TRAFFIC ENGINEERING REPORT

PROPOSED SENIOR VILLAGE

at the intersection of

WASHINGTON STREET (US Route 11) & SAMARITAN MEDICAL CENTER DRIVEWAY / HUDSON LANE

in the

CITY OF WATERTOWN

Jefferson County

New York

May, 2011

prepared by:

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HCS ANALYSES

A. INTRODUCTION

This Report assesses the traffic-related implications of the proposed development of lands along the easterly side of Washington Street (US Route 11) at its signalized intersection with the Samaritan Medical Center Driveway and Hudson Lane. The development will initially consist of a 288 bed Senior Living Facility. A future expansion of these facilities for seniors is anticipated which will include an additional 100 beds. The traffic related impacts of the fully expanded development have been estimated and analyzed in accord with the guidelines of the Institute of Transportation Engineers. The study area for this Report consists of the section of Washington Street adjacent to the Medical Center, the proposed driveway for delivery vehicles and the existing signalized intersection and its approaches.

Traffic volumes used in this Report are based on data compiled by Jim Napoleon & Associates (JN&A). Traffic volumes expected to be generated by the proposed development were calculated from data contained in the 2008 Edition of TRIP GENERATION prepared by the Institute of Transportation Engineers (ITE). Evaluations of the operational characteristics of the intersection were performed using Version 5.3 of the HIGHWAY CAPACITY SOFTWARE (HCS+) for signalized intersections. A copy of each analysis is included in the Appendix of this Report.

The principal findings of this Study are that the existing highway will safely and satisfactorily accommodate the small volume of new traffic expected to be generated by the proposed development, and, that the proposed development, including the future addition of 100 beds, will produce only a small and manageable impact on the existing highway system. Levels of Service at the signalized intersection will remain essentially unaltered and no significant impacts on traffic operations along Washington Street, or at the signalized intersection are anticipated. No geometric alterations of the existing highway or modifications to the existing traffic signal operation were found to be necessary as a result of the proposed development and none are recommended.

B. EXISTING CONDITIONS

B.1. General

Washington Street (US Route 11) is a four lane, two-way, north-south, City of Watertown owned and maintained highway that is straight and on a 4½% upgrade to the south adjacent to the northerly portion of the Samaritan Medical Center frontage, the road crests and becomes essentially level at the signalized intersection. It has a posted Speed Limit of 30 miles per hour in both directions. The NYSDOT reported that 10,470 vehicles passed along this section of highway during 2009. According to the 2010 New York State Department of Transportation (NYSDOT) Pavement Data Report, Washington Street is in fair condition.

The signalized intersection of Washington Street with the Samaritan Medical Center Driveway / Hudson Lane has four legs and is semi-actuated. The north and south legs of Washington Street each have four lanes; two lanes entering and two lanes leaving the intersection. The northerly leg has a painted crosswalk and pedestrian signal indications.

The Samaritan Medical Center Driveway forms the easterly leg of the intersection. It has a crosswalk and a raised median that separates entering traffic from that which is leaving. The westbound approach to the intersection is vehicle actuated and unmarked, but sufficiently wide for two vehicles to be abreast of one another; its width allows it to function as a shared left and through lane and, a right-turn-only lane.

Hudson Lane forms the westerly leg of the intersection. It is vehicle actuated and has a painted crosswalk and a painted median that separates entering traffic from that which is leaving. The eastbound approach to the intersection is marked for a right-turn-only lane and a shared left and through lane.

B.2. Existing Traffic Volumes

Traffic movements were observed and manual turning movement traffic counts were performed during the Weekday afternoon peak hours on Monday, 18 April 2011 between 4 and 5:30 PM, and, again on Wednesday 4 May 2011 between 4 and 6 PM. Weekday morning traffic was observed and counted on Thursday, 21 April 2011 between 6:45 and 9 AM, and, again on 4 May 2011 between 7 and 9 AM. The peak hour traffic volumes observed during May are depicted in **Figure 1** and summaries of the traffic count data are included in the Appendix to this Report.

B.3. Intersection Operation and Existing Levels of Service

The concept of Level of Service, as defined by the Highway Capacity Manual (HCM) published by the Transportation Research Board, is "a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers." The Levels of Service are given letter designations, from A to F, with Level of Service "A" representing the best operating conditions and Level of Service "F" the worst. Levels of Service at the signalized intersection were calculated using existing roadway geometries, the traffic volumes counted in May and Version 5.3 of the Highway Capacity Software (HCS+) for signalized intersections. The results of these calculations are summarized in **TABLE 1**.

It was noted during our observations in April that some delays were being created for Washington Street traffic by the method of operation of the vehicle detectors in the Samaritan Medical Center approach to the intersection. This observation was mentioned to the City Engineer and an appropriate adjustment was made to eliminate those needless delays. These delays were not observed during our May observations.

Approach	Weekday AM Peak Hour	Weekday PM Peak Hour
Northbound -Washington Street	A	A
Southbound - Washington Street	A	A
Westbound- Samaritan Medical Center	B	B
Eastbound - Hudson Lane	B	B
Overall Intersection	A	A

TABLE 1. Existing Levels of Service

C. THE PROPOSAL

C.1. General

The proposed Samaritan Senior Village development, including the anticipated expansion of 100 units, will consist of 220 assisted living units and 168 skilled care units with a common area to be shared by all residents. These residential facilities will complement and be synergistic with the function of the Samaritan Medical Center as the abutting lands will provide rapid and easy access for seniors to facilities at the Medical Center. It is intended that auto access and egress at the development be provided by the existing, signalized Medical Center Driveway, and, that service and delivery vehicle access and egress be provided via a newly constructed full-access driveway approximately 550 feet north of the existing Driveway and traffic signal.

C.2. Trip Generation Factors and Volumes

Data contained in the latest version of TRIP GENERATION prepared by the ITE in 2008 were used for analysis purposes. It should be expected that traffic generated at the proposed development will be slightly less than predicted by the ITE data due to the fact that residents of the Senior Village will have direct access to medical facilities without traveling on any public roadways while the ITE data was gathered at independently situated facilities. The ITE predicted traffic volumes at the Senior Village include all auto as well as service and delivery vehicle traffic, these volumes are summarized in **TABLE 2**. Details of ITE data and our calculations are contained in the Appendix.

	Weekdays			Saturdays	Sundays
	Morning Peak Hour	Afternoon Peak Hour	Total Daily Traffic	Total Daily Traffic	Total Daily Traffic
Assisted Living, 120 beds	17 veh./hr.	26 veh./hr.	315 veh./day	264 veh./day	288 veh./day
Nursing Home, 168 beds	29 veh./hr.	37 veh./hr.	392 veh./day	354 veh./day	353 veh./day
Assisted Living, 100 beds	14 veh./hr.	22 veh./hr.	284 veh./day	220 veh./day	254 veh./day
Totals	60 veh./hr.	85 veh./hr.	991 veh./day	838 veh./day	895 veh./day

TABLE 2. Projected Vehicular Traffic Generation

C.3. Projected Trip Distribution

The projected distribution patterns of site generated traffic for the proposed Senior Village were developed as a reflection of the measured patterns and flows at the existing Medical Center Driveway. It was assumed that all Senior Village oriented traffic will pass through the intersection of the Medical Center Driveway with Washington Street for the sake of being able to analyze a "worst-case-scenario" condition. Signing along Washington Street and the access roadway will direct delivery vehicles to and from the proposed new driveway (north of the existing signalized driveway) and separate it from car traffic.

The directions of existing traffic flows at the signalized intersection are shown in **Figures 2 and 3**. The intersection volumes resulting from the addition of the existing traffic movements and the projected Senior Village traffic are shown in **Figure 4**.

C.4. Impact of the Development on Existing Levels of Service

Highway Capacity Software (HCS+) analyses were performed to identify any change in operating conditions between the existing and proposed conditions at the signalized intersection. **TABLE 3** summarizes and compares the results of these analyses:

Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	Existing	Projected	Existing	Projected
Northbound -Washington Street	A	A	A	A
Southbound - Washington Street	A	A	A	A
Westbound- Samaritan Medical Center	B	B	B	B
Eastbound - Hudson Lane	B	B	B	B
Overall Intersection	A	A	A	A

TABLE 3. Existing and Projected Levels of Service

As can be seen in **TABLE 3**, no significant changes in operating conditions can be expected at the intersection as a result of the proposed development. The possible addition of an average of only one or one and one-half vehicles per minute during the peak traffic times cannot be expected to noticeably affect traffic movements at the intersection.

D. DISCUSSION

Listed below are additional traffic related factors of the proposed Senior Village development.

- The proposed development will include construction of a loop roadway that encircles the property and forms two intersections with Washington Street. This feature will significantly increase the safety of all persons on the site as it will increase the availability of access for any and all emergency vehicles if and when needed.

- More than adequate parking capacity will be provided on the site and snow removal and storage will not be a problem.

- Designation of the northerly driveway for the use of delivery vehicles will be made via the posting of regulatory signing. Additionally, all suppliers of goods and services to the site will be advised that this facility has been provided for their use.

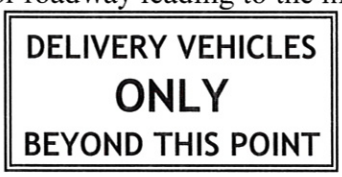
- The sight distances at the proposed northerly driveway with Washington Street will be adequate to permit safe movements to be made. That is, drivers on Washington Street will be able to see and react safely to the presence of any delivery vehicles using the driveway as will the drivers of delivery vehicles be able to see traffic on-coming from both directions along Washington Street from adequate and safe distances.

E. RECOMMENDATIONS

It is recommended that the following traffic signing be installed at the site:

1. Black on white, rectangular, "Delivery Vehicles Only" signs, facing northbound and southbound drivers should be installed alongside the proposed new northerly driveway at its intersection with Washington Street.

2. A black on white, rectangular, "Delivery Vehicles Only Beyond This Point" sign should be installed on both sides of the loop roadway facing east at a point immediately west of the intersection of the connector roadway leading to the main parking area.



F. CONCLUSIONS

The Study and Analysis contained in this Report allow the following to be concluded:

1. Very little new traffic can be expected at the existing signalized intersection or on Washington Street as a result of the proposed Senior Village development.

2. The Levels of Service currently experienced by motorists at the signalized intersection and along Washington Street will not be detrimentally affected as a result of the proposed development. The effects of the small volume of additional traffic will be minimal.

3. No alterations to Washington Street or the signalized intersection will be necessary as a result of the proposed development and none are recommended.

Respectfully submitted,

James Napoleon

James Napoleon, P.E.
Jim Napoleon & Associates

JN & A

APPENDIX

SUBJECT PROPOSED SAMARITAN SENIOR VILLAGE

EXISTING WEEKDAY PEAK HOUR TRAFFIC VOLUMES

SHEET NO.____ OF ____

JOB NO. ____

BY ____ DATE ____

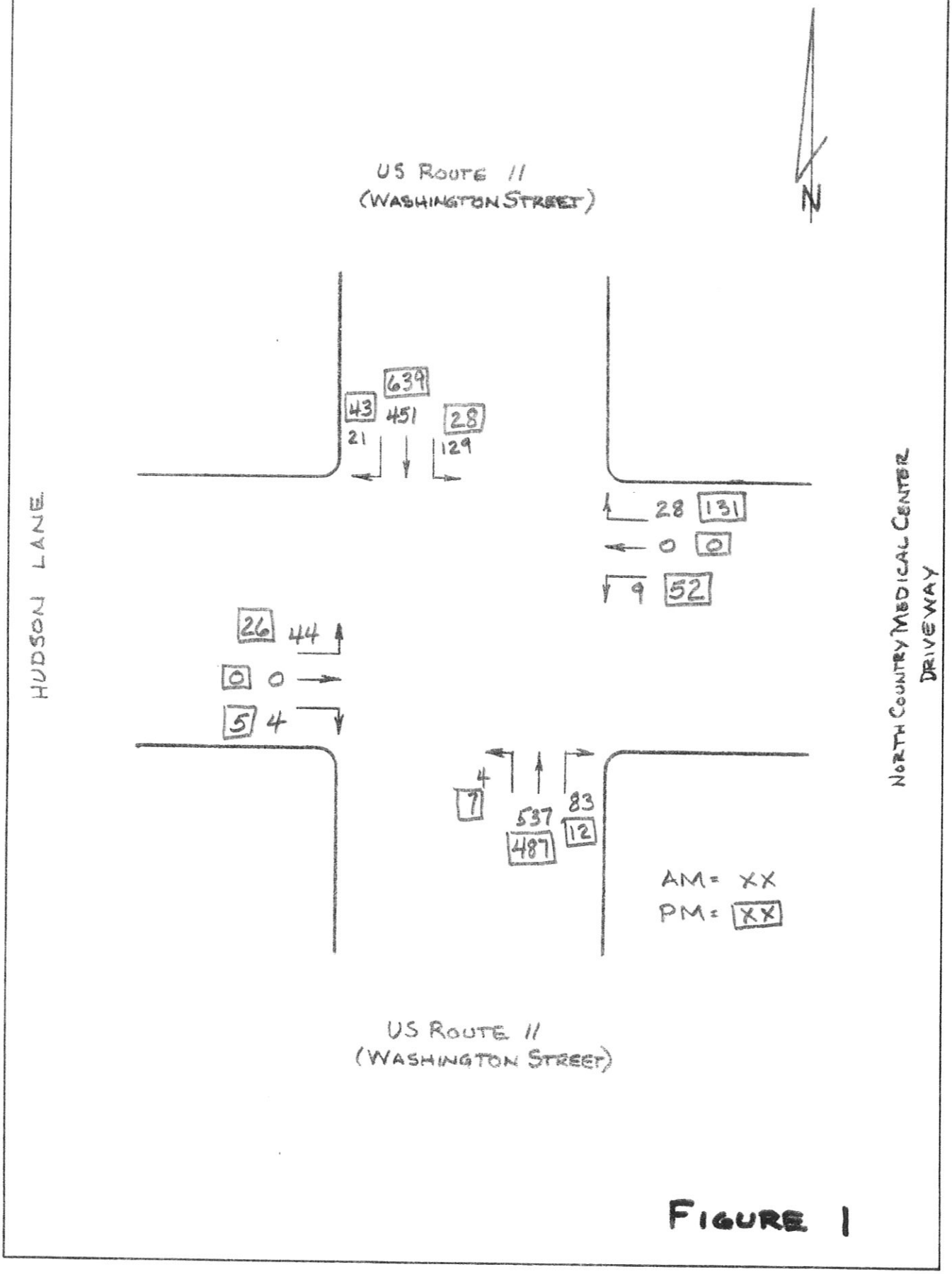


FIGURE 1

TRAFFIC and TRANSPORTATION ENGINEERING

James Napoleon, PE

TRIP DISTRIBUTION PATTERN

SamaritanMedCtr.qpw
AM Peak Hour
07:15 AM to 08:15 AM

Eastbound: Hudson Lane
Westbound: Samaritan Medical Center Dr.
Northbound: US Route 11
Southbound: US Route 11

Municipality:
City of Watertown, New York

Date of Count: 04-May-11

US Route 11
Entering from the North

⇓	45.88%	⇓
⇓	601	⇓
21	451	129
3.49%	75.04%	21.46%
<==	⇓	==>

US Route 11
Leaving to the North

	46.49%	
	609	
7.22%	88.18%	4.60%
↗	⇑	↖

Hudson Lane

Leaving	⇐	⇐	84.00%	↙	
to the	1.91%	25	0.00%	⇐	
West			16.00%	↖	
Entering	⇒	⇒	44	91.67%	^
from the	3.66%	48	0	0.00%	==>
West	⇒	⇒	4	8.33%	v

Hudson Lane

North

Samaritan Medical Center Dr.

^	75.68%	28	⇐	⇐	**Entering**
<==	0.00%	0	37	2.82%	from the
v	24.32%	9	⇐	⇐	East
↘	60.85%				**Leaving**
⇒	0.00%	212	16.18%		to the
↗	39.15%	⇒	⇒		East

Samaritan Medical Center Dr.

↘	⇓	↙
0.86%	97.20%	1.94%
	464	
	35.42%	

Leaving to the South
US Route 11

<==	⇑	==>
0.64%	86.06%	13.30%
4	537	83
⇑	624	⇑
⇑	47.63%	⇑

Entering from the South
US Route 11

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FIGURE 2

TRIP DISTRIBUTION PATTERN

SamaritanMedCtr.qpw
PM Peak Hour
04:15 PM to 05:15 PM

Eastbound: Hudson Lane
Westbound: Samaritan Medical Center Dr.
Northbound: US Route 11
Southbound: US Route 11

Municipality:
City of Watertown, New York

Date of Count: 04-May-11

						US Route 11 Entering from the North			US Route 11 Leaving to the North					
						⇓	49.65%	⇓		45.03%				
						⇓	710	⇓		644				
						43	639	28	4.04%	75.62%	20.34%			
						6.06%	90.00%	3.94%	↗	⇑	↖			
						<==	⇓	==>						
Hudson Lane												Samaritan Medical Center Dr.		
Leaving	⇐	⇐	86.00%	↙								^	71.58%	131	⇐	⇐	**Entering**
to the	3.50%	50	0.00%	⇐								<==	0.00%	0	183	12.80%	from the
West			14.00%	↖								v	28.42%	52	⇐	⇐	East
Entering	⇒	⇒	26	83.87%	^								↘	70.00%			**Leaving**
from the	2.17%	31	0	0.00%	==>								⇒	0.00%	40	2.80%	to the
West	⇒	⇒	5	16.13%	v								↗	30.00%	⇒	⇒	East
Hudson Lane							North						Samaritan Medical Center Dr.				
									<==	⇑	==>						
						↘	⇓	↙	1.38%	96.25%	2.37%						
						0.72%	91.81%	7.47%	7	487	12						
							696		⇑	506	⇑						
							48.67%		⇑	35.38%	⇑						
							Leaving to the South US Route 11			Entering from the South US Route 11							

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FIGURE 3

SUBJECT PROPOSED SAMARITAN SENIOR VILLAGE

PROJECTED WEEKDAY PEAK HOUR TRAFFIC VOLUMES

SHEET NO.____ OF ____

JOB NO. ____

BY ____ DATE ____

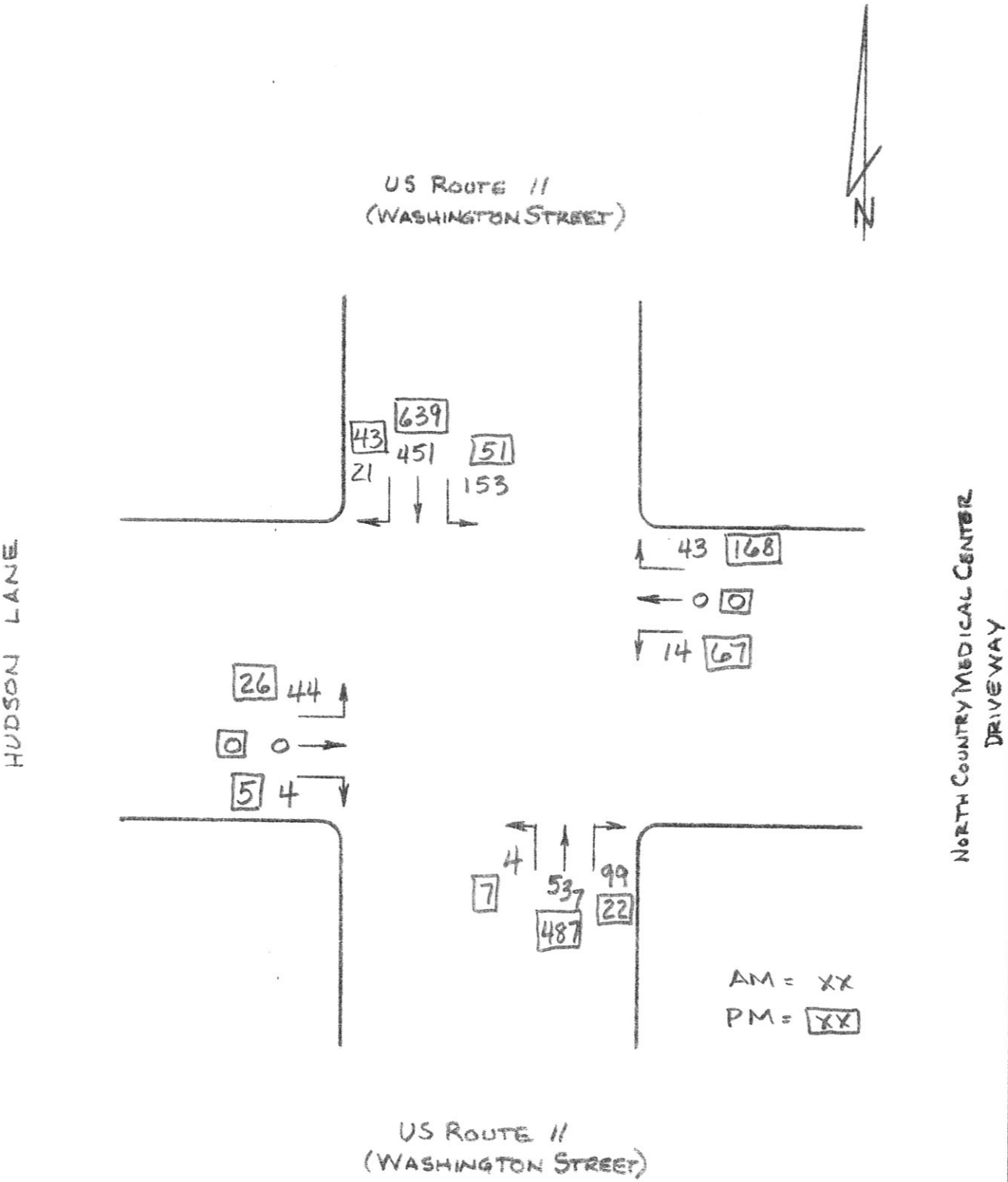

FIGURE 4

TRAFFIC and TRANSPORTATION ENGINEERING

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SamaritanMedCtr.qpw

AM Weekday

Peak Hour

Manual Turning Movement Traffic Count taker **City of Watertown, New York**

Thursday 21-Apr-11	Hudson Lane EASTBOUND						Samaritan Medical Center Dr. WESTBOUND						US Route 11 NORTHBOUND						US Route 11 SOUTHBOUND						Peak Hour Volumes		
Peak Hour Volumes	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Vehicle Volumes	Ped. Volumes	Bus Volumes
07:30 AM to 08:30 AM	24	1	6	31	5	0	13	0	28	41	20	4	5	420	49	474	5	6	109	381	16	506	1	6	1052	1	1
Percents	77%	3%	19%		83%	0%	32%	0%	68%		71%	10%	1%	89%	10%		10%	1%	22%	75%	3%		6%	1%			
Peak Hour Factors	0.86	0.25	0.75	0.78			0.54		0.70	0.79			0.63	0.83	0.44	0.76			0.80	0.81	0.57	0.82			0.80	PHF	
Peak Hour	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	(per 15 minutes)		
07:30 AM to 07:45 AM	7	1	2	10	2	0	6	0	3	9	2	0	0	97	6	103	0	1	20	98	7	125	1	0	247	0	0
07:45 AM to 08:00 AM	5	0	1	6	1	0	3	0	10	13	6	3	1	127	28	156	4	1	34	117	3	154	0	1	329	0	0
08:00 AM to 08:15 AM	7	0	2	9	1	0	2	0	8	10	6	1	2	101	11	114	1	1	31	85	3	119	0	4	252	0	0
08:15 AM to 08:30 AM	5	0	1	6	1	0	2	0	7	9	6	0	2	95	4	101	0	3	24	81	3	108	0	1	224	1	1

COUNT DATA	EASTBOUND Name of Approach: Hudson Lane						WESTBOUND Name of Approach: Samaritan Medical Center Dr.						NORTHBOUND Name of Approach: US Route 11						SOUTHBOUND Name of Approach: US Route 11						15 min. Vehicle Volumes	15 min. Ped. Volumes	15 min. Bus Volumes
COUNT INTERVAL	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck			
06:45 AM to 07:00 AM	3	0	1	4	0	1	1	0	1	2	0	0	0	58	4	62	0	2	14	39	1	54	0	1	122	0	0
07:00 AM to 07:15 AM	4	0	1	5	1	0	0	0	0		0	0	1	51	4	56	0	1	11	45	1	57	0	2	118	0	0
07:15 AM to 07:30 AM	7	0	1	8	0	0	0	0	3	3	1	0	2	88	6	96	0	3	19	67	6	92	2	1	199	0	0
07:30 AM to 07:45 AM	7	1	2	10	2	0	6	0	3	9	2	0	0	97	6	103	0	1	20	98	7	125	1	0	247	0	0
07:45 AM to 08:00 AM	5	0	1	6	1	0	3	0	10	13	6	3	1	127	28	156	4	1	34	117	3	154	0	1	329	0	0
08:00 AM to 08:15 AM	7	0	2	9	1	0	2	0	8	10	6	1	2	101	11	114	1	1	31	85	3	119	0	4	252	0	0
08:15 AM to 08:30 AM	5	0	1	6	1	0	2	0	7	9	6	0	2	95	4	101	0	3	24	81	3	108	0	1	224	1	1
08:30 AM to 08:45 AM	4	1	1	6	1	0	6	0	15	21	10	0	0	92	12	104	2	2	17	76	1	94	0	3	225	0	0
08:45 AM to 09:00 AM	3	0	1	4	1	0	9	2	16	27	10	2	0	96	8	104	1	3	25	86	1	112	0	2	247	0	0
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
COUNT TOTALS	45	2	11	58	8	1	29	2	63	94	41	6	8	805	83	896	8	17	195	694	26	915	3	15	1963	1	1

Traffic Control	Traffic Signal	Traffic Signal	Traffic Signal	Traffic Signal
Approach Lanes	Two	Two	Two	Two
Lane Widths	12 feet	12 feet	12 feet	12 feet
Parking	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Speed Limit	25 MPH	25 MPH	30 MPH	30 MPH
Grade	0%	0%	0%	0%
Bus Stop	None	None	None	None

Weather: Wet snow, 37 degs.
RoadCond. Clear, wet Pavement
Observer: JN
NE corner: Medical Center
NW corner Residential
SE corner: Vacant
SW corner: Residential

Notes:

