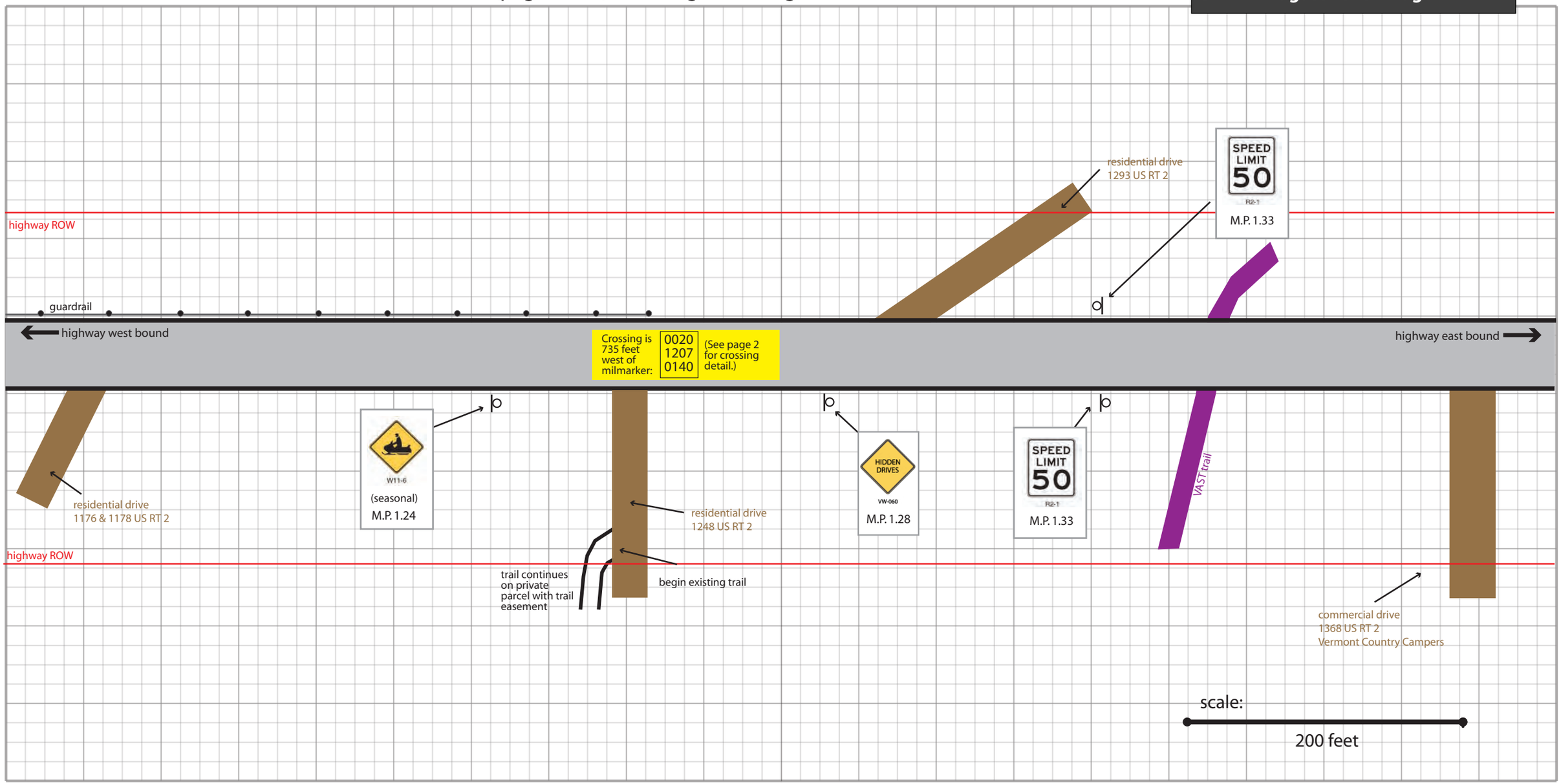
No.	Date	Revision	By

SITE PLAN
CROSS TRAILS VERMONT ASSOCIATION
U.S. ROUTE 2 MONTPELIER

GRENIER ENGINEERING, PC
155 DEMERITT PLACE #2
P.O. Box 445
Waterbury, VT 05676
TEL (802) 244-6413
FAX (802) 244-1572
grenierengineering.com

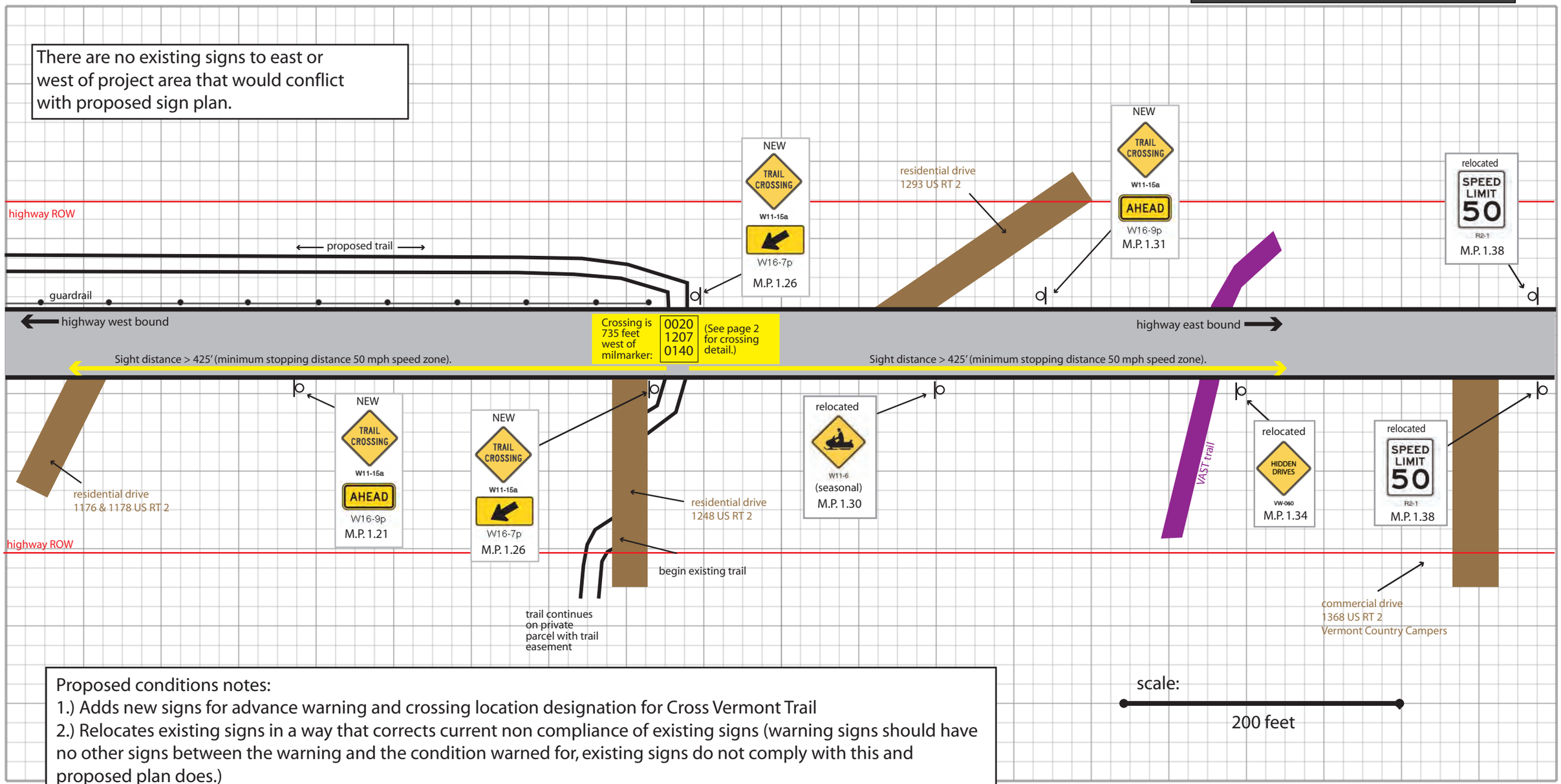
Date:	7 . 30 . 18
Drn By:	TJM
Scale:	1" = 20'
Sheet No:	1 of 1
Dwg Name:	CVT SP
File No:	1211 ~ 33

TITLE: RT 2 CROSSING DETAIL (page 1 of 4) Traffic signs existing conditions.



