

Vermont Department of Environmental Conservation

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Agency of Natural Resources

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AUTHORIZATION TO CONDUCT NEXT FLOOD MEASURES

Pursuant to Section C.2.2.5 of the Vermont Stream Alteration General Permit

Project Number: **SA-05-011-2015 Bridgewater TH 4 Bridge Replacement** **VTrans Grant # BC1619**

Applicant Name: Town of Bridgewater Contact: Randy Kennedy

Mailing Address: 7335 Route 4, Bridgewater, VT 05034 Phone: (802) 342-0768

Project Location: Bridgewater Hill Road TH #4 off of US Route 4 Email: twbridge@comcast.net

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

1. This project authorizes a temporary bypass road and replacement of a 4' x 5' concrete bridge with a 12'-11" x 7'-6" arch plate pipe over an un-named tributary to the Ottauquechee River on Bridgewater Hill Road at MM 0.05.
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit.
3. The proposed activity will meet the terms and conditions of Section F of the General Permit provided:
 - a) The project will be completed and approved as shown on the undated plan, prepared by Contech, and approved by the Vermont Agency of Natural Resources as attached herein.
 - b) The project will not adversely affect the public safety by increasing flood hazards.
 - c) The project will not significantly damage fish life or wildlife.
 - d) The project will not significantly damage the rights of riparian owners.
 - e) The project will not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction. The project shall use stone size Type E1 in between sediment sills inside the culvert.
 - f) The project is conducted in a manner which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the VT Water Quality Standards.
 - g) The River Management Engineer is notified by phone or email when construction begins and when the project is complete.
 - h) In-stream working dates for all GP activities are from July 1st through October 1st; any in-stream work outside these dates will require an Individual Stream Alteration Permit authorization by the River Management Engineer.
 - i) This authorization has been posted for three days public comment. This authorization constitutes final approval.

If there are any changes in the project plan or deviation in construction from the plan, the Permittee must notify the River Management Engineer immediately.

If the project is constructed as you have described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

Signed this 30th day of March, 2015
David K. Mears, Commissioner
Department of Environmental Conservation

This permit expires October 1, 2015.

by: 

Todd Menees, P.E., P.H., River Management Engineer

Bridgewater Hill Road TH 4 Replacement Bridge in Town of Bridgewater, Vermont



Bridge Location above intersection of Bridgewater Hill Road and US Route 4



Photograph looking upstream at Existing Bridge Outlet

Streambed Stone Fill Design Guidance

Type	Velocity Range (fps)*	Embeddedness (in)
E1	$V \leq 9$	18
E2	$9 < V \leq 11$	24
E3	$11 < V \leq 13$	36
E4	$13 < V \leq 15$	48

*Maximum velocity should be based on a minimum 50-year design flow rate and calculated at the structure outlet.

Item xxx.xxx CY Streambed Stone Fill Specification

Type E1. The longest dimension of the stone shall be at least 18 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 12 inches, and at least 25 percent of the particles shall have a maximum dimension of 2 inches and be well graded material.

Type E2. The longest dimension of the stone shall be at least 24 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 18 inches, and at least 25 percent of the particles shall have a maximum dimension of 2 inches and be well graded material.

Type E3. The longest dimension of the stone shall be at least 36 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 24 inches, and at least 25 percent of the particles shall have a maximum dimension of 2 inches and be well graded material.

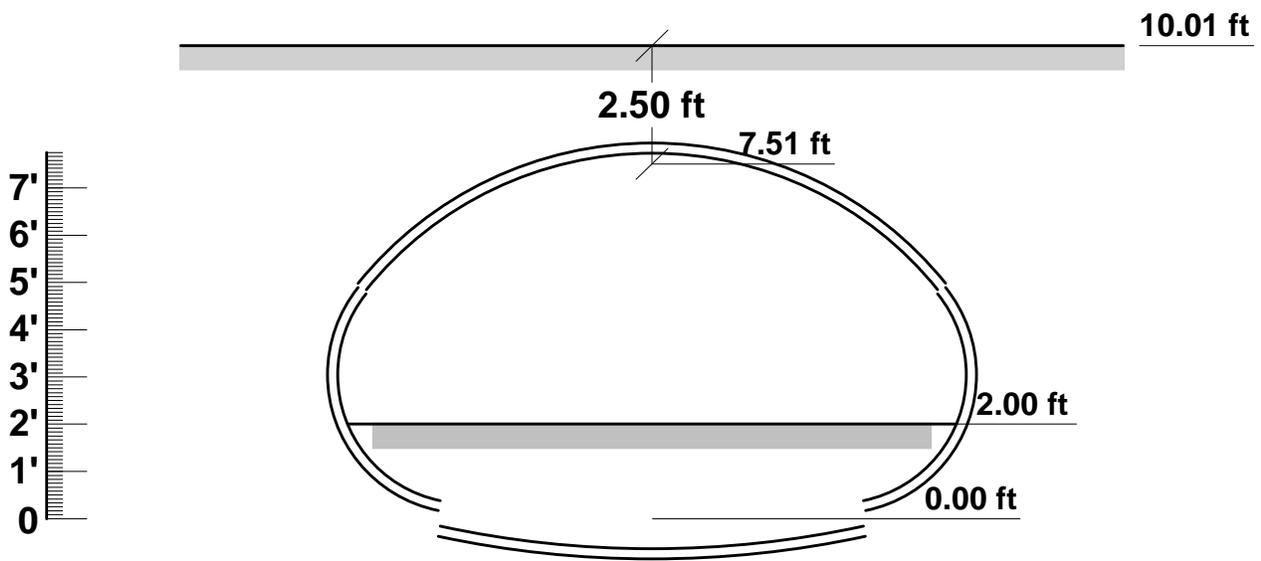
Type E4. The longest dimension of the stone shall be at least 48 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 36 inches, and at least 25 percent of the particles shall have a maximum dimension of 2 inches and be well graded material.

Notes

- The streambed stone fill shall be hard, blasted, angular rock other than serpentine rock containing the fibrous variety chrysotile (asbestos). Similar sized river sediment is an acceptable alternative as is a mixture of angular material and river sediment.
- Stone placed inside of a closed structure shall be placed such that the structure is not damaged.
- Care shall be taken to limit segregation of the materials.
- Add sand borrow item as needed to seal the bed and prevent subsurface flow.
- There shall be no subsurface flow upon final inspection.

TH 23 Bridgewater VT

42N Pipe Arch
12'-11" Span x 7'-6" Rise
End Area = 57.0 ft²



Arc	"N"	Radius
Top	17	90 1/2"
Corner	7	31 1/2"
Bottom	11	251 1/2"



Not for final design or construction purposes