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SamaritanMedCtr.qpw

PM Weekday

Peak Hour

Manual Turning Movement Traffic Count taker **City of Watertown, New York**

Monday 18-Apr-11	Hudson Lane EASTBOUND						Samaritan Medical Center Dr. WESTBOUND						US Route 11 NORTHBOUND						US Route 11 SOUTHBOUND						Peak Hour Volumes		
Peak Hour Volumes	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Vehicle Volumes	Ped. Volumes	Bus Volumes
04:15 PM to 05:15 PM	28	1	4	33	3	0	45	0	97	142	48	1	12	416	9	437	2	8	32	535	30	597	1	15	1209	5	0
Percents	85%	3%	12%		75%	0%	32%	0%	68%		49%	1%	3%	95%	2%		22%	2%	5%	90%	5%		3%	3%			
Peak Hour Factors	0.64	0.25	0.50	0.63			0.75		0.78	0.77			0.50	0.85	0.45	0.87			0.89	0.83	0.50	0.86			0.87	PHF	
Peak Hour	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	(per 15 minutes)		
04:15 PM to 04:30 PM	6	0	1	7	1	0	11	0	25	36	9	0	4	84	5	93	1	0	9	121	5	135	0	3	271	3	0
04:30 PM to 04:45 PM	11	1	1	13	0	0	14	0	22	36	11	0	6	114	2	122	1	6	9	133	15	157	1	5	328	1	0
04:45 PM to 05:00 PM	6	0	2	8	2	0	5	0	19	24	9	0	2	95	0	97	0	1	9	120	3	132	0	3	261	0	0
05:00 PM to 05:15 PM	5	0	0	5	0	0	15	0	31	46	19	1	0	123	2	125	0	1	5	161	7	173	0	4	349	1	0

COUNT DATA	EASTBOUND Name of Approach: Hudson Lane						WESTBOUND Name of Approach: Samaritan Medical Center Dr.						NORTHBOUND Name of Approach: US Route 11						SOUTHBOUND Name of Approach: US Route 11						15 min. Vehicle Volumes	15 min. Ped. Volumes	15 min. Bus Volumes
COUNT INTERVAL	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck			
04:00 PM to 04:15 PM	5	0	2	7	2	0	6	0	25	31	20	0	1	118	2	121	0	1	12	122	9	143	0	2	302	2	
04:15 PM to 04:30 PM	6	0	1	7	1	0	11	0	25	36	9	0	4	84	5	93	1	0	9	121	5	135	0	3	271	3	
04:30 PM to 04:45 PM	11	1	1	13	0	0	14	0	22	36	11	0	6	114	2	122	1	6	9	133	15	157	1	5	328	1	
04:45 PM to 05:00 PM	6	0	2	8	2	0	5	0	19	24	9	0	2	95	0	97	0	1	9	120	3	132	0	3	261	0	
05:00 PM to 05:15 PM	5	0	0	5	0	0	15	0	31	46	19	1	0	123	2	125	0	1	5	161	7	173	0	4	349	1	
05:15 PM to 05:30 PM	6	0	1	7	1	0	4	0	5	9	4	1	1	82	1	84	0	0	2	123	18	143	1	1	243	1	
																									0		
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																									0		
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																									0		
																									0		
																									0		
																									0		
																									0		
COUNT TOTALS	39	1	7	47	6	0	55	0	127	182	72	2	14	616	12	642	2	9	46	780	57	883	2	18	1754	8	0

Traffic Control	Traffic Signal	Traffic Signal	Traffic Signal	Traffic Signal
Approach Lanes	Two	Two	Two	Two
Lane Widths	12 feet	12 feet	12 feet	12 feet
Parking	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Speed Limit	25 MPH	25 MPH	30 MPH	30 MPH
Grade	0%	0%	0%	0%
Bus Stop	None	None	None	None

Notes:

Weather: Wet snow, 36 degs.
RoadCond. Clear, wet Pavement
Observer: RSF, JN
NE corner: Medical Center
NW corner Residential
SE corner: Vacant
SW corner: Residential

Jim Napoleon & Associates

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SamaritanMedCtr.qpw

AM Weekday2

Peak Hour

Manual Turning Movement Traffic Count taker **City of Watertown, New York**

Wednesday 04-May-11	Hudson Lane EASTBOUND						Samaritan Medical Center Dr. WESTBOUND						US Route 11 NORTHBOUND						US Route 11 SOUTHBOUND						Peak Hour Volumes		
Peak Hour Volumes	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Vehicle Volumes	Ped. Volumes	Bus Volumes
07:15 AM to 08:15 AM	44	0	4	48	3	2	9	0	28	37	13	4	4	537	83	624	3	10	129	451	21	601	1	13	1310	3	0
Percents	92%	0%	8%		75%	4%	24%	0%	76%		46%	11%	1%	86%	13%		4%	2%	21%	75%	3%		5%	2%			
Peak Hour Factors	0.79		0.50	0.75			0.45		0.58	0.62			0.33	0.91	0.51	0.83			0.57	0.88	0.75	0.83			0.83	PHF	
Peak Hour	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	(per 15 minutes)		
07:15 AM to 07:30 AM	7	0	1	8	1	0	0	0	3	3	2	0	0	144	7	151	0	2	23	104	7	134	0	4	296	2	0
07:30 AM to 07:45 AM	14	0	2	16	1	1	1	0	5	6	2	3	1	117	22	140	0	0	20	128	6	154	0	2	316	0	0
07:45 AM to 08:00 AM	11	0	1	12	1	1	3	0	12	15	6	0	0	147	41	188	1	2	57	116	7	180	1	4	395	1	0
08:00 AM to 08:15 AM	12	0	0	12	0	0	5	0	8	13	3	1	3	129	13	145	2	6	29	103	1	133	0	3	303	0	0

COUNT DATA	EASTBOUND Name of Approach: Hudson Lane						WESTBOUND Name of Approach: Samaritan Medical Center Dr.						NORTHBOUND Name of Approach: US Route 11						SOUTHBOUND Name of Approach: US Route 11						15 min. Vehicle Volumes	15 min. Ped. Volumes	15 min. Bus Volumes
COUNT INTERVAL	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck			
07:00 AM to 07:15 AM	3	0	0	3	0	0	1	0	1	2	0	1	0	92	9	101	0	6	7	50	2	59	0	2	165	1	0
07:15 AM to 07:30 AM	7	0	1	8	1	0	0	0	3	3	2	0	0	144	7	151	0	2	23	104	7	134	0	4	296	2	0
07:30 AM to 07:45 AM	14	0	2	16	1	1	1	0	5	6	2	3	1	117	22	140	0	0	20	128	6	154	0	2	316	0	0
07:45 AM to 08:00 AM	11	0	1	12	1	1	3	0	12	15	6	0	0	147	41	188	1	2	57	116	7	180	1	4	395	1	0
08:00 AM to 08:15 AM	12	0	0	12	0	0	5	0	8	13	3	1	3	129	13	145	2	6	29	103	1	133	0	3	303	0	0
08:15 AM to 08:30 AM	11	0	0	11	0	1	3	0	15	18	11	0	2	102	15	119	2	7	25	98	10	133	0	2	281	2	0
08:30 AM to 08:45 AM	4	0	1	5	1	0	4	0	11	15	3	1	0	111	9	120	0	3	23	81	4	108	0	5	248	0	0
08:45 AM to 09:00 AM	11	0	1	12	1	1	10	0	18	28	8	0	1	120	13	134	1	8	17	82	6	105	0	3	279	0	0
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
COUNT TOTALS	73	0	6	79	5	4	27	0	73	100	35	6	7	962	129	1098	6	34	201	762	43	1006	1	25	2283	6	0

Traffic Control	Traffic Signal	Traffic Signal	Traffic Signal	Traffic Signal
Approach Lanes	Two	Two	Two	Two
Lane Widths	12 feet	12 feet	12 feet	12 feet
Parking	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Speed Limit	25 MPH	25 MPH	30 MPH	30 MPH
Grade	0%	0%	0%	0%
Bus Stop	None	None	None	None

Notes:

Weather: Drizzle, 41 degs.
RoadCond. Clear, wet Pavement
Observer: JN
NE corner: Medical Center
NW corner Residential
SE corner: Vacant
SW corner: Residential

Jim Napoleon & Associates

Transportation Engineering Consultants

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SamaritanMedCtr.qpw

PM Weekday2

Peak Hour

Manual Turning Movement Traffic Count taker **City of Watertown, New York**

Wednesday 04-May-11	Hudson Lane EASTBOUND						Samaritan Medical Center Dr. WESTBOUND						US Route 11 NORTHBOUND						US Route 11 SOUTHBOUND						Peak Hour Volumes		
Peak Hour Volumes	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Vehicle Volumes	Ped. Volumes	Bus Volumes
04:15 PM to 05:15 PM	26	0	5	31	1	2	52	0	131	183	89	0	7	487	12	506	0	8	28	639	43	710	6	15	1430	4	0
Percents	84%	0%	16%		20%	6%	28%	0%	72%		68%	0%	1%	96%	2%		0%	2%	4%	90%	6%		14%	2%			
Peak Hour Factors	0.65		0.63	0.70			0.59		0.84	0.75			0.58	0.86	0.43	0.87			0.64	0.91	0.77	0.91			0.90	PHF	
Peak Hour	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	(per 15 minutes)		
04:15 PM to 04:30 PM	10	0	1	11	0	1	9	0	28	37	22	0	0	109	2	111	0	2	11	144	11	166	0	2	325	1	0
04:30 PM to 04:45 PM	6	0	2	8	1	0	22	0	39	61	23	0	2	121	2	125	0	2	3	158	8	169	2	2	363	1	0
04:45 PM to 05:00 PM	5	0	0	5	0	0	3	0	30	33	21	0	3	115	7	125	0	0	8	162	10	180	3	7	343	0	0
05:00 PM to 05:15 PM	5	0	2	7	0	1	18	0	34	52	23	0	2	142	1	145	0	4	6	175	14	195	1	4	399	2	0

COUNT DATA	EASTBOUND Name of Approach: Hudson Lane						WESTBOUND Name of Approach: Samaritan Medical Center Dr.						NORTHBOUND Name of Approach: US Route 11						SOUTHBOUND Name of Approach: US Route 11						15 min. Vehicle Volumes	15 min. Ped. Volumes	15 min. Bus Volumes
COUNT INTERVAL	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck	Left	Thru	Right	Total	ROR	Trck			
04:00 PM to 04:15 PM	7	0	1	8	1	0	11	0	39	50	24	1	2	125	6	133	1	4	9	143	10	162	0	2	353	1	
04:15 PM to 04:30 PM	10	0	1	11	0	1	9	0	28	37	22	0	0	109	2	111	0	2	11	144	11	166	0	2	325	1	
04:30 PM to 04:45 PM	6	0	2	8	1	0	22	0	39	61	23	0	2	121	2	125	0	2	3	158	8	169	2	2	363	1	
04:45 PM to 05:00 PM	5	0	0	5	0	0	3	0	30	33	21	0	3	115	7	125	0	0	8	162	10	180	3	7	343	0	
05:00 PM to 05:15 PM	5	0	2	7	0	1	18	0	34	52	23	0	2	142	1	145	0	4	6	175	14	195	1	4	399	2	
05:15 PM to 05:30 PM	3	0	0	3	0	0	3	0	17	20	12	1	3	93	1	97	0	2	4	132	8	144	0	3	264	0	
05:30 PM to 05:45 PM	9	0	1	10	0	0	5	0	9	14	5	0	0	97	0	97	0	0	0	114	8	122	1	2	243	0	
05:45 PM to 06:00 PM	6	0	1	7	1	0	3	0	4	7	3	0	2	68	1	71	0	0	2	77	12	91	1	1	176	0	
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
																									0		
COUNT TOTALS	51	0	8	59	3	2	74	0	200	274	133	2	14	870	20	904	1	14	43	1105	81	1229	8	23	2466	5	0

Traffic Control	Traffic Signal	Traffic Signal	Traffic Signal	Traffic Signal
Approach Lanes	Two	Two	Two	Two
Lane Widths	12 feet	12 feet	12 feet	12 feet
Parking	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Speed Limit	25 MPH	25 MPH	30 MPH	30 MPH
Grade	0%	0%	0%	0%
Bus Stop	None	None	None	None

Notes:

Weather: Rain 45 degs.
RoadCond. Clear wet pavement
Observer: RSFanelli
NE corner: Medical Center
NW corner Residential
SE corner: Vacant
SW corner: Residential

Jim Napoleon & Associates
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TRIP GENERATION CALCULATIONS

TRIP GENERATION, 2008, 8th Edition
I.T.E. Land Use Code: 254 **"Assisted Living"**

Independent Variable: **220** Beds

Average Vehicle Trip Ends on **Weekdays**
R squared = 0.55

Total Daily Traffic:	442	vehicles per day

During the peak hour of adjacent street traffic:

between **7 and 9 AM**	Entering Traffic:	20	vehicles per hour
R squared = ****	Exiting Traffic:	11	vehicles per hour
	Entering + Exiting:	31	vehicles per hour
between **4 and 6 PM**	Entering Traffic:	21	vehicles per hour
R squared = ****	Exiting Traffic:	27	vehicles per hour
	Entering + Exiting:	48	vehicles per hour

During the Peak Hour of the Land Use:

before noon	Entering Traffic:	27	vehicles per hour
R squared = ****	Exiting Traffic:	13	vehicles per hour
	Entering + Exiting:	40	vehicles per hour
after noon	Entering Traffic:	31	vehicles per hour
R squared = 0.82	Exiting Traffic:	36	vehicles per hour
	Entering + Exiting:	67	vehicles per hour

Average Vehicle Trip Ends on **Saturdays**
R squared = ****

Total Daily Traffic:	484	vehicles per day

During the peak hour of the land use:
R squared = ****

Entering Traffic:	34	vehicles per hour
Exiting Traffic:	39	vehicles per hour
Entering + Exiting:	73	vehicles per hour

Average Vehicle Trip Ends on **Sundays**
R squared = 0.57

Total Daily Traffic:	438	vehicles per day

During the peak hour of the land use:
R squared = ****

Entering Traffic:	36	vehicles per hour
Exiting Traffic:	48	vehicles per hour
Entering + Exiting:	84	vehicles per hour

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TRIP GENERATION CALCULATIONS

TRIP GENERATION, 2008, 8th Edition
I.T.E. Land Use Code: 620 **"Nursing Home"**

Independent Variable: **168** Beds

Average Vehicle Trip Ends on **Weekdays**
R squared = 0.79

Total Daily Traffic:	392	vehicles per day

During the peak hour of adjacent street traffic:

between **7 and 9 AM**	Entering Traffic:	N/A	vehicles per hour
R squared = ****	Exiting Traffic:	N/A	vehicles per hour
	Entering + Exiting:	29	vehicles per hour
between **4 and 6 PM**	Entering Traffic:	12	vehicles per hour
R squared = ****	Exiting Traffic:	25	vehicles per hour
	Entering + Exiting:	37	vehicles per hour

During the Peak Hour of the Land Use:

before noon	Entering Traffic:	14	vehicles per hour
R squared = ****	Exiting Traffic:	6	vehicles per hour
	Entering + Exiting:	20	vehicles per hour
after noon	Entering Traffic:	18	vehicles per hour
R squared = 0.51	Exiting Traffic:	28	vehicles per hour
	Entering + Exiting:	46	vehicles per hour

Average Vehicle Trip Ends on **Saturdays**
R squared = ****

Total Daily Traffic:	354	vehicles per day

During the peak hour of the land use:

R squared = ****	Entering Traffic:	N/A	vehicles per hour
	Exiting Traffic:	N/A	vehicles per hour
	Entering + Exiting:	67	vehicles per hour

Average Vehicle Trip Ends on **Sundays**
R squared = ****

Total Daily Traffic:	353	vehicles per day

During the peak hour of the land use:

R squared = 0.74	Entering Traffic:	29	vehicles per hour
	Exiting Traffic:	22	vehicles per hour
	Entering + Exiting:	51	vehicles per hour

SHORT REPORT

General Information		Site Information	
Analyst	RSF / JN	Intersection	US11 & SamMedCtr / HudsonLane
Agency or Co.	Jim Napoleon & Associates	Area Type	All other areas
Date Performed	5/4/2011	Jurisdiction	City of Watertown, NY
Time Period	Weekday AM Peak Hour Volumes	Analysis Year	2011 - Existing2

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	0	1	1	0	2	0	0	2	0
Lane Group		LT	R		LT	R		LTR			LTR	
Volume (vph)	44	0	4	9	0	28	4	537	83	129	451	21
% Heavy Vehicles	4	4	4	11	11	11	2	2	2	2	2	2
PHF	0.79	0.25	0.50	0.45	0.25	0.58	0.33	0.91	0.51	0.57	0.88	0.75
Pretimed/Actuated (P/A)	A	A	A	A	A	A	P	P	P	P	P	P
Startup Lost Time		2.0	2.0		2.0	2.0		2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0	2.0		2.0			2.0	
Arrival Type		3	3		3	3		3			3	
Unit Extension		3.0	3.0		3.0	3.0		3.0			3.0	
Ped/Bike/RTOR Volume	0	0	3	0	0	13	0	0	3	0	0	1
Lane Width		12.0	12.0		12.0	12.0		12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0	0		0	0		0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 13.0	G =	G =	G =	G = 32.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 1.00						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		56	2		20	26		759			766	
Lane Group Capacity		316	367		316	344		1884			1260	
v/c Ratio		0.18	0.01		0.06	0.08		0.40			0.61	
Green Ratio		0.24	0.24		0.24	0.24		0.58			0.58	
Uniform Delay d_1		16.7	16.1		16.3	16.3		6.3			7.4	
Delay Factor k		0.11	0.11		0.11	0.11		0.50			0.50	
Incremental Delay d_2		0.3	0.0		0.1	0.1		0.6			2.2	
PF Factor		1.000	1.000		1.000	1.000		1.000			1.000	
Control Delay		17.0	16.1		16.4	16.4		6.9			9.6	
Lane Group LOS		B	B		B	B		A			A	
Approach Delay	17.0			16.4			6.9			9.6		
Approach LOS	B			B			A			A		
Intersection Delay	8.8			Intersection LOS						A		

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SHORT REPORT

General Information		Site Information	
Analyst	RSF / JN	Intersection	US 11 & SamMedCtr / HudsonLane
Agency or Co.	Jim Napoleon & Associates	Area Type	All other areas
Date Performed	5/5/11	Jurisdiction	City of Watertown, NY
Time Period	Weekday PM Peak Hour Volumes	Analysis Year	2011 - Existing2

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	0	1	1	0	2	0	0	2	0
Lane Group		LT	R		LT	R		LTR			LTR	
Volume (vph)	26	0	5	52	0	131	7	487	12	28	639	43
% Heavy Vehicles	6	6	6	0	0	0	2	2	2	2	2	2
PHF	0.84	0.25	0.63	0.59	0.25	0.84	0.58	0.86	0.43	0.64	0.91	0.77
Pretimed/Actuated (P/A)	A	A	A	A	A	A	P	P	P	P	P	P
Startup Lost Time		2.0	2.0		2.0	2.0		2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0	2.0		2.0			2.0	
Arrival Type		3	3		3	3		3			3	
Unit Extension		3.0	3.0		3.0	3.0		3.0			3.0	
Ped/Bike/RTOR Volume	0	0	1	0	0	89	0	0	0	0	0	6
Lane Width		12.0	12.0		12.0	12.0		12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0	0		0	0		0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 12.0	G =	G =	G =	G = 28.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 1.00						Cycle Length C = 50.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		31	6		88	50		606			794	
Lane Group Capacity		314	366		321	388		1851			1770	
v/c Ratio		0.10	0.02		0.27	0.13		0.33			0.45	
Green Ratio		0.24	0.24		0.24	0.24		0.56			0.56	
Uniform Delay d_1		14.8	14.5		15.5	14.9		5.9			6.5	
Delay Factor k		0.11	0.11		0.11	0.11		0.50			0.50	
Incremental Delay d_2		0.1	0.0		0.5	0.2		0.5			0.8	
PF Factor		1.000	1.000		1.000	1.000		1.000			1.000	
Control Delay		14.9	14.5		15.9	15.1		6.4			7.3	
Lane Group LOS		B	B		B	B		A			A	
Approach Delay	14.9			15.6			6.4			7.3		
Approach LOS	B			B			A			A		
Intersection Delay	7.9			Intersection LOS						A		

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SHORT REPORT

General Information		Site Information	
Analyst	RSF / JN	Intersection	US11 & SamMedCtr / HudsonLane
Agency or Co.	Jim Napoleon & Associates	Area Type	All other areas
Date Performed	5/5/2011	Jurisdiction	City of Watertown, NY
Time Period	Weekday AM Peak Hour Volumes	Analysis Year	2011 - Projected2

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	0	1	1	0	2	0	0	2	0
Lane Group		LT	R		LT	R		LTR		DefL	TR	
Volume (vph)	44	0	4	14	0	43	4	537	99	153	451	21
% Heavy Vehicles	4	4	4	11	11	11	2	2	2	2	2	2
PHF	0.79	0.25	0.50	0.45	0.25	0.58	0.33	0.91	0.51	0.57	0.88	0.75
Pretimed/Actuated (P/A)	A	A	A	A	A	A	P	P	P	P	P	P
Startup Lost Time		2.0	2.0		2.0	2.0		2.0		2.0	2.0	
Extension of Effective Green		2.0	2.0		2.0	2.0		2.0		2.0	2.0	
Arrival Type		3	3		3	3		3		3	3	
Unit Extension		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0	3	0	0	20	0	0	4	0	0	1
Lane Width		12.0	12.0		12.0	12.0		12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0	0		0	0		0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 10.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 1.00						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		56	2		31	40		788		268	540	
Lane Group Capacity		234	282		223	265		2062		408	1177	
v/c Ratio		0.24	0.01		0.14	0.15		0.38		0.66	0.46	
Green Ratio		0.18	0.18		0.18	0.18		0.64		0.64	0.64	
Uniform Delay d_1		19.2	18.4		18.9	18.9		4.8		6.2	5.1	
Delay Factor k		0.11	0.11		0.11	0.11		0.50		0.50	0.50	
Incremental Delay d_2		0.5	0.0		0.3	0.3		0.5		8.3	1.3	
PF Factor		1.000	1.000		1.000	1.000		1.000		1.000	1.000	
Control Delay		19.8	18.4		19.2	19.2		5.3		14.6	6.4	
Lane Group LOS		B	B		B	B		A		B	A	
Approach Delay	19.7			19.2			5.3			9.1		
Approach LOS	B			B			A			A		
Intersection Delay	8.2			Intersection LOS						A		

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SHORT REPORT

General Information		Site Information	
Analyst	RSF / JN	Intersection	US 11 & SamMedCtr / HudsonLane
Agency or Co.	Jim Napoleon & Associates	Area Type	All other areas
Date Performed	5/5/11	Jurisdiction	City of Watertown, NY
Time Period	Weekday PM Peak Hour Volumes	Analysis Year	2011 - Projected2

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	0	1	1	0	2	0	0	2	0
Lane Group		LT	R		LT	R		LTR			LTR	
Volume (vph)	26	0	5	67	0	168	7	487	22	51	639	43
% Heavy Vehicles	6	6	6	0	0	0	2	2	2	2	2	2
PHF	0.84	0.25	0.63	0.59	0.25	0.84	0.58	0.86	0.43	0.64	0.91	0.77
Pretimed/Actuated (P/A)	A	A	A	A	A	A	P	P	P	P	P	P
Startup Lost Time		2.0	2.0		2.0	2.0		2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0	2.0		2.0			2.0	
Arrival Type		3	3		3	3		3			3	
Unit Extension		3.0	3.0		3.0	3.0		3.0			3.0	
Ped/Bike/RTOR Volume	0	0	1	0	0	114	0	0	0	0	0	6
Lane Width		12.0	12.0		12.0	12.0		12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0	0		0	0		0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 12.0	G =	G =	G =	G = 28.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 1.00

Cycle Length C = 50.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		31	6		114	64		629			830	
Lane Group Capacity		308	366		321	388		1840			1653	
v/c Ratio		0.10	0.02		0.36	0.16		0.34			0.50	
Green Ratio		0.24	0.24		0.24	0.24		0.56			0.56	
Uniform Delay d_1		14.8	14.5		15.8	15.0		6.0			6.7	
Delay Factor k		0.11	0.11		0.11	0.11		0.50			0.50	
Incremental Delay d_2		0.1	0.0		0.7	0.2		0.5			1.1	
PF Factor		1.000	1.000		1.000	1.000		1.000			1.000	
Control Delay		14.9	14.5		16.5	15.2		6.5			7.8	
Lane Group LOS		B	B		B	B		A			A	
Approach Delay	14.9			16.0			6.5			7.8		
Approach LOS	B			B			A			A		
Intersection Delay	8.4			Intersection LOS						A		

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PHASE 1 ARCHAEOLOGICAL SURVEY
SAMARITAN SENIOR VILLAGE
CITY OF WATERTOWN
JEFFERSON COUNTY

prepared by

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for

GYMO, PC
220 Sterling Street
Watertown NY 13601

May 5, 2011

MANAGEMENT SUMMARY

PROJECT NAME/PIN: Samaritan Senior Village
PROJECT TYPE: New construction
CULTURAL RESOURCE SURVEY TYPE: Phase 1 survey

LOCATION: City of Watertown, NY (04540)

SURVEY AREA: 6.9 ha (17.2 ac)
U.S.G.S. QUAD NAME: Watertown, NY

SENSITIVITY ASSESSMENT:
Prehistoric: Low based on soil type and aspect
Historic: High based on map-documented structures

ARCHAEOLOGICAL SURVEY METHODS:
Number of STPs: 265
Number of Units:0
Surface survey: n/a

RESULTS OF ARCHAEOLOGICAL SURVEY:
Number of prehistoric sites identified: 0
Number of historic sites identified: 1
Number of sites recommended for Stage 2: 0
Number of NR listed/eligible sites that may be impacted: 0

RESULTS OF ARCHITECTURAL SURVEY:
Number of historic structures identified: 1
Number of NR listed/eligible historic structures: 0
Number of recommended structures: 0
Number of NR listed/eligible properties that may be impacted: 0

AUTHOR: Timothy J. Abel, PhD

DATE: May 5, 2011

SPONSOR: HEAL NY

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1.0 INTRODUCTION

This report documents a Phase 1 archaeological survey of the proposed Samaritan Senior Village development (11PR0992) in the City of Watertown (04540), Jefferson County (Figure 1, Photos 1-12). The project is proposed by Samaritan Medical Center, with funding through a grant from the Health Care Efficiency and Affordability Law for New Yorkers (HEAL NY) program. Office of Parks, Recreation, and Historic Preservation (OPRHP) review of the project is being sought under Section 14.09 of the NYS Parks, Recreation and Historic Preservation Law (1980).