TITLE: RT 2 CROSSING DETAIL (page 2 of 4) Warning signs for highway traffic, proposed conditions.

There are no existing signs to east or west of project area that would conflict with proposed sign plan.



Proposed conditions notes:

1.) Adds new signs for advance warning and crossing location designation for Cross Vermont Trail

2.) Relocates existing signs in a way that corrects current non compliance of existing signs (warning signs should have no other signs between the warning and the condition warned for, existing signs do not comply with this and proposed plan does.)

3.) However, CVTA is agreeable to any sign plan preferred by VTrans.

TITLE: RT 2 CROSSING DETAIL (page 3 of 4) Traffic sign summary sheet and notes.

Width and Height of signs:

Sign Type	Width (inches)	Height (inches)
All warning signs, facing highway traffic	36	36
All placards paired with warning signs facing highway traffic.	24	12
STOP for path users (R1-1 for SUP)	18	18
NO MOTOR VEHICLES for path users (R5-3)	24	24
Cross Vermont Trail route sign for path users (VD-503)	12	18

Installation details:

All signs shall be installed in compliances with VTrans Standard Drawings Numbered E-121, A-80 and E-161.

Final post lengths are to be determined in the field. Post sizes are computed based on information furnished on the standard sheets and the VTrans "Sign Post Design Guideline".

Any signs facing highway traffic approved for this project will be maintained by VTrans after approved installation. All other signs maintained by CVTA.

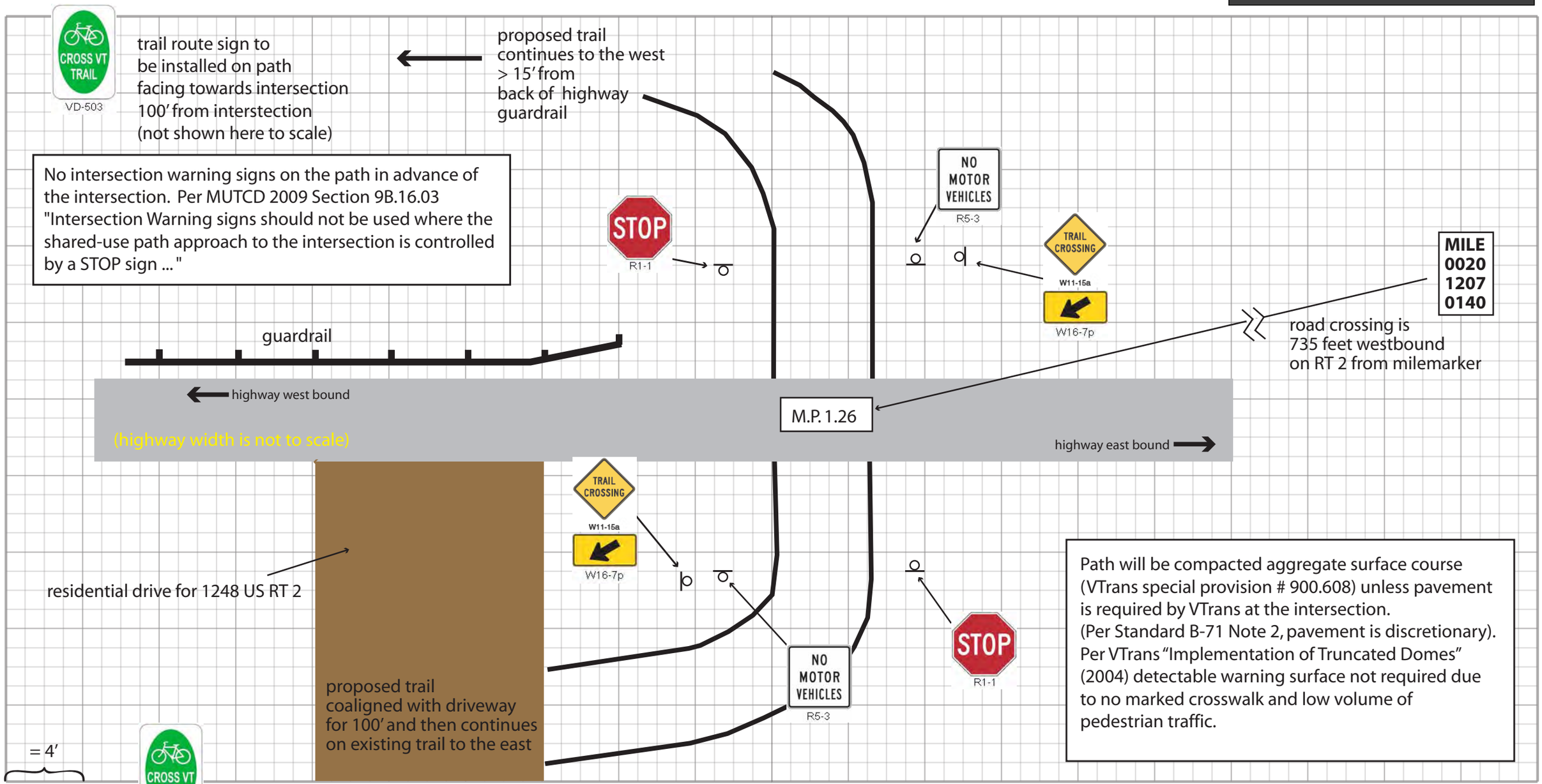
Standards for sign selection and layout:

* MUTCD 2009 (revised 2012); Parts 2A, 2C and 9 [MUTCD]
* 2009 Clarification of Sign Options [TEI 18-200]
* VTrans "Pedestrian and Bicycle Facility Planning and Design Manual"; Sections 3.5.5 [Bike/Ped]
* VTrans Standard Drawing A-80 "Shared Use Path/Highway Intersection Details"

Notes:

* Marked Crossing = NO, as this is a high speed rural road. (Bike/Ped)
* Warned Crossing = YES, as this is a location where motorists may not otherwise anticipate a crossing. (MUTCD)
* Type of Warning sign = "TRAIL CROSSING" with placards AHEAD and downward pointing arrow as appropriate. (MUTCD)
* Color of Warning sign = Standard Yellow (TEI 18-600)
* Location of advance signs = at least 250' in advance of crossing (MUTCD) and at least 200' removed from any other current signs in ROW is "desirable". (TEI 18-200).
* Location of signs at cross point = "immediately adjacent" (Bike/Ped) but greater than 4' from path edge (MUTCD).

TITLE: RT 2 CROSSING DETAIL (page 4 of 4) Signs for Path Users.



Planting Guidance for the Revegetation of Riparian Areas in Vermont

The active revegetation of riparian areas through plantings can greatly accelerate the natural recovery process and restoration of important riparian functions. The following guidance is not meant to be a comprehensive resource on riparian restoration, but does provide basic information and resources regarding planting densities, techniques and species for riparian revegetation projects in Vermont.

General:

Species selection will vary based upon biophysical region, soils, topography, existing vegetation and other factors. Assessment of the project area and adjacent riparian lands, including an inventory of established trees and shrubs, will provide a good indication of which species are suited for the site.

When available, information on the known or potential natural community type of the site can further inform planting efforts. Vermont has five distinct floodplain forest natural communities, as well as many other shrub and wetland communities, that occur along shorelines. Each natural community is characterized by certain soils, flood regimes, and other conditions that will favor a certain suite of trees and shrubs. Selecting species appropriate to a site's natural community will enhance long-term restoration. Detailed information on Vermont's natural communities and their associated species can be found in *Wetland, Woodland, Wildland* (Thompson and Sorenson 2000).

Native species should be used. There are limited exceptions where naturalized, non-native species can be considered in areas where they are already well established and/or do not pose a threat to riparian ecosystems (e.g. boxelder). **When developing planting plans and ordering or purchasing plant material, it is important to provide complete scientific names (including subspecies if appropriate) of plant species to insure non-native and invasive species are not inadvertently introduced.** Plant a variety of suitable tree and shrub species to insure structural and ecological diversity and long term viability of the riparian area.

It is also important to consider the successional status of the plant species and the target riparian environment. For example, it is not advisable to plant all late successional trees in an open agricultural field as it disregards site conditions and normal ecological processes. Under natural conditions, early successional (shade intolerant) trees and shrubs such as chokecherry, white pine, shrub willows, dogwoods, and viburnums would be some of the first species to colonize the site. Riparian projects which account for natural succession processes, while also incorporating late successional trees, can improve long-term project success.

