VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
Springfield Regional Office
100 Mineral Street, Suite 303
Springfield, VT 05156
www.watershedmanagement.vt.gov

Agency of

[phone] 802-885-8855
[fax] 802-885-8890
[cell] 802-345-3510

AUTHORIZATION TO CONDUCT STREAM ALTERATION ACTIVITIES

Pursuant to Section C.2.2.5 of the VT Stream Alteration General Permit (Reporting activities not requiring an application)

Project Number: SA-SE-067-2014 Halifax Denison Quarry Culvert
Applicant Name: C.A. Denison Lumber Co. Inc., Halifax, VT
Mailing Address: 5076 Stage Road, Guilford, VT 05301-4446
Project Location: off Evans Rd un-named tributary to Green River

Act 250 LUP # 2W0204 Application
Contact: Russell Denison
Phone: (802) 368-7770
Email: russelldenison@msn.com

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

1. This project authorizes replacement of a log road stream ford crossing with a 72" dia CMP culvert on an un-named tributary to the Green River for construction and operational access for a proposed dimensional stone quarry.
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit (SA GP).
3. The proposed activity will meet the terms and conditions of the General Permit provided:
   a) The project will be completed and approved as shown on the revised plan dated 12/2/14, prepared by Vanasse Hangen Brustlin, 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 cutting of trees shall be minimized to the greatest extent possible.
   f) The project is conducted in accordance with SA GP Section B.3.3 Erosion Control which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the VT Water Quality Standards.
   g) The ANR River Management Engineer is notified by phone or email when construction begins and when the project is complete. All disturbed areas shall be seeded and mulched with native conservation seed mix.
   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 3rd day of December, 2014
David K. Mears, Commissioner
Department of Environmental Conservation

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

This permit expires October 1, 2016.

Computations

Project	C.A. Denison Lumber Co., Inc.	Project #	57595.00
Location	Halifax, Vermont	Sheet	1 of 1
Calculated By	RAW	Date	12/1/2014
Checked By		Date	
Title	Stone Sizing for Channel Protection		

Vermont Agency of Natural Resources. Vermont Standard River Management Principles and Practices. May 1, 2014
Appendix M. Draft Streambed Fill Specifications

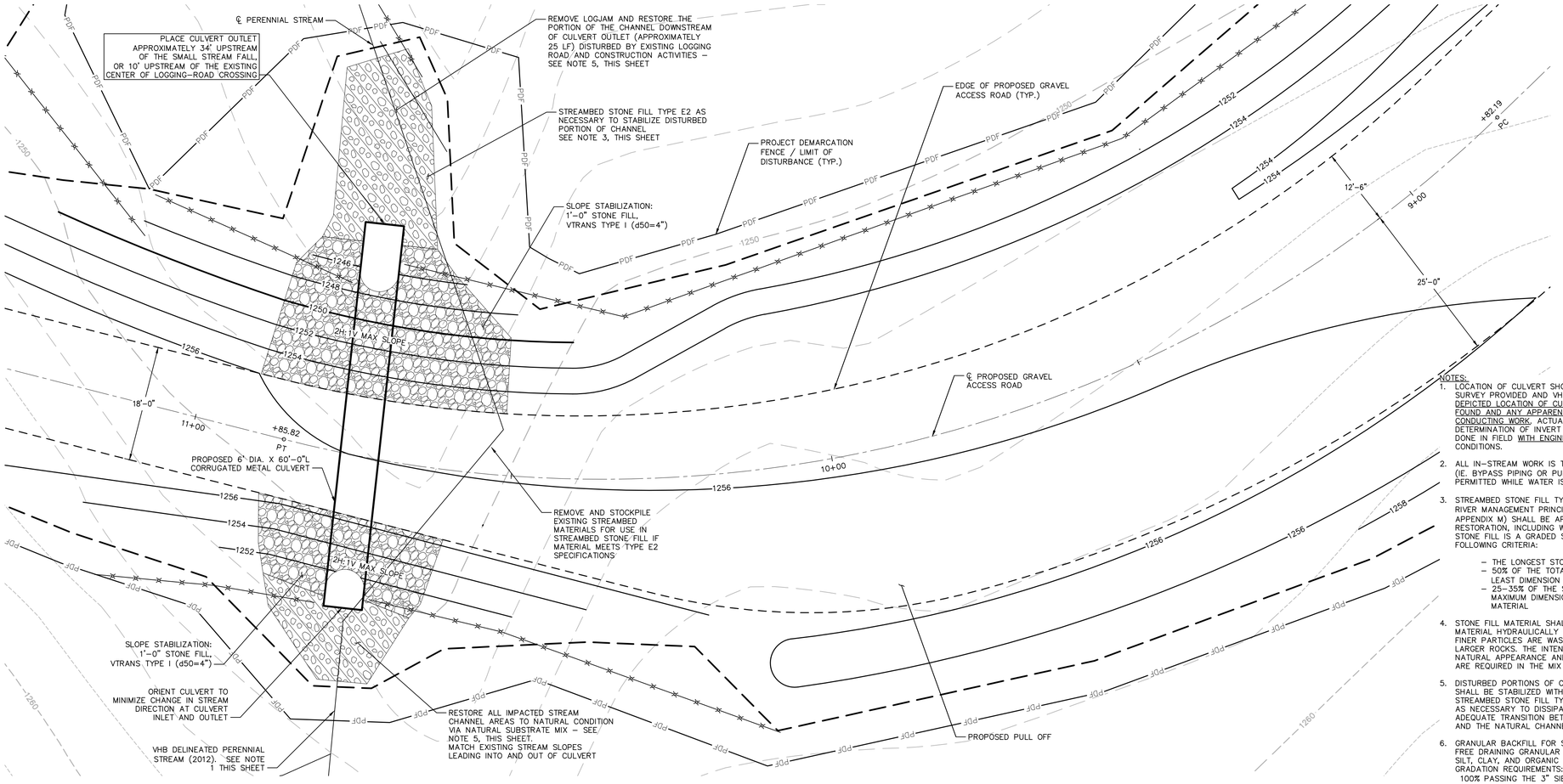
Type	Velocity Range (feet/second)	Embeddedness (inches)
E1	V ≤ 9	18
E2	9< V ≤ 11	24
E3	11 < V ≤ 13	36
E4	13 < V ≤ 15	48