The project area is situated on the southern boundary of the city, on the east side of outer Washington Street, behind the former K-Mart store (now Samaritan Medical Center Annex) at 1575 Washington St. The proposed project will result in the creation of a 288-bed, 321,000 ft^2 senior living facility on 6.7 ha (16.7 ac). A water main will be constructed as well, stretching from the PA to Summitt Drive, then east to Spring Valley Drive. Ground disturbing activities will include extensive cut and fill, utility installation, and grading. This investigation was conducted to determine whether significant cultural resources, as defined under Section 106 of the National Historic Preservation Act, would be impacted by this undertaking.

The survey was conducted by the author between 4/18-4/29, 2011. The author is qualified as a consulting archaeologist under Section 36 CFR 61 of the National Parks Service Regulations. Background research was conducted by the au-

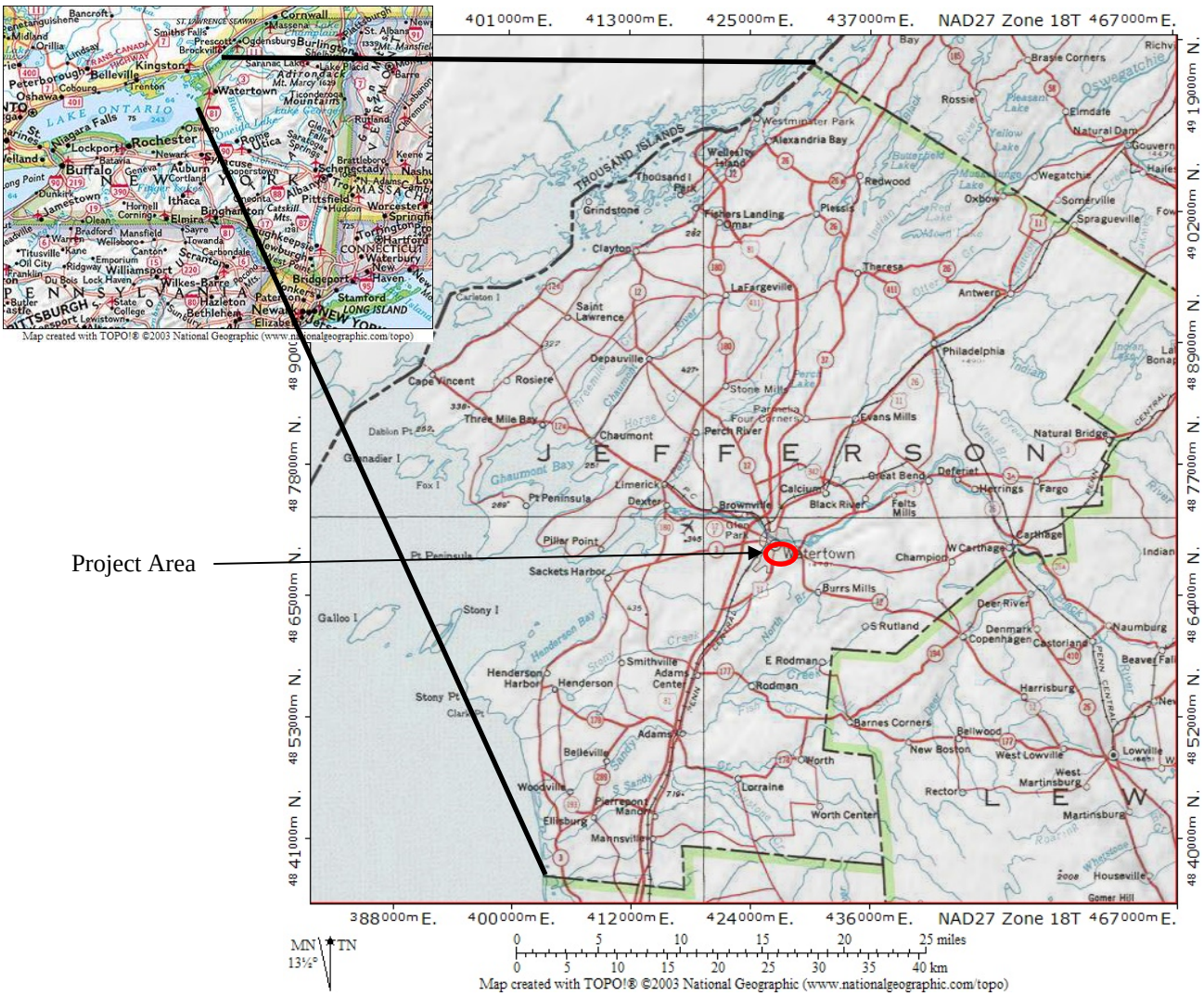

Figure 1– General project area location in the City of Watertown, Jefferson County.

Photo 1– Looking southeast from Washington Street.

Photo 2– Extant barn structure adjacent to 1511 Washington Street.

Photo 3– Outbuilding ruin adjacent to extant barn, behind 1511 Washington Street.

Photo 4– Looking north.

Photo 5– Looking north from the south PA boundary, along the rear of the Samaritan Medical Center Annex.

Photo 6– Quarry area abandoned in the 1960s.

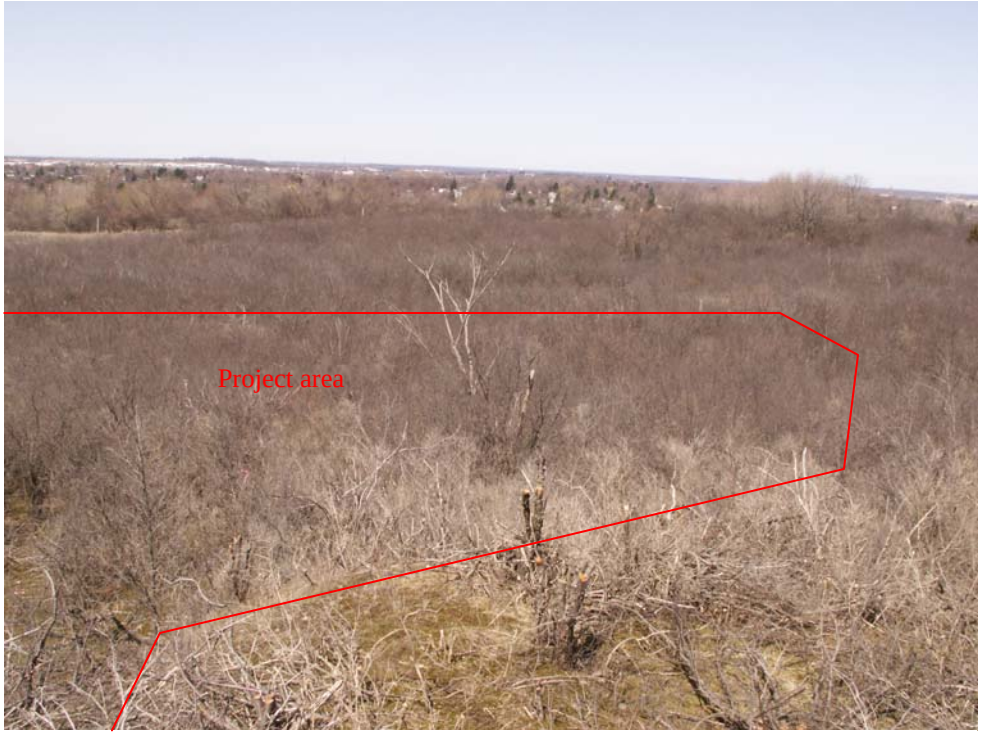

Photo 7– Looking north.

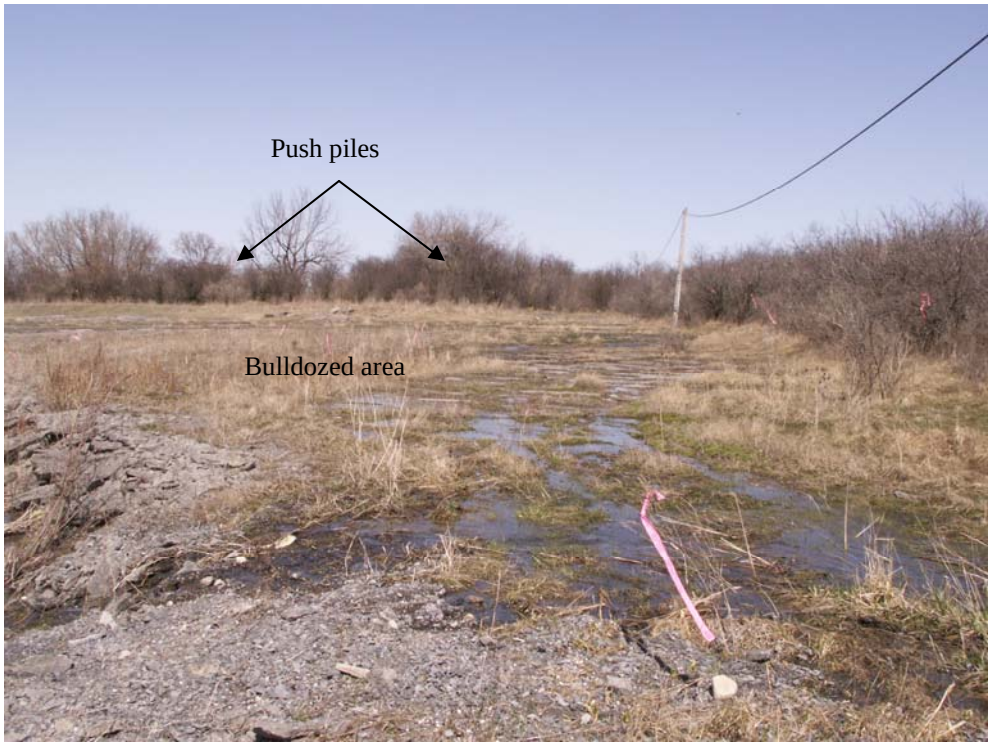

Photo 8– Looking north.

Photo 9– Looking east across bulldozed area.

Photo 10– Water main transect looking south toward Summit Drive.

Photo 11– Water main transect along Summit Drive.

Photo 12– Water main transect along Summit Drive.

thor and Ms. Barbara Ross. Fieldwork was performed by the author, Therese Miner, and Murat O'Hara. The Phase 1 archaeological investigation was conducted in accordance with the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (NYAC 1994), as adopted by OPRHP in 1982. The reporting of this project follows the *Phase I Report Format Requirements* (OPRHP 2005).

1.1 Project Area/ Area of Potential Effect Definition

The project area (PA) is situated within the City of Watertown, in central Jefferson County (Figure 1). It lies on the east side of Washington Street, behind the Samaritan Medical Center Annex at 1575 Washington Street. The project is to be built on 6.7 ha (16.7 ac) of a 14 ha (35 ac) parcel owned by Samaritan Medical Center. A water main will be constructed as part of this project, stretching 752 m (2467 ft) to Summit Drive, then along Summit Drive to Spring Valley Drive.

The PA is coterminous with the Area of Potential Effect (APE), encompassing 6.9 ha (17.2 ac). The boundary of the APE was defined by a series of ten UTM reference points provided by the client and located in the field by Global Positioning System (GPS)(see Figures 2-3; Table 1). The water main was plotted in the field based on fixed reference points established by engineers.

1.2 Physical Setting

The PA is situated within the Ontario Lake Plain section of the Erie-Ontario Lowlands physiographic region (Cressey 1977). This section is characterized by gently to moderately rolling glacial lake plain topography covering southwest-trending ridges of underlying glaciated sedimentary bedrock of the Middle Ordovician Black River Group. This bedrock is exposed throughout the PA, including a 0.8 ha (2 ac) area that was once quarried.

The PA is situated on upland bedrock table plains at elevations of 530-600 ft. amsl (Figure 3). The highest point of the PA lies at the southeast corner, at the foot of a bedrock terrace. The PA slopes gently to the northwest, then precipitously northwest beyond a bedrock terrace-edge running northeast-southwest through the western portion. Slopes within the PA range from 0-50%.

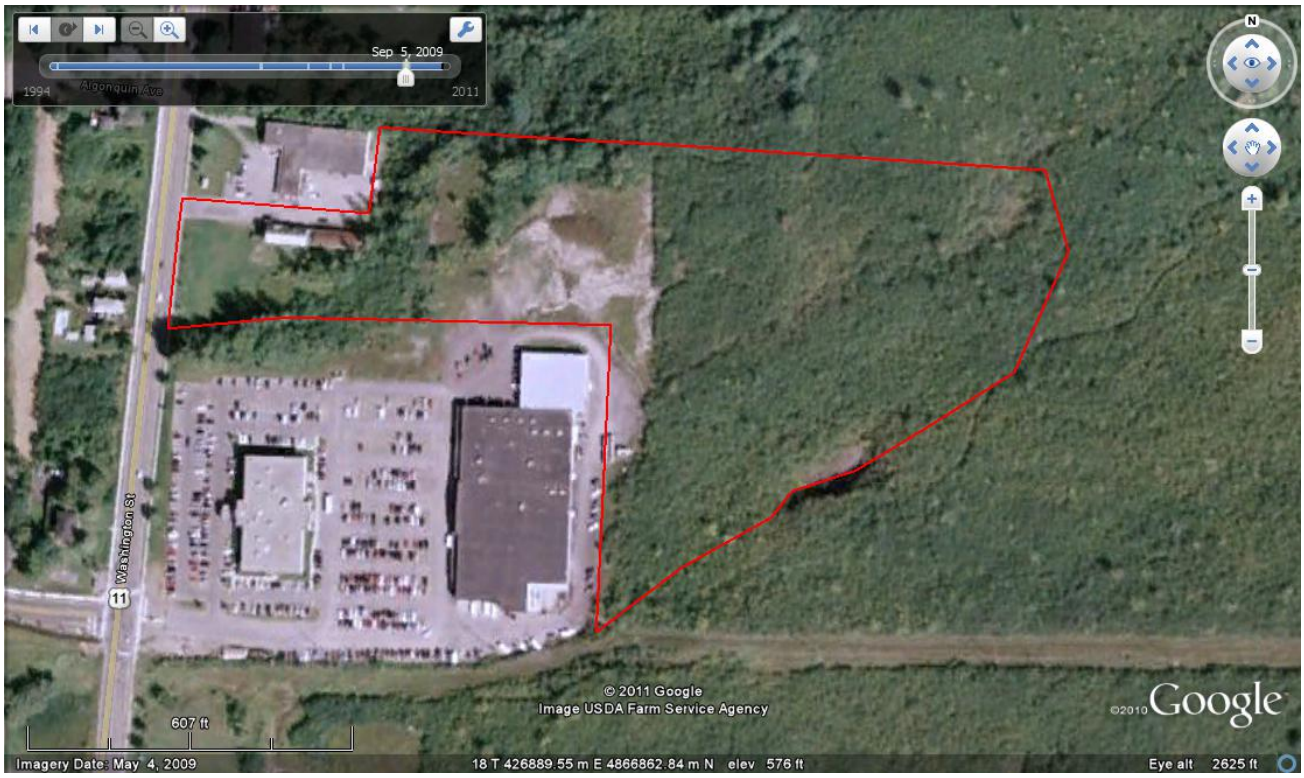

Figure 2– Project area aerial view and current conditions.

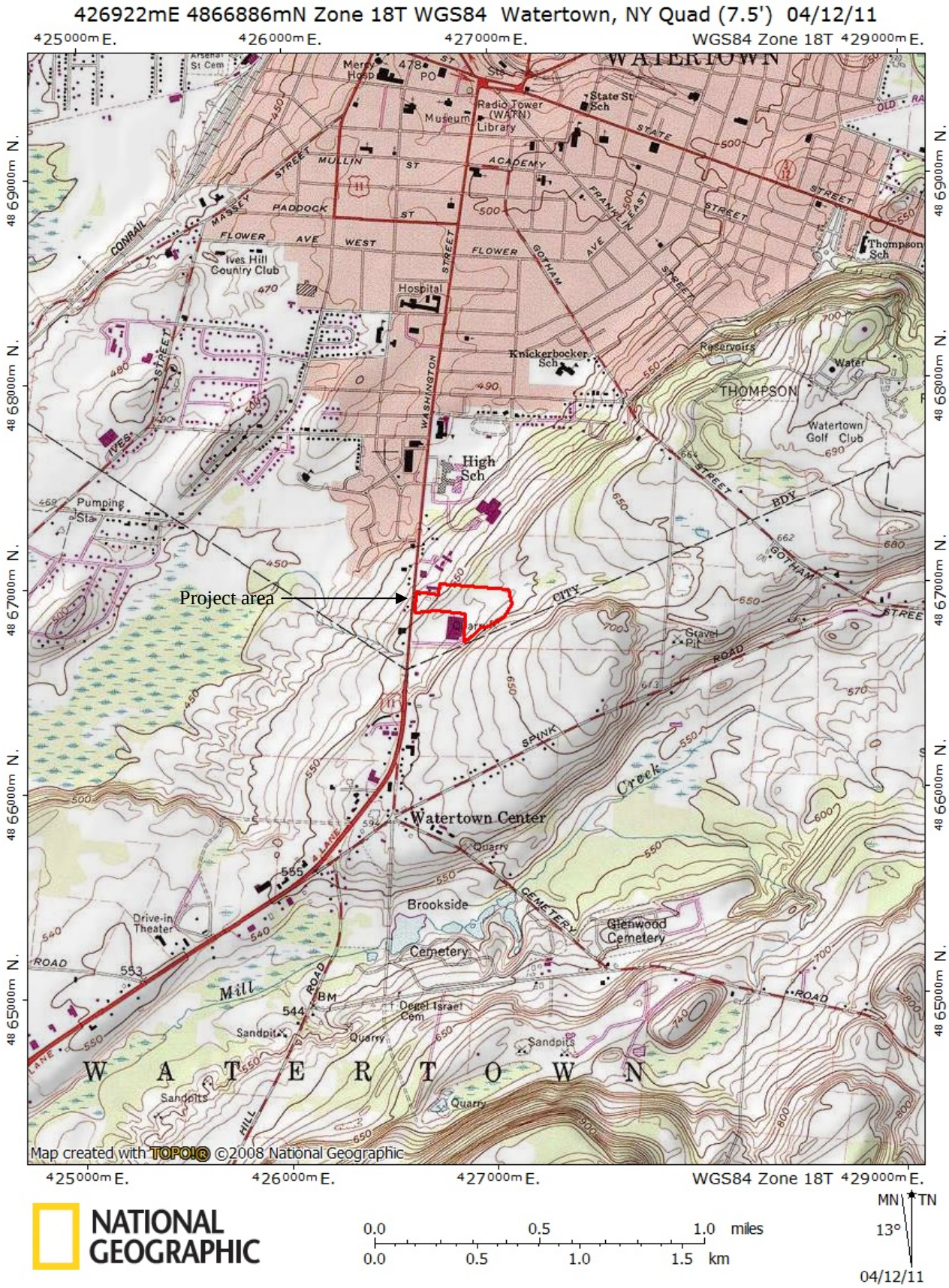

Figure 3– Project area location on the 1982 USGS 7.5" topographic map.

Table 1– GPS corner coordinates for the PA.

RP	Zone	Easting	Northing	Elevation
1	18T	427113	4866196	644
2	18T	427092	4866242	645
3	18T	427059	4866282	644
4	18T	427007	4866336	644
5	18T	426863	4866354	626
6	18T	426903	4866615	652
7	18T	426957	4866782	818
8	18T	427105	4866999	572
9	18T	426619	4866900	NA
10	18T	426617	4866973	531
11	18T	426735	4867013	542
12	18T	427119	4866935	598
13	18T	427088	4866870	608
14	18T	426856	4866728	602
15	18T	426864	4866898	576

The PA is drained by numerous springs and small un-named streams that flow west to an expansive wetland forming the headwater of Mill Creek, located roughly 0.8 km (0.5 mi) west of the PA (Figure 3). Because many areas within the PA are flat with shallow soils, these streams often expand into wetlands before flowing downhill into the swamp.

The soils of the PA are depicted in Figure 4 and summarized in Table 2. The soils are characterized by the Farmington-Galway-Benson association, which are moderately deep, excessively drained, loamy soils on plains (McDowell 1989). These soils were formed of sediments from fossil Lake Iroquois. There is a small area of Farmington loam on the west end of the PA. Significant soil deposition throughout the PA ended with the drainage of Lake Iroquois c. 12,000 rcyB.P. (cal. 14,000 rcyB.P.). There is no prediction of deeply-buried cultural deposits.

Figure 4– PA soils.

Table 2– Summary of project area soils data.

Soil Type/ Symbol	Soil Horizon Depth	Color	Texture	Slope	Drainage	Landform
Benson channery silt loam; BfF	Ap- 0-8 cm (0-3 in) BA- 8-15 cm (3-6 in) Bw- 15-30 cm (6-12 in) R- 30 cm (12 in)	7.5YR3/2 5YR4/3 5YR3/3 bedrock	ChSiLo ChSiLo ChSiLo	25-50%	Excessive	Slopes
Benson-Galoo Complex; BgB	A1-0-10 cm (0-4 in) Bw-10-18 cm (4-7 in) 2R	7.5YR3/2 5YR4/3 bedrock	SiLo ChSiLo BR	0-8%	Excessive	Till plains
Galoo-Rock Outcrop Complex; GbB	A1-0-10 cm (0-4 in) Bw-10-18 cm (4-7 in) 2R	7.5YR3/2 5YR4/3 bedrock	SiLo SiLo	0-8%	excessively well	Rock outcrops
Farmington Loam; FaB	Ap- 0-20 cm (0-8 in) Bw1- 20-38 cm (8-15 in) Bw2-38-48 cm (15-19 in) R- 48 cm (19 in)	10YR4/3 10YR4/4 10YR4/3 bedrock	Lo Lo Lo	0-8%	Well- Excessive	Till plains
Newstead silt loam; Nn	Ap- 0-20 cm (0-8 in) Bg1- 20-41 cm (8-16 in) Bg2- 41-56 cm (16-22 in) Cg- 56- 76 cm (22-30 in) R- 76-86 cm (30-34 in)	10YR3/2 2.5Y5/2 2.5Y5/2 2.5Y5/2 10YR5/1	SiLo SiLo GvLo GvLo BR	0-3%	Somewhat poor	Till plains
Urban land; Ur						

1.3 Current Land Use and Integrity

The PA lies within a mix of urban residential, commercial and wooded landscapes (Figure 2). The PA was formerly agricultural fields that were abandoned in the 1960s for commercial development. The entire central portion of the PA was scraped clear in the 1990s during an addition to the Samaritan Medical Center Annex. Detritus from that activity was pushed to the northern boundary of the PA, exposing a portion of the Black River Group bedrock formation. The south-central portion of the PA was quarried from the late 19th through the middle 20th centuries.

There are overhead utilities within the PA, running north-south through the central portion, along the rear boundary of the Samaritan annex building. There are buried sanitary and storm sewer lines that run through the western portion of the PA, fronting Washington Street. Overhead high-voltage transmission lines run to the south of the PA, as does a gas line.

2.0 BACKGROUND

2.1 Literature Search

A search of the OPRHP and NYSM site and project files was performed by Barbara Ross. Details of that search are included as Appendix 1. A summary and commentary is presented below.

The PA falls within the general area established for an unknown prehistoric burial site documented by Parker (NYSM 3537). No further information is available, but a photo of this burial, from the Klock farm, was found in the files of the Jefferson County Historical Society (Figure 5). The burial appears to be eroding out of some rather steep banks, perhaps a sand or rock quarry. Such quarries existed in the PA in the 19th century, but it is impossible to now be certain where these human remains were found.

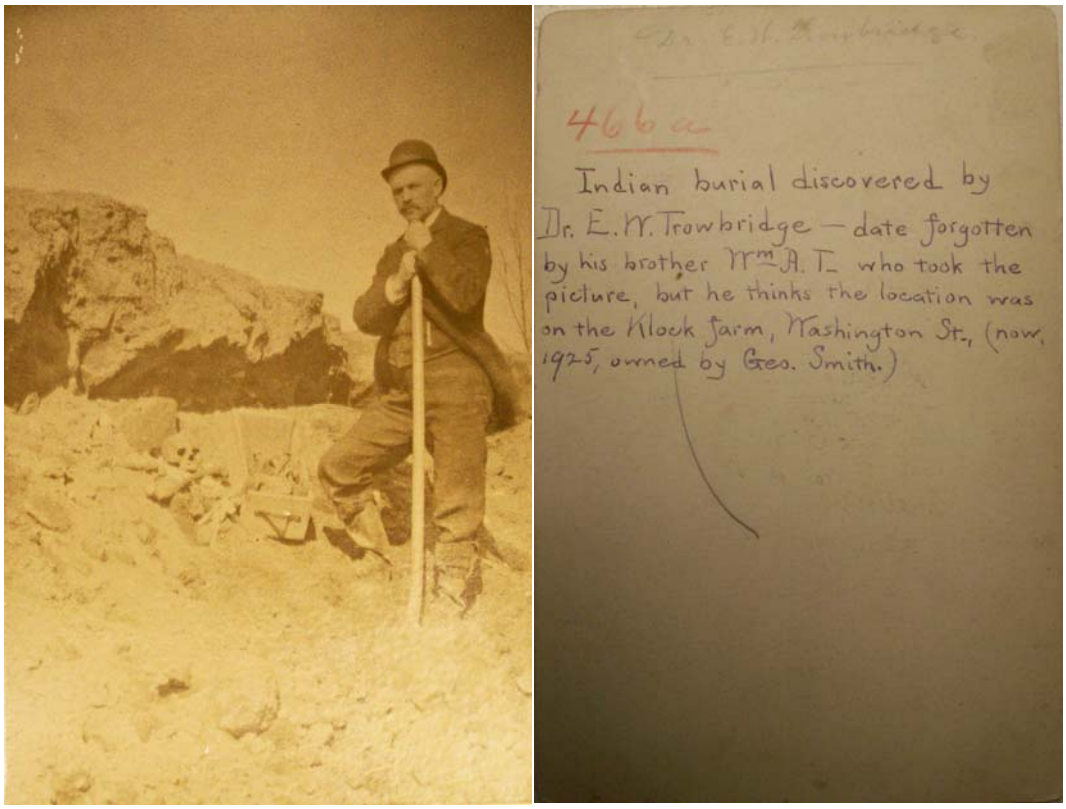

Figure 5– Obverse and reverse of a photo from the Jefferson County Historical Society depicting a burial from the Klock Farm.

