VERMONT

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Agency of Natural Resources

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AUTHORIZATION TO CONDUCT NEXT FLOOD MEASURES

Pursuant to Section F of the Vermont Stream Alteration General Permit

Project Number: **SA-3-** 133 pre **-2015**

Applicant Name: Town of Barre Phone: 476-2595

Mailing Address: P.O. Box 116 Websterville, VT 05678

Project Location: Plainfield Road - Gunner Brook

Email: hhinrichsen@barretown.org

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

1. This project authorizes woody debris removal, in-stream channel material removal, structure header, riprap & erosion control (as indicated attached
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit – Next Flood Measures.
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 plan dated 7/22/15, prepared by Town of Barre/ AEC and approved by the Vermont Agency of Natural Resources.
   b) The project is proportional to the threat and conditioned to cease when the threat to life or to improved property has ended.
   c) The project will not result in a threat to life, public health or safety.
   d) The project will meet the standards detailed in subsection E.2.1 and E.2.2 of the General Permit.
   e) The project will meet Stream Alteration Standards to the greatest extent possible.
   f) A pre-construction meeting is held between the contractor, owner/applicant, and the ANR River Management Engineer.
   g) The River Management Engineer is notified by phone or email when construction begins and when the project is complete.
   h) A final construction inspection is required for any culvert and bridge related work.
   i) Additional conditions: See attached narrative, sketch & details

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.

David K. Mears, Commissioner
Department of Environmental Conservation

by: _____ Dated: 7/22/15
Patrick Ross, P.E., River Management Engineer

1. **Plainfield Road Site:**

   Required:

- **Woody debris removal**: remove any woody debris at culvert inlet and outlet immediately blocking the current structure and flow immediately downstream. Debris removal will extend upstream from culvert inlet to just upstream of the upstream riprap location. Leave tree stumps in place if they are currently attached to the bank and any tree debris located outside the stream channel will remain in place. Debris removal will be limited to these areas unless otherwise approved.
- **In-stream channel material removal:** the plugging of the structure with debris and sediment caused the channel to excessive aggrade (build up) it's bed, limiting channel transport capacity. A limited amount of guided channel dredging will be conducted under the supervision of the Stream Engineer upstream of the structure invert. Channel material will begin at structure invert, using the invert elevation as a starting point for material removal from downstream to upstream. Channel material removal will extend upstream getting shallower as you move upstream with final channel bed elevation approximately 2-2.5' below top of low bank elevation. Natural channel bed material shall be removed from site and could be used as chinking material at Cummings Road site for channel bed armoring.
- **Structure header**: 3'x6'x18" concrete block or equivalent granite block, approximately 30' w x 20' high (1-2 blocks deep). Blocks installed 3-4' below channel bed. Installed both at structure inlet and outlet.
- **Riprap:** Type IV stone, 3-4' keyway with up tiebacks. (See detail). Riprap to be installed immediately adjacent to culvert header on both river right and left. River right riprap will extend further downstream to protect Mitchell Road embankment. Jim Ryan will define limits of riprap and height of riprap in the field at contractor pre-construction meeting. An additional section of riprap will be installed at the upstream end of site as defined in the field. Riprap will be installed at site in lieu of rock wall indicated in Town specs to contractor.
- **Erosion control:** All disturbed areas will be immediately seeded and mulched as work is completed in each area.

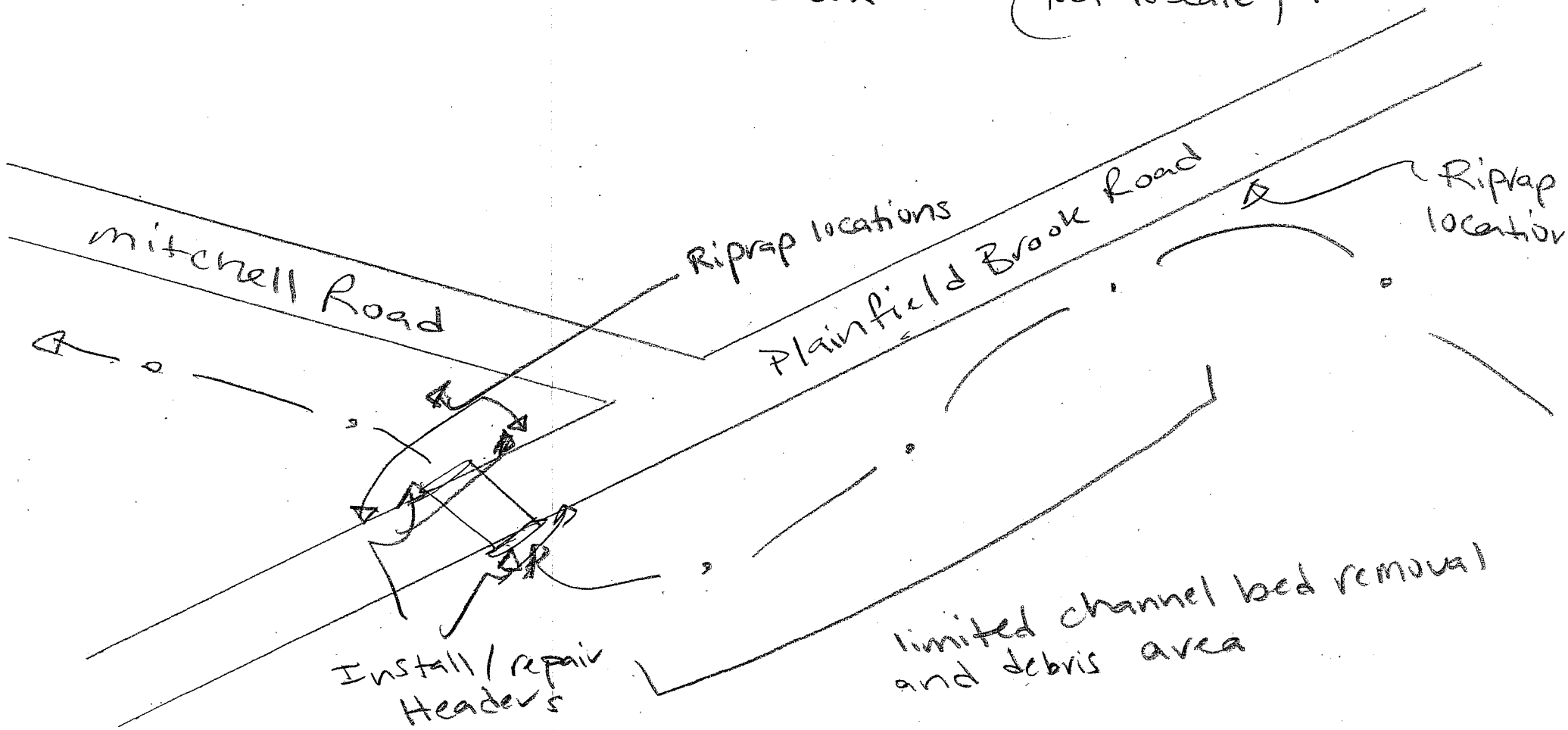
Recommended:

