

REFERENCE REACH FIELD FORM
STREAM CHANNEL CLASSIFICATION LEVEL II

STREAM TYPE: Rosgen C3 grading to F3 in Village

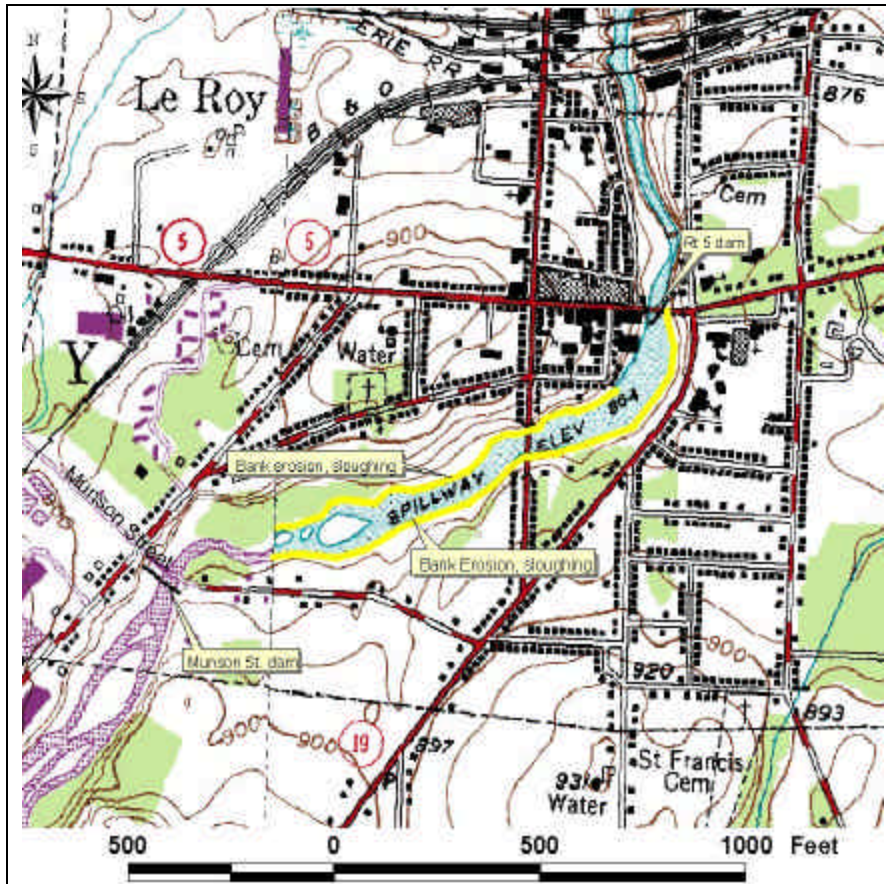
STREAM NAME: Oatka Creek DRAINAGE AREA: 135 sq. miles ± BASIN NAME: Oatka

OBSERVERS: J. Hauber, F. Reese (observed from canoe) DATE: 10/7/2004

LOCATION: Oatka Creek between Munson Street and Rt. 5 dams, Village of LeRoy, Genesee County

Latitude	42-58-28	Longitude	77-59-34	Mapped Soil Type(s)	Alden mucky silt loam	0.24
					Wayland silt loam	0.43
					Ontario loam, 3-8% slope	0.20
				K Factor		

Bankfull WIDTH	273	Ft.(W _{bkf})	Bankfull MAX DEPTH	4+	Ft.(d _{max})	Channel SLOPE		Ft/Ft		%
Bankfull Mean DEPTH	4+	Ft.(d _{bkf})	Flood Prone Area WIDTH	273	Ft.(W _{FP})	Valley SLOPE		Ft/Ft		%
WIDTH/DEPTH Ratio	68.25		ENTRENCHMENT Ratio	1		SINUOSITY (Stream Dist/Valley Dist.)	1			
Channel MATERIALS: (Pebble Count)			D50		mm	D84		mm		



Site Location Map – Sites E39 through E45, Oatka Creek, Village of LeRoy, Genesee County



Aerial Photograph ca. 2002, Sites E39 through E45, Oatka Creek, Village of LeRoy



Photo 1. Eroded bank conditions typical of south side of Oatka Creek, immediately east of Rt. 19 bridge



Photo 2. View of south bank of Oatka Creek, with Wolcott Street in the background. Note partial stone riprap along bank at photo left, and growth of riparian vegetation (bur-reed) at photo center.



Photo 3. Bank conditions typical of north bank approximately 1500 feet east of Munson Street bridge. Note muskrat hole in bank just above water level.



Photo 4. Typical bank conditions along south bank west of Rt. 19 bridge.

Site Description: The project reach extends from Munson Street to the Route 5 dam in the Village of LeRoy, Genesee County. This reach was accessed by canoe due to deep water conditions. The normal water elevation behind the dam is 864 feet above mean sea level. Land uses on the south side of the creek are predominantly residential and open space. The Village of LeRoy maintains a park along the south side of the creek adjacent to Wolcott Street. Land uses along the north side of the creek are also predominantly residential and open space. Creek banks are typically steeper on the north bank than on the south bank. From the Rt. 19 bridge west to Munson Street, the north bank is more heavily vegetated, as seen in the aerial photograph and in Photo 3. Woody vegetation is scarce on the south bank between the Route 5 dam and the Route 19 bridge. The Village and adjacent property owners mow the lawn down to the creek bank. West of the Route 19 bridge, some woody vegetation is present along the bank, but the bank has been mowed to the top of the bank on some of the residential lots.

The Village of LeRoy maintains a sanitary sewer main adjacent to the creek channel parallel to Wolcott Street. Flooding from high water levels has exposed this sewer in the past. In 2003, the Village of LeRoy placed approximately 400 LF of heavy stone riprap along the south bank of the creek to protect this sewer. In places, a thin fringe of tall emergent vegetation (*Sparganium eurycarpum*) has become established. Where this vegetation exists, it protects the bank against the prevailing winds, and cuts down on erosion. The land above this emergent fringe is mowed.

It was also noted that the mowed grass in the park is extensively used by Canada geese for grazing and resting. Goose excrement was very common along the shoreline.

Based on site observations, it appears that the water level fluctuates about 1.5 to 2 feet in this reach. The steep banks restrict the creek's ability to overflow into a flood plain.

Statement of Problem: The south bank experiences severe erosion and undercutting due to fluctuating water levels and currents driven by the prevailing winds between the Rt. 19 bridge and the Rt. 5 bridge. The bank is mowed to the top of the bank in this reach. Visual observation showed that the bank has slumped about 2-4 feet into the creek. The Village reportedly is planning to install more heavy stone riprap along the south bank to protect the shoreline. Where a fringe of riparian marsh type vegetation exists, the bank is better protected.

Some bank erosion is also evident along the south bank of the creek west of the Route 19 bridge. Erosion in this area is also caused by fluctuating water levels, and a lack of woody vegetation to hold the bank in place.

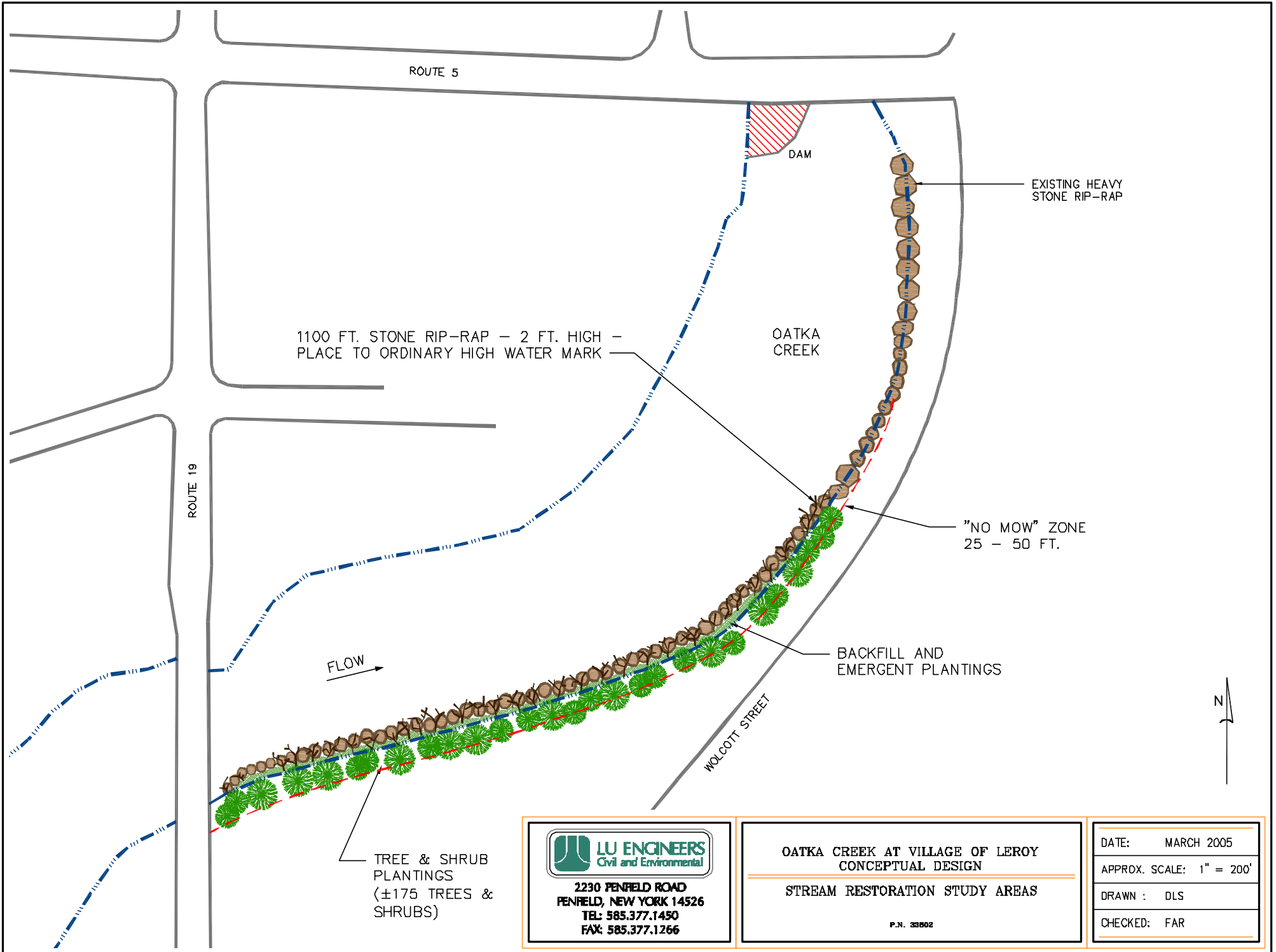
Proposed Restoration/Remediation Methods:

- Establish a 25-50 ft. wide "no mow" zone along south creek bank between the Route 5 dam and the Route 19 bridge with scattered clear areas to maintain the view of the creek. The longer grass along the shoreline will discourage the influx of Canada geese.
- Place riprap out from south bank shoreline approximately 5 feet and backfill with approximately 1-2 feet of soil material as a bed for emergent aquatic vegetation.

- Plant native species such as giant bur-reed (*Sparganium eurycarpum*, *Scirpus atrovirens*, *Scirpus validus*) in shallow water areas along the bank behind the rock wall to reduce the impact of waves and currents. [Note: a side benefit of planting tall emergents such as giant bur-reed is that it discourages Canada geese from landing on the water and wading out onto the shoreline).
- Plant groupings of red maple, willow, and dogwood along the shoreline close to the top of the bank to re-establish woody vegetation.
- Offer a public education/outreach program on do-it-yourself streambank protection techniques for homeowners. Encourage the use of vegetative measures to control erosion.

Cost Estimate:

Item	Unit	Unit cost	Extended Cost (\$)
Mowing reduction savings 4 hr/week x 26 weeks x \$30/hr	104	-30	-3120
Gasoline saved	1	-300	-300
Rock rip rap (1100 LF, 2 ft high, 24 in. diam.)	163 cy	46	7498
Backfill	305 cy	12	3660
Tall emergent vegetation plantings	0.12 ac x 15 lb PLS/ac	150	270
Woody plantings	175	15	2625
Estimated cost			10,633



1100 FT. STONE RIP-RAP - 2 FT. HIGH -
PLACE TO ORDINARY HIGH WATER MARK

OATKA CREEK

EXISTING HEAVY
STONE RIP-RAP

"NO MOW" ZONE
25 - 50 FT.

BACKFILL AND
EMERGENT PLANTINGS

FLOW

ROUTE 19

ROUTE 5

WOLCOTT STREET

TREE & SHRUB
PLANTINGS
(±175 TREES &
SHRUBS)

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OATKA CREEK AT VILLAGE OF LEROY
CONCEPTUAL DESIGN

STREAM RESTORATION STUDY AREAS

P.N. 32502

DATE:	MARCH 2005
APPROX. SCALE:	1" = 200'
DRAWN :	DLS
CHECKED:	FAR