Strive for a total stem density of 400 stems/acre with at least 50% comprised of tree species. Assume a 20-25% loss following planting. Survivorship can be increased by selecting appropriate species, proper handling and planting techniques, watering, and implementing follow-up maintenance activities.

Maximize the use of large trees when possible. Large trees have greater survival and will provide important riparian function, such as shading, much sooner than seedlings. Trees < 4 feet tall are more likely to be outcompeted by grasses and are more subject to damage by deer. To accelerate the development of riparian shading, concentrate larger trees in a minimum of two staggered rows along the waterbody.

Planting Techniques:

Large Trees (8-15' tall stock, ~ 1-2" caliper)

- Obtain trees in early spring and plant them before they begin to leaf out (usually need to be in the ground by mid-May at the latest, can be planted as soon as the ground has thawed and snow is melted at planting site). Field-dug trees usually come with a small root ball wrapped in burlap and will be root-pruned and top-pruned to help the tree survive transplanting. Balled and burlaped or trees grown in containers come with larger root balls and are comparably more expensive than field dug stock. Inspect root balls to insure adequacy and proper condition. Trees can also be planted in fall after they have entered dormancy.
- Space large trees 15' to 20' apart.
- Dig hole large enough to fit root ball and to spread out the roots, and deep enough to cover up to the root swell (area on the trunk just above topmost emerging roots where trunk begins to narrow-up). It is not necessary to completely remove the burlap from the root ball, but it is important to loosen the strings around the root ball and spread out the burlap and roots to help the tree sit down into the hole and insure soil is able to completely surround the roots.
- Spread a thin layer of soil over roots, and then water-in roots. Cover with more soil and water again, filling hole with soil. Pack soil firmly around tree to eliminate air spaces next to the roots and to put the roots in contact with soil. Watering as you fill the hole with soil also helps to do this.
- Large trees require more maintenance to insure survival. Water trees several days a week for the first few weeks if no substantial rain falls. Also water during dry spells for the first summer to help insure survival. If careful attention to watering is unlikely to happen, consider planting extra stock to account for some mortality.

Seedlings & Bare-root Trees (minimum 36" tall stock)

- Use the same planting techniques as above, but space trees 8 to 10' apart. Expect a higher percent of mortalities with smaller stock.

Shrubs & Willows

- Shrubs material should be no less than 36" tall.
- Willows and other shrubs should be planted 3-5 feet apart. Consider clustering shrubs in groups 4' apart to mimic natural succession and provide valuable cover habitats.

Willow Stakes

- Cut stems of shrub willow species when plant is dormant (early spring before leaf out or fall after leaf drop). Cut stems into 1.5 to 2 foot long "stakes". Minimum caliper is .75 inches, maximum caliper is 2 inches.
- Pound stakes into streambank until only 1 to 2 inches, or 25% of stake is showing above ground. A rubber mallet works well for this.
- Livestakes and fascines can be used on bank faces and on low banks where the willow can root into fairly moist soils. High banks that are dry do not usually support willows well.

Protection of Plantings

- Protect trees from rodent damage with tree tubes or tree wraps – either heavy duty plastic wraps or wraps fabricated on site from hardware cloth. These can be purchased for a few dollars each and take only a few minutes to install. As trees grow, these will need to be loosened or removed.
- Biodegradable tree mats can also be installed to retard weed growth and reduce moisture loss.
- Latex paint mixed with sand applied to the lower 3' of tree trunks has been effective in Vermont in reducing beaver and vole damage for 2-inch caliper and larger trees. *Avoid using this technique on smaller trees as it can cause plant mortality.*
- Consider developing a monitoring and stewardship plan to provide necessary plant care, address unexpected plant losses and/or damage, control competing species, etc.

Technical Assistance:

US Fish and Wildlife Service, Partners for Fish and Wildlife Program
http://www.fws.gov/lcfwro/habitat.html

US Natural Resource Conservation Service
http://www.nrcs.usda.gov/wps/portal/nrcs/site/vt/home/

Vermont Department of Environmental Conservation, Watershed Coordinators
http://www.watershedmanagement.vt.gov/contacts.htm

Vermont Fish and Wildlife Department, Fisheries Biologists
http://www.vtfishandwildlife.com/common/pages/DisplayFile.aspx?itemId=247326

Watersheds United Vermont – for a listing of local watershed organizations which often have experience in riparian restoration approaches for local conditions.
http://www.watershedsunitedvt.org/home

References & Additional Resources:

Alaska Fish and Game. 2005. Streambank Revegetation and Protection: A Guide for Alaska. http://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.main

Connecticut River Joint Commission. 1998. Buffers for Habitat - Riparian Buffers for the Connecticut River Watershed. http://www.crjc.org/riparianbuffers.htm

Natural Resources Conservation Service. Plants Materials Program: Riparian and Bioengineering. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/plantmaterials/technical/publications/?cid=stelprdb1043002

New Hampshire Department of Environmental Services. Native Shoreland*/Riparian Buffer Plantings for New Hampshire. http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/vrap_native_plantings.pdf

Thompson, E.H. and E.R. Sorenson. 2000. Wetland, Woodland,Wildland: A Guide to the Natural Communities of Vermont. Vermont Department of Fish and Wildlife and The Nature Conservancy. 456 p. University Press.

U.S.Forest Service. 2004. Riparian Restoration. http://www.fs.fed.us/t-d/pubs/html/04231201/toc.htm

Vermont Agency of Natural Resources. 1994. Native Vegetation for Lakeshores, Streamsides and Wetland Buffers. http://www.anr.state.vt.us/dec/waterq/planning/docs/pl_native-veg.buffer-manual.1994.pdf

Vermont Natural Resources Conservation Service. Specification Guide Sheet for Riparian Forest Buffer (391): https://efotg.sc.egov.usda.gov/references/public/VT/VTSpec391-0109.pdf

Vermont Natural Resources Conservation Service. Specification Guide Sheet for Tree/Shrub Establishment (612): https://efotg.sc.egov.usda.gov/references/public/VT/VTSpec612-0109.pdf

Vermont Natural Resources Conservation Service. Forestry Technical Note #2: Trees and Shrubs for Conservation: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_010205.xls

Acknowledgement:

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Prepared by:
Rich Kirn, Vermont Fish and Wildlife Department
January 2016

Tree and Shrub Species:

The following is a list of common tree and shrub species used in riparian restoration projects in Vermont. See the Vermont Agency of Natural Resources 1994 publication *Native Vegetation for Lakeshores, Streamsides and Wetland Buffers* for a more complete and detailed list as well as plant descriptions and appropriate site conditions.

TREES			
Common Name	**Scientific Name**	**Planting Location[1]**	**Distribution[2] & Comments**
American Elm	*Ulmus americana*	R	Statewide; Often killed by Dutch Elm Disease within 30 years.
American Sycamore	*Platanus occidentalis*	R	South ½ Champlain Valley, South 1/3 CT River Valley
Atlantic White Cedar	*Thuja occidentalis*	B	North 2/3 of VT
Balsam Fir	*Abies balsamea*	B	Statewide
Balsam Poplar	*Populus balsamifera*	B	North 2/3 of VT
Black Cherry	*Prunus serotina*	B	statewide
Black Willow	*Salix nigra*	R	statewide
Boxelder	*Acer negundo*	R	Non-native, use only where already well established.
Common Hackberry	*Celtis occidentalis*	R	South ½ Champlain Valley, South 1/3 CT River Valley
Eastern Cottonwood	*Populus deltoides*	R	Champlain Valley, South 1/3 CT River Valley
Gray Birch	*Betula populifolia*	B	Statewide
Paper Birch	*Betula papyrifera*	U	Statewide
Ironwood (American hornbeam)	*Carpinus caroliniana*	B	Statewide except far North East VT; Most appropriate in backswamps & low gradient floodplains
Quaking Aspen	*Populus tremuloides*	U	Statewide; highly preferred by beaver – protection required.
Red Maple	*Acer rubrum*	B	Statewide
Silver Maple	*Acer saccharinum*	R	Statewide; excellent for floodplain stabilization, shade, wood and leaf litter input.
Sugar Maple	*Acer saccharum*	U	Statewide
White Ash	*Fraxinus americana*	B	Statewide; Consider potential threat of Emerald ash borer.
White Pine	*Pinus strobus*	U	Statewide
Yellow Birch	*Betula alleghaniensis*	B	Statewide