Burials have also been recorded from Thompson Park (NYSM 3461), 1.1 km (0.7 mi) to the northeast, but no other information of these remains has been otherwise recorded. The Gifford (Gragg, Gregg, NYSM3459) site was a St. Lawrence Iroquoian village located 2.3 km (1.4 mi) to the east of the PA. This site is not the same as two village sites referenced in the search detail as NYSM3460, which refers to the Goodnough and Hungerford sites. All of these sites are likely destroyed by sand and gravel mining (Engelbrecht, et al. 1990).

Traces of occupation have been documented around wetlands lying south and west of the PA. These were recorded by Parker as well, and have not been otherwise substantiated.

There are a few documented 19th and early 20th century farm and homestead archaeological sites within the viewshed of the PA, but none of these are within or adjacent. The Mather site (A04540.1326) is located on Washington Street across from the PA, and was documented to the Phase II level prior to development. Toward the northwest, in the heart of the City of Watertown, there are several documented industrial ruin sites from the 19th and early 20th century. These have been documented at the Phase I level.

There is one National Register (NR) listing within 3.2 km (2 mi) of the PA. Thompson Park (90NR0310) was listed by its association with Fredrick Law Olmstead, the architect who designed Central Park in New York City. It is not visible from the PA and this undertaking will have no impact on this property.

Three residences in the 1300-1400 blocks of Washington Street, beginning one block south of the PA, have been inventoried. All have been determined ineligible for NR listing.

2.2 Prehistoric Occupation

The PA was opened for pioneering occupation by the drainage of glacial Lake Iroquois by c. 14,000 years ago (calibrated radiocarbon age). Recent pollen studies have demonstrated a quick succession of grassland and spruce-pine boreal forests following glacial lake recession in northern New York, ending by c. 7,000 B.P. (Brown 2002). Paleoin-

dian populations had been frequenting the area as early as c. 13,800 years ago (calibrated age), but the PA was likely inundated at that time. Cultural remains of these first peoples, in the form of distinctive fluted lanceolate spear points, have been found sporadically throughout Jefferson County. The nature of these sites demonstrates transitory, rather than sustained occupation.

Early Archaic period (c. 10,000-7000 B.P.) sites are not documented for the region (Trubowitz 1979). The guiding hypothesis for this seeming abandonment has been the dominance of boreal forest environments in the Northeast during that time, with their low carrying capacity and associated low population densities (Funk 1977, 1978, 1979). Another factor undoubtedly contributing to the paucity of Early Archaic sites in Jefferson County, however, must be the realization that post-glacial lake levels in the Ontario basin were 65 ft. below present day during this time. This exposed large areas of the basin to settlement which have been since flooded (Abel and Fuerst 1999).

The number of archaeological sites in the region increases again with the climax of deciduous forests in the Northeast, an event which corresponds with the Middle Archaic period (c. 7000-5000 BP). Large Middle Archaic base camp sites, not surprisingly, are riverine oriented, and point to at least a seasonally focal subsistence economy based on fishing (Starbuck and Bolian 1980). These base camps must, however, be accompanied by numerous site types that are now only poorly understood (Curtin 2009). There are no known Middle Archaic sites within the area of the PA.

Late Archaic cultures (5000-3500 B.P.) are seen as a direct outgrowth of local Middle Archaic cultures. Little of aboriginal culture changed except for artifact forms and an intensification of optimal foraging subsistence strategies (Keene 1981; Winterhalder 1981). Spring and summer sites are riverine-oriented, and exhibit evidence of population aggregation. Fall and winter sites evince dispersal, and a diffuse winter economy carried out at interior sites (Ritchie and Funk 1973). Late Archaic sites in the region are concentrated in the interior, along the major rivers and streams flowing into Lake Ontario and the St. Lawrence River.

The period between c. 1500-1000 B.C. marks the Archaic Transition, during which populations achieved more sedentism through the development of more efficient food procurement, preparation, and storage. Earlier populations obviously cached small amounts of food for short periods of time at local camps. During the Archaic Transition, however, cultures learned to fabricate stone, and later, fired clay pots, which made much more efficient storage and cooking vessels.

This innovation was spurred by an intensification of harvesting strategies to produce surplus food reserves for lean season use, and consequently, resulted in longer site occupations. Longer stays meant a greater accumulation of debris, and this has resulted in increased archaeological visibility for Transitional period sites, when compared to earlier Late Archaic period sites. Repeated use of some sites has given the erroneous impression of enormous settlements along some riverine settings. Like earlier populations, Transitional Archaic populations were seasonally focal, but likely followed a diffuse fall and winter settlement and subsistence pattern (Ritchie and Funk 1973). There are no known sites representing the Transitional period local to the PA.

Early Woodland populations (1000-400 B.C.) mastered the art of clay vessel-making. Early Woodland populations, too, lived a seasonally focal economy that in the spring and summer focused on fishing at riverine locales. They appear to have also had a diffuse fall and winter economy that included collecting and hunting (Ritchie and Funk 1973). Numerous Early Woodland sites have been found in the Indian River drainage, but none so far in the Black River valley.

Middle Woodland populations (400 B.C.-A.D.800) are recognized archaeologically by the Point Peninsula Tradition (Spence, et al. 1990). Like their predecessors, Middle Woodland peoples lived a seasonally focal economy. Spring and summer sites were clustered around good fishing areas, while fall sites emphasized wild grain harvesting, nut collection and hunting. Middle Woodland sites are perhaps the most numerous on the landscape, some think owing to an increased population (Anderson 1991). More likely however, is the seasonally aggregated reoccupation of riverine and lacustrine site localities, giving the false impression of large riverine settlements.

Between 800-1000 A.D., intensive maize cultivation began to be practiced in the Northeast (Hart 1999). There is currently no evidence of maize cultivation in Jefferson County, however, before the arrival of St. Lawrence Iroquoian populations c. 1250 A.D. This, however, is likely just a product of the paucity of documented early Late Woodland sites. With intensive maize cultivation came more sedentary village settlements. Local raiding forced the movement

of settlements to interior locations away from the riverine settings that for millennia formed the focus of aboriginal life. Specialized camps were utilized on a logistical basis to provide supplement to the maize diet (Abel 2000).

About 1525 A.D., St. Lawrence Iroquoian cultures abandoned Jefferson County. Ceramic comparisons make it clear that the Clayton Cluster population crossed the St. Lawrence River and miscegenated with a population cluster located in Prince Edward County, Ontario. Populations on Dry Hill likely moved south to join the Five Nations, principally the Onondaga and Oneida. A population centered south of Black Lake likely moved into the area north of Prescott, Ontario (Abel 2001). There are multiple hypotheses that seek to explain their abandonment, including climatic shift (Fitzgerald and Jamieson 1985), warfare (Jamieson 1990; Pendergast 1985), and political upheaval (Abel 2001; Engelbrecht 1995).

2.3 Historic Development

The period from c. 1525-1800 A.D. is known as the Frontier Period in northern New York (Abel and Fuerst 1999). During this time, the area was shared and at times contested between several transient aboriginal cultures including the Iroquois, Huron and Algonquians (Engelbrecht 2004). Later, it was similarly contested by the French and English. Most of the sites relating to this time period are located along Lake Ontario and the St. Lawrence River, which were important conduits for transportation and commerce in what was otherwise uninhabited wilderness.

After being ceded to the new United States by the Oneida and Onondaga in 1788, much of northern New York, including the PA, was carved up and sold in six "Great Lots." In 1791, Alexander Macomb and company purchased this region, save for a 10 mile square reserve in the northern part of Jefferson County given to Peter Penet by the Oneida. The PA was organized as part of Oneida County until 1805, when Jefferson County was split off including Watertown as an original town.

Settlement in what would become the Town of Watertown was slow at first, owing to its wilderness location and the difficulty of navigating the raging Black River. The first settlements were begun in the region in 1801 along the Black River on Watertown's Public Square. A toll road that would later become Washington Street was cut by 1803 and connected the fledgling settlement with Adams and Rome to the south. Settlements along this road were growing by the 1820s, as was the village of Watertown, but there is no documentation of this development until 1855.

The historic development of the PA can be traced through an excellent series of maps. The Levy map (1855) (Figure 6) documents one farmstead within the PA, identified as owned by C.D. Morgan. This farmstead appears intermittently on maps through 1909 (Figures 7-11) (Beers and Beers 1864; Blankman 1892; Robinson 1888). In 1864 and 1888, it is identified as the S. Klock farm. It does not appear on the 1892 Blankman map and is similarly missing from the 1898 USGS topographic map. It reappears by 1909. Whether this indicates a redevelopment, or simply a map error, is unknown.

By 1864, the City of Watertown had expanded its limits beyond the PA to the south, enveloping the farm in the growing city. Indications are that the farm remained in operation into the 1950s. A 1925 note on the burial photograph lists it as owned by George Smith. By the 1950s, however, it is unclear what the history of the farmstead was. The Washington Street frontage was apparently redeveloped into an implement sales lot around that time, and functioned in that activity until the 1970s. It was then converted into several commercial enterprises. The farm continued to be owned by the Lettiere family in the 1990s when it was bequeathed to Samaritan Medical Center.

A large portion of the farm south of the PA was sold off in the 1960s, and developed into a K-Mart department store. That development was sold in the 1990s to Samaritan Medical Center and converted into an outpatient, records, print and maintenance facility. It was additionally developed in the late 1990s with additions to the former K-Mart building and the construction of a new outpatient surgical complex. It was during this time that significant portions of the PA were cleared, bulldozed and pushed for future development (Figure 12).

Figure 6- Detail of the 1855 Levy map of Jefferson County.

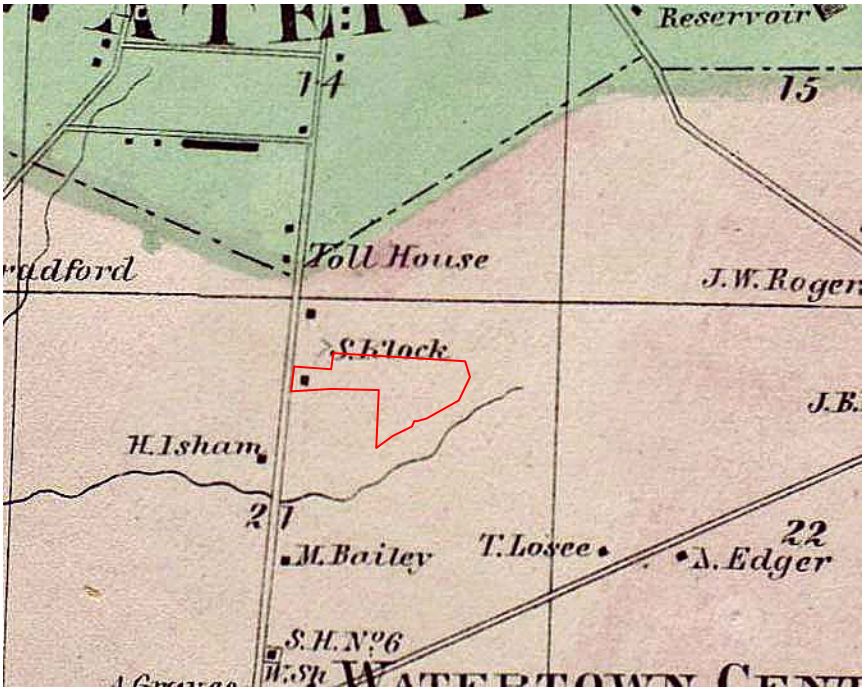

Figure 7– Detail of the 1864 Beers & Beers map of Town of Watertown.

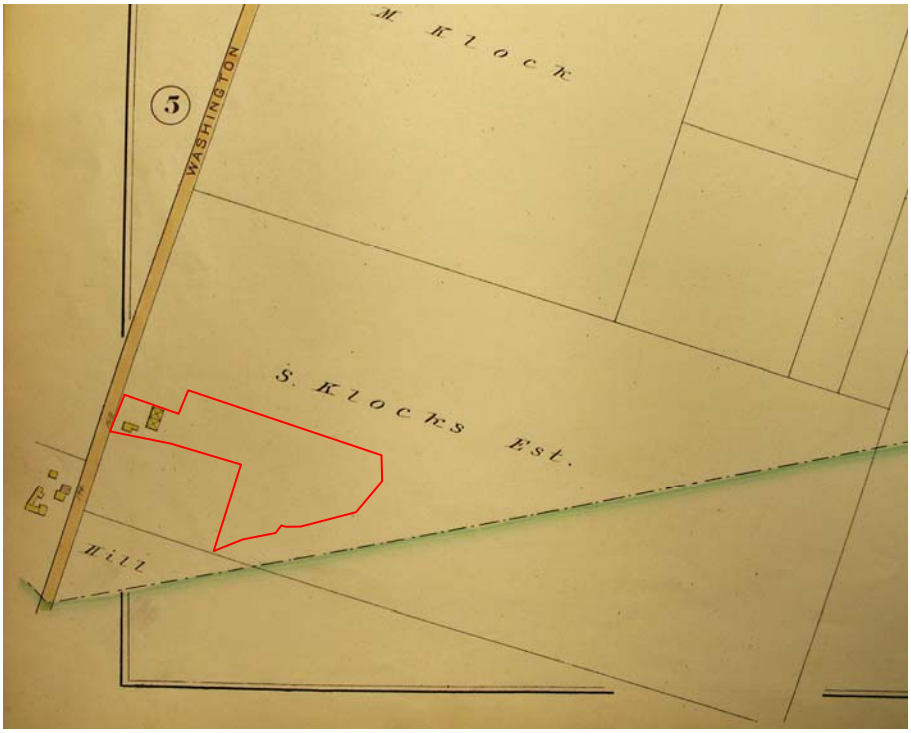

Figure 8– Detail of the 1888 Robinson Atlas map of the Town of Watertown.

Figure 9– Detail of the 1892 Blankman map.

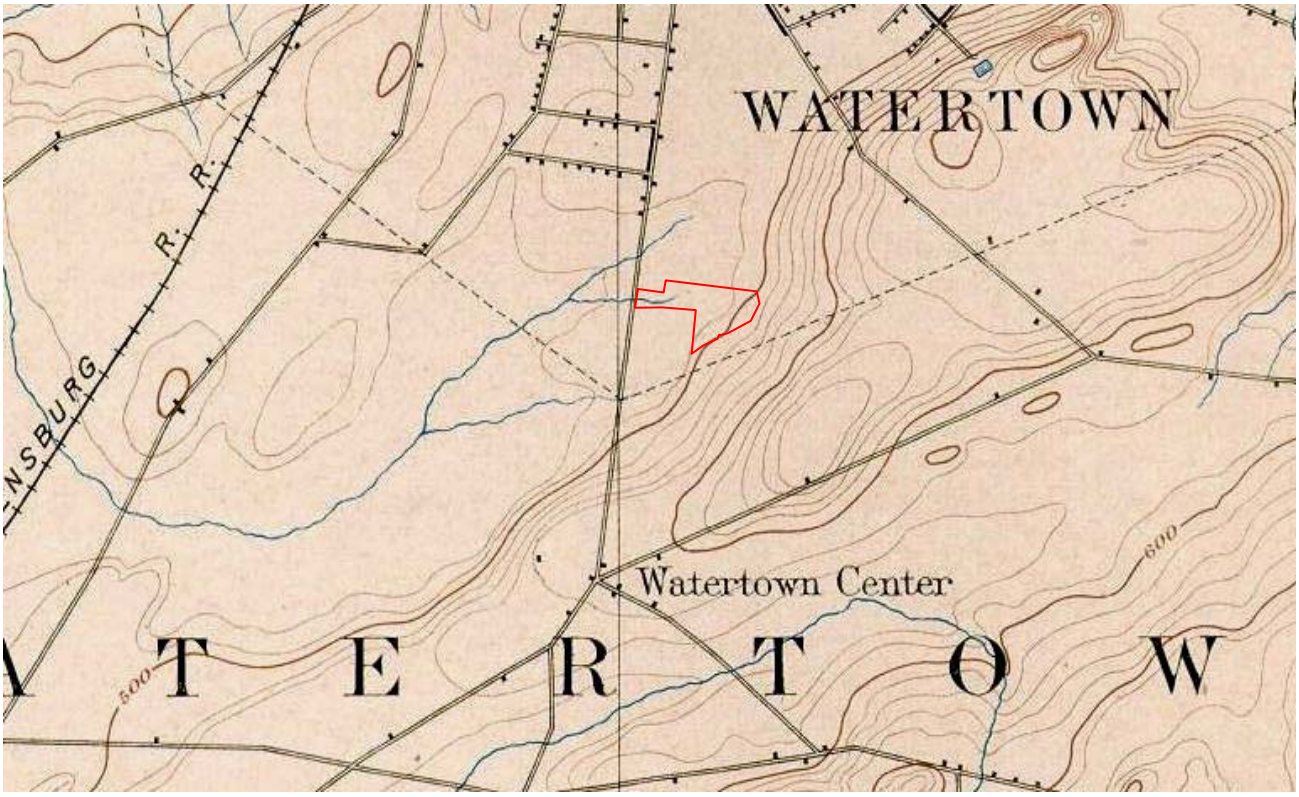

Figure 10– Detail of the 1898 USGS topographic map.

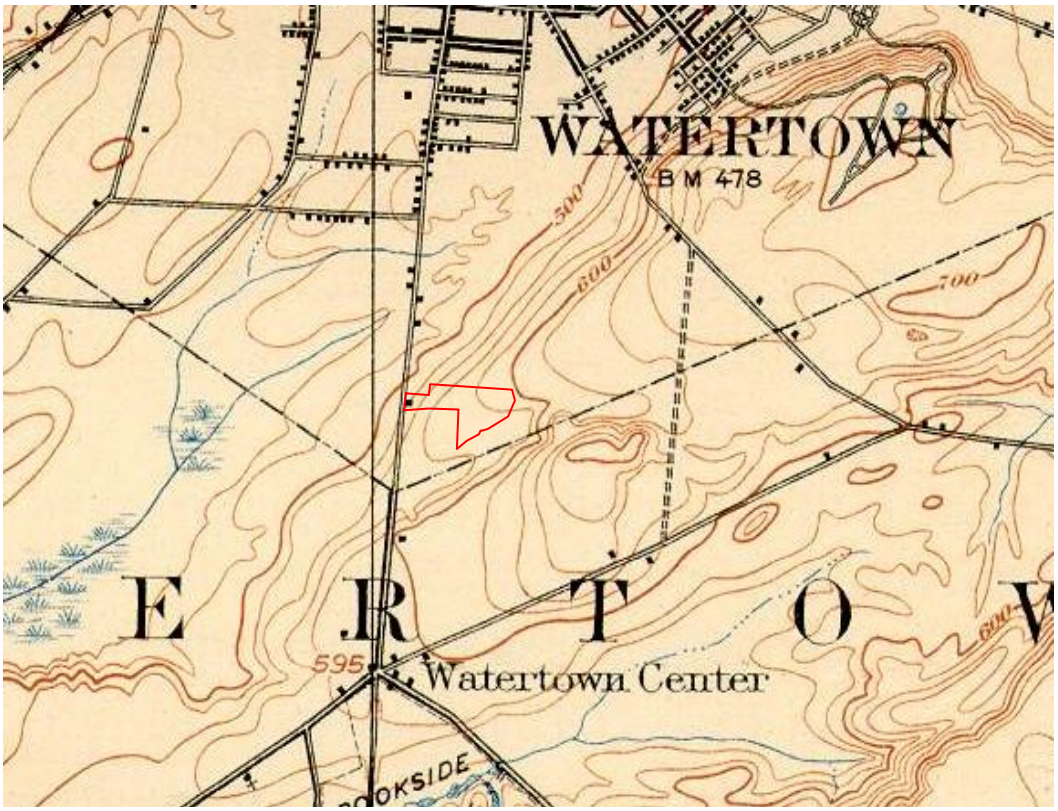

Figure 11– Detail of the 1909 USGS topographic map.

3.0 ARCHAEOLOGICAL ASSESSMENT

3.1 Archaeological Sensitivity

The archaeological sensitivity of any region- the likelihood that archaeological sites will be encountered- is factored by examining its suitability for settlement, judging by the economic systems of cultures that inhabited the area; locations of known archaeological resources based on prior surveys; and finally, contemporary maps locating sites and human activity that have the potential to produce archaeological deposits. Of course, any assessment of the likelihood of finding sites must be tempered by documented levels of development that regularly destroy them.

GIS studies of aboriginal settlement have consistently keyed on the intersection of four landscape characteristics that seem to predict site location (Hamilton and Larcombe 1994; Klein, et al. 1985; Kohler and Parker 1986). Chief among these is proximity to potable water. Most prehistoric archaeological sites are located within 200 m (656 ft) of a freshwater source. For aggregated settlements such as base camps and villages, the water source needs to be perennial. For ephemeral camps, however, sources of freshwater may be seasonally temporary or even episodic. Water systems played a key role in not only the sustenance of life but also in aboriginal transportation, socialization and commerce.

A second factor in prehistoric site location is drainage. People do not typically settle in wet areas prone to flooding or poor drainage. Prehistoric peoples tended to locate on moderately well to well-drained soils, most likely to be found on knolls, ridges, terraces and hills. Areas with only seasonal flooding, however, may be occupied sporadically to seasonally, such as floodplains.

A third factor in prehistoric site location is aspect. Prehistoric peoples tended to locate their settlements on the south and east aspects of upland environments. Location on these aspects sheltered the settlements from prevailing winds, especially in winter.

A fourth and final factor in prehistoric site location is slope. Unless a culture possessed the labor and time investment necessary to alter existing conditions, prehistoric peoples tended to favor flat to gently-sloping landscapes for settlement. Most prehistoric sites are located on land forms with slopes of 12 percent or less.

Aboriginal peoples dependent on horticulture for their subsistence, notably Late Woodland populations, have an added settlement requirement- soils suitable for growing crops. In addition, because warfare was endemic to Late Woodland populations, settlements increasingly tended to seek defensible locations proximate to suitable soils. These locations, for the most part, are inland from lacustrine environments.

As cited above, no prehistoric archaeological sites have been documented within the PA. Poor soil drainage and an exposed aspect may have discouraged aboriginal peoples from settling there. But another factor that must be considered is the lack of systematic surveys. While farming activity over the last 175 years has brought most large aboriginal settlements to light, smaller settlements like camps often go unnoticed because they lack diagnostic tools. There are numerous landforms within the PA that fit proximity to water and soil drainage for prehistoric site location. Thus, while the location of larger prehistoric settlements may be doubtful, there remains an archaeological sensitivity for small, ephemeral prehistoric sites, at least in areas that have not been disturbed by development.

Euroamerican site location follows many of the same tendencies as aboriginal sites, with the notable elimination of proximity to water as a key factor for all but very early –pioneering- settlements. Wells allowed water to be obtained virtually anywhere, leaving drainage and proximity to roads as the most reliable predictors of historic site location (Hasenstab and Resnick 1990). Exceptions to this pattern should be expected for ephemeral military sites, which tend to follow the same location patterns as those seen for aboriginal sites; and industrial sites which rely on proximity to water for power.

Perhaps the best predictors of historic site location are contemporary maps which document the locations of roads, industries and settlements. Nineteenth century land ownership maps of the PA detail the presence of one farmstead within the PA. There exists a high potential for the location of historic archaeological sites in areas not disturbed by development.

3.2 Archaeological Contexts

Ephemeral Aboriginal Sites

The use of ephemeral sites played a key role in the settlement and subsistence strategies of aboriginal peoples, whether they obtained their sustenance primarily from foraging or from farming. In foraging economies, such as those that characterized the Paleoindian through Late Archaic time periods, ephemeral campsites made up the bulk of the settlement pattern, while aggregated settlements were much more rare (Bettinger 1991; Kelly 1995). This was because resources were similarly ephemeral, and human societies needed to adapt by making their settlement strategies more flexible.

During the Transitional Archaic, Early Woodland and Middle Woodland time periods, harvesting or optimized foraging became the preferred adaptive strategy among many northeast cultures. Using this strategy, cultures keyed in on annually abundant and reliable resources such as fish, wild grains, and nuts, supplementing their diets with foodstuffs hunted or gathered from ephemeral sites (Binford 1980; Keene 1981). The perceived tendency for more ephemeral sites to be occupied during "lean" seasons, such as winter, led many researchers in the northeast to postulate "coalescence-dispersal" or "riverine-backwater" settlement patterns for these cultures (e.g. Ritchie and Funk 1973). It is clear, however, that ephemeral sites remained important throughout the seasonal settlement cycle to supplement diets and provide raw materials for tooling (Kelly 1995).

For cultures that derived the bulk of their subsistence through horticulture, ephemeral sites similarly remained important for supplementary subsistence activities such as hunting, gathering and retooling. The important role of these sites continued well into historic times, as documented by numerous accounts by the Jesuits and other travelers to aboriginal settlements. The early American ethnologist Lewis Henry Morgan noted that the Iroquois, for example, left their villages frequently for extended hunts (Morgan 1954(1851):346-347).

As a result primarily of CRM activities, the study of these ephemeral sites has received much needed attention (Kenyon and Lennox 1997; Lennox 1997; Rieth 2008). This is primarily because they are the most numerous evidences of aboriginal settlement activity on the landscape and today the most likely site type yet to be found by systematic archaeological survey. Northeast archaeologists have typically relied on studies of large sites precisely because they contain the contextual and artifact data necessary for cultural reconstruction. While the locations of these sites have in many cases been known for centuries, the systematic search for ephemeral sites has lagged (Abel 2000).

Ephemeral sites have posed a special problem for CRM archaeologists, however, due to historic disturbance and the nature of their discovery and documentation (Rieth 2008). Many of these sites were originally surface deposits whose primary contexts have long-since been destroyed by farming and subsequent cultural activity. Today, most are discovered in the course of Phase 1 surveys such as this one, where project boundaries and objectives are constrained by the undertakings being evaluated. When they are found, they rarely contain diagnostic tools, making it extremely difficult, if not impossible, to tie these site types to "big picture" concepts salable to review agencies and the public, to say nothing of the clients paying for the study. As such, surprisingly small samples of cultural material are often relied upon for a generalization of the assemblage, and when diagnostic artifacts and context are lacking, there is little that can be reconstructed from the site aside from location and setting.

