



DUFRESNE GROUP  
CONSULTING ENGINEERS

# BREEZY AVENUE CULVERT REPLACEMENT

## GREENSBORO, VERMONT



*Historic Building Built Over Stone Culvert*



*Failing Arch Culvert*

Construction projects in the Village of Greensboro are challenging due to the significant tourist traffic the area experiences during summertime and the historic buildings located in the center of the village. One of these historic buildings, The Miller's Thumb, previously housed a grist mill that was powered by Greensboro Brook. Greensboro Brook drains from the south end of Caspian Lake and continues under Willey's Store via a culvert under Breezy Avenue.

Portions of the culvert under Breezy Avenue consist of a laid stone arch, which forms part of the south wall of The Miller's Thumb and extends approximately half way across Breezy Avenue. After the stone arch portion of the culvert started showing signs of settlement an investigation by DG and VTrans indicated replacement was required.

### KEY FEATURES

- Existing bedrock channel dictated cast-in-place concrete design.
- Concrete culvert also functions as the foundation under The Miller's Thumb.
- Permits included Stream Alteration and Historic Building Modifications.
- Project bid of \$172,400 was less than the \$180,000 engineer's estimate.
- VTrans funding of \$150,000 significantly reduced the local share.

54 Main Street, P.O. Box B, Windsor, VT 05089  
297 South Main Street, Barre, VT 05641  
459 Portland Street, Suite 102, St. Johnsbury, VT 05819  
1996 Depot Street, Manchester Center, VT 05255

(t) 802.674.2904  
(t) 802.479.3698  
(t) 802.748.8605  
(t) 802.768.8291

(f) 802.674.2913  
(f) 802.479.2261  
(f) 802.748.4512  
(f) 802.768.8315

(e) info@dufresnegroup.com  
(e) d\_g\_barre@dufresnegroup.com  
(e) d\_g\_stj@dufresnegroup.com  
(e) dg\_manchester@dufresnegroup.com