SHRUBS			
Common Name	**Scientific Name**	**Planting Location[1]**	**Distribution[2] & Comments**
Arrow-wood	*Viburnum dentatum var. lucidum*	B	Southern Vermont
Elderberry	*Sambucus canadensis*	B	Statewide
Gray Dogwood	*Cornus racemosa (C. foemina)*	B	Champlain Valley & south ½ VT
Chokecherry	*Prunus virginiana*	B	Statewide
Highbush Cranberry	*Viburnum trilobum (V. opulus var americanum)*	B	Statewide; Most HB cranberry in nurseries is *var.opulus* which is non-native, but not known to be invasive. Differs mostly in minor leaf characters & fruit is more tart than native var.
Red Elderberry	*Sambucus racemosa (S. pubens)*	B	Statewide
Red Osier Dogwood	*Cornus sericea*	R	Statewide
Serviceberry	*Amelanchier arborea and A. laevis*	B	Statewide
Silky Dogwood	*Cornus amomum*	B	Not found in northern Green Mountains or Essex Co.
Speckled Alder	*Alnus incana spp. rugosa*	R	**Exercise extreme caution in planting leafless alders!** Some nurseries may provide the invasive *Alnus glutinosa* and other species/subspecies which are difficult to distinguish w/o leaves.
Wild Raisin / Witherod	*Viburnum nudum var cassinoides*	R	Statewide
Winterberry	*Ilex verticillata*	R	Statewide
Common pussy willow Silky willow Bebb's willow Shining willow Sandbar willow Wooly headed willow	*Salix discolor spp.* *Salix sericea* *Salix bebbiana* *Salix lucida* *Salix interior* *Salix eriocephala*	R	Beware of planting leafless individuals. The non-native Streamco, Purple, or Basket Willow (Salix purpurea) has opposite leaves & should be avoided; all native willows are alternate.

[1] R = Riparian floodplain - species suited to moist soils and periodic inundation.
U = Upland – species best suited to drier, upland side slopes and terrace locations.
B = Both – species suited to a wide range of riparian floodplain and upland conditions.

[2] Range interpreted from: http://esp.cr.usgs.gov/data/little/ and https://gobotany.newenglandwild.org/simple/

Riparian Planting Sources: (should not be considered a complete listing or an indication of endorsement)

Nursery	Website	Address	Phone
New England Wetland Plants	http://www.newp.com	820 West St. Amherst, MA, 01002	(413) 548-8000
Intervale Conservation Nursery	http://www.intervale.org/what-we-do/intervale-conservation-nursery/	180 Intervale Rd. Burlington, VT 05401	(802) 660-0440 x 114
Drinkwater Nursery		564 Lawrence Rd. Waterford, VT 05819	(802) 535-9748
Champlain Valley Native Plant Restoration Nursery	http://www.pmnrcd.org	Green Mountain College Poultney, VT 05764	(802) 287-8396
Vermont Wetland Plant Supply	www.vermontwetlandplants.com	P.O. Box 153 Orwell, VT	(802) 948-2553
NH State Forest Nursery	http://www.nhnursery.com	405 Daniel Webster Highway Boscawen, NH 03303	(603) 796-2323 (nursery) (603) 271-2214 (admin)
New York State Tree Nursery	http://www.dec.ny.gov/animals/7127.html	2369 Rte. 50 Saratoga Springs, NY 12866	(518) 587-1120
Cold Stream Farm	www.coldstreamfarm.net	8585 North Stephens Rd. Free Soil, MI 49411	(231) 464-5809
Fiddlehead Creek Nursery	www.FiddleheadCreek.com	7381 State Route 40 Hartford, NY 12838	(518) 632-5505
Vermont Willow Nursery	willowmanvt@me.com	1943 Ridge Road North, Fairfield VT 05455-5631	

CVTA Route 2 Project - comments response 2018-08-06

#	who	comment	response	sketch pg name	sketch pg #	comment pg #	pdf pg #
1	nathan.covey@vermont.gov	Maybe you have but please differentiate state highway right-of-way vs VTrans property, vs other State Agencies.	Done.	cover	1	5	9
2	nathan.covey@vermont.gov	further research is being requested to determine how to handle a finance and maintenance agreement or if done through the State Highway Access and Work Permit for locations not covered by MAB projects.	Research has been completed. See note in Narrative.	cover	1	5	9
3	tanya.miller@vermont.gov	VT	format preference - changed	cover	1	5	9
4	tanya.miller@vermont.gov	utility	typo - fixed	cover	1	5	9
5	nathan.covey@vermont.gov	Please differentiate between state owned lands and state highway right-of-way as done below.	Done.	notes 1 of 3	2	6	11
6	nathan.covey@vermont.gov	[an arrow is numbered as a comment]		notes 1 of 3	2	6	11
7	jeff.blanchard@vermont.gov	I provided prior project plans to Greg Western but have not been involved with any right of way plotted on these plans. Not sure who plotted or verified right of way on these plans. - Thanks Jeff	Narrative clarified as requested.	notes 1 of 3	2	6	11
8	nathan.covey@vermont.gov	Please remove this paragraph and if meetings need to be tracked that is fine but not believed needed for the plan/ proposal information. Also not a ROW process but a meeting about a State Highway Access and Work Permit Application.	Revised as requested.	notes 1 of 3	2	6	11
9	nathan.covey@vermont.gov	I believe this entire paragraph can be removed. This info at a minimum was missing from the applicants State Highway Access and Work Permit application where a plan is needed as per the application so it did have to be asked for-agreed.	Revised as requested.	notes 1 of 3	2	6	11
10	nathan.covey@vermont.gov	Does the Cross Vermont Trail exist now in that users are just required to utilize the paved highway at this point?	Cross Vermont Trail is currently mixture of off road paths and a scenic route signed on roads. The mission of the Cross Vt Trail Association is to create a continuous OFF road path.	notes 1 of 3	2	6	11
11	theresa.gilman@vermont.gov	Please be advised that all individuals working in the State ROW will require appropriate safety apparel and shall be covered by applicants liability insurance per State required minimums.	Understood.	notes 1 of 3	2	6	11
12	theresa.gilman@vermont.gov	Is there a known construction time line for work proposed within the State ROW?	Work is proposed to occur in phases over three construction seasons. See note in Narrative.	notes 1 of 3	2	6	11
13	nathan.covey@vermont.gov	is there other trailhead parking outside of state highway right-of-way on either or both sides of this proposal that could be utilized instead of this additional but very small parking proposal please explain?	Parking is needed at this location, other locations outside of highway ROW are not available. Parking is correctly sized.	notes 2 of 3	3	7	13
14	kristin.driscoll@vermont.gov	Is there a plan set for this parking area? Is this a separate project?	Plan set attached. The parking is a part of the larger Cross Vermont Trail project.	notes 2 of 3	3	7	13
15	jon.lemieux@vermont.gov	I'm curious how the trailhead parking ties into these projects, as there is no reference to them on the CLD plans or the Stantec Plans. Is there funding available to construct this parking area? When will it be constructed?	Parking area is outside of federal project. Local funding will be used. Construction of parking area is proposed to be the first task in the non federal funded project, as the parking area would then be used as the staging area for trail construction.	notes 2 of 3	3	7	13
16	kristin.driscoll@vermont.gov	Which will likely require future permits. Future work shall not be done with out proper permitting	Agreed.	notes 2 of 3	3	7	13
17	nathan.covey@vermont.gov	This is a tough table to work with. Please show offsets on the plan and from highway centerline and edge of pavement of US 2 for worthy transitions? the more detailed plan could avoid this sheet and possibly help clarity for all.	Information added layout sheets. Table retained as may be useful to some.	notes 3 of 3	4	8	15
18	nathan.covey@vermont.gov	I am missing the purpose of this entire table as could this info also be incorporated on the layout sheet.	Information also included on layout sheets. Table retained as may be useful to some.	notes 3 of 3	4	8	15