The Rural Farmstead

Based on their 1986 study of the Fort Drum cantonment and range areas, Louis Berger & Associates (LBA 1994b) defined the Rural Farmsteads historical context to characterize early historic dispersed agrarian settlements.

The Rural Farmsteads historic context defines the dispersed family farm as

> the fundamental settlement unit in the early nineteenth century, just as the family was the fundamental social and economic unit. Farmers practiced diversified agriculture, with investments in various grains and in livestock, including both cattle and sheep (LBA 1994b:3-1).

The family farmstead was the primary settlement unit on the rural landscape during the 19th century. It was the focus of family consumption, production and organization. Consumables came from farm production as well as from the local market economy which was tied through turnpikes, and later railroads, to regional and world-wide trade.

Production was generated by the nuclear or extended family with few outside hired hands, who were expensive and sparse. In the early 19th century, most farm production was used to meet household needs and social obligations within the community using barter. Debates occur concerning why this subsistence production shifted to surplus commercial production during the mid-19th century. Some argue as transportation and regional consumer markets grew, so did the pressure to participate in the consumer market economy (Henretta 1991; Huey 2000). Others argue that the technological challenges of labor limited the amount of production on rural farms, and that once mechanization became widespread, farms grew to maximize surplus and profit (Perkins 1980).

The shift to commercial farming brought about several changes in farmstead consumption, production and organization (Adams 1990; Peña 2000). Through this shift, consumption patterns show an increased reliance on market goods that come to reflect the relative economic prosperity of the farm. Production patterns show an increased reliance on hired farm labor and mechanization to ensure farm production. Organization patterns show a shift to nuclear, rather than extended family units, as the new norm, allowing couples establish new households to maximize nuclear family wealth.

The basis of social organization for most farmsteads in early 19th century northern New York was the extended family. This was a product of both the economic and social forces. Early farms were quite large, initially sold in 100 acre parcels- far too large to manage with just a small nuclear family but with room to grow. Coming into a new social environment was made easier by bringing as many family members along as would join in the enterprise. These extended families would live in one household on the family estate, or cluster their new households on subdivisions of the family farm or in an area, forming a community of related rural farmsteads, reliant on each other for cooperative labor and machinery ownership.

4.0 ARCHAEOLOGICAL SURVEY

4.1 Prior Surveys

There have been surprisingly few archaeological surveys in this area. Late 19th and early 20th century site inventories by Squier (1849), Hough (1850, 1851; 1853; 1854), Beauchamp (1887, 1900) and Parker (1920) are mute in regard to the PA, other than mentioning those sites already discussed in Section 2.1. As stated, only one of these sites is potentially within the PA. There have been no systematic archaeological surveys within the PA.

There have been numerous systematic archaeological surveys adjacent to or within 3.2 km (2 mi) of the PA. These have all been conducted and funded pursuant to Section 106 of the NHPA or Section 14.09 of the NYS Parks, Recreation and Historic Preservation Law and their implementation policies. They are summarized with results in Appendix 1. Adjacent to the PA, HAZEx conducted a Phase 1 archaeological survey for the proposed Summit Wood housing project (06PR5926). The survey was conducted for the US Army Corps of Engineers (CORPS). One historic farmstead site was identified in 40 acres surveyed.

4.2 Surface Survey

On 4/20/11, I conducted a surface survey of the PA and adjacent areas to identify all visible cultural features including structure ruins, fencelines and roads; and disturbances that would preclude the location of intact archaeological deposits. These features were located on the UTM grid using a Garmin eTrex Vista HCx handheld GPS receiver. Features were then plotted on the project maps (Appendix 5).

A 7.6 (25 ft) x 15.2 m (50 ft) formed concrete foundation and farm road are the only cultural features identified within the PA (Photo 2; Appendix 5). They were plotted on engineering maps using GPS coordinates. The likely location of the 19th century farmstead, as discussed in Section 2.3, was plotted by reference to historic maps, by examining current landscapes, and talking with property owners.

The current land use of the project area is abandoned farmland. There is one historic structure within the PA, a barn located on the western side that belonged to the Morgan/ Klock/ Smith/Lettiere farmstead. It will not be impacted by the proposed undertaking.

The PA consists of commercial landscaped yards and woodlots. No tilled land surfaces were visible at the time of the survey. Disturbance was documented through the middle of the PA, where adjacent development has resulted in exten-

sive scraping and soil removal. Push piles were documented along the northern PA boundary. There was also a quarry in the south-central portion of the PA. These areas were eliminated from subsurface survey.

4.3 Subsurface Methods

A subsurface investigation was conducted to determine the presence or absence of cultural resources in those areas of the PA that could not be otherwise covered by surface survey or eliminated from potential based on disturbances.

The PA was divided into two baselines to facilitate subsurface testing. Baseline 1 was divided into transects A-Y, spaced 15 m (50 ft) beginning at the extreme northeast corner of the PA and progressing west. Baseline 2 began at the southeast corner of the barn structure and continued west at 15 m (50 ft) intervals. At Baseline 2, Transects E-L, the transect interval was tightened to 5 m (16 ft) interval. Shovel tests were excavated at 15 m (50 ft) intervals along each transect of Baseline 1 and on Transects A-D on Baseline 2. STPs were excavated at 5 m (16 ft) interval on Baseline 2, Transects E-L.

Each STP was excavated by hand to a depth at least 10 cm (4 in) into sterile B horizon soils. This was accomplished throughout the APE at depths ranging from 20-30 cm (8-12 in), except where bedrock was encountered within 10 cm (4 in) of the surface. Excessive demolition fill was found in Baseline 2, Transects E-L. While some STPs did penetrate the dense gravel and rock fill, this fill grew deeper moving west, making penetration impossible.

The soils from each STP were screened through ¼ inch hardware mesh to recover artifacts. Artifacts from each horizon were bagged according to stratum for return to a laboratory, cleaning, and analysis. All artifacts were retained for analysis, except for coal, coal slag, and whole brick. The soil profile of each STP was recorded by noting the depth, color and soil texture before backfilling.

4.4 Laboratory Methods

Artifacts were returned to a laboratory where they were cleaned thoroughly with a soft toothbrush and warm water. After washing the artifacts were allowed to air dry for approximately one week before being prepared for permanent curation according to 36CFR79 standards.

The artifacts were cataloged using Excel into an inventory that includes information on provenience, depth, quantity, functional category, sub-category, material, description, maker, marks, minimum, median and maximum dates of use and field date. The functional categories followed those used by South (1976) for historic artifacts. There were no prehistoric artifacts to categorize.

Once compiled, the artifact inventory was analyzed to determine the distribution and nature of the archaeological deposits within the PA.

4.5 Survey Results

Archaeologists excavated 195 STPs within the PA at 15 m (50 ft) interval and 70 STPs at 5 m (16 ft) interval. Shovel test locations are plotted on PA maps included in Appendix 5.

With one exception, the soil stratigraphy was characterized by an Ap horizon of water-saturated dark brown to dark grey-brown clayey to silty loam 7-36 cm (3-14 in) in thickness. Most of the STPs terminated at this level into bedrock. Where subsoils were encountered, below this was a B horizon composed of red brown to grey brown or yellow brown clayey or silty loam. No subsurface features were detected. This profile is typical for the soil types found within the PA.

Again, the aberration to this profile occurred in the area next to Washington Street, on Baseline 2, Transects E-L. This area was characterized by a gravel fill that began in Transect E and got progressively deeper and denser moving west toward Washington Street. Below this fill, at least to Transect J, was a dark brown sandy silt loam, designated as A2. Below this, at depths up to 71 cm (28 in), lay the B horizon subsoils. Beyond Transect J, STPs did not penetrate this fill.

No artifacts were found within the Baseline 1 testing area. Within Baseline 2, 20 STPs tested positive for historic cultural material. Their locations may be found on project maps contained in Appendix 5. This material is interpreted as evidence of structures and activity related to the Morgan/ Klock/ Smith/ Lettiere farmstead identified in Section 2.3.

4.5.1 C. D. Morgan Farmstead site

Description and Investigation History

The Morgan Farmstead site is located proximate to Washington Street fronting barns and a commercial complex that at the time of this writing housed the Savory Café at 1511 Washington Street. The site contains an extant barn 54 m (180 ft) x 9 m (30 ft) (Photo 2), an adjacent foundation ruin 7.6 (25 ft) x 15.2 m (50 ft)(Photo 3), an adjacent concrete bridge abutment that once carried a farm lane over an intermittent creek to the second-story hay loft, and a low-density midden that stretches from the extant barn to Washington Street.

The site has never been inventoried as an archaeological site, nor have there been any previous systematic surveys of the site.

Site Boundary and Size

Based on this investigation, the C. D. Morgan Farmstead site encompasses an area 40 m (134 ft) wide by 124 m (407 ft) long. The boundaries of the site are established by Washington Street on the west, the APE and limit of archaeological investigation on the north, a steep terrace on the east, and the measured site boundary on the south (Figure 12). The site area is very likely to extend to the north of the APE, but research objectives did not warrant investigation outside the PA. The site occupies an area of 0.5 ha (1.3 ac). GPS corner coordinates for the site are given in Appendix 4.

Temporal/Cultural Affiliation

The assemblage of 103 artifacts, summarized in Appendix 3, is consistent with tax, deed and map records that indicate the C.D. Morgan Farmstead site dates between at least A.D. 1855 and the present. The majority of the diagnostic artifact assemblage, however, dates to the modern post-1950 time period, based on the recovery of wire nails, green and brown bottle glass and plastics. This suggests that the archaeological deposit is of post-1950 origin, quite possibly stemming from redevelopment and demolition in the 1960s.

Artifact Distribution

The midden is located between the extant barn and Washington Street. The artifacts are distributed in the A2 horizon of the site, sealed below a gravel fill that begins to the west of the extant barn and grows progressively thicker to the west toward Washington Street. It is believed that this fill was introduced in the 1960s when the site was redeveloped into a commercial site. No subsurface features were documented. The midden does not appear to go beyond a buried farm lane to the south.

Context and Function

The assemblage is dominated by the architectural and unaffiliated categories (Figure 13). Small percentages of kitchen, automotive and activities-related artifacts were also found. While all of the artifacts are consistent with an interpretation of domestic development, production and consumption, its mixed temporal affiliation makes further interpretation impossible. The site fits squarely within the Rural Farmsteads context defined above.

Site Integrity and Data Potential

Jefferson County is one area in which a great deal is known about the 19th century rural economy, and rural domestic site archaeology, owing to a nearly decade-long research project undertaken by Louis Berger & Associates for Fort Drum (LBA 1994a). As a result of that project, 153 farmsteads and numerous dispersed rural industry and social center sites in the adjacent Town of LeRay were subjected to Phase I, Phase II and Phase III investigation (LBA 1994a, b, c).

To evaluate farmstead archaeological sites, LBA developed a Farmsteads Historic Context, with criteria for National Register eligibility that focus on a site's ability address key analytical questions related to domestic consumption, pro-

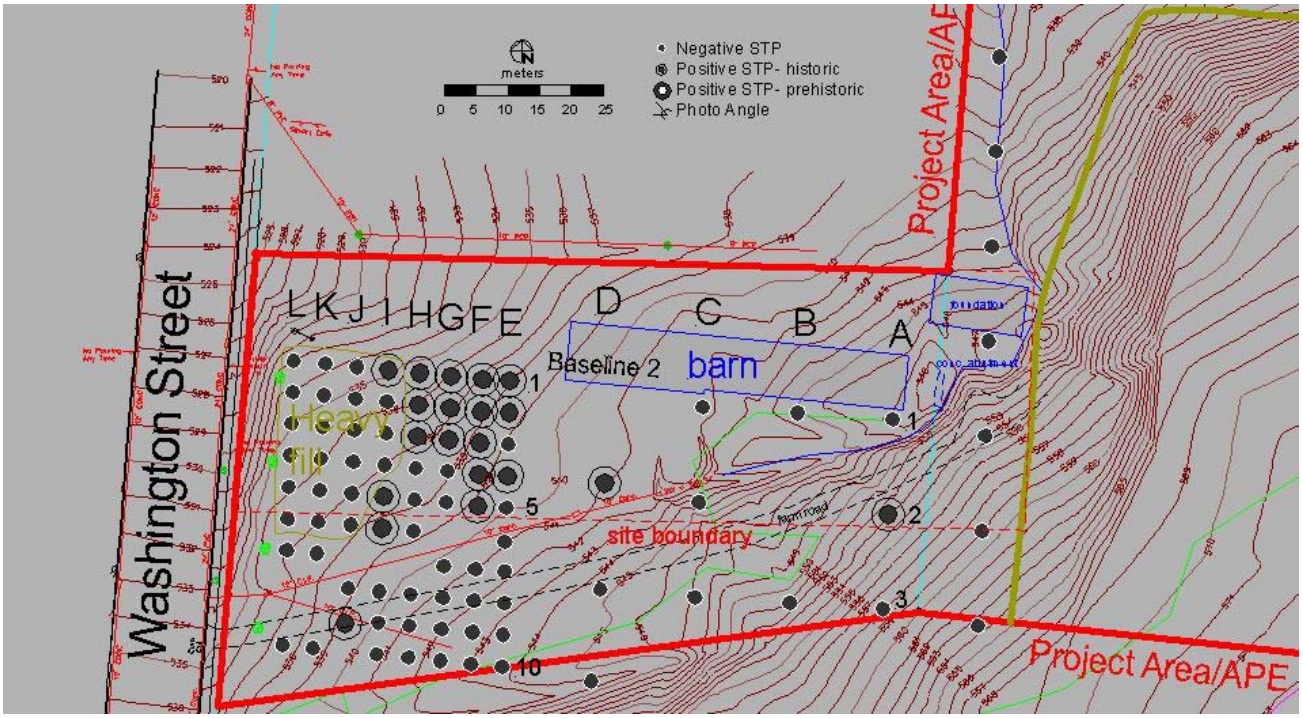

Figure 12– Schematic plan, C.D. Morgan site.

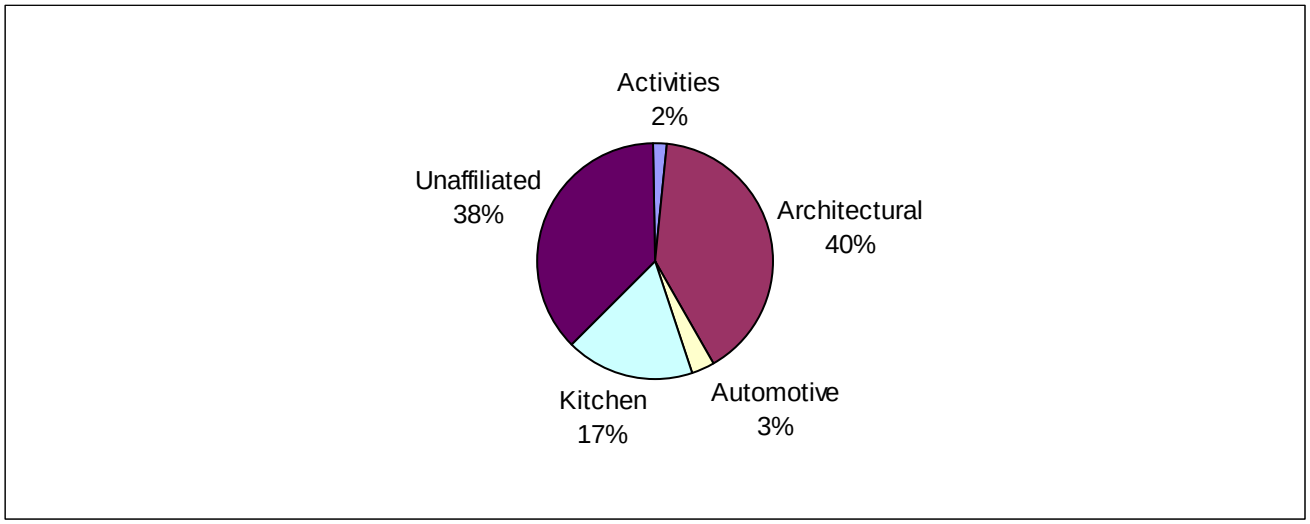

Figure 13– Functional analysis of artifact assemblage, C.D. Morgan site.

duction, and social organization (LBA 1994b). The research potential and hence the significance of a farmstead site is a product of its ability to address three topics of research: consumptive patterns, production patterns and social organization patterns.

The available information from the C.D. Morgan Farmstead site is limited to the APE for this project. Phase 1 investigations at 5 m (16 ft) interval resulted in the identification of an A2 horizon midden containing a mixture of architectural and domestic materials. With only 103 artifacts (averaging 5 artifacts per positive STP), however, it must be considered a light-density midden. The assemblage contains artifacts of both modern and late 19th century temporal affiliation, making its context likely modern. There are few artifacts of closed diagnostic range, combining to make the deposit of rather limited research value. There is every indication that further research within the APE will not yield significantly different results.

5.0 IMPACTS AND RECOMMENDATIONS

The C.D. Morgan Farmstead site will be impacted by the proposed undertaking. The archaeological deposit within the current APE generally lacks the integrity and information necessary to reconstruct significant aspects of past cultural behavior. It is recommended that no further investigation is warranted and that the impact within the APE will have no effect on any deposits eligible for or listed on the National Register of Historic Places.

This undertaking will therefore not result in impacts to any cultural resources eligible for or listed on the National Register of Historic Places. Further investigations do not seem warranted for this undertaking.

These recommendations are made pursuant to the investigations described herein. The OPRHP should be notified in case of any alteration of the undertaking as proposed at the time of this survey, and as detailed by Section 1.1. Like all surveys, this one has relied on a sampling of the project area based on a body of research about the likelihood of documenting cultural resources. No sampling strategy can be 100% failsafe against the possibility of cultural resources being actually found in the course of construction. Should this occur, the client is advised to stop construction and contact the OPRHP immediately for recommendation before continuing. If any human remains should be discovered, all work should cease immediately. NYS Health Law dictates that the client contact the SHPO and the local coroner to begin mitigation procedures.

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APPENDIX 1– OPRHP FILE REVIEW DATA

CONFIDENTIAL; Not for Public Release
NYS OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION
Field Services Bureau Files Search

DATE: March 2011
CONDUCTED BY: B Ross
Project: Samaritan Senior Housing, Washington Street
Minor Civil Division (MCD): City of Watertown (04540)
County: Jefferson
USGS Quadrangle: Watertown

1. Archaeological Sites (within 3.2 km / 2 mi radius):

   Refer to attached table.

2. Surveys and Reports within immediate or adjacent MCDs: (all within City of Watertown and selected (ca. 3.2 km) within Town of Watertown):

   OPR Report #2. *Stage IB Cultural Resource Survey for Proposed Sewer District No. 1, Town of Watertown, Jefferson County, New York,* Pratt & Pratt, 2/78 for EPA. Four prehistoric sites (not in Parks system – includes Muskellange Lake and Pt. Peninsula) – all beyond 3.2 km.

   OPR Report #3. *Stage IB Cultural Resource Survey for Proposed Sanitary Collection System, City of Watertown, Jefferson County, NY,* Pratt & Pratt, 5/77 for EPA. No sites.

   OPR Report #5. *Stage IA/B Cultural Resource Survey for PIN 7500.35, Route 3 Interchange, Town of Watertown, Jefferson County, NY,* RJ Murphy, 6/78 for DOT. No sites.

   OPR Report #15. *Stage IA/B Cultural Resource Survey Addendum for PIN 7750.75, Court Street Bridge, City of Watertown, Jefferson County, NY,* NYS Museum, 1/89 for DOT. No sites. Initial survey, 11/82, historic site A04540.000003 (Item 1, Site 15).

   OPR Report #18. *Stage IA/B Cultural Resource Survey for PIN 7NEW.12, Mill Street, Town of Watertown, Jefferson County, NY,* Syracuse University, 6/84 for DOT. No sites.

   OPR Report #43. *Stage IB Cultural Resource Survey for Eastern Boulevard Housing Development, City of Watertown, Jefferson County, NY,* Pratt & Pratt, 2/86. One historic site, A04540.000011 (Item 1, Site 16) within 29.5 acres.

   OPR Report #45. *Stage IA/B Cultural Resource Survey for PIN 7016.42.121, Route 3 (Eastern Boulevard) and Route 12 (State and Gifford Roads), City and Town of Watertown, Jefferson County, NY,* SUNY Potsdam, 4/87 for FHWA. No sites within 10.2 acres.

   OPR Report #52. *Stage IB Cultural Resource Survey for Watertown Housing Project, City of Watertown, Jefferson County, NY,* Pratt & Pratt, 9/88 for HUD. No sites within 11 acres.

   OPR Report #55. *Stage IA/B Cultural Resource Survey for PIN 7015.69.101, Fort Drum #27, Town of Watertown, Jefferson County, NY,* SUNY Potsdam, 7/88 for DOT. No sites within 2.5 acres.

   OPR Report #141, 00PR3041. *Cultural Resource Reconnaissance Survey for OGS 41041, Medium Security Dormitories Watertown Correctional Facility, Town of Watertown, Jefferson County, NY,* NYS Museum, 7/00 for DOCS. No sites within 13.3 acres.

OPR Report #200, 02PR5030. *Stage IA/B Archaeological Survey for Emerson Place Rehabilitation Project, City of Watertown, Jefferson County, NY,* Timothy Abel, 2/03 for CD. No sites within two acres

OPR Report #202, 02PR1326. *Cultural Resource Reconnaissance Survey for PIN 7143.25.121, US 11 to NY 232, Towns of Watertown and Adams, Jefferson County, NY,* NYS Museum, 4/04 – seven historic sites beyond 3.2 km. AND Stage II; 7/06; Two historic sites; A04501.000001 and A04520.000025 (beyond 3.2 km) within 145 sq ft.

OPR Report #213, 04PR4455. *Stage IA/B Archaeological Survey for Bellow Avenue Development, City of Watertown, Jefferson County, NY,* Timothy Abel, 12/04 for GSA. No sites within three acres.

OPR Report #238, 04PR4531. *Stages I and II Cultural Resource Survey and Site Assessment for Towne Center at Watertown, Town of Watertown, Jefferson County, NY,* Stephen Oberon, 4/06 for SEQRA. One historic site, A04520.000034 (Watertown; just beyond 3.2 km) within 55 acres; 47 sq ft site exam.

OPR Report #244, 06PR5926. *Stage IA/B Archaeological Assessment for the Summit Wood Housing Development, City of Watertown, Jefferson County, NY,* H.A.Z.Ex., 12/06 for CORPS. One historic site, A04540.001326 (Item 1, Site 1) within 40 acres. AND Stage II; 3/07, 199 sq ft. **Note;** adjacent survey.

OPR Report #310, 09PR1514. *Stage I Archaeological Survey for Hospice Residential Center, City of Watertown, Jefferson County, NY,* Timothy Abel, 7/09 for SEQRA.

3. National Register Eligible and Listed Properties within, adjacent or within view shed of project area:

   No NRE or NRL near.

4. Inventoried Structures within, adjacent or within view shed of project area:

   Three inventoried structures near project on Washington Street; all determined not eligible.
   04540.001360, 1351 Washington Street, Watertown City High School
   04540.001176, 1356 Washington Street
   04540.001359, 1411 Washington Street, one story residence

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NYSOPRHP Site File Search Results
(sites within 3.2 km / 2 mi radius from project area)
March 2011

Item 1. Archaeological Site Table. Samaritan Senior Village, City of Watertown, Jefferson County (04540). Watertown Quadrangle. Page 1 of 2.

Map #	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
1	A04540.001326	Mather House: Gifford/Wild Rose	Within PA / 1.3 km N Mill Creek & 3km S Black River / 167 m (548 ft); gentle	c. 1850	House foundation & sheet midden	Surface & 19 stps: domestic & building material. And Stage II	OPR Report 06PR05926
2	NYSM 3462	ACP JFSN 35	Lg general area within & adj to PA + / minor wetland / 149 m (490 ft) +	Unidentified prehistoric	Burial site	No information	Documented by Parker
3	NYSM 3463	ACP JFSN 36	Lg general area 0.6 km (0.4 mi) + W / lg wetland / 149 m (490 ft) +	Unidentified prehistoric	Burial site	No information	Documented by Parker
4	NYSM 3535	ACP JFSN	Lg general area within & adj to PA + / small wetland / 137 m (450 ft) +	Unidentified prehistoric	Traces of occupation	No information	Documented by Parker
5	NYSM 3461	ACP JFSN 34	Lg general area 1.1 km (0.7 mi) + E-NE / 168 m (550 ft) +	Unidentified prehistoric	Burial site	No information	Documented by Parker
6	NYSM 3536	ACP JFSN	Lg general area 0.6 km (0.4 mi) + S / creek & lg wetlands / 169 m (555 ft) +	Unidentified prehistoric	Traces of occupation	No information	Documented by Parker
7	NYSM 3460	ACP JFSN 33; possibly JFSN 32	Lg general area 1.8 km (1.1 mi) + SE / creek	Unidentified prehistoric	Two earthworks	Earthwork with three gates nearby a smaller circular work	Documented by Parker
8	NYSM 9345	ACP JFSN	Lg general area 2.6 km (1.6 mi) SE & E onto Rutland Center Quad / creek	Unidentified prehistoric	Earthwork	No information	Documented by Parker
9	NYSM 1481		2.4 km (1.5 mi) SE / near wetland / 207 m (680 ft)	Unidentified prehistoric	Village	No information	Documented by Parker
10	NYSM 1482		General area 2.1 km (1.3 mi) S-SE / wetland / 198 m (650 ft) +	Unidentified prehistoric	Possible camp	No information	Documented by Parker
11	NYSM 3537	ACP JFSN	Lg general area 2.4 km (1.5 mi) NW + / lg wetland	Unidentified prehistoric	Traces of occupation	No information	Documented by Parker
12	A04540.001156	Round House	2.7 km (1.7 mi) NW / 0.6 km (0.4 mi) from water / 122 m (400 ft); flat	Early 20th century	Railroad round house	Surface traces of structure	Stage IA City Center Drive Industrial Park Abel 9/99
13	A04540.000986		2.7 km (1.7 mi) N / S Branch Black River	1802 and later 19th century-early 20th	First mill; grist mill 1802 – later mills	Surface traces of structures	None
14	A04540.000987	The Ice Cave	2.7 km (1.7 mi) N / terrace above Black River	19th century utilization by humans	Used for refrigeration. Closed off in 1876	None	None
15	A04540.000003		3.1 km (1.9 mi) N / creek banks	c. 1804	Bridge abutments	Surface	OPR Report #15

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NYSOPRHP Site File Search Results
(sites within 3.2 km / 2 mi radius from project area)
March 2011

Item 1. Archaeological Site Table. Samaritan Senior Village, City of Watertown, Jefferson County (04540). Watertown Quadrangle. Page 2 of 2.

