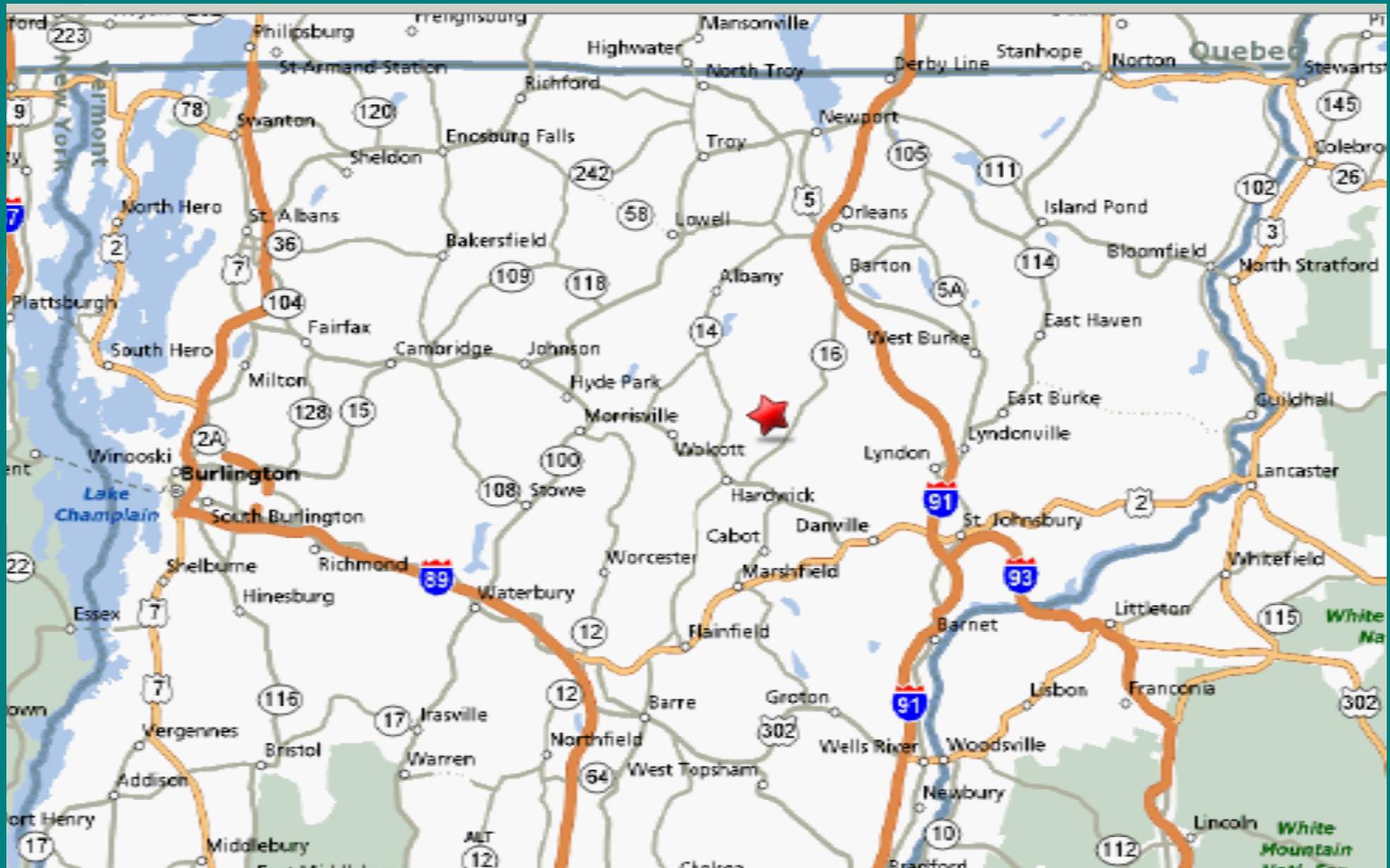


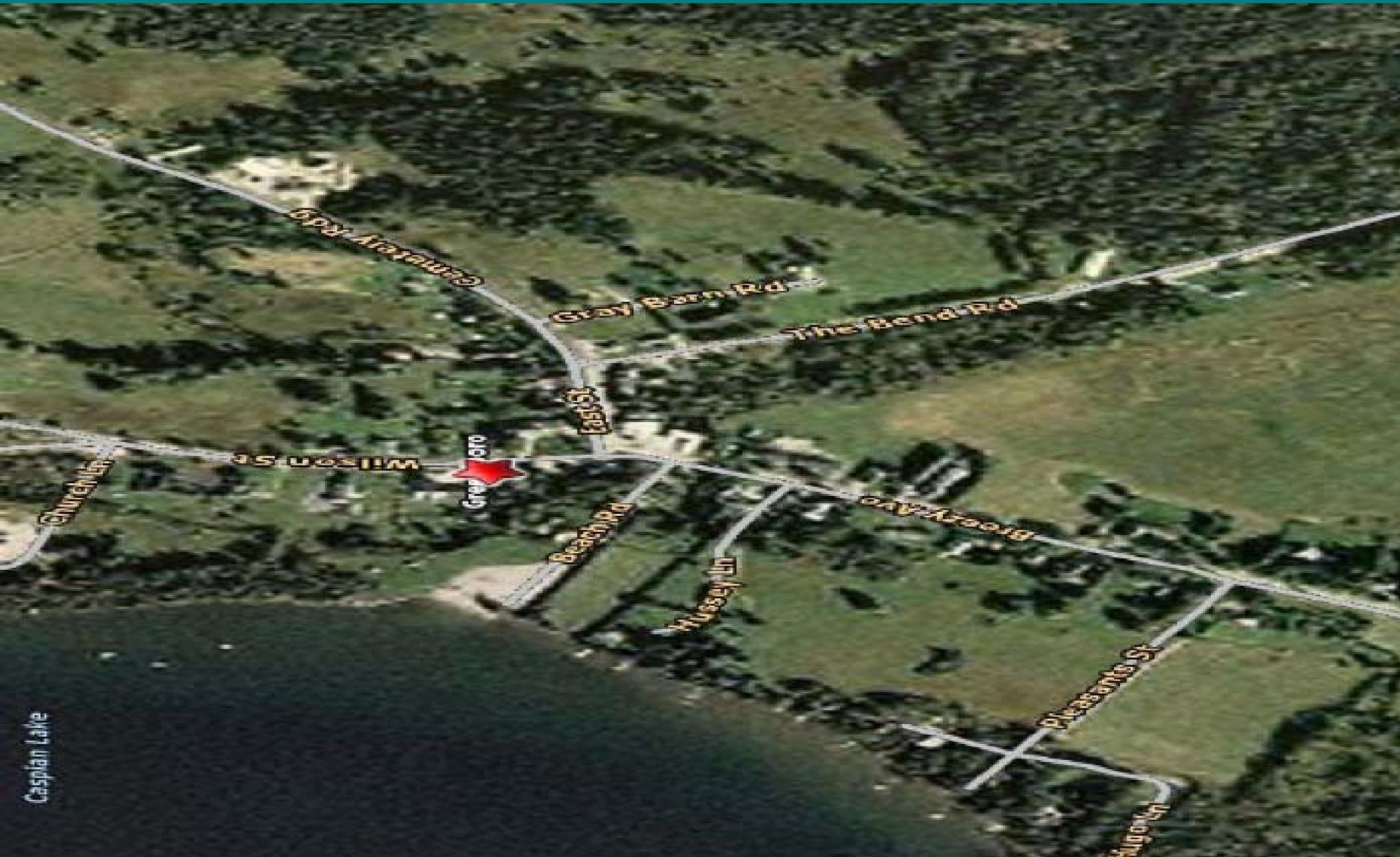
GREENSBORO SMALL HYDRO PROJECT

- *Caspian Lake can generate electricity for Greensboro's Elementary School, town hall, library fire station, public works, traffic and streetlights.*
- *The project supports local and regional agricultural economic development and local food production.*

GREENSBORO SMALL HYDRO PROJECT



GREENSBORO SMALL HYDRO PROJECT



Caspian Lake

THE GREENSBORO SMALL HYDRO PROJECT

- *Generates electricity to reduce town expenses, reduce reliance on fossil-fuels, and reduce global warming.*
- *Could make a seven to ten percent return on the investment for Greensboro's citizens and businesses.*