#	who	comment	response	sketch pg name	sketch pg #	comment pg #	pdf pg #
19	nathan.covey@vermont.gov	Please provide the scoping study that suggested this bridge be constructed vs utilizing what is questioned to be a possibly less sensitive/ less expensive location for trail on the other side of the road?	History of project scoping added to narrative.	map 1 of 5	5	9	17
20	kristin.driscoll@vermont.gov	Please show culverts in typical plan fashion - Size, cross, etc. and in sections in relation to highway and trail. (typ)	Trail will not impact culverts. Will either cross over deeply buried culverts with minimal excavation, or will clear span culvert outlets with relatively long bridges. Typical added to CVTA sketch plans. Additional detail on the relation between the culverts and the highway is beyond the scope of the path planning.	map 1 of 5	5	9	17
21	kristin.driscoll@vermont.gov	Is there a plan set available for this?	Plan included.	map 2 of 5	6	10	19
22	kristin.driscoll@vermont.gov	[an oval shape is numbered as a comment]		map 4 of 5	8	12	23
23	kristin.driscoll@vermont.gov	culvert in this area. I have not verified each location	Culvert location added.	map 4 of 5	8	12	23
24	nathan.covey@vermont.gov	Please note which of these bridges currently exist vs are proposed for all bridges?	Information added.	map 5 of 5	9	13	25
25	nathan.covey@vermont.gov	Please remove .,,	typo - fixed	Turnpike	10	14	27
26	nathan.covey@vermont.gov	[an arrow is numbered as a comment]		Turnpike	10	14	27
27	nathan.covey@vermont.gov	Please point to the North and South edge references for clarity? This is a typical comment for the next pages that also refer to North and South but not clear enough as don't want to make assumptions.	Revised for clarity.	Turnpike	10	14	27
28	tanya.miller@vermont.gov)	1st sentence is confusing.	Revised for clarity.	Boardwalk	12	16	31
29	nathan.covey@vermont.gov	what does "outdoor construction" mean?	Pressure treated lumber and galvanized hardware.	Boardwalk	12	16	31
30	callie.ewald@state.vt.us	what is this hashed black line? fabric separator?	Just outlining the fill and excavation areas. Hashed line removed for clarity.	Behind Guardrail	13	17	33
31	kristin.driscoll@vermont.gov	Where is the ROW here? If there is a wash out, the slope will be built back to previous conditions prior to trail construction (what is required for the road). Maintenance responsibilities should be clear.	All of the Filled Bench is within the highway ROW, which is very wide in this area. Maintenance of trail is clearly responsibility of CVTA.	Filled Bench	14	18	35
32	nathan.covey@vermont.gov	Please show frequency as to how many " trees will be planted, what kinds of trees for review, size, and any other details that would help visualize all notes that refer to trees being planted?	Additional detail added.	Filled Bench	14	18	35
33	nathan.covey@vermont.gov	And may make most sense to include trees or hatching on layout plan sheets?	Additional detail added.	Filled Bench	14	18	35
34	callie.ewald@state.vt.us	does this addition of fill have any negative impact to the stability of the existing highway embankment?	No. Fill for trail is relatively insignificant.	Filled Bench	14	18	35
35	callie.ewald@state.vt.us	Depending on soils, even with erosion matting, a 1:1 slope is not likely to be surficially stable. Is this cut only 2 feet in height though? The less height of vertical cut the better.	Revised to more gradual slope. In any case, cut is low height.	Dug Bench	15	19	37
36	kristin.driscoll@vermont.gov	In the area of 6600 +/- it appears that this is not the typical. There is a slope off the road, not a roadside ditch and hill side. How far from the edge of US 2 is the path in this location? What is the existing slope? If the trail is close, and the slope is 1:2.5 then the path construction is changing the slope which would require guardrail. All locations will have to be checked....	In the area of 6600 this is the correct typical. In any case, all locations have been checked and plans corrected as needed.	Dug Bench	15	19	37
37	callie.ewald@state.vt.us	fabric?	Just outlining the fill and excavation areas. Hashed line removed for clarity.	Walled Bench	16	20	39
38	nathan.covey@vermont.gov	Please show more detail of what is proposed for this parking area as a B-71 drive, parking spaces, dimensions	See plan sheet from Grenier Engineering.	Hidden Dam	18	22	43
39	christopher.mercon@vermont.gov	Side note: standard pedestrian signs are FYG in VT	Revised so no longer pedestrian signs.	Rt 2 Crossing 1	19	23	45

#	who	comment	response	sketch pg name	sketch pg #	comment pg #	pdf pg #
40	christopher.mercon@vermont.gov	the standards on this have changed, We currently use W11-15a signs to indicate trail crossings along with the plaques you have shown.	Revised.	Rt 2 Crossing 1	19	23	45
41	christopher.mercon@vermont.gov	Crossing at M.P. 1.26. References to each sign in mile point would be really helpful.	Done.	Rt 2 Crossing 1	19	23	45
42	christopher.mercon@vermont.gov	New standards have been established. Cite agency documentation vs citing agency employees.	Done.	Rt 2 Crossing 1	19	23	45
43	christopher.mercon@vermont.gov	Minimum spacing of 200' is required. (125' used)	Sign plan revised to comply with 200' spacing.	Rt 2 Crossing 1	19	23	45
44	christopher.mercon@vermont.gov	Hidden Drives (VW-060)	Sign plan revised to add this detail.	Rt 2 Crossing 1	19	23	45
45	christopher.mercon@vermont.gov	Folding sign New as part of 2017 Sign project. Possible removal/movement Per General sign locations in VTRANS TEI 16-200. no signs placed between warning sign and condition being warned for.	Proposed sign plan is one option. Any other variation preferred by VTrans to correctly sign the trail crossing would also be OK.	Rt 2 Crossing 1	19	23	45
46	christopher.mercon@vermont.gov	200' minimum spacing per TEI 16-200.	Sign plan revised to comply with 200' spacing.	Rt 2 Crossing 1	19	23	45
47	christopher.mercon@vermont.gov	typo	typo - fixed	Rt 2 Crossing 1	19	23	45
48	christopher.mercon@vermont.gov	Any signs indicating the US-2 intersection?	None required.	Rt 2 Crossing 2	20	24	47
49	christopher.mercon@vermont.gov	See note on detail page 1		Rt 2 Crossing 2	20	24	47
50	christopher.mercon@vermont.gov	[graphic is numbered as a comment]		Rt 2 Crossing 2	20	24	47
51	christopher.mercon@vermont.gov	Please indicate sign sizes and installation details for each sign or use a traffic sign summary sheet.	Done.	Rt 2 Crossing 2	20	24	47
52	christopher.mercon@vermont.gov	Bollards? Detectable warning surfaces? Stop Bars?	No bollards in highway ROW. Detectable warning surface not required in low use rural setting.	Rt 2 Crossing 2	20	24	47
53	christopher.mercon@vermont.gov	[graphic is numbered as a comment]		Rt 2 Crossing 2	20	24	47
54	christopher.mercon@vermont.gov	US-2 Danville	Detectable warning surface not required in low use rural setting.	Rt 2 Crossing 2	20	24	47
55	christopher.mercon@vermont.gov	[graphic is numbered as a comment]		Rt 2 Crossing 2	20	24	47
56	nathan.covey@vermont.gov	Bollards are not allowed in right-of-way.	Agreed.	Rt 2 Crossing 2	20	24	47
57	nathan.covey@vermont.gov	Please capture on the crossing plans that any signs facing highway traffic approved for this project will be maintained by VTrans after approved installation All other signs maintained by CVTA.	Done.	Rt 2 Crossing 2	20	24	47
58	christopher.mercon@vermont.gov	[graphic is numbered as a comment]		Rt 2 Crossing 2	20	24	47
59	glenn.gingras@vermont.gov	All permitting for this project should be reviewed and updated accordingly. Wetland delineations are only good for 5 years. There is also a new COE General Permit that became effective 12/6/17, new wetland rules, and potential T&E species review that will need to occur for	Understood.	EH10(17) 1	0	30	59
60	kristin.driscoll@vermont.gov	[graphic is numbered as a comment]		EH10(17) 2	0	31	61
61	kristin.driscoll@vermont.gov	What does this give you for deflection clearance?	See Stantec comment on plan.	EH10(17) 2	0	31	61
62	jon.lemieux@vermont.gov	The culverts locations, type, size and invert elevations must be shown on the cross-sections.	See Stantec comment on plan.	EH10(17) 6	0	35	69
63	nancy.avery@vermont.gov	What temporary traffic control will be used for materials and equipment to enter and exit the work site when the project is under construction. How will the work are be secured at the end of each work day to prevent motorist, bicyclist & pedestrian from entering?	See Stantec comment on plan.	EH10(17) 9	0	38	75
64	nancy.avery@vermont.gov	Buffer space for a 40 MPH roadway is 305 FT. See table 6C-2 of the 2009 MUTCD	See Stantec comment on plan.	EH10(17) 9	0	38	75
65	nancy.avery@vermont.gov	There would be a shoulder closure L/3 Typical	See Stantec comment on plan.	EH10(17) 9	0	38	75
66	nancy.avery@vermont.gov	A temporary speed certificate shall be signed and approved by the Agency shall be obtained before the speed limit can be reduced for this project.	See Stantec comment on plan.	EH10(17) 9	0	38	75
67	nancy.avery@vermont.gov	[graphic is numbered as a comment]		EH10(17) 9	0	38	75
68	nancy.avery@vermont.gov	Lane shift L/2 Typical	See Stantec comment on plan.	EH10(17) 9	0	38	75
69	nancy.avery@vermont.gov	[graphic is numbered as a comment]		EH10(17) 9	0	38	75
70	nancy.avery@vermont.gov	As the trail itself is completed, temporary traffic control devices will be necessary to stop trail users from entering the work area.	See Stantec comment on plan.	EH10(17) 9	0	38	75