Map #	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
16	A04540.000011	Camp's Ditch	2.7 km (1.7 mi) NE / 366 m (1200 ft) S Black River	1830	Power canal	Industrialist Elijah Camp had power canal (12 miles) construction begin in 1830 to serve factories in Sacketts Harbor	OPR Report #43
17	NYSM 3459	ACP JFSN 33; Possibly JFSN 32 (NYSM 3460)	2.3 km (1.4 mi) E / 30 m (100 ft) N creek / 201 m (660 ft)	Unidentified prehistoric	Earthwork and cemetery	No information	Documented by Parker
	Rutland Center	**Quadrangle**					
18	NYSM 3456	ACP JFSN 29	2.6 km (1.6 mi) E / 427 m (1400 ft) S of creek	Unidentified prehistoric	Village	No information	Documented by Parker
19	NYSM 3458	ACP JFSN 31	3.1 km (1.9 mi) SE / 247 m (810 ft) S creek	Unidentified prehistoric	Village	No information	Documented by Parker
20	NYSM 1491		3.1 km (1.9 mi) SE / 701 m (2300 ft) S of creek	Unidentified prehistoric	Possible camp	No information	Documented by Parker

APPENDIX 2– SHOVEL TEST PROFILE DATA

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1A1	0-20 vdk br lo	bedrock	
1A2	0-20 vdk br lo	bedrock	
1A3	not tested	inundated	
1A4	0-25 vdk br lo	bedrock	
1A5	0-25 vdk br lo	25-35 br si lo	
1A6	0-30 vdk br lo	30-40 tn gr cl lo	
1A7	0-25 vdk br lo	25-35 tn yl si lo	
1A8	0-25 vdk br lo	25-35 tn yl si lo	
1B1	0-30 vdk br lo	bedrock	
1B2	0-35 vdk br lo	bedrock	
1B3	0-35 vdk br lo	bedrock	
1B4	0-32 vdk br lo	bedrock	
1B5	0-32 vdk br lo	32-40 tn gr cl lo	
1B6	0-30 vdk br lo	30-40 tn gr cl lo	
1B7	0-33 vdk br lo	33-43 tn yl si lo	
1B8	0-31 vdk br lo	31-41 tn yl si lo	
1B9	0-25 dk br lo	25-35 tn yl si lo	
1C1	0-26 vdk br lo	bedrock	
1C2	0-33 vdk br lo	bedrock	
1C3	0-30 vdk br lo	bedrock	
1C4	0-20 vdk br lo	bedrock	
1C5	0-10 vdk br lo	bedrock	
1C6	0-18 vdk br lo	bedrock	
1C7	0-30 vdk br lo	bedrock	
1C8	0-26 vdk br lo	bedrock	
1C9	0-2 dk br lo	bedrock	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1C10	0-30 dk br lo	bedrock	
1D1	0-20 vdk br lo	bedrock	
1D2	0-20 vdk br lo	bedrock	
1D3	not tested	inundated	
1D4	0-20 vdk br lo	bedrock	
1D5	0-25 vdk br lo	bedrock	
1D6	0-20 vdk br lo	bedrock	
1D7	0-25 vdk br lo	25-35 tn yl si lo	
1D8	0-20 vdk br lo	bedrock	
1D9	0-25 dk br lo	25-35 tn yl si lo	
1D10	0-25 dk br lo	25-35 tn yl si lo	
1E1	0-25 vdk br lo	bedrock	
1E2	0-9 vdk br lo	bedrock	
1E3	0-11 vdk br lo	bedrock	
1E4	0-30 vdk br lo	bedrock	
1E5	0-33 vdk br lo	33-43 br gv lo	
1E6	0-32 vdk br lo	32-35 tn yl si lo	bedrock
1E7	0-7 vdk br lo	bedrock	
1E8	0-28 vdk br lo	28-38 br gv lo	
1E9	0-30 vdk br lo	30-40 br gv lo	
1E10	0-27 vdk br lo	bedrock	
1F1	0-12 vdk br lo	bedrock	
1F2	0-18 vdk br lo	bedrock	
1F3	0-15 vdk br lo	bedrock	
1F4	0-20 vdk br lo	bedrock	
1F5	0-10 vdk br lo	bedrock	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1F6	0-24 vdk br lo	bedrock	
1F7	0-32 vdk br lo	bedrock	
1F8	0-20 dk gr br lo	20-30 tn yl si lo	
1F9	0-25 dk gr br lo	25-32 tn yl si lo	
1F10	0-24 dk gr br lo	24-30 tn yl si lo	
1F11	0-18 dk gr br lo	18-25 tn yl si lo	
1G1	0-18 vdk br lo	bedrock	
1G2	0-23 vdk br lo	bedrock	
1G3	0-26 vdk br lo	bedrock	
1G4	0-5 vdk br lo	bedrock	
1G5	0-20 vdk br lo	bedrock	
1G6	0-20 dk br lo	20-30 br gv lo	
1G7	0-20 dk br lo	20-30 br gv lo	
1G8	0-20 dk br lo	20-30 br gv lo	
1G9	0-13 dk br lo	bedrock	
1G10	0-30 dk br lo	bedrock	
1H1	0-10 vdk br lo	bedrock	
1H2	0-30 vdk br lo	bedrock	
1H3	0-30 vdk br lo	bedrock	
1H4	0-25 vdk br lo	bedrock	
1H5	0-25 vdk br lo	bedrock	
1H6	0-25 vdk br lo	25-30 tn yl si lo	bedrock
1H7	0-25 vdk br lo	25-30 tn yl si lo	bedrock
1H8	0-25 dk br lo	25-30 tn yl si lo	bedrock
1H9	0-25 dk br lo	25-35 tn yl si lo	bedrock
1H10	0-25 dk br lo	25-30 tn yl si lo	bedrock

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1I1	0-19 vdk br lo	bedrock	
1I2	0-15 vdk br lo	bedrock	
1I3	0-17 vdk br lo	bedrock	
1I4	0-18 vdk br lo	bedrock	
1I5	0-18 vdk br lo	bedrock	
1I6	0-30 vdk br lo	bedrock	
1I7	0-16 dk br lo	16-30 tn yl si lo	
1I8	0-19 dk br lo	19-25 tn yl si lo	
1I9	0-20 dk br lo	20-30 tn yl si lo	
1I10	0-8 dk br lo	bedrock	
1I11	0-10 dk br lo	bedrock	
1J1	0-15 vdk br lo	bedrock	
1J2	0-17 vdk br lo	bedrock	
1J3	0-17 vdk br lo	bedrock	
1J4	0-20 vdk br lo	20-30 br gv lo	
1J5	not tested	inundated	
1J6	not tested	inundated	
1K1	0-8 vdk br lo	bedrock	
1K2	0-22 vdk br lo	bedrock	
1K3	0-25 vdk br lo	bedrock	
1K4	0-23 vdk br lo	bedrock	
1K5	0-30 vdk br lo	bedrock	
1K6	0-20 vdk br lo	20-28 br si lo	
1K7	0-20 vdk br lo	20-28 br si lo	
1K8	0-18 vdk br lo	bedrock	
1K9	0-20 vdk br lo	20-30 tn yl si lo	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1K10	0-10 dk br lo	bedrock	
1K11	0-20 dk br lo	20-25 tn yl si lo	bedrock
1L1	0-24 vdk br lo	24-30 br si lo	bedrock
1L2	0-30 vdk br lo	bedrock	
1L3	0-20 vdk br lo	bedrock	
1L4	0-30 vdk br lo	bedrock	
1L5	0-15 vdk br lo	bedrock	
1L6	0-25 vdk br lo	25-30 br si lo	
1L7	0-10 vdk br lo	bedrock	
1L8	0-10 vdk br lo	bedrock	
1L9	0-30 dk br lo	bedrock	
1L10	0-25 dk br lo	25-35 tn yl si lo	
1L11	0-20 dk br lo	20-30 tn yl si lo	
1M1	0-30 vdk br lo	bedrock	
1M2	0-35 vdk br lo	bedrock	
1M3	0-20 vdk br lo	bedrock	
1M4	0-35 vdk br lo	bedrock	
1M5	0-10 vdk br lo	bedrock	
1M6	0-20 vdk br lo	bedrock	
1M7	0-25 vdk br lo	bedrock	
1M8	0-10 vdk br lo	bedrock	
1M9	0-30 vdk br lo	bedrock	
1M10	0-30 vdk br lo	bedrock	
1N1	0-17 vdk br lo	bedrock	
1N2	0-14 vdk br lo	bedrock	
1N3	0-15 vdk br lo	bedrock	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1N4	0-8 vdk br lo	bedrock	
1N5	0-23 vdk br lo	bedrock	
1N6	0-18 vdk br lo	bedrock	
1N7	0-15 vdk br lo	bedrock	
1N8	0-8 vdk br lo	bedrock	
1N9	0-20 vdk br lo	20-30 tn yl si lo	
1N10	0-19 dk br si lo	19-29 tn yl si lo	
1N11	0-20 dk br si lo	20-28 tn yl si lo	
1N12	0-20 dk br si lo	20-30 tn yl si lo	
1N13	0-20 dk br si lo	bedrock	
1N14	0-22 dk br si lo	bedrock	
1N15	0-20 dk br si lo	20-30 tn yl si lo	
1O1	0-17 vdk br lo	bedrock	
1O2	0-18 vdk br lo	bedrock	
1O3	0-17 vdk br lo	bedrock	
1O4	0-30 vdk br lo	bedrock	
1O5	0-36 vdk br lo	bedrock	
1O6	not tested	inundated	
1O7	0-20 vdk br lo	20-23 br cl lo	bedrock
1O8	0-12 dk br lo	12-22 br cl lo	bedrock
1O9	0-17 dk br lo	17-23 br cl lo	bedrock
1O10	0-13 dk br lo	13-24 br cl lo	bedrock
1O11	0-17 dk br lo	17-31 br cl lo	
1O12	0-25 dk br si lo	25-25 dk tn si lo	
1O13	0-20 dk br si lo	20-27 dk tn si lo	bedrock
1O14	0-22 dk br si lo	22-32 br sa lo	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
1O15	0-20 dk br sa lo	20-25 br sa lo	bedrock
1O16	0-22 dk br sa lo	22-32 br sa lo	
1P1	0-25 dk br lo	bedrock	
1P12	not tested	push	
1P13	0-20 dk br sa lo	20-30 br sa lo	
1P14	0-25 dk br sa lo	25-35 br sa lo	
1P15	0-25 dk br sa lo	25-35 br sa lo	
1P16	0-20 dk br sa lo	20-30 br sa lo	
1P17	0-18 dk br sa lo	18-28 br sa lo	
1Q1	0-20 dk br lo	20-30 yl tn si lo	
1R1	0-15 dk br lo	15-25 yl tn si lo	
1S1	0-22 dk br lo	22-32 yl tn si lo	
1T1	0-20 dk br lo	20-35 yl tn si lo	
1U1	0-28 dk br lo	28-30 yl tn si lo	bedrock
1V1	0-27 dk br gv lo	27-37 br gv lo	
1W1	0-35 dk br gv lo		
1X1	0-11 dk br gv lo	bedrock	
1Y1	0-30 dk br gv lo	30-40 br gv lo	
1Y2	0-13 dk br gv lo	bedrock	
1Y3	0-23 dk br gv lo	bedrock	
1Y4	0-12 dk br gv lo	12-24 tn yl gv lo	
1Y5	not tested	push	
1Y6	0-20 dk br gv lo	bedrock	
1Y7	0-10 dk br gv lo	bedrock	
1Y8	0-3 dk br lo	bedrock	
2A1	0-35 dk br sa lo	35-59 lt br sa si	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
2A2	0-25 dk br sa lo historic	25-35 lt br sa si	
2A3	0-25 dk br sa lo	25-35 lt br sa si	
2B1	0-20 dk br sa lo	heavy gravel	
2B2	not tested	push	
2B3	0-30 dk br sa lo	heavy gravel	
2C1	0-18 gravel	heavy gravel	
2C2	0-22 dk br gv lo	heavy gravel	
2C3	0-22 dk br gv lo	22-24 or yl gv si lo	
2D1	not tested	paved	
2D2	0-29 dk br gv lo historic	29-39 br gv lo	
2D3	0-17 dk br gv lo	heavy gravel	
2D4	0-25 dk br gv lo	heavy gravel	
2E1	0-33 gravel historic	heavy gravel	
2E2	0-50 gravel historic	50-55 tn yl sa lo	
2E3	0-9 gravel	9-38 dk br sa lo historic	38-48 yl tn sa lo
2E4	0-23 gravel	23-35 dk br sa lo historic	35-45 yl tn sa lo
2E5	0-23 gravel	23-33 dk br sa lo	33-43 yl tn sa lo
2E6	0-23 gravel	23-28 yl tn sa lo	bedrock
2E7	0-28 dk br gv lo	28-38 yl tn sa lo	
2E8	0-24 dk br gv lo	24-36 yl tn gv lo	
2E9	0-21 dk br gv lo	21-33 yl tn gv lo	bedrock
2E10	0-18 dk br gv lo	18-32 dk br gv lo	32-42 yl tn sa lo
2F1	0-20 gravel	20-35 dk br sa lo historic	35-55 yl tn sa lo

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
2F2	0-25 gravel	25-35 dk br sa lo historic	35-41 yl tn sa lo
2F3	0-25 gravel	25-35 dk br sa lo historic	35-49 yl tn sa lo
2F4	0-25 gravel	25-35 dk br sa lo historic	35-48 yl tn sa lo
2F5	0-25 gravel	25-35 dk br sa lo historic	35-46 yl tn sa lo
2F6	not tested	storm sewer	
2F7	0-30 gravel	asphalt	
2F8	0-30 gravel	30-40 dk br gv lo	40-50 yl tn sa lo
2F9	0-25 gravel	25-30 dk br gv lo	30-47 yl tn sa lo
2F10	0-30 gravel	30-40 dk br gv lo	40-49 yl tn sa lo
2G1	0-30 gravel	30-50 dk br sa lo historic	50-60 yl tn sa lo
2G2	0-26 gravel	26-48 dk br sa lo historic	48-58 yl tn sa lo
2G3	0-23 gravel	23-44 dk br sa lo historic	44-54 yl tn sa lo
2G4	0-25 gravel	25-50 dk br sa lo	50-60 yl tn sa lo
2G5	0-20 gravel	20-38 dk br sa lo	38-48 yl tn sa lo
2G6	not tested	storm drain	
2G7	0-28 gravel	bedrock	
2G8	0-27 gravel	27-47 dk br gv lo	47-57 tn yl sa lo
2G9	0-23 gravel	23-46 dk br gv lo	46-56 yl tn sa lo
2G10	0-22 gravel	22-41 dk br gv lo	
2H1	0-38 gravel	38-65 dk br sa lo historic	65-75 yl tn sa lo
2H2	0-42 gravel	42-71 dk br sa lo historic	71-81 yl tn sa lo

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
2H3	0-31 gravel	31-54 dk br sa lo historic	54-64 yl tn sa lo
2H4	0-27 gravel	27-63 dk br sa lo	
2H5	0-50 dk br sa lo	50-60 yl tn sa lo	
2H6	0-20 gravel	stopped by rock	
2H7	not tested	storm drain	
2H8	0-40 dk br sa lo	stopped by rock	
2H9	0-40 dk br sa lo	stopped by rock	
2H10	0-28 gravel	28-43 dk br sa lo	stopped by rock
2I1	0-50 gravel	50-86 dk br sa lo historic	
2I2	0-40 gravel	stopped by rock	
2I3	0-30 gravel	stopped by rock	
2I4	0-25 gravel	stopped by rock	
2I5	0-15 gravel historic	stopped by rock	
2I6	0-15 gravel	15-30 gravel	30-63 dk br sa lo historic
2I7	not tested	storm drain	
2I8	0-15 gravel	15-35 dk br sa lo	35-45 yl tn sa lo
2I9	0-15 gravel	15-40 dk br sa lo	40-45 yl tn sa lo
2I10	0-15 gravel	15-40 dk br sa lo	stopped by rock
2J1	0-12 gravel	12-55 dk br st lo fill	
2J3	0-12 dk br lo	12-23 gravel	23-32 dk br st lo fill
2J4	0-15 dk br lo	15-27 gravel	27-35 dk br st lo fill
2J5	0-14 dk br lo	14-28 gravel	stopped by rock
2J6	0-14 dk br lo	14-38 gravel	stopped by rock

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
2J7	not tested	storm drain	
2J8	0-14 dk br lo	stopped by rock	
2J9	0-8 dk br lo	8-20 gravel	20-38 dk br gv lo historic
2J10	0-15 gravel	15-28 dk br gv lo	stopped by rock
2K1	0-23 gravel	23-63 lt tn sa	63-73 gravel
2K2	0-25 gravel	stopped by rock	
2K3	0-30 gravel	stopped by rock	
2K4	0-28 gravel	stopped by rock	
2K5	0-30 gravel	stopped by rock	
2K6	0-30 gravel	stopped by rock	
2K7	not tested	storm drain	
2K8	0-20 gravel	stopped by rock	
2K9	not tested	storm drain	
2K10	0-30 dk br gv lo	30-40 yl tn sa lo	
2L1	0-40 gravel	stopped by rock	
2L2	0-40 gravel	stopped by rock	
2L3	0-28 gravel	stopped by rock	
2L4	0-24 gravel	stopped by rock	
2L5	0-5 dk br gv lo	concrete	
2L6	0-25 gravel	stopped by rock	
2L7	0-25 gravel	stopped by rock	
2L8	not tested	storm drain	
2L9	0-24 gravel	stopped by rock	
2L10	0-8 gravel	stopped by rock	
Z1	0-18 dk br st lo	stopped by rock	
Z2	0-16 dk br st lo	bedrock	

STP	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS	DEPTH SOIL ARTIFACTS
Z3	0-22 dk br lo	bedrock	
Z4	0-15 dk br lo	bedrock	
Z5	not tested	gas line	
Z6	0-20 dk br si lo	bedrock	
Z7	0-25 dk br si lo	25-35 br si lo	
Z8	0-18 dk br si lo	18-22 br si lo	
Z9	0-30 dk br si lo	30-40 br si lo	
Z10	0-17 dk br si lo	17-31 br si lo	
Z11	0-30 dk br si lo	30-40 br si lo	
Z12	0-16 dk br si lo	bedrock	

KEY:
dk= dark; vdk= very dark; lt= light
br= brown; or= orange; tn= tan; yl= yellow;
gr= grey
cl= clay; sa=sand; si= silt; lo= loam
gv= gravel; st= stone

APPENDIX 3– ARTIFACT INVENTORY

Samaritan Senior Center
Artifact Catalog

Provenience	Stratum	Quantity	Class	Description	Mark	Maker	Vessel Type	Earliest	Latest	Median	Field Date
2A2	1	1	Automotive	spark plug	J8C	Champion					4/21/2011
2A2	1	1	Kitchen	blue transfer porcelain			teacup				4/21/2011
2A2	1	1	Unaffiliated	clear glass							4/21/2011
2D2	2	1	Architectural	wire nails				1890	2000	1945	4/21/2011
2E1	2	1	Architectural	brick							4/21/2011
2E2	2	1	Activities	terra cota field tile							4/21/2011
2E2	2	1	Architectural	unid. Nails							4/21/2011
2E4	2	1	Architectural	wire nails				1890	2000	1945	4/21/2011
2E4	2	1	Kitchen	aqua bottle glass							4/21/2011
2F1	2	2	Architectural	window glass							4/26/2011
2F1	2	1	Architectural	cut nail				1815	1900	1857.5	4/26/2011
2F1	2	2	Architectural	unid. Nails							4/26/2011
2F1	2	2	Kitchen	undiff. Whiteware				1820	1900	1860	4/26/2011
2F1	2	1	Kitchen	food remains							4/26/2011
2F1	2	1	Unaffiliated	sheet plastic				1955	2000	1977.5	4/26/2011
2F1	2	2	Unaffiliated	clear glass							4/26/2011
2F2	2	2	Architectural	wire nails				1890	2000	1945	4/21/2011
2F2	2	1	Architectural	cut nail				1815	1900	1857.5	4/21/2011
2F2	2	1	Unaffiliated	clear glass							4/21/2011
2F3	2	1	Architectural	window glass							4/21/2011
2F3	2	2	Architectural	wire nails				1890	2000	1945	4/21/2011
2F3	2	2	Automotive	laminated glass							4/21/2011
2F3	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/21/2011
2F3	2	2	Unaffiliated	plastics							4/21/2011
2F3	2	1	Unaffiliated	brown glass							4/21/2011
2F3	2	3	Unaffiliated	clear glass							4/21/2011
2F4	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/21/2011
2F5	2	1	Kitchen	food remains							4/21/2011
2F5	2	1	Unaffiliated	clear glass							4/21/2011
2F5	2	1	Unaffiliated	unknown ferrous object							4/21/2011
2G1	2	1	Architectural	unid. Nails							4/21/2011
2G2	2	1	Architectural	window glass							4/21/2011
2G2	2	1	Unaffiliated	clear glass							4/21/2011
2G3	2	1	Architectural	copper wire				1930	2000	1965	4/21/2011
2G3	2	1	Architectural	unid. Nails							4/21/2011
2H1	2	3	Architectural	unid. Nails							4/26/2011
2H1	2	2	Unaffiliated	clear glass							4/26/2011
2H2	2	2	Architectural	wire nails				1890	2000	1945	4/26/2011
2H3	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2H3	2	1	Kitchen	Albnay slip stoneware				1805	1920	1862.5	4/26/2011
2H3	2	1	Kitchen	aqua bottle glass							4/26/2011
2H3	2	1	Kitchen	blue transfer print whiteware				1820	1900	1860	4/26/2011
2H3	2	1	Unaffiliated	clear glass							4/26/2011
2H3	2	2	Unaffiliated	sheet plastic				1955	2000	1977.5	4/26/2011
2H3	2	2	Unaffiliated	unknown ferrous object							4/26/2011
2I1	2	2	Architectural	window glass							4/26/2011
2I1	2	1	Architectural	braided copper cable				1930	2000	1965	4/26/2011
2I1	2	5	Architectural	wire nails							4/26/2011
2I1	2	2	Kitchen	green bottle glass							4/26/2011
2I1	2	1	Unaffiliated	clear glass							4/26/2011
2I1	2	3	Unaffiliated	milk glass							4/26/2011
2I1	2	1	Unaffiliated	wire hook							4/26/2011
2I1	2	1	Unaffiliated	unknown ferrous object							4/26/2011
2I5	2	4	Architectural	window glass							4/26/2011
2I5	2	1	Architectural	lighting glass							4/26/2011
2I5	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2I5	2	1	Architectural	copper wire				1930	2000	1965	4/26/2011
2I5	2	1	Kitchen	porcelain			mug				4/26/2011
2I5	2	1	Kitchen	green bottle glass							4/26/2011
2I5	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/26/2011
2I5	2	6	Unaffiliated	clear glass							4/26/2011
2I5	2	2	Unaffiliated	brown glass							4/26/2011
2I5	2	1	Unaffiliated	aluminum foil				1960	2000	1980	4/26/2011
2I5	2	1	Unaffiliated	ferrous wire				1890	2000	1945	4/26/2011
2I5	2	1	Unaffiliated	ferrous container rim							4/26/2011
2I6	2	1	Activities	chain link							4/26/2011
2I6	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2I6	2	1	Kitchen	crown cap				1935	2000	1967.5	4/26/2011
2I6	2	1	Unaffiliated	ferrous wire				1890	2000	1945	4/26/2011
2J9	2	1	Kitchen	ironstone				1842	1930	1886	4/26/2011

APPENDIX 4– OPRHP SITE FORMS

CONFIDENTIAL

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only--Site Identifier _____

Project Identifier: 11PR0992
Date: 5/6/11

Your Name: **Timothy J. Abel** Phone: **315-493-9527**
Address: **33512 NYS Rte 26**
Carthage, NY 13619

Organization (if any)

1. Site Identifier(s): C.D. Morgan Farmstead

2. County: Jefferson one of following:
   City: Watertown
   Town: _____
   Incorporated Village: _____
   Unincorporated Village or Hamlet: _____

3. Present Owner: Samaritan Medical Center
   Address: _____
   _____

4. Site Description (check all appropriate categories):
   Structure/site
   Superstructure: __ complete __ partial collapsed ✓ not evident
   Foundation: above below (ground level) ✓ not evident
   __ Structural subdivisions apparent __ Only surface traces visible
   __ Buried traces detected
   List construction materials (specific as possible): cut and wire nails, window glass, field stone

   Grounds
   __ Under cultivation __ Sustaining erosion __ Woodland ✓ Upland
   Never cultivated __ Previously cultivated __ Floodplain Pastureland
   Soil Drainage: __ excellent good ✓ fair poor
   Slope: __ flat gentle ✓ moderate steep
   Distance to nearest water from structure: 290 m (swamp)
   Elevation: 530-610 ft. amsl

5. Site Investigation (append additional sheets, if necessary):
   __ Surface--date(s) _____ Site Map (submit with form*)
   __ Collection
   ✓ Subsurface-- date(s) 4/21-4/26/2011
   Testing: ✓ shovel __ coring __ other-- unit size:
   # of units: 70 (Submit plan of units*)
   Excavation: unit size: _____ # of units: _____ (Submit plan of units with form*)

*Submission should be 8.5" x 11", if feasible

Investigator: **Timothy J. Abel, PhD**

Manuscript or published report(s) (reference fully):

Phase 1 Archaeological Survey, Samaritan Senior Village, City of Watertown, Jefferson County. Report submitted to GYMP, PC, Watertown, NY. On file, OPRHP.