Velocity at Q100 flow of 65 cfs (From HY-8) = 10.8 cfs
Recommended Streambed Fill Specification = E2

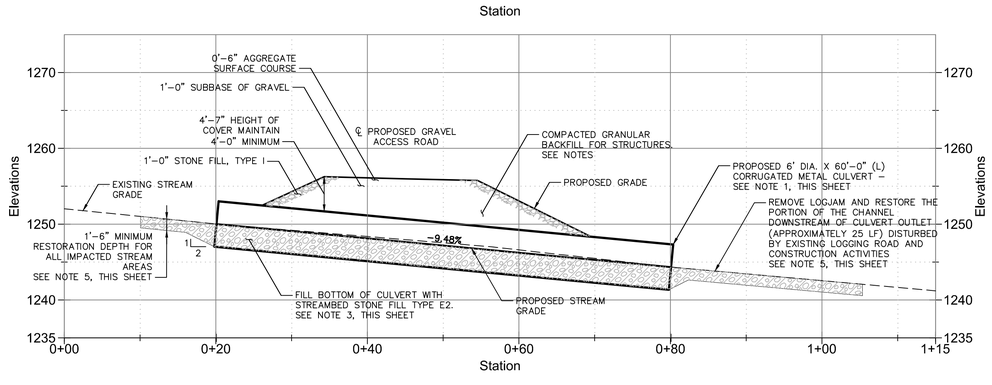
Type E2 - The longest dimension of the stone shall be at least 24 inches, and at least 50 percent of the volume of the stone in place shall have a least dimension of 18 inches, and at least 25 percent of the particles shall have a maximum dimension of 2 inches and be well graded material.

Notes:

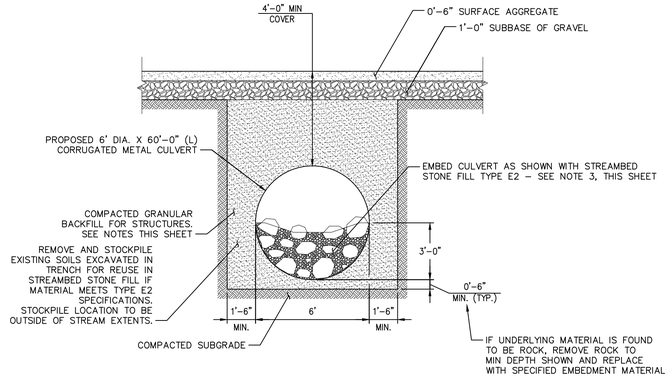
1. The streambed stone fill shall be hard, blasted, angular rock other than serpentine rock containing the fibrous variety chrysotile (asbestos). Similar sized river sediment is an acceptable alternative as is a mixture of angular material and river sediment.
2. Stone placed inside of a closed structure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