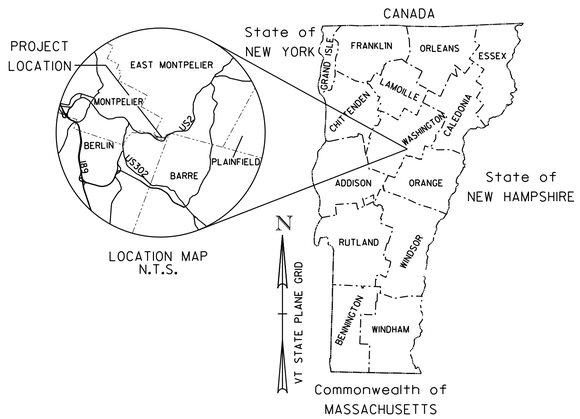
#	who	comment	response	sketch pg name	sketch pg #	comment pg #	pdf pg #
71	nancy.avery@vermont.gov	If Flaggers are to be used, additional traffic control noting the one lane roadway geometry and Flaggers are present shall be included within the TCP.	See Stantec comment on plan.	EH10(17) 9	0	38	75
72	nancy.avery@vermont.gov	Accommodations should be taken to ensure that obstacles, equipment, construction materials, traffic control devices, etc. do not encroach into the bicycle path of travel. It is important that cyclist's routes are free of ruts, sand and mud to prevent cyclist's crashes.	See Stantec comment on plan.	EH10(17) 9	0	38	75
73	nancy.avery@vermont.gov	is this in conflict with the 900.645 TTC item?	See Stantec comment on plan.	EH10(17) 9	0	38	75
74	nancy.avery@vermont.gov	Where and why would concrete barrier be used?	See Stantec comment on plan.	EH10(17) 9	0	38	75
75	jon.lemieux@vermont.gov	Provide EPSC legend	Provided.	EH10(17) 12	0	41	81
76	nathan.covey@vermont.gov	Very unfortunate for many reasons that earlier VTrans comments have not been addressed prior to this review and could make things more confusing for the project in the future.	All comments have been addressed.	CVRT(2) DWG1	0	45	89
77	kristin.driscoll@vermont.gov	Is this access to be removed after construction?	Yes.	CVRT(2) DWG13	0	58	115
78	callie.ewald@state.vt.us	where is proposed grade in front of wall? Is crushed stone under concrete abutment really necessary?	See updated plans revised by Stantec.	CVRT(2) DWG19	0	64	127
79	callie.ewald@state.vt.us	1:1 slope is likely to have surficial stability issues	See updated plans revised by Stantec.	CVRT(2) XS9	0	79	157
80	nancy.avery@vermont.gov	630.10 UTOs; 630.15 Flaggers	See updated plans revised by Stantec.	CVRT(2) Q1	0	81	161
81	pete.daye@vermont.gov	THE WAY ESTIMATE IS SETUP ONLY NEED TO LIST LEAD PIN NUMBER	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
82	pete.daye@vermont.gov	UPDATE VPINS	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
83	pete.daye@vermont.gov	ESTIMATE NEEDS TO BE RUN WITH NEWER DATE	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
84	pete.daye@vermont.gov	UPDATE SPEC YEAR TO 11	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
85	pete.daye@vermont.gov	ESTIMATE TYPE	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
86	pete.daye@vermont.gov	CHECKED BY;APPROVED BY	See updated plans revised by Stantec.	CVRT(2) Est1	0	83	165
87	nancy.avery@vermont.gov	630.10 UTOs; 630.15 Flaggers	See updated plans revised by Stantec.	CVRT(2) Est2	0	84	167
88	callie.ewald@state.vt.us	lump sum for micropiles? recommend $/foot without knowing the design at time of bid.	See updated plans revised by Stantec.	CVRT(2) Est4	0	86	171

INDEX OF SHEETS

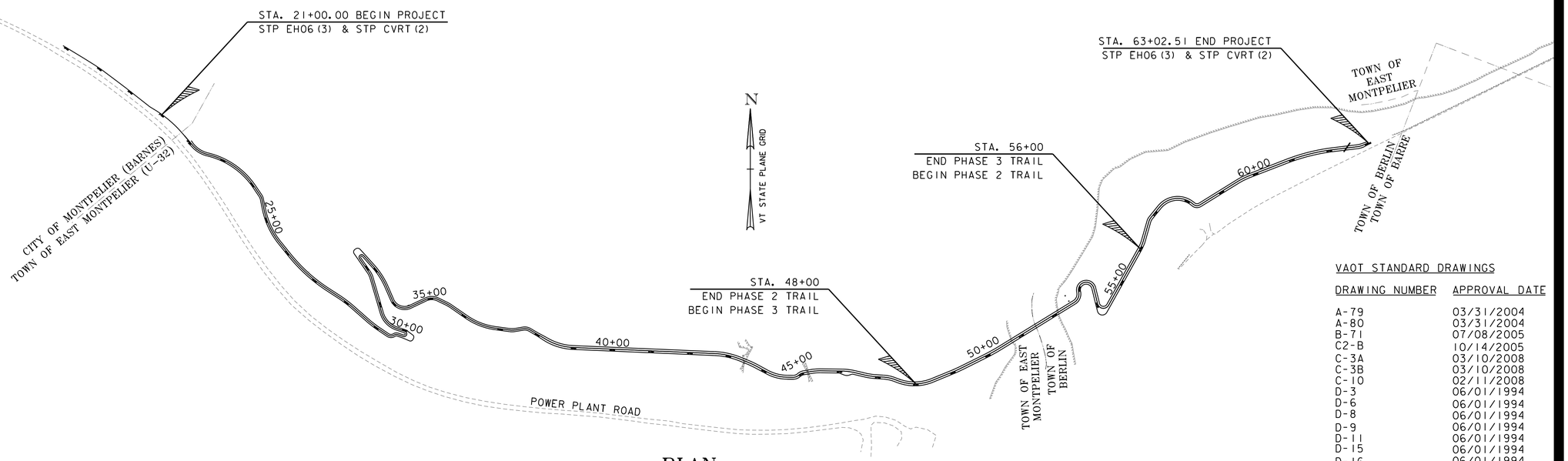
CROSS VT TRAIL ASSOCIATION
CITY OF MONTPELIER AND TOWNS OF EAST MONTPELIER AND BERLIN

TRAIL CONSTRUCTION BEGINNING AT A POINT ADJACENT TO POWERPLANT ROAD IN MONTPELIER, APPROXIMATELY 2000 FEET FROM JUNCTION OF POWERPLANT ROAD AND GALLISON HILL ROAD, EXTENDING EAST PARALLEL TO THE WINOOSKI RIVER INTO EAST MONTPELIER, INCLUDING A NEW BRIDGE OVER THE RIVER INTO BERLIN AND ENDING AT A POINT ADJACENT TO VT ROUTE 2 AT APPROXIMATELY THE BERLIN/BARRE TOWN TOWN LINE.

LENGTH OF PROJECT =4202.51 FT. (0.79 MILES)
LENGTH OF R.O.W. PROJECT = 6210 FT. (1.18 MILES)



LOCATION MAP
N.T.S.