Present repository of materials: Site owner

6. Site inventory:
   a. date constructed or occupation period: c. 1855-1966
   b. previous owners, if known: see report
   c. modifications, if known:
      (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references:
      1) Name C.D. Morgan Date 1854 Source Levy
      2) Name S. Klock Date 1866 Source Beers
      3) Name S. Klock Est. Date 1888 Source Robinson
      4) Name - Date 1896 Source Blankman

   b. Representation in existing photography
      1) Photo _____ Date _____ Where located _____
      2) Photo _____ Date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____ Address _____
      2) Name _____ Address _____

8. List of material remains other than those used in construction (be specific as possible in identifying object and material): see artifact catalog

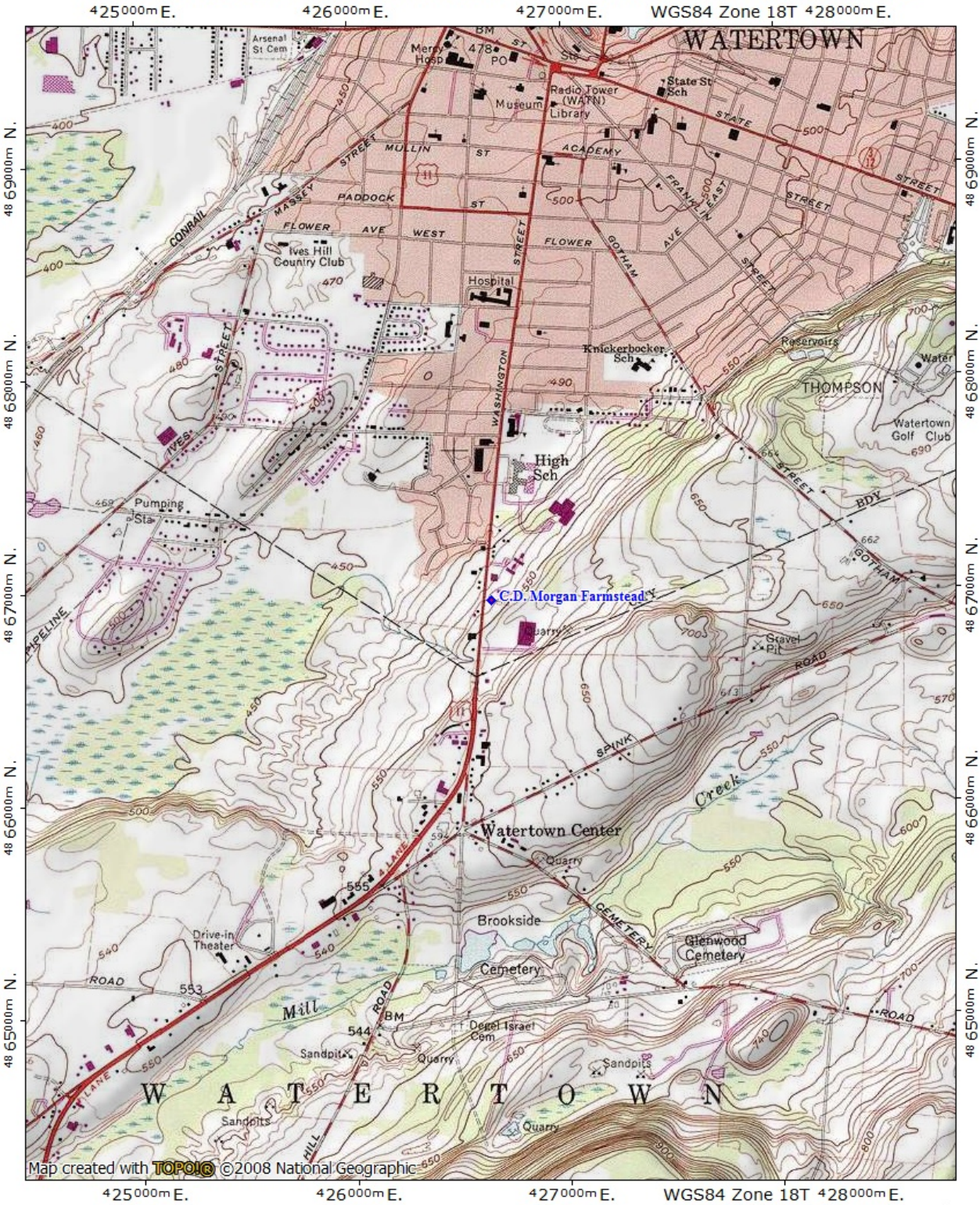
If prehistoric materials are evident, check here and fill out prehistoric site form _ _

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8.5"x11", if feasible.

USGS 7.5 Minute Series Quad. Name: Watertown NY
For Office Use Only--UTM Coordinates: Zone 18T Easting 426629 Northing 4866933

10. Photography (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

426649mE 4866938mN Zone 18T WGS84 Watertown. NY Quad (7.5') 05/06/11



NATIONAL GEOGRAPHIC

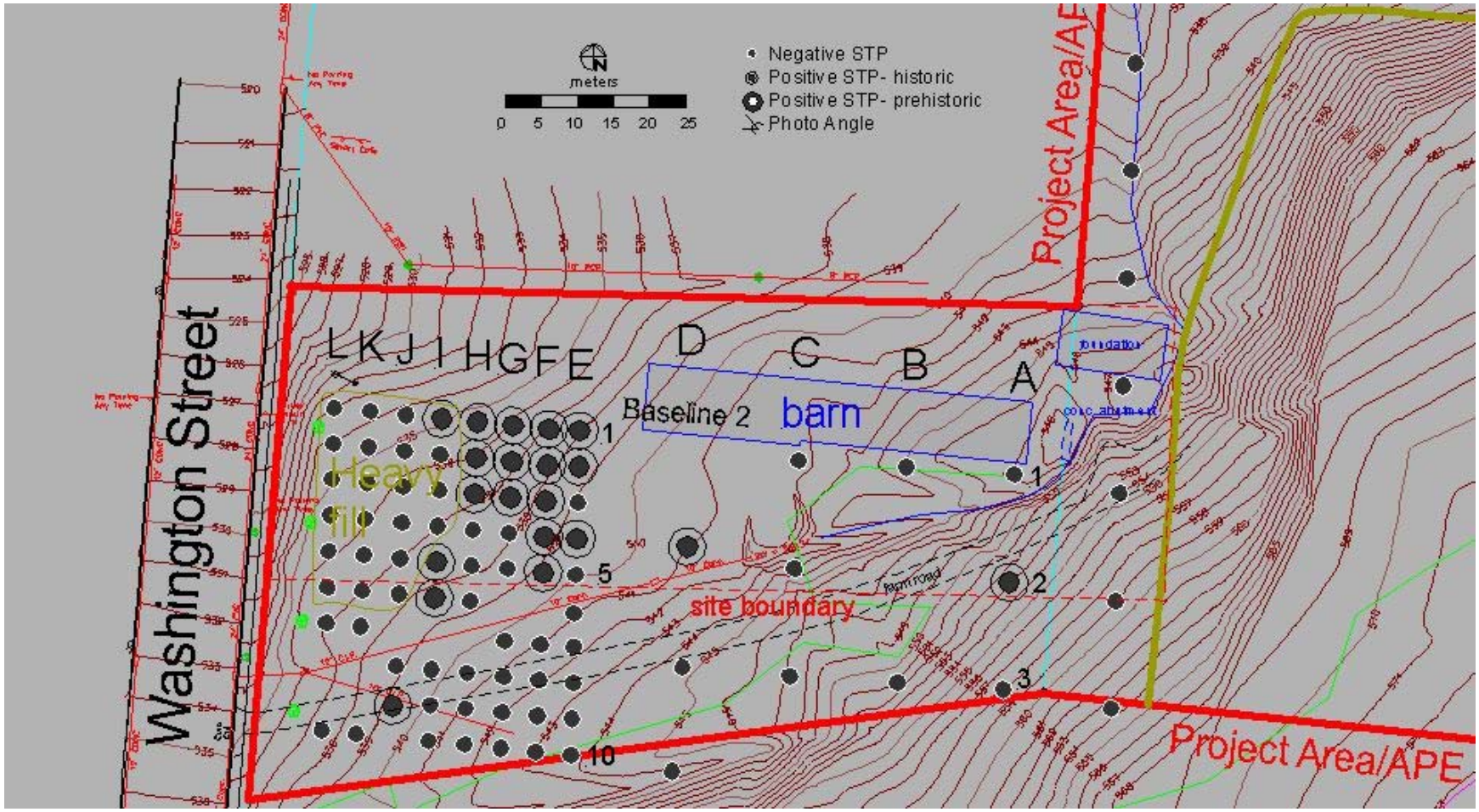
0.0 0.5 1.0 miles

0.0 0.5 1.0 1.5 km

MN TN

13°

05/06/11


Negative STP
Positive STP- historic
Positive STP- prehistoric
Photo Angle
meters
0 5 10 15 20 25
Washington Street
Project Area/APE
Project Area/APE
L K J I H G F E
D
C
B
A
Baseline 2
barn
Heavy fill
site boundary
farm road
foundation
conc. abutment
1
5
10
1
2
3

Samaritan Senior Center
Artifact Catalog

Provenience	Stratum	Quantity	Class	Description	Mark	Maker	Vessel Type	Earliest	Latest	Median	Field Date
2A2	1	1	Automotive	spark plug	J8C	Champion					4/21/2011
2A2	1	1	Kitchen	blue transfer porcelain			teacup				4/21/2011
2A2	1	1	Unaffiliated	clear glass							4/21/2011
2D2	2	1	Architectural	wire nails				1890	2000	1945	4/21/2011
2E1	2	1	Architectural	brick							4/21/2011
2E2	2	1	Activities	terra cota field tile							4/21/2011
2E2	2	1	Architectural	unid. Nails							4/21/2011
2E4	2	1	Architectural	wire nails				1890	2000	1945	4/21/2011
2E4	2	1	Kitchen	aqua bottle glass							4/21/2011
2F1	2	2	Architectural	window glass							4/26/2011
2F1	2	1	Architectural	cut nail				1815	1900	1857.5	4/26/2011
2F1	2	2	Architectural	unid. Nails							4/26/2011
2F1	2	2	Kitchen	undiff. Whiteware				1820	1900	1860	4/26/2011
2F1	2	1	Kitchen	food remains							4/26/2011
2F1	2	1	Unaffiliated	sheet plastic				1955	2000	1977.5	4/26/2011
2F1	2	2	Unaffiliated	clear glass							4/26/2011
2F2	2	2	Architectural	wire nails				1890	2000	1945	4/21/2011
2F2	2	1	Architectural	cut nail				1815	1900	1857.5	4/21/2011
2F2	2	1	Unaffiliated	clear glass							4/21/2011
2F3	2	1	Architectural	window glass							4/21/2011
2F3	2	2	Architectural	wire nails				1890	2000	1945	4/21/2011
2F3	2	2	Automotive	laminated glass							4/21/2011
2F3	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/21/2011
2F3	2	2	Unaffiliated	plastics							4/21/2011
2F3	2	1	Unaffiliated	brown glass							4/21/2011
2F3	2	3	Unaffiliated	clear glass							4/21/2011
2F4	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/21/2011
2F5	2	1	Kitchen	food remains							4/21/2011
2F5	2	1	Unaffiliated	clear glass							4/21/2011
2F5	2	1	Unaffiliated	unknown ferrous object							4/21/2011
2G1	2	1	Architectural	unid. Nails							4/21/2011
2G2	2	1	Architectural	window glass							4/21/2011
2G2	2	1	Unaffiliated	clear glass							4/21/2011
2G3	2	1	Architectural	copper wire				1930	2000	1965	4/21/2011
2G3	2	1	Architectural	unid. Nails							4/21/2011
2H1	2	3	Architectural	unid. Nails							4/26/2011
2H1	2	2	Unaffiliated	clear glass							4/26/2011
2H2	2	2	Architectural	wire nails				1890	2000	1945	4/26/2011
2H3	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2H3	2	1	Kitchen	Albnay slip stoneware				1805	1920	1862.5	4/26/2011
2H3	2	1	Kitchen	aqua bottle glass							4/26/2011
2H3	2	1	Kitchen	blue transfer print whiteware				1820	1900	1860	4/26/2011
2H3	2	1	Unaffiliated	clear glass							4/26/2011
2H3	2	2	Unaffiliated	sheet plastic				1955	2000	1977.5	4/26/2011
2H3	2	2	Unaffiliated	unknown ferrous object							4/26/2011
2I1	2	2	Architectural	window glass							4/26/2011
2I1	2	1	Architectural	braided copper cable				1930	2000	1965	4/26/2011
2I1	2	5	Architectural	wire nails							4/26/2011
2I1	2	2	Kitchen	green bottle glass							4/26/2011
2I1	2	1	Unaffiliated	clear glass							4/26/2011
2I1	2	3	Unaffiliated	milk glass							4/26/2011
2I1	2	1	Unaffiliated	wire hook							4/26/2011
2I1	2	1	Unaffiliated	unknown ferrous object							4/26/2011
2I5	2	4	Architectural	window glass							4/26/2011
2I5	2	1	Architectural	lighting glass							4/26/2011
2I5	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2I5	2	1	Architectural	copper wire				1930	2000	1965	4/26/2011
2I5	2	1	Kitchen	porcelain			mug				4/26/2011
2I5	2	1	Kitchen	green bottle glass							4/26/2011
2I5	2	1	Kitchen	undiff. Whiteware				1820	1900	1860	4/26/2011
2I5	2	6	Unaffiliated	clear glass							4/26/2011
2I5	2	2	Unaffiliated	brown glass							4/26/2011
2I5	2	1	Unaffiliated	aluminum foil				1960	2000	1980	4/26/2011
2I5	2	1	Unaffiliated	ferrous wire				1890	2000	1945	4/26/2011
2I5	2	1	Unaffiliated	ferrous container rim							4/26/2011
2I6	2	1	Activities	chain link							4/26/2011
2I6	2	1	Architectural	wire nails				1890	2000	1945	4/26/2011
2I6	2	1	Kitchen	crown cap				1935	2000	1967.5	4/26/2011
2I6	2	1	Unaffiliated	ferrous wire				1890	2000	1945	4/26/2011
2J9	2	1	Kitchen	ironstone				1842	1930	1886	4/26/2011

Washington Street
Baseline 1
Baseline 2
barn
foundation
Heavy Fill
Push
Quarry
Samaritan
Project Area/APE
site boundary
farm road
Transect Z
meters x10
0 1 2 3 4 5 10
Negative STP
Positive STP- historic
Positive STP- prehistoric
Photo Angle

Jurisdictional Delineation Report

Samaritan Medical Center Senior Living Campus
Town of Watertown
Jefferson County, New York

Prepared For:

GYMO Architecture, Engineering and Land Surveying, P.C.
220 Sterling Street
Watertown, New York 13601

Prepared By:

edr Companies
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

May 2011

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1.0 INTRODUCTION

1.1 Project Site Description

At the request of GYMO Architecture, Engineering and Land Surveying, P.C. (GYMO), edr Companies (edr) investigated approximately 20 acres of land located in the Town of Watertown, Jefferson County, New York (Figure 1). The land (hereafter referred to as the Project site) is proposed for development of a senior living campus and possibly an associated waterline connection with an existing main southeast of the Project site. The Project site is currently dominated by successional shrubland, but also includes areas of disturbed/developed land, mowed lawn, successional old field, and wetland communities. The Project site is bounded by Washington Avenue to the west, undeveloped land to the north and west and Samaritan Hospital to the south.

1.2 Purpose

The purpose of this study was to delineate and describe all on-site wetlands and streams that may fall under state or federal jurisdiction and to conduct a reconnaissance-level survey of potential habitat for the Lyre-tipped Spreadwing damselfly (*Lestes unguiculatus)*. Specific tasks performed for the wetland portion of this study included 1) review of background resource data/mapping, 2) field delineation and flagging of all potential state and federal jurisdictional wetlands and streams, 3) survey of jurisdictional area boundaries using a global positioning system (GPS) with reported sub-meter accuracy, 4) quantification of the area of on-site wetlands and streams, and 5) a detailed description of these potential jurisdictional areas based on hydrology, vegetation, and soils data collected in the field. The Lyre-tipped spreadwing damselfly habitat investigation involved the identification and documentation of potential on-site habitat for this unlisted, but uncommon, species known to occur in the area.

This report describes the results of the on-site wetland delineation conducted by edr, including a description of the wetlands and other waters that were identified and their likely jurisdictional status. This document is intended to provide all of the information necessary to identify on-site jurisdictional areas and support a permit application to the United States Army Corps of Engineers (USACOE) and the New York State Department of Environmental Conservation (NYSDEC), if necessary. This report also presents the results of the on-site Lyre-tipped spreadwing damselfly habitat survey. This survey was performed in response to a letter from Erin White, a zoologist at the New York Natural Heritage Program (NHP) indicating the potential for this species to occur on or adjacent to the Project site.

1.3 Resources

Data and literature supporting this investigation have been obtained from a number of sources including United States Geological Survey (USGS) topographic mapping (Watertown, NY 7.5 minute quadrangle), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, NYSDEC Freshwater Wetlands mapping, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Jefferson County, New York, correspondence with the NHP, and recent (2003) color infrared aerial photography obtained from the NYS Geographic Information Systems (GIS) Clearinghouse.

Vascular plant names used in this report follow nomenclature found in Gleason and Cronquist (1991). Wetland indicator status for plant species was determined by reference to Reed (1988). Jurisdictional areas were characterized according to the wetlands and deepwater habitats classification system used in NWI mapping.

1.4 Qualifications

edr ecologist Nate Butera and regulatory compliance specialist Eric Lockard performed the on-site wetland delineation. John Hecklau served as the edr principal in charge on the project.

Mr. Hecklau serves as principal-in-charge on all of edr's environmental inventory, management, and permitting projects. He received a bachelor's degree in biology from Middlebury College and a master's degree in wildlife biology from State University of New York (SUNY) College of Environmental Science and Forestry. With over 25 years of experience in the environmental field, professional expertise includes wetland delineations, plant and wildlife identification, community mapping, resource management planning, habitat assessments, and environmental impact analysis.

Mr. Butera is an environmental analyst with a bachelor's degree in renewable resources from Morrisville State College. Mr. Butera has over four years of experience in the environmental field, including wetland delineation, resource inventory and mapping, and environmental compliance monitoring. Prior to joining edr in 2009, he worked as an Environmental Scientist for Clough Harbour and Associates and as a contractor for Colorado State University delineating wetlands on Fort Drum. Professional expertise includes global GPS surveying and mapping, jurisdictional area delineations, and SEQR compliance.

Mr. Lockard is a regulatory compliance specialist with over three years of experience in the environmental field. He received a bachelor's degree in biology from the Virginia Military Institute. Mr. Lockard's professional expertise includes Geographic Information Systems (GIS) and computer aided drafting (CAD) analysis and mapping, GPS surveying and mapping, state and federal wetland permitting, and environmental impact analysis.

2.0 SITE PHYSICAL CHARACTERISTICS AND RESOURCES

2.1 Existing Vegetation

Existing ecological communities on the Project site were mapped based on interpretation of aerial photography, and then verified by edr biologists in the field on April 13, 2011. Following field reconnaissance and aerial photo review, vegetative community boundaries were digitized, and approximate acreages calculated through the use of GIS analysis. As shown in Figure 6, the site contains of four broad ecological community types: successional shrubland (13 acres), disturbed/developed (7 acres), mowed lawn (0.35 acre), and successional old-field (0.3 acres).

Successional shrubland is the dominant community type of the site (13 acres) and is centrally located within the Project site. Aside from the herbaceous vegetation scattered throughout the understory, this community is dominated by shrub species, primarily European buckthorn (*Rhamnus cathartica)* and honeysuckle (*Lonicera spp)*.

Disturbed/developed land comprises approximately 7 acres of the Project site. This area includes the Samaritan Hospital parking lot and an unidentified road that the proposed waterline would follow.

Mowed lawn comprises approximately 0.35 acre of the Project site. Located in the western portion of the Project site, mowed lawn is dominated by grasses and is maintained on a regular basis.

Successional old-field comprises approximately 0.3 acre of the Project site. Successional old-field is former agricultural land that has been allowed to go fallow. Located in the central portion of the Project site and on the National Grid 115kV transmission line, vegetation within this community type includes goldenrod (*Solidago spp.)* and grass species.

2.2 Physiography and Soils

The Project site is located within the Erie-Ontario Plain physiographic province of New York, which occurs in the central to southwestern portions of Jefferson County, east of Lake Ontario. This province is characterized by topography that varies from nearly level to rolling and broken, with the common occurrence of shallow bedrock and

steep rock ledges. The Erie-Ontario Plain and the St. Lawrence Valley region are often thought of as the "lowlands" of Jefferson County. Elevations range from 246 feet above mean sea level (amsl) near Lake Ontario and the St. Lawrence River to 650 feet amsl on the beach of glacial Lake Iroquois, south of the City of Watertown (NRCS, 1989).

Topography on the Project site can be described as gently sloping, with elevations ranging from approximately 650 feet amsl along the eastern boundary of the property to approximately 550 feet amsl along the western border of the site (adjacent to Washington Street) (Figure 1). The Project site is primarily undeveloped, however the site does include a portion of the Samaritan Hospital parking lot, a National Grid 115 kV transmission line right-of-way (ROW) and a road that that the proposed waterline would follow.

Based on available soils mapping for Jefferson County (NRCS, 1989), the Project site is underlain by six soils: Benson-Galoo complex, Benson channery silt loam, Farmington loam, Galoo-Rock outcrop complex, Newstead silt loam and Urban land (Figure 3). The major soil units on the Project are Galoo-Rock outcrop complex (GdB) series and Benson-Galoo complex (BgB), which occur on over 50 percent of the site. Newstead silt loam is the only mapped soil listed as hydric in New York State. This soil is located in the northeastern portion of the Project site, and is associated with delineated Wetland A. No soils on-site are indicated as having the potential for hydric inclusions (NRCS, 1989 and 2006). Table 1 presents detailed information on all of the soils found on-site.

Table 1. On-Site Soils.

Soils Name[1]	Mapping Unit	Slope (%)	Drainage [2]	Depth to Seasonal High Water Table (in)	Hydric Soil [3]
Benson-Galoo complex	BgB	0-8	sed	>72	No
Benson channery silt loam	BfF	25-50	sed	>72	No
Farmington loam	FaB	0-8	wd	>72	No
Galoo-Rock outcrop complex	GbB	0-8	ed	>72	No
Newstead silt loam	Nn	0-8	spd	6-12	Yes
Urban land	Ur	N/A	ed	N/A	No

[1]Unless otherwise noted, information derived from the Soil Survey of Jefferson County, New York (1989).
[2]Soil drainage is represented by the following abbreviations: “ed” = excessively drained, “sed” = somewhat excessively drained "wd" = well drained, "mwd" = moderately well drained, "spd" = somewhat poorly drained, and "vpd" = very poorly drained.
[3] "As in indicated by Hydric Soils of New York State (NRCS 1989, NRCS 1995).

2.3 Hydrology

The Project site is located in the Indian River Drainage Basin and is part of USGS Hydrologic Unit 04150303 of the Great Lakes Region. In Jefferson County, total annual precipitation averages 40 inches (NRCS, 1989). The majority of the Project site hydrology is generated by surface water run-off, a perched water table and groundwater discharge. Surface water drains off-site to the west, primarily through sheet flow, ground water infiltration, and two 18-inch culverts that reportedly empty into the City of Watertown's storm sewer system. USGS topographic mapping does indicate the presence of any ponds or streams in the site (Figure 1). However, field delineation revealed that there are four intermittent stream channels associated with delineated Wetland A.

3.0 JURISDICTIONAL AREA MAPPING

3.1 Waters of the United States

As defined by the USACOE, Waters of the United States include all lakes, ponds, streams (intermittent and perennial), and wetlands. Jurisdictional wetlands are defined as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA, 2001). Such areas are indicated by the presence of three criteria: hydrophytic vegetation, hydric soils, and evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987). However, as a result of the Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers Supreme Court case (No. 99-1178; January 9, 2001), it has been determined that the USACOE does not have jurisdictional authority over waters that are "nonnavigable, isolated, and intrastate" (EPA, 2001). Subsequent Supreme Court rulings have indicated that jurisdictional waters include headwaters and wetlands that have "significant nexus" to jurisdictional wetlands. The jurisdictional status of all on-site waters can only be determined following a field visit by a Buffalo District USACOE representative.

NWI maps indicate the approximate location of wetlands that could be under federal jurisdiction. NWI mapping does not indicate the presence of any federally mapped wetlands on the site (see Figure 4). The closest NWI mapped wetland is located approximately 0.2 mile to the east of the Project site.

3.2 New York State Freshwater Wetlands

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas (100-foot upland buffer). The Freshwater

Wetlands Act requires the NYSDEC to map all state-protected wetlands (typically over 12.4 acres in size) to allow landowners and other interested parties a means of determining where state jurisdictional wetlands exist. NYSDEC Freshwater Wetland mapping does not indicate the presence of any state mapped wetland on the Project site (see Figure 5). The nearest NYSDEC Freshwater Wetland W-2, is located off-site to the west in approximately 0.3 miles from the Project site

3.3 Summary of On-Site Jurisdictional Areas

3.3.1 Wetlands

edr personnel delineated a single wetland on the Project site. Information pertaining to this wetland is summarized in Table 2. Detailed descriptions of the delineated wetland are presented in Section 4.2. Additional information is provided on the data sheets in included Appendix B.

Table 2. On-Site Wetlands.

Wetland ID [1]	Area [2]	Federal Jurisdiction [3]	State Jurisdiction
A	2.8[2]	Undetermined	No

[1]Delineated wetlands were identified with a unique letter by edr personnel during field investigations.
Missing letters apply to wetlands identified off-site.
[2]Area is expressed in acres, and includes on-site portions of wetlands only.
[3]Based on field observations of hydrologic connections. Final jurisdiction will be determined during agency field visit.

3.3.2 Streams and Ponds

Although no mapped streams or ponds are shown on the Project site, four intermittent streams occur as part of delineated Wetland A (Figure 7). These streams originate off-site and on-site, and are characterized by well-defined banks and a slow, gentle flow (see additional discussion in Section 4.2). There is one small ponded area located within an area of emergent marsh in delineated Wetland A. (see additional discussion in Section 4.2).