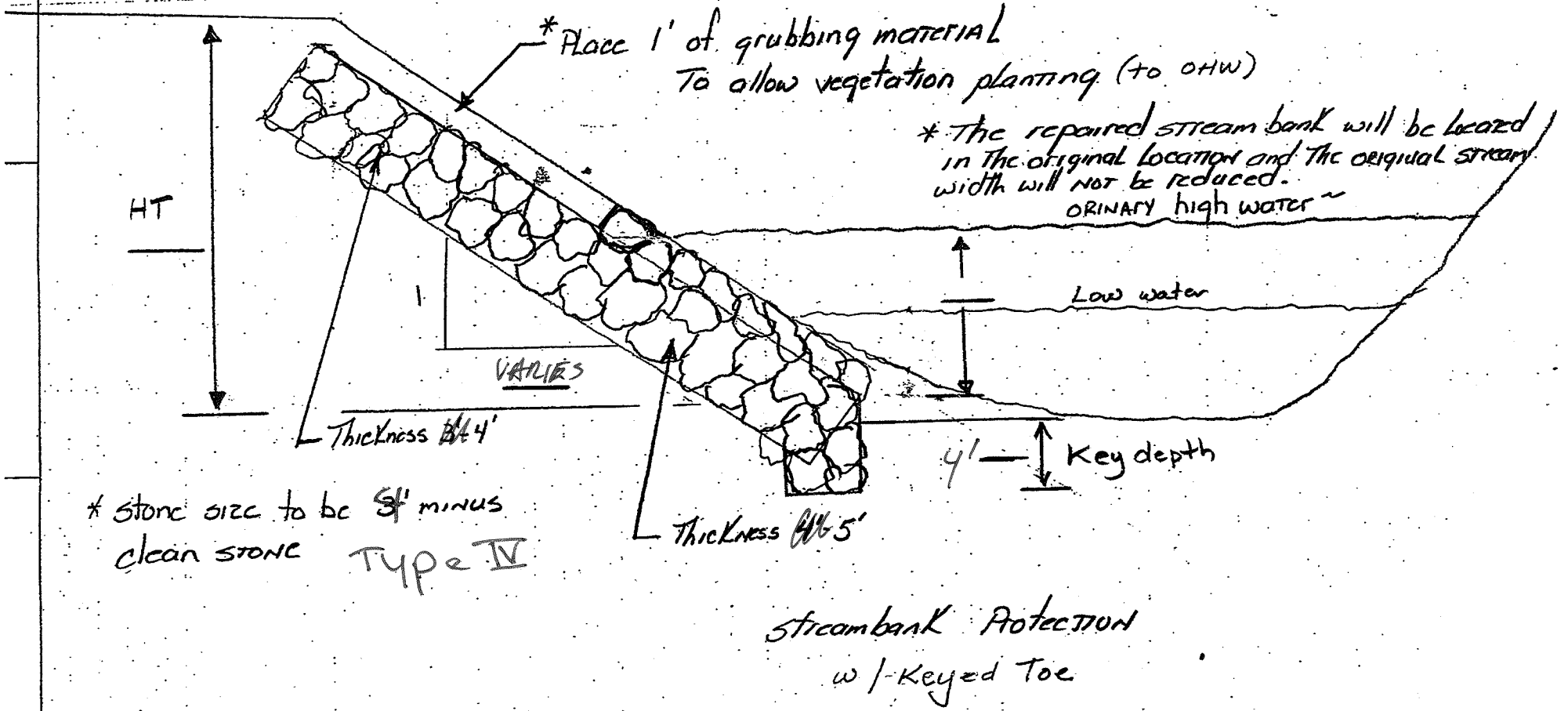
- **Stream crossing structure is undersized and should be replaced with bankfull plus sized structure.** Current structure is size at approximately 50% of bankfull width. A new bankfull plus sized structure would better accommodate the passage of flow, sediment and debris, reducing jam potential and related outflanking. DEC Stream Engineers and VTrans available to assist in correct structure sizing.
- **Rock-lined drainage ditches**- install rock lined drainage ditch stabilization on upstream road drainage networks as needed to address erosion.

Jim Ryan
DEC Deputy Stream Engineer
(802) 490-6140

Town of Barre - Plainfield Brook Rd. - Gunner Brook

(Not to scale) N





Streambank Protection
w/ Keyed Toe