PLAN

0 150 300
SCALE IN FEET

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL

SURVEYED BY : VSE
SURVEYED DATE : 10/2007

DATUM
VERTICAL: NAVD 88
HORIZONTAL: STATE GRID

VAOT STANDARD DRAWINGS

DRAWING NUMBER	APPROVAL DATE
A-79	03/31/2004
A-80	03/31/2004
B-71	07/08/2005
C2-B	10/14/2005
C-3A	03/10/2008
C-3B	03/10/2008
C-10	02/11/2008
D-3	06/01/1994
D-6	06/01/1994
D-8	06/01/1994
D-9	06/01/1994
D-11	06/01/1994
D-15	06/01/1994
D-16	06/01/1994
D-33	03/12/2007
E-1	07/11/2017
E-2	07/11/2017
E-3	07/11/2017
E-121	08/08/1995
E-131B	05/30/2003
E-191	02/11/1999
E-193	08/18/1995
J-3	08/07/1995
T-1	04/25/2016
T-2	04/25/2016
T-10	08/06/2012
T-28	08/06/2012
T-30	08/06/2012
T-44	04/09/2014
T-45	01/02/2013
T-56	11/26/2015

FINAL
7/26/2018

PHASE 2,3

Stantec
55 GREEN MOUNTAIN DRIVE
SOUTH BURLINGT VT 05403
Tel. 802.864.0223
www.stantec.com

Consultants

Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

File Name: title.dgn	PZA	GAS	ISM	7/26/2018
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

Client/Project
CROSS VT TRAIL ASSOCIATION

EAST MONTPLIER STP EHO6(3)
MONTPELIER-BERLIN STP CVRT(2)

Title
COVER SHEET

Project No.	Scale	
195311563		
Drawing No.	Sheet	Revision
	1 of 57	0

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ — HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

PHASE 2,3

Stantec

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Legend

Notes

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File Name: typ.dgn	PZA	GAS	ISM	7/26/2018
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Permit-Seal

Client/Project
CROSS VT TRAIL ASSOCIATION

EAST MONTPELIER STP EHO6(3)
MONTPELIER-BERLIN STP CVRT(2)

Title
CONVENTIONAL SYMBOLOGY LEGEND

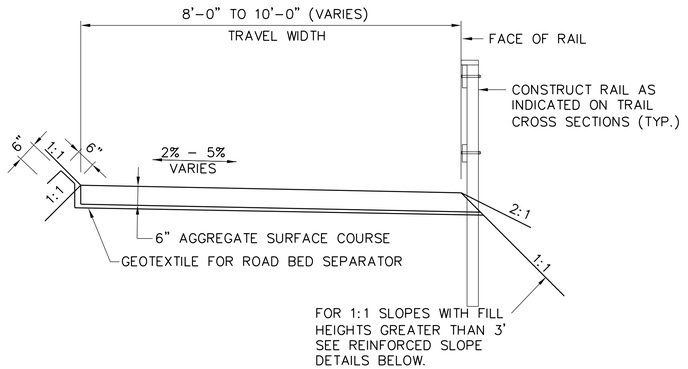
Project No. 195311563

Scale AS SHOWN

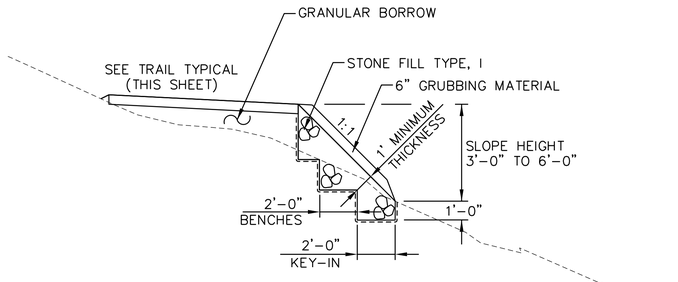
Drawing No.

Sheet 2 of 57

Revision 0



TRAIL TYPICAL SECTION



REINFORCED SLOPE 3' TO 6'

N.T.S.

STA. 29+30 TO 29+60 RT.
STA. 32+88 TO 33+50 RT.
STA. 33+88 TO 34+30 RT.
STA. 34+80 TO 35+25 RT.
STA. 38+70 TO 42+25 RT.
STA. 43+49 TO 43+75 RT.
STA. 45+10 TO 45+15 LT-RT.
STA. 45+20 TO 45+40 LT-RT.
STA. 46+50 TO 46+60, RT.
STA. 46+90 TO 48+00, RT.
STA. 58+90 TO 59+50. LT.
STA. 59+87 TO 60+10, LT.

GENERAL TRAIL NOTES (PHASE 2 & 3):

1. PROJECT CONSTRUCTION HAS BEEN SPLIT INTO TWO PHASES WITH EACH SHEET LABELED ACCORDING TO THE PHASE TO WHICH IT APPLIES. A GENERAL BREAKDOWN OF THE PHASED WORK, CONSTRUCTION RESPONSIBILITY AND APPLICABLE DESIGN PLAN SHEETS IS AS FOLLOWS:

   PHASE 2 – CONSTRUCTION IS SPLIT INTO TWO DISTINCT SECTIONS, BOTH OF WHICH ARE TO BE COMPLETED BY VERMONT YOUTH CONSERVATION CORPS MEMBERS AND VOLUNTEER EFFORTS. THE FIRST INCLUDES THE TRAIL ON THE WOODED HILLSIDE OF THE U32 SCHOOL PROPERTY. THIS SECTION BEGINS AT STATION 21+00 AND ENDS AT STATION 48+00. THE SECOND SECTION INCLUDES THE TRAIL ALONG VT. ROUTE 2. THIS SECTION BEGINS AT STATION 56+00 AND ENDS AT STATION 63+02.51.

   PHASE 3 – CONSTRUCTION IS TO BE COMPLETED BY HIRED CONTRACTOR AND INCLUDES THE PEDESTRIAN BRIDGE OVER THE WINOOSKI RIVER, ITS ASSOCIATED FOUNDATIONS, GABION WALLS AND SECTIONS OF APPROACH TRAIL LEADING TO EACH ABUTMENT. THIS SECTION BEGINS AT STATION 48+00 AND ENDS AT STATION 56+00.

2. POTENTIAL STAGING AREAS FOR CONTRACTOR VEHICLE AND EQUIPMENT PARKING, MATERIAL STORAGE AND WORK OPERATIONS HAVE BEEN SHOWN ON THE PLANS. IF THE CONTRACTOR DESIRES ADDITIONAL WORK AREA OR TO USE AN AREA IN A MANNER OTHER THAN WHAT IS CALLED FOR, A WRITTEN REQUEST SHALL FIRST BE SUBMITTED TO THE CVTA THAT INCLUDES A SKETCH SHOWING THE ADDITIONAL AREA AND A DESCRIPTION OF THE ALTERNATIVE USE. THE CVTA SHALL BE THE PRIMARY CONTACT AND LIAISON BETWEEN THE CONTRACTOR AND PROPERTY OWNER. NO GUARANTEES ARE MADE THAT THE REQUEST FOR ADDITIONAL AREA OR ALTERNATIVE USE WILL BE GRANTED. CONTRACTOR SHALL BE PREPARED TO COMPLETE THE WORK WITHIN THE AREAS SHOWN ON THE PLANS. IN THE EVENT THAT A REQUEST IS GRANTED, THE CONTRACTOR SHALL AMEND THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS ACCORDINGLY. THE CONTRACTOR SHALL COOPERATE WITH ALL PROPERTY OWNERS IN THE PERFORMANCE OF THE WORK.

3. AT EACH OF THE POTENTIAL STAGING AREAS SHOWN ON THE PLANS, DISTINCT USES HAVE RECEIVED APPROVAL OF THE RESPECTIVE PROPERTY OWNER AND HAVE BEEN PERMITTED FOR THE PURPOSES NOTED BELOW.

   STATION 47+50 TO 50+50 RIGHT:
   VEHICLE AND EQUIPMENT STORAGE, DRY MATERIAL STORAGE, NO STORAGE OF SOILS HAS BEEN ACCOUNTED FOR.
   ACCESS TO THIS STAGING AREA WILL BE VIA GALLISON HILL ROAD AND POWER PLANT ROAD.

   WINOOSKI HYDRO DAM 52+50 TO 59+50 RIGHT:
   VEHICLE AND EQUIPMENT STORAGE, DRY MATERIAL STORAGE. FIELD OFFICE TRAILER, SOIL STOCKPILES.
   ACSESS TO THIS STAGING AREA WILL BE VIA ROUTE 2.