4.0 ON-SITE JURISDICTIONAL AREA DELINEATION

4.1 Methodology

The entire Project site was investigated, and all the wetlands were delineated on April 13, 2011. The determination of wetland boundaries was made by edr personnel according to the three-parameter methodology described in the *USACOE Wetland Delineation Manual* (hereafter referred to as the 1987 Manual) (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the *Interim Regional Supplement to the Corps of Engineers*

Wetland Delineation Manual: Northcentral and Northeastern Region (hereafter referred to as the Regional Supplement) (USACOE, 2009). Attention was also given to the identification of potential hydrologic connections between wetland areas that could influence their jurisdictional status. Wetland boundaries were defined in the field with sequentially numbered pink surveyor's flagging.

Data was collected from three sample plots in the delineated wetland (depending on the size of the delineated area) on April 13, 2011, and was recorded on USACOE *Routine Wetland Determination* forms (Appendix B). Data collected by edr personnel included dominant vegetation, hydrology indicators, and soil characteristics.

The vegetative data collection process focused on dominant plant species in four categories: trees (>3" diameter at breast height), saplings/shrubs (<3.0" diameter at breast height and >3.2' tall), herbs (<3.2' tall), and woody vines. Dominance was measured by visually estimating those species having the largest relative basal area (trees), greatest height (saplings/shrubs), greatest number of stems (woody vines), and greatest percentage of aerial coverage (herbaceous) by species. Dominant species for each stratum in the plant community were identified for all sample points. The dominant species from each category are defined as those plants with the highest ranking which, when cumulatively totaled, exceeds 50 percent of the total dominance measure for that category, plus any additional plant species comprising 20 percent or more of the total dominance measure for the category. The species were rank ordered for each category by decreasing value of percent cover.

Soils data at each sampling location were collected by edr personnel using a Dutch auger. Information concerning soil name, drainage classification, texture, matrix and redoximorphic feature color was obtained by reviewing the County Soil Survey and through field sampling. Soil colors were determined using *Munsell Soil Charts* (Kollmorgen Corp., 2000). This information was used to determine whether the soils displayed hydric characteristics. Hydric soils are those that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil layer. Hydric soils are poorly drained, and their presence is indicative of the likely occurrence of wetlands (Environmental Laboratory, 1987).

The Regional Supplement lists the following indicators as evidence of wetland hydrology (in order of decreasing reliability): (A1) surface water, (A2) high water table, (A3) saturation, (B1) water marks, (B2) sediment deposits, (B3) drift deposits, (B4) algal mat or crust, (B5) iron deposits, (B7) inundation visible on aerial imagery, (B8) sparsely vegetated concave surface, (B9) water-stained leaves, (B13) aquatic fauna, (B15) marl deposits, (C1) hydrogen sulfide odor, (C3) oxidized rhizospheres on living roots, (C4) presence of reduced iron, (C6) recent iron reduction in tilled soils, and (C7) thick muck surface. Hydrologic characteristics (inundation and soil saturation) were visually assessed to a depth of 12 inches. The hydrology indicators described above are considered "primary indicators,"

and any one of these indicators is sufficient evidence that wetland hydrology is present. In addition, "secondary indicators" used by edr personnel included: (B6) surface soil cracks, (B10) drainage patterns, (B16) moss trim lines, (C2) dry-season water table, (C8) crayfish burrows, (C9) saturation visible on aerial imagery, (D1) saturation visible on aerial imagery, (D2) geomorphic position, (D3) shallow aquitard, (D4) microtopographic relief, and (D5) fac-neutral test. Any two of these also indicate the presence of wetland hydrology. Wetland hydrology, when combined with a hydrophytic plant community and hydric soils, indicate the presence of a wetland.

Photographs representative of the delineated wetland on-site are included in Appendix C.

4.2 Description of On-Site Delineated Wetlands

edr personnel delineated a single wetland on-site. The size and location of this wetland are illustrated in Figure 7. A description of this wetland is presented below.

Wetland A

Wetland A is a relatively linear wetland entering the Project site from the northeast and exiting the Project site to the west. Wetland A includes emergent and scrub-shrub cover types (see Photos 03 & 04). In addition, there were four intermittent stream channels (see Photos 01 & 02) and one small ponded area (see Photo 09) associated with this wetland. The ponded area was unvegetated, and at the time of the delineation consisted of open water sitting on top of bedrock in the western portion of Wetland A. Hydrologic input to this area is primarily groundwater percolating through the rock outcrop located immediately to the southeast and surface water from the intermittent stream channels sheet flowing over the bedrock. The banks of the ponded area consist of gravel fill, which appears to have been used for the Samaritan Hospital parking lot.

Three intermittent stream channels occur in the northern, southern and central portion of Wetland A. These stream channels are branches off of the main wetland complex and all originate on-site. The other intermittent stream channel flows directly through the middle of the scrub-shrub portion of Wetland A. This stream channel is approximately six inches wide and six to 12 inches deep. It has a cobble substrate and originates off-site to the northeast. All four stream channels converge into a man-made ditch immediately adjacent to the Samaritan Hospital parking lot. The ditch is approximately four feet wide and three feet deep with well-defined, excavated banks. At the time of the delineation it included 12 inches of flowing water. The ditch flows into two 18-inch culverts that are located in the western portion of the Project site and convey the water underneath the Samaritan Hospital parking lot. From that point, there was no visible outlet from the culverts on or adjacent to the Project site.

Dominant hydrophytic vegetation in the scrub-shrub portion of the wetland included black willow (*Salix nigra*), pussy willow (*Salix discolor)* and silky dogwood (*Cornus amomum*). The primary hydrologic input to the scrub-shrub portion of Wetland A appears to be surface water runoff, a perched water table and groundwater recharge. Indicators of wetland hydrology within Wetland A included standing/flowing water, drainage patterns in the wetland, and inundated soils. Low chroma soils (10YR 2/1 and 10YR 3/2) with redoxmorphic features (10YR 5/3 and 10YR 3/3) indicated the presence of hydric soils.

In addition to the scrub-shrub wetland community, an emergent wetland community is located in the western portion of Wetland A (see Photo 08). Hydrologic input to this area is primarily groundwater percolating through the rock outcrop located immediately to the east of the emergent area, and surface water from the intermittent stream channels converging immediately southwest of this area. Some of the water from these intermittent stream channels flows in a sheet manner over an area of rock outcrop into the emergent wetland. The emergent area was contiguous with the ditch and associated 18-inch culverts described above. Dominant vegetation in the emergent portion of Wetland A included narrow-leaved cattail (*Typha angustifolia*), algae (*Disambiguation sp.)* and sedges (*Scirpus sp*.). Indicators of wetland hydrology within this community included standing/flowing water, drainage patterns in the wetland, and inundated soils. A loamy gleyed matrix (Gley 2 5/5 PB) indicated the presence of hydric soils in this area.

Uplands adjacent to Wetland A consisted of successional old field communities and successional shrubland. Dominant upland vegetation adjacent to Wetland A included European buckthorn, Canada goldenrod (*Solidago canadensis*) and perennial rye grass (*Lolium perenne).* No evidence of wetland hydrology was present in these areas and soils in the uplands did not exhibit hydric characteristics (typical matrix color of 10 YR 3/3).

5.0 THREATENED AND ENDANGERED SPECIES

5.1 Lyre – tipped Spreadwing Damselfly

A contact letter was sent to the NHP on March 7, 2011 to determine whether any listed endangered or threatened species have been documented on or adjacent to the Project site. edr received a response from the NHP on March 18, 2011 (Salerno, pers. comm.). The response indicated that no state or federally-listed threatened or endangered species have been documented on or near the Project site. However, a letter dated January 27, 2011 from Erin White (a zoologist at the NHP) indicated that freshly emerged, adult Lyre-tipped spreadwing damselflies were observed near the ditch immediately adjacent to the Samaritan Hospital parking lot within the Project site in 2007. This letter indicated that the ditch may represent potential breeding habitat for this species. This ditch is identified as part of Wetland A and is located in the western portion of this wetland (see Photos 06 & 09). Although not a state or

federally- listed species, the NHP letter indicated that there has been a decline of breeding populations of this damselfly species in recent years, suggesting that the species could be considered a "rare species" in New York State in upcoming years.

Lyre-tipped spreadwing damselfly habitat is characterized by ponds that are typically exposed to sun and dry up in the summer months. The naiads do well in alkaline water. Larvae feed on a wide variety of aquatic insects, such as mosquito larvae, other aquatic fly larvae, mayfly larvae, and freshwater shrimp. This damselfly will eat almost any soft-bodied flying insect including mosquitoes, flies, small moths, mayflies, and flying ants or termites (Montana Field Guide, 2011). The western portion of Wetland A is the primary area of concern because the Lyre-tipped spreadwing was observed there in 2007. After edr's review of the on-site habitat, it is believed the emergent and open water portion of Wetland A represents suitable habitat for the Lyre-tipped spreadwing damselfly. The actual presence of this species can only be determined later in the year when adults emerge from their larval stage in early July.

6.0 CONCLUSIONS

edr delineated one wetland (Wetland A) on the Project site. The surveyed wetland totals approximately 2.8 acres, within the Project site. This wetland was identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. The delineated area includes scrub-shrub and emergent cover types. The primary functions provided by this wetland appear to include storm water detention, ground water discharge/recharge, water quality improvement, and wildlife habitat. The functions of Wetland A are limited due to its shallow depth and lack of habitat diversity. With the exception of the emergent area and open water in the western portion of Wetland A, which appears to provide habitat suitable for the non-listed Lyre-tipped spreadwing damselfly, the on-site wetland does not display characteristics that suggest it could support listed, threatened or endangered species. Because this wetland is on private land, it offers little or no opportunities for public recreational use, education, or research. Wetland A does not correspond to areas where wetlands are shown on the NWI maps. However, it clearly displays wetland characteristics (vegetation, soils and hydrology) and will require a jurisdictional determination by the USACOE. There is no surface water connection between Wetland A and off-site jurisdictional waters, suggesting that Wetland A may be non-jurisdictional. At the time of the site investigation it was undetermined where the two 18-inch culvert's draining Wetland A discharged. However, after discussing the culverts with GYMO staff, they reviewed City drawings and performed dye tests to determine the outlet of these pipes. This investigation revealed that the two culverts empty into the City of Watertown's storm sewer system, which eventually outlets into NYSDEC Freshwater Wetland W-2 northwest of the Project site. The exact location where the storm sewer outlets into NYSDEC Freshwater Wetland W-2 is between 1354 Cosgrove Street and 1366 Cosgrove Street in the Town of Watertown. It is unknown

whether this connection to the municipal storm sewer system constitutes a hydrologic connection that would qualify Wetland A as jurisdictional under the Clean Water Act.

During the Lyre-tipped spreadwing habitat assessment, it was determined that potential habitat exists in the western portion of Wetland A. Potential habitat included a ditch containing cattails and an associated ponded area lacking vegetation. The Project site is considered potential habitat for the Lyre-tipped spreadwing due to the presence of ponded area, the ditch, the emergent wetland, and previous observations of this species in the area by the NHP.

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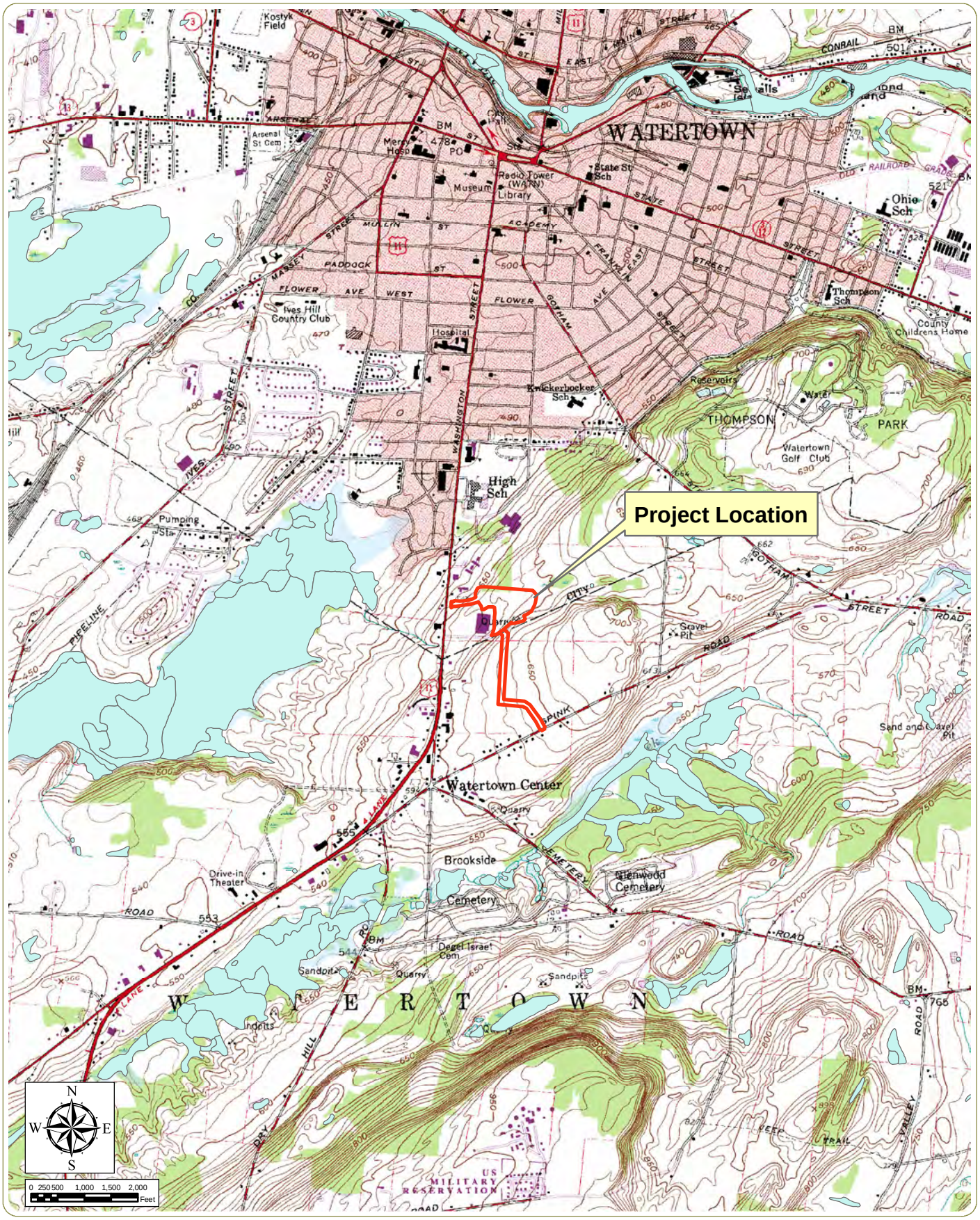
APPENDIX A

Figures



Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 1: USGS Topographic Mapping

April 2011

Notes: Base Mapping: Watertown USGS 7.5-Minute Quadrangle

Project Boundary

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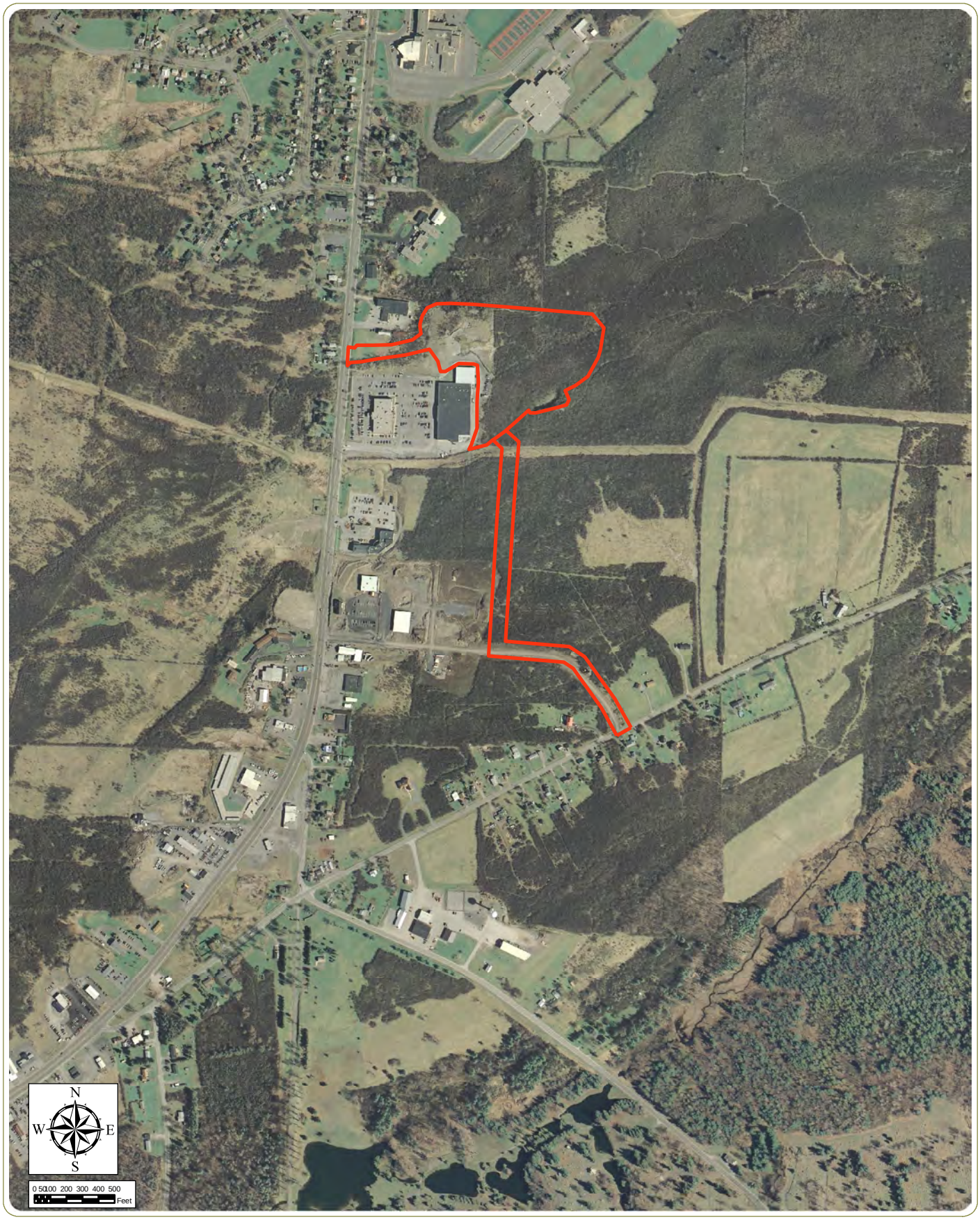

Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 2: Site Location Map

April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

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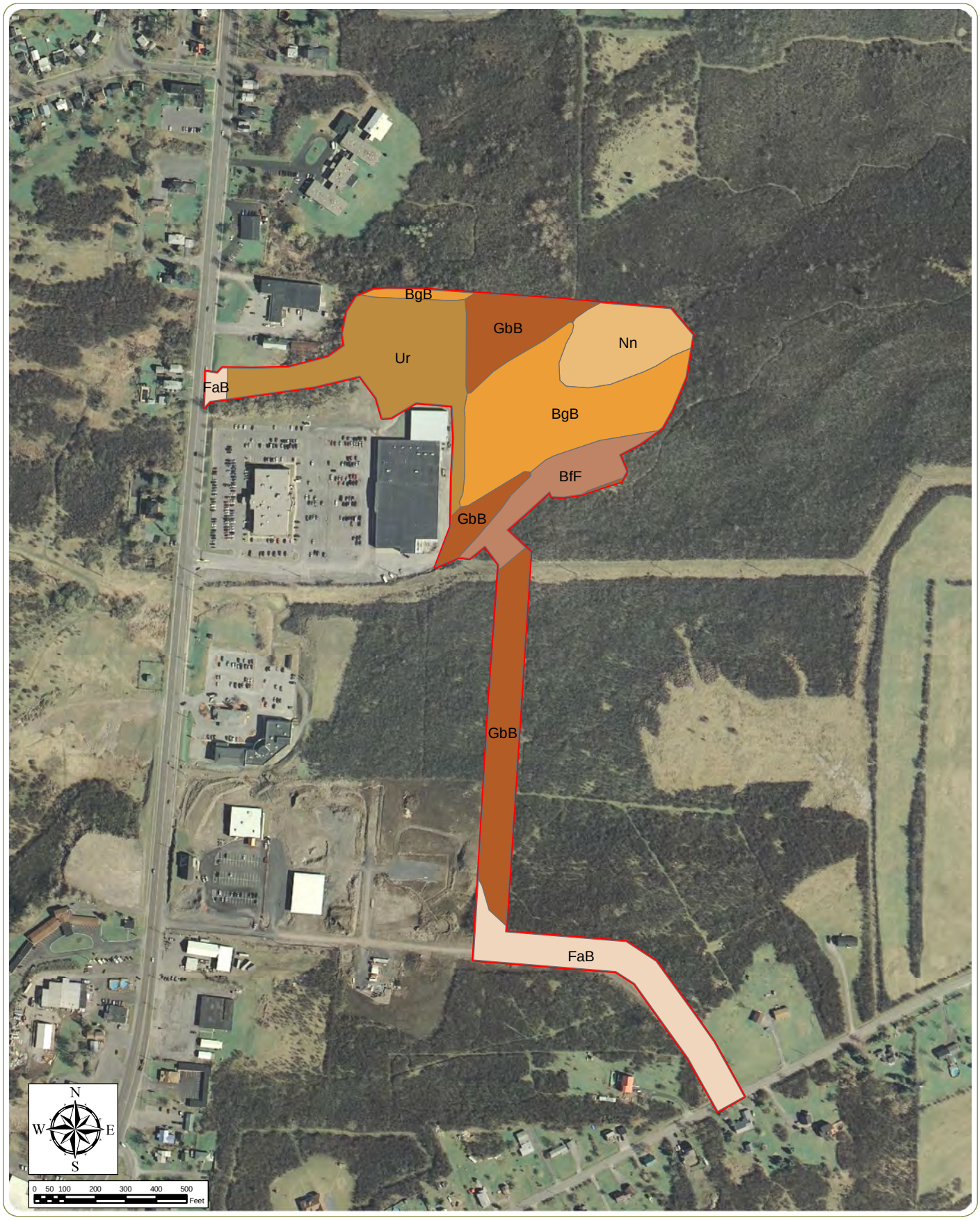

Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 3: On-Site Soils

April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

On-Site Soils

Soil Symbol

- BfF
- BgB
- FaB
- GbB
- Nn
- Ur

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Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 4: NWI Wetland Mapping

April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

NWI Wetland

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Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 5: NYSDEC Freshwater Wetland Mapping

April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

NYSDEC Freshwater Wetland

NYSDEC Mapped Stream

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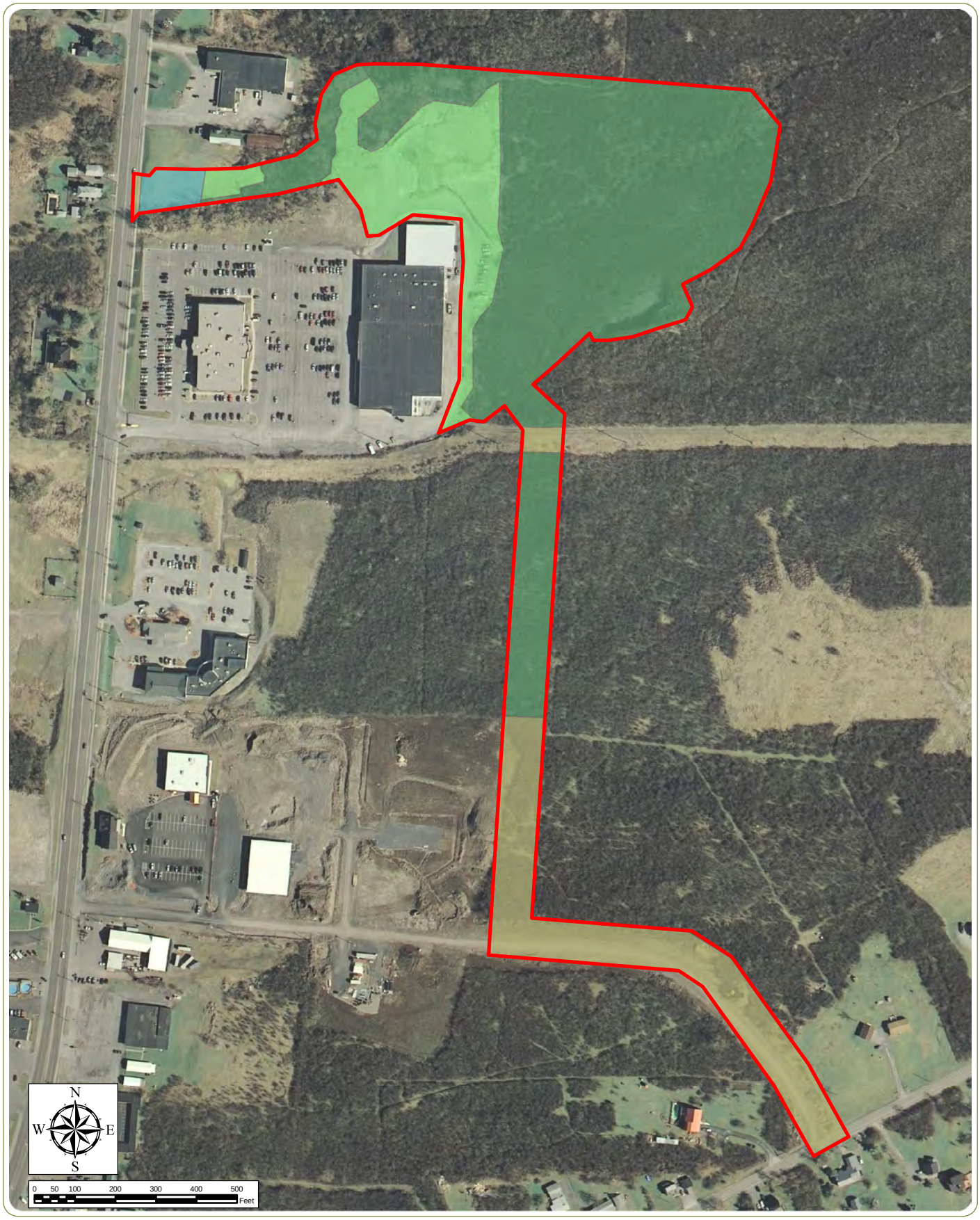

Samaritan Medical Center Senior Living Campus
City of Watertown, Jefferson County, New York

Figure 6: On-Site Ecological Communities
April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

Community Type

- Disturbed/Developed
- Mowed Lawn