

REFERENCE REACH FIELD FORM
STREAM CHANNEL CLASSIFICATION LEVEL II

STREAM TYPE: Rosgen C3

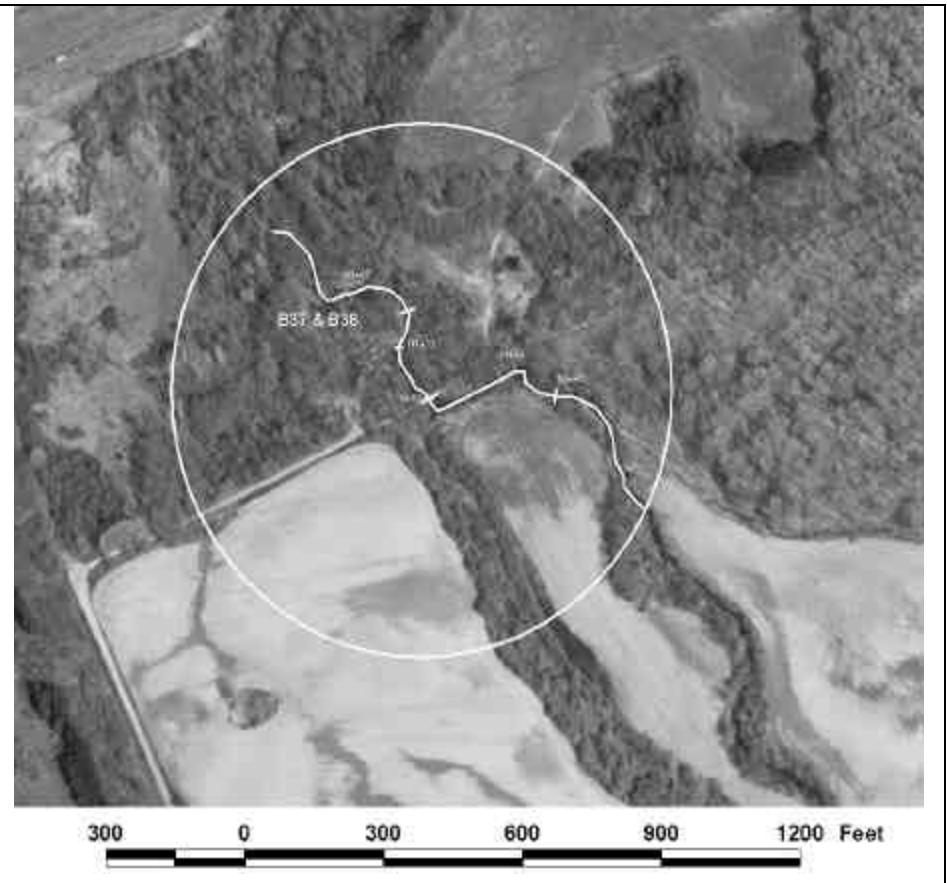
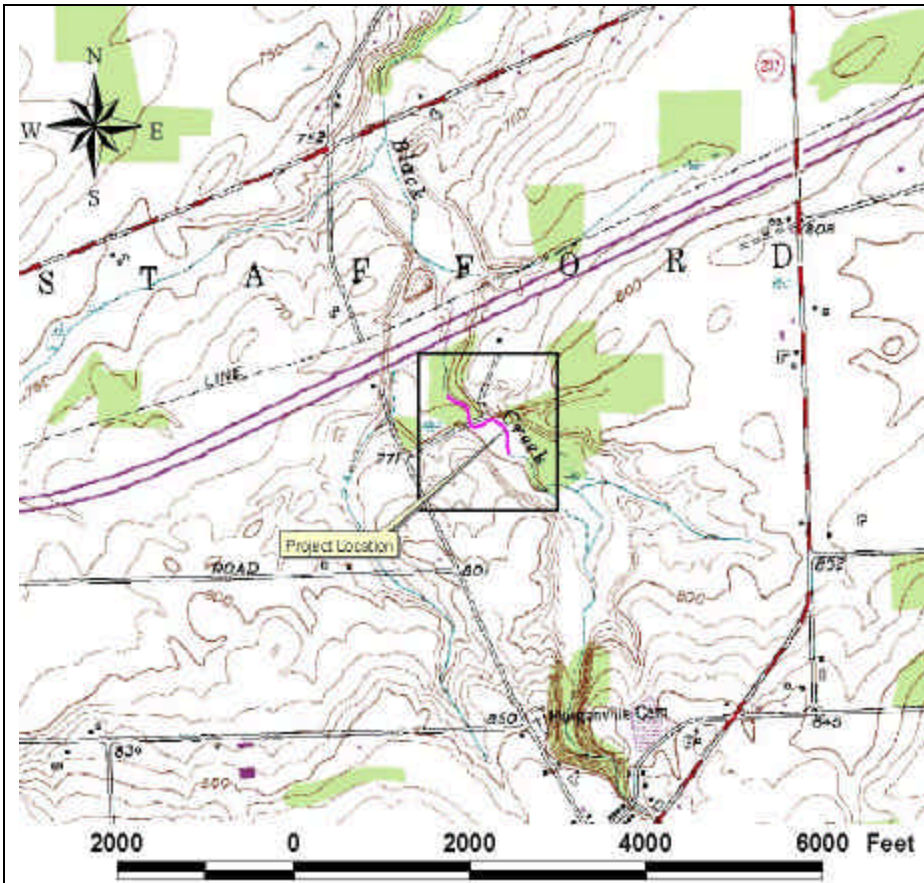
STREAM NAME: Black Creek DRAINAGE AREA: 22.7 square miles BASIN NAME: Genesee