SITE PLAN
SCALE: 1" = 10'



CULVERT LONGITUDINAL SECTION
SCALE: 1" = 10'



CULVERT TYPICAL SECTION
SCALE: 1" = 4'

NOTES:

1. LOCATION OF CULVERT SHOWN ON PLANS IS BASED ON AERIAL SURVEY PROVIDED AND VHB DELINEATED STREAM LOCATION. VERIFY DEPICTED LOCATION OF CULVERT IN FIELD; REPORT CONDITIONS FOUND AND ANY APPARENT DISCREPANCIES TO ENGINEER PRIOR TO CONDUCTING WORK. ACTUAL PLACEMENT OF CULVERT AND DETERMINATION OF INVERT ELEVATIONS AND CULVERT SLOPE TO BE DONE IN FIELD WITH ENGINEER INPUT TO REFLECT TRUE STREAM CONDITIONS.
2. ALL IN-STREAM WORK IS TO OCCUR DURING FLOW BYPASS ACTIVITIES (IE. BYPASS PIPING OR PUMPING). NO IN-STREAM WORK IS PERMITTED WHILE WATER IS FLOWING THROUGH THE WORK ZONE.
3. STREAMBED STONE FILL TYPE E2 (PER THE VERMONT STANDARD RIVER MANAGEMENT PRINCIPLES AND PRACTICES (SRMPP) MANUAL, APPENDIX M) SHALL BE APPLIED IN ALL IN-STREAM AREAS OF RESTORATION, INCLUDING WITHIN THE CULVERT INVERT. TYPE E2 STONE FILL IS A GRADED STONE-PARTICLE MIX MEETING THE FOLLOWING CRITERIA:
   - THE LONGEST STONE DIMENSION IS 24" MIN
   - 50% OF THE TOTAL VOLUME OF STONE FILL SHALL HAVE A LEAST DIMENSION OF 18 INCHES (d50 = 18")
   - 25-35% OF THE STONE FILL VOLUME SHALL HAVE A MAXIMUM DIMENSION OF 2 INCHES, AND BE WELL-GRADED MATERIAL
4. STONE FILL MATERIAL SHALL BE PLACED IN 1.5 FOOT LIFTS AND THE MATERIAL HYDRAULICALLY FLUSHED BETWEEN LIFTS TO ENSURE THAT FINER PARTICLES ARE WASHED INTO THE VOIDS SURROUNDING LARGER ROCKS. THE INTENT IS TO CREATE A STREAM CHANNEL OF NATURAL APPEARANCE AND FUNCTION. ADEQUATE GRANULAR FINES ARE REQUIRED IN THE MIX TO PREVENT SUBSURFACE STREAM FLOW.
5. DISTURBED PORTIONS OF CHANNEL AT EACH END OF THE CULVERT SHALL BE STABILIZED WITH A MINIMUM THICKNESS OF 1.5 FEET OF STREAMBED STONE FILL TYPE E2. THIS MATERIAL SHALL BE PLACED AS NECESSARY TO DISSIPATE ENERGY AND TO PROVIDE AN ADEQUATE TRANSITION BETWEEN THE EMBEDDED CULVERT MATERIALS AND THE NATURAL CHANNEL SUBSTRATE.
6. GRANULAR BACKFILL FOR STRUCTURES SHALL BE A WELL GRADED FREE DRAINING GRANULAR MATERIAL, REASONABLY FREE FROM LOAM, SILT, CLAY, AND ORGANIC MATERIAL, AND MEET THE FOLLOWING GRADATION REQUIREMENTS:
   100% PASSING THE 3" SIEVE
   45-75% PASSING THE NO. 4 SIEVE
   0-12% PASSING THE NO. 100 SIEVE
   0-6% PASSING THE NO. 200. SIEVE
7. GRANULAR BACKFILL FOR STRUCTURES SHALL BE COMPACTED IN 6" MAX. LIFTS.

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
7056 U.S. Route 7, P.O. Box 120
North Ferrisburgh, Vermont 05473
802.497.6100 • FAX 802.425.7799

No.	Revision	Date	Appvd.
1	Revised Streambed stone fill notes	12/2/14	RW

Designed by | Drawn by | Checked by
CAD checked by | Approved by
Scale AS SHOWN | Date December 13, 2013

Project Title
Halifax Quarry
C.A.Denison Lumber Co., Inc.
Halifax, Vermont

Issued for
Permitting

Not Approved for Construction

Drawing Title
Stream Crossing Plan

Drawing Number
C-3

Sheet 3 of 11

Project Number
57595.00