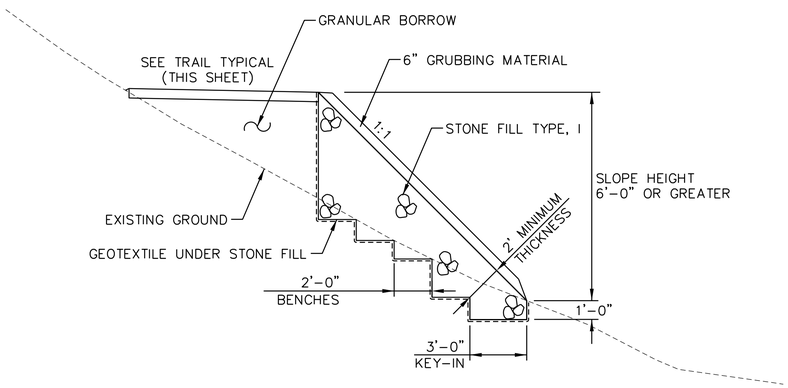
4. CLEARING LIMITS SHALL EXTEND TO THE SLOPE LIMIT AS SHOWN ON THE PLANS. FLAGGING RIBBON, PROJECT DEMARCATION FENCE AND BARRIER FENCE AS APPLICABLE HAS BEEN SHOWN OFFSET 5 FEET FROM THE SLOPE LIMIT. THE EXACT CLEARING AND DISTURBANCE LIMITS WILL BE ESTABLISHED IN THE FIELD BY THE ENGINEER.

5. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL RESTORE ALL AREAS IMPACTED BY CONSTRUCTION TO ORIGINAL GRADE UNLESS OTHERWISE SHOWN ON THE PLANS AND AS APPROVED BY THE CVTA.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE CONDITIONS OF ALL PERMITS OBTAINED FOR THIS PROJECT. COPIES OF THESE PERMITS AND THEIR CONDITIONS HAVE BEEN INCLUDED IN THE CONTRACT DOCUMENTS.

7. CONSTRUCTION SHALL BE IN ACCORDANCE WITH US ARMY CORPS OF ENGINEERS GENERAL PERMIT NO NAE-2017-02232. BASED UPON THE CALCULATED TOTAL AREA OF WETLAND IMPACTS THIS PROJECT QUALIFIES FOR AUTHORIZATION IN CATEGORY 1: NON-REPORTING. PARTICULAR ATTENTION SHOULD BE PAID TO SECTION V.18 OF THE GENERAL PERMIT.

8. RAILING THAT IS INDEPENDENT OF BRIDGES SHALL BE 42 INCHES TALL. FOR RAILING THAT IS CONTIGUOUS WITH BRIDGE MOUNTED RAIL, SEE SHORT SPAN BRIDGE NOTES.



REINFORCED SLOPE 6' OR GREATER

N.T.S.

STA. 34+30 TO 34+80, RT
STA. 46+60 TO 46+90, RT
STA. 48+00 TO 49+50, RT.
STA. 58+52 TO 58+90 LT.
STA. 59+50 TO 59+87 LT.

PHASE 2,3

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Permit-Seal

Client/Project
CROSS VT TRAIL ASSOCIATION

EAST MONTPELIER STP EHO6(3)
MONTPELIER-BERLIN STP CVRT(2)

Title
TYPICAL SECTIONS AND GENERAL NOTES

Project No.	Scale	
195311563	AS SHOWN	
Drawing No.	Sheet	Revision
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES		TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
EROSION CONTROL	BIKE/TRANSPORTATION PATH	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	1	1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
	675	675		CY	COMMON EXCAVATION	203.15				
	370	370		CY	GRANULAR BORROW	203.32				
	10	10		CY	TRENCH EXCAVATION OF EARTH	204.20				
	7.6	7.6		MFBM	STRUCTURAL LUMBER AND TIMBER, TREATED	522.25				
	30	30		LF	18" CPEP(SL)	601.2615				
	560	560		CY	STONE FILL, TYPE I	613.10				
	1	1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
	1	1		LS	TRAFFIC CONTROL	641.10				
	4500	4500		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11				
	2300	2300		SY	GEOTEXTILE UNDER STONE FILL	649.31				
	210	210		LB	SEED	651.15				
	580	580		LB	FERTILIZER	651.18				
	3	3		TON	AGRICULTURAL LIMESTONE	651.20				
	100	100		CY	TOPSOIL	651.35				
	1050	1050		SY	GRUBBING MATERIAL	651.40				
1		1		LS	EPSC PLAN	653.01				
20		20		HR	MONITORING EPSC PLAN	653.02				
1		1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	653.03				
	2	2		TON	HAY MULCH	653.10				
1800		1800		SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.20				
30		30		CY	STABILIZED CONSTRUCTION ENTRANCE	653.35				
	500	500		LF	BARRIER FENCE	653.50				
	6500	6500		LF	PROJECT DEMARCATION FENCE	653.55				
	17.5	17.5		SF	TRAFFIC SIGN, TYPE A	675.20				
	120	120		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
	580	580		CY	SPECIAL PROVISION (AGGREGATE SURFACE COURSE)	900.608				
	1400	1400		LF	SPECIAL PROVISION (TIMBER RAIL)	900.640				

Stantec
55 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403
Tel. 802.864.0223
www.stantec.com

Consultants

Legend

Notes

Revision	By	Appd.	YY.MM.DD

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	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

Client/Project
CROSS VT TRAIL ASSOCIATION

EAST MONTPELIER STP EHO6(3)
MONTPELIER-BERLIN STP CVRT(2)

Title
QUANTITY SUMMARY SHEET
PHASE 2

Project No. 195311563
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Drawing No.
Sheet 4 of 57
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES			TOTALS		DESCRIPTIONS			
EROSION CONTROL	BIKE/TRANSPORTATION PATH	BRIDGE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
	1		1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
	100		100		CY	COMMON EXCAVATION	203.15	
	600		600		CY	EARTH BORROW	203.30	
		123	123		CY	STRUCTURE EXCAVATION	204.25	
		130	130		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
		1	1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	
	10		10		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	
	250		250		CY	STONE FILL, TYPE I	613.10	
	75		75		CY	STONE FILL, TYPE II	613.11	
	6		6		EACH	BOLLARDS	619.14	
	1		1		LS	MOBILIZATION/DEMOBILIZATION	635.11	
	1		1		LS	TRAFFIC CONTROL	641.10	
	900		900		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11	
	300		300		SY	GEOTEXTILE UNDER STONE FILL	649.31	
	100		100		LB	SEED	651.15	
	260		260		LB	FERTILIZER	651.18	
	2		2		TON	AGRICULTURAL LIMESTONE	651.20	
	50		50		CY	TOPSOIL	651.35	
	300		300		SY	GRUBBING MATERIAL	651.40	
1			1		LS	EPSC PLAN	653.01	
20			20		HR	MONITORING EPSC PLAN	653.02	
	2		2		TON	HAY MULCH	653.10	
550			550		SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.20	
2			2		CY	CHECK DAM, TYPE I	653.25	
15			15		CY	STABILIZED CONSTRUCTION ENTRANCE	653.35	
	320		320		LF	SILT FENCE, TYPE I	653.475	
	1500		1500		LF	BARRIER FENCE	653.50	
	400		400		LF	PROJECT DEMARCATION FENCE	653.55	
	16.5		16.5		SF	TRAFFIC SIGN, TYPE A	675.20	
	50		50		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	
	120		120		CY	SPECIAL PROVISION (AGGREGATE SURFACE COURSE, TRAIL)	900.608	
		36	36		CY	SPECIAL PROVISION (GABION RETAINING WALL)	900.608	
		2	2		EACH	SPECIAL PROVISION (PROOF TEST OF MICROPILES)	900.620	
	500		500		LF	SPECIAL PROVISION (TIMBER RAIL)	900.640	
		1	1		LS	SPECIAL PROVISION (DRILLED MICROPILE & CONCRETE ABUTMENT)(ABUTMENT 1)	900.645	
		1	1		LS	SPECIAL PROVISION (DRILLED MICROPILE & CONCRETE ABUTMENT)(ABUTMENT 2)	900.645	
		1	1		LS	SPECIAL PROVISION (PREFABRICATED MULTI-MODAL BRIDGE)	900.645	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

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Title
QUANTITY SUMMARY SHEET
PHASE 3

Project No. 195311563
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