OBSERVERS: J. Hauber, F. Reese, C. Rigerman DATE: 10/29/2004

		<u>Wakeville silt loam</u>		<u>0.43</u>
		<u>Schoharie silty clay loam, 6-12% slope</u>		<u>0.49</u>
		<u>Schoharie silty clay loam, 12-20% slope, eroded</u>		<u>0.49</u>
		<u>Palmyra and Arkport soils, 25-40% slopes</u>		<u>0.20</u>

	Latitude		Longitude		Mapped Soil Type(s)		K Factor
LOCATION: <u>Black Creek at Private Drive off Morganville Road, Town of Stafford, Genesee County</u>		<u>43-0-56</u>		<u>78-4-48</u>			

Bankfull WIDTH	43	Ft.(W _{bkf})	Bankfull MAX>DEPTH	2.0	Ft.(d _{max})	Channel SLOPE	0.0085	Ft/Ft		%
Bankfull Mean DEPTH	1.37	Ft.(d _{bkf})	Flood Prone Area WIDTH	400	Ft.(W _{FP})	Valley SLOPE	0.010	Ft/Ft		%
WIDTH/DEPTH Ratio	31.3		ENTRENCHMENT Ratio	9.3		SINUOSITY (Stream Dist/Valley Dist.)		1.21		
Channel MATERIALS: (Pebble Count)			D50	90	mm	D84	170	mm		



Site Location Map – Black Creek at Morganville Road

2002 Aerial Photograph – Black Creek at Morganville Road



Photo 1. View of Black Creek near Morganville Road, looking upstream (south) from Station N1+32. Bridge in photo center is Station 0+00.



Photo 2. View of Black Creek near Morganville Road, looking upstream from Station S1+90, approximately 190 feet south of the private road bridge over Black Creek.

Site Description: This site is located at the base of a steep escarpment. The stream channel drops approximately 100 feet from the Morganville Cemetery, about 0.9 mile upstream from the project site. The current is fast, and the channel carries a sizable sediment load, as evidenced in the photos. The channel is generally shallow (less than one foot deep) with numerous riffles and small pools. Flowing northward from the Morganville Cemetery, the creek forms a 90° bend at the upstream side of a private road bridge. A deep scour hole has been created by an eddy in the current that deflects off the western bridge abutment. The property owner placed gravel and stone across the channel to create a ford for all terrain vehicles. Large stone has been placed at strategic points along eastern channel bank south of the bridge. This stone protects a steep hillside from being undercut by the stream channel. The valley widens and flattens as the channel approaches the NYS Thruway, approximately 1500 feet north of the bridge site. Two intermittent streams form confluences with Black Creek in this reach.

North of the bridge site, the creek banks are forested on both sides. Dominant tree species include silver maple, green ash, box elder and eastern cottonwood. South of the bridge, a large cornfield is located on the west side of the channel. The cornfield is separated from the channel by a narrow (15-20 ft. wide) band of woody riparian vegetation. The east side of the channel forms a steep, wooded embankment, with an extension of the private drive continuing up the hill from the bridge.

Statement of Problem: A large scour hole has formed at the northwest abutment of the bridge site. This scour hole may eventually undermine the bridge foundation, causing collapse of the structure. High flows also deposit large amounts of sediment in the channel and cause the formation of gravel bars. A thin line of riparian shrubs is located along the west bank of the creek. Although this vegetation provides some protection for the bank, the field is cultivated as close to the creek as possible, contributing soil erosion to the channel. Some evidence of channel degradation is seen in the formation of mid-channel bars downstream from the bridge site. Downed trees deflect currents into the banks, causing additional undercutting north of the bridge.