Greensboro Small Hydro Project Business Plan

| | | |
|---|---|-----------------------|
| • | Specifications (10/28/08) | |
| • | Water Intake elevation under ice in lake _____ | 1399.3 |
| • | Powerhouse turbine elevation | 1245.2 |
| • | Gross head | 154.1 |
| • | Drainage area from USGS topo | 7.5 sq.miles |
| • | Average stream flow @2cfs/sq. mile | 15.0 cfs |
| • | 7Q10 minimum bypass flow required estimated .25 cfs/sq.mile | 2 cfs |
| • | Design Flow _____ | 8 cfs |
| • | Francis style turbine | |
| • | 18” PIP pvc pipe penstock | 2750 feet |
| • | Head loss at design flow | 7.6 feet |
| • | Net head at design flow _____ - | 148.5 feet |
| • | Power and Energy | |
| • | Power (KW=(flow x head/ 11.8) x efficiency= {(8.0 x 152)/11.8}0.7 _____ | 0.75 power = 70 kw |
| • | Estimated plant factor | 0.6 |
| • | Estimated annual energy production | 367,920 kwhr/year |
| • | Replacing load @current local power rate of \$0.10/ kwhr | \$36,792 /year |
| • | Wholesale power sales @ current PPL rate approx. \$0.08/ kwhr | \$29,434 /year |
| • | Tax credits, Vermont renewable energy credits, grants being determined | Approx ½ cost |
| • | Estimated Construction Cost | \$290,600 |
| • | 1/12/2009 Estimated permitting cost in addition to CEDF grant | \$ 9,400 |
| • | Total Cost | \$300,000 |

The Greensboro Small Hydro Project

FINANCING OPTIONS:

- Contract with a utility, or create a utility, to produce and sell electricity.
- Create an L3C company to manage bond-like investments to raise capital for Greensboro and Hardwick and other renewable energy projects.
- Greensboro and Hardwick contribute to a state Clean Energy Development Fund grant match.
- Charitable Donations also contribute some of the match.

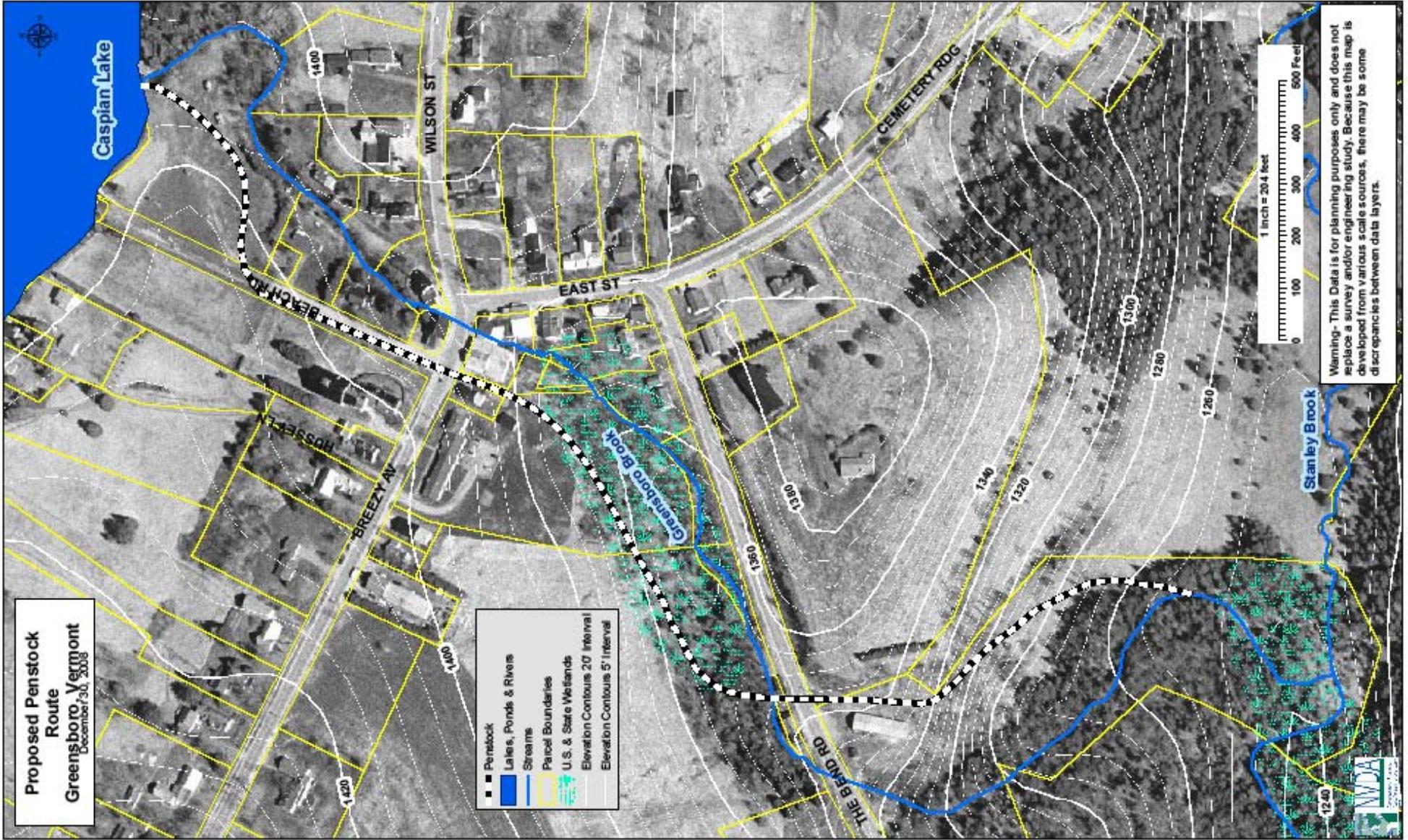
Greensboro Small Hydro Project And Arch Restoration

(Recommended pipeline design and arch repairs)

Members:

Brian Breslend
Jay Charest
Ryan Foster
Daniel Galasti
Laura Stone

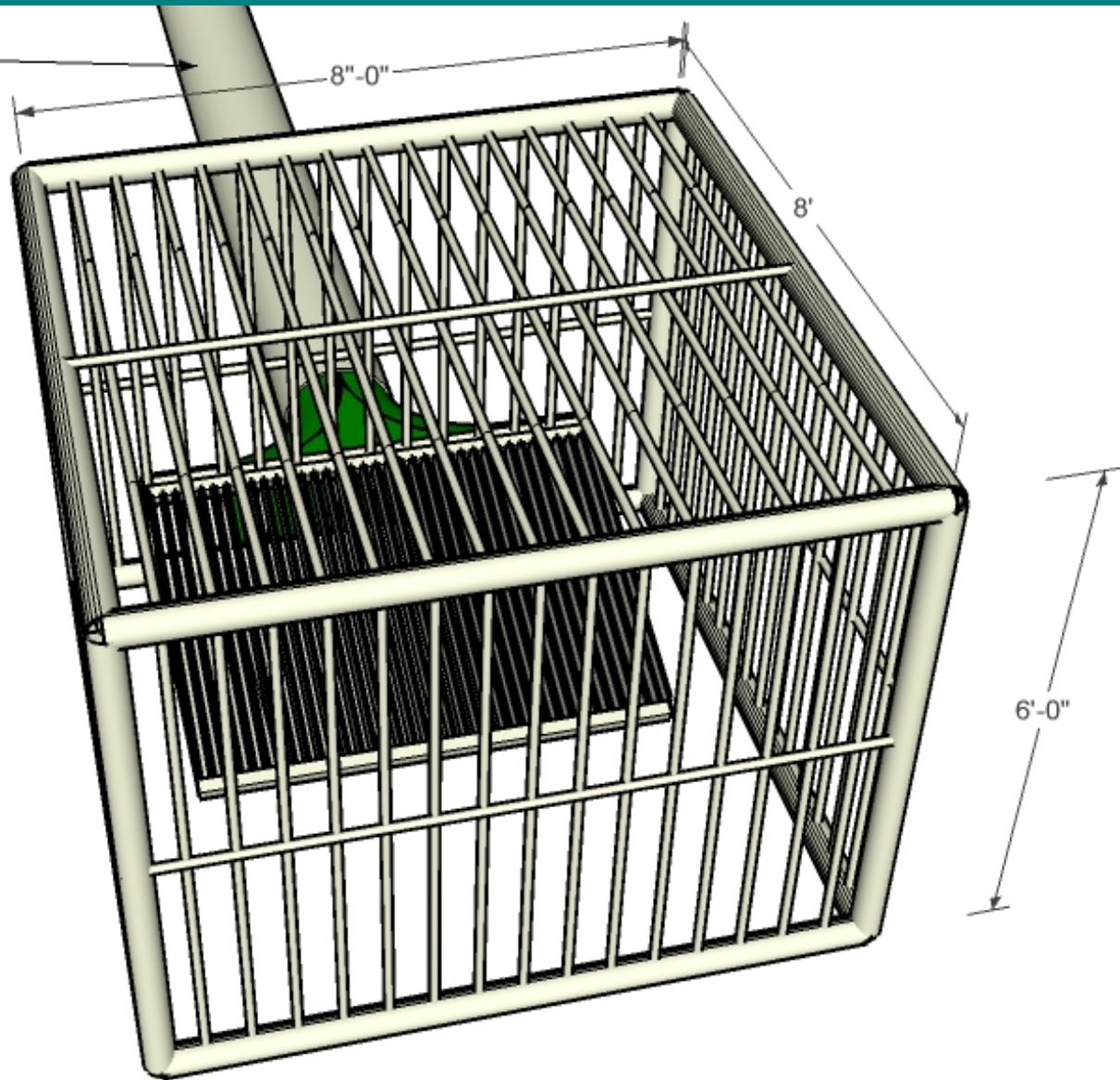
STUDY DONE BY THE UVM CIVIL ENGINEERING SCHOOL.





1/12/2009

18" dia. steel pipe in lake



Greensboro Hydro
Intake Structure
In Lake





ITALIAN POTTERY • GIFTS • VERMONT CRAFTS

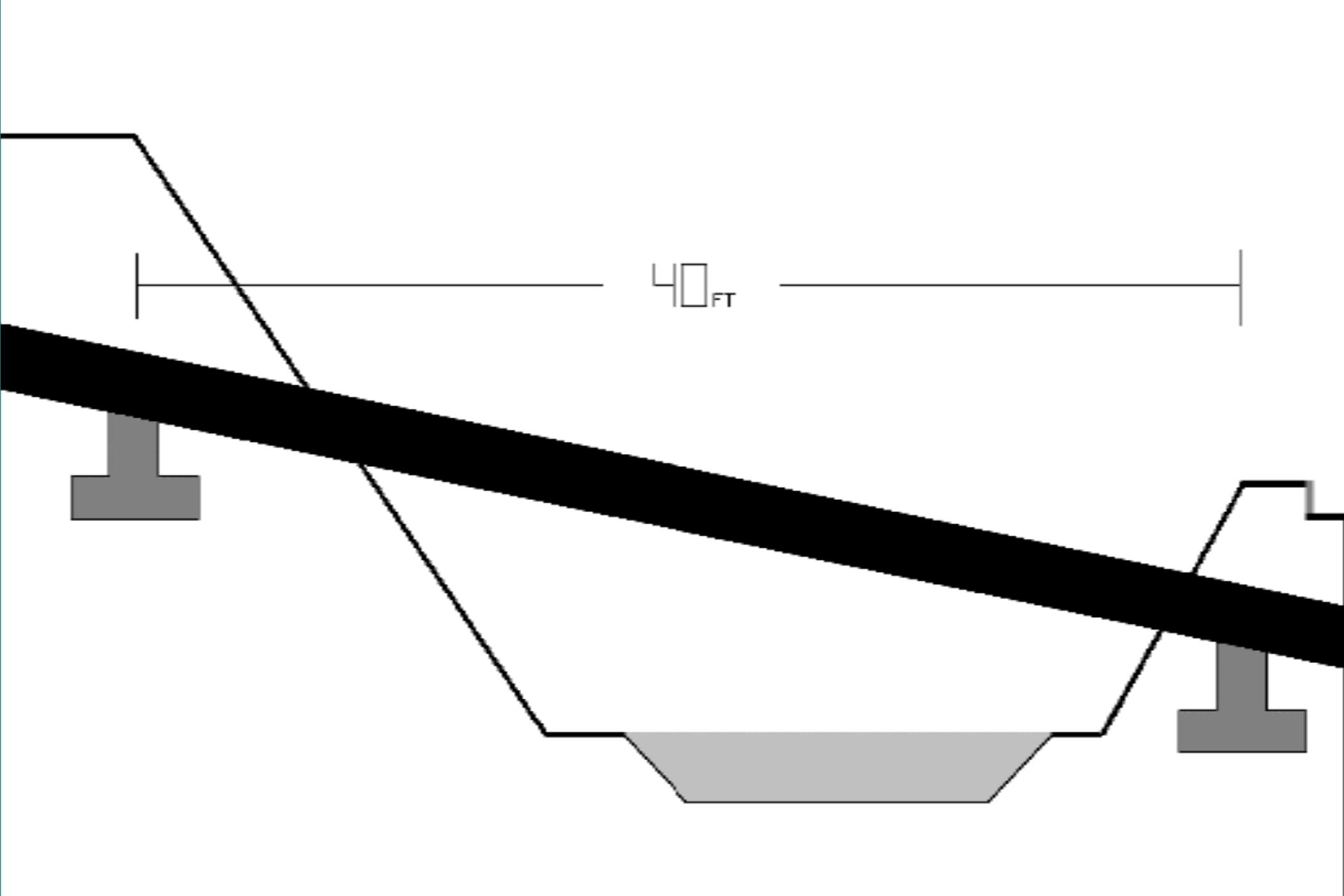
THE VERMONT STORE

THE VERMONT STORE





Photo courtesy Henry Merri
**Cutler & Goss Woodworking Factory, powered by the outfall from Caspian Lake, Greensboro
around 1900.**















THE GREENSBORO SMALL HYDRO PROJECT

- *IN SUMMARY, THE PROJECT:*
- *Generates less expensive electricity, locally, without interstate high-voltage transmission; improves local electricity distribution, capacity and reliability.*
- *Preserves water quality, fish and wildlife, wetlands, land use, history, aesthetic, historical, archeological, social and recreational values.*