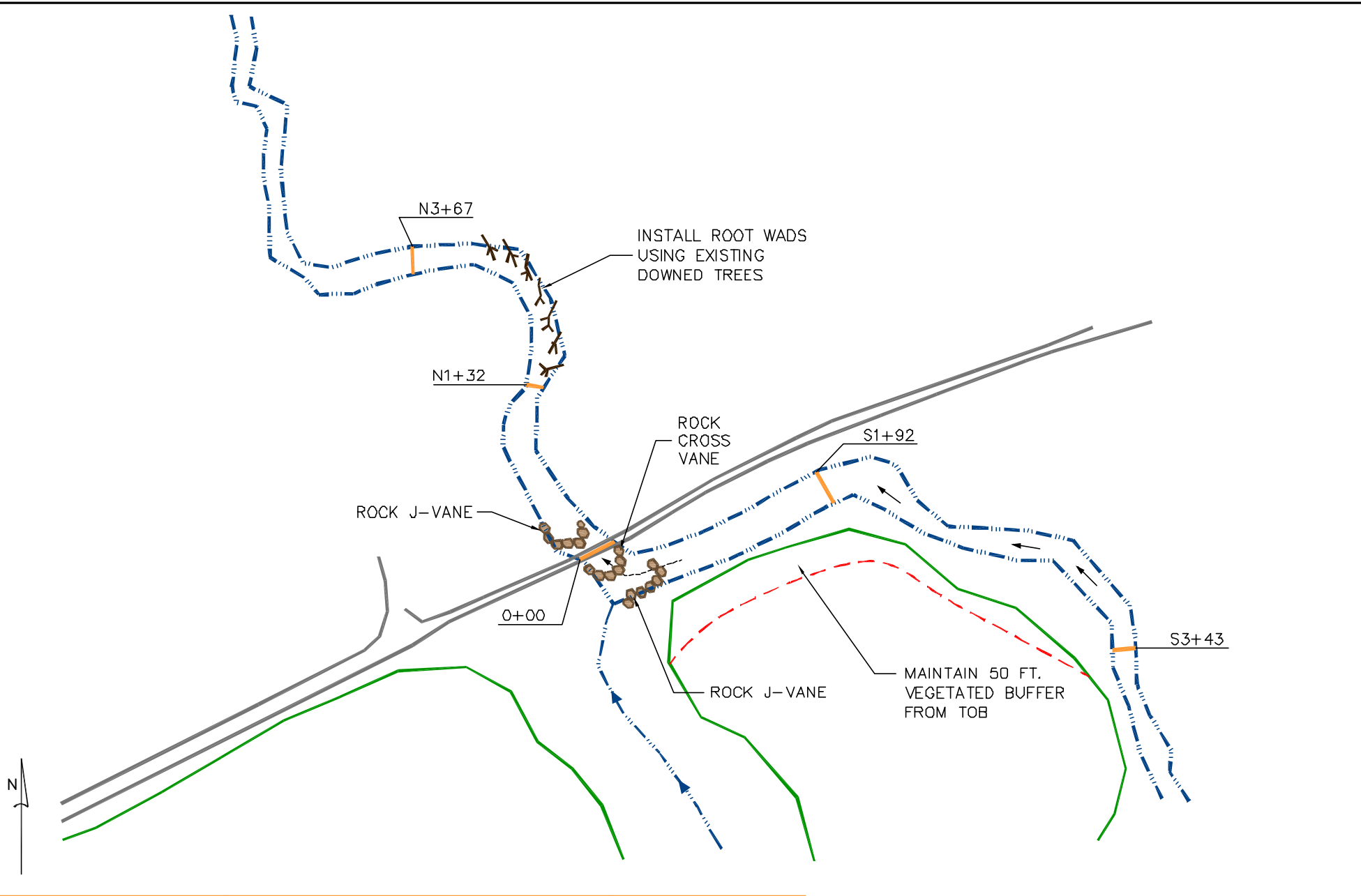
Proposed Restoration/Remediation Methods:

1. Construct a rock J-vane to deflect flow toward the middle of the channel, away from the northwest bridge abutment.
2. Encourage farmers and property owners to maintain at least a 50 ft. wide buffer of woody riparian vegetation along the channel.
3. Utilize deadfalls in the stream as root wads to stabilize failing banks.

Cost Estimate:

Item	Unit	Unit Cost	Extended Cost (\$)
Root wads (utilize on site materials)	2 days	\$1500	3000
Rock J-vanes (2)	3 cy	46	138
Rock cross vane (1)	2.6 cy	46	120
Excavation	27 cy	12	324
Turbidity curtain	27 sy	30	830
Detailed site survey	1200/day	1	1200
Plans and permits	LS	5000	5000
Total estimated cost			\$10612

Conceptual Plan Sheets/Standard Details



2230 FENFELD ROAD
 PENFELD, NEW YORK 14526
 TEL: 585.377.1450
 FAX: 585.377.1266

BLACK CREEK NEAR MORGANVILLE ROAD

STREAM RESTORATION STUDY AREAS

P.N. 33802

DATE:	MARCH 2005
APPROX. SCALE:	1" = 100'
DRAWN :	DLS
CHECKED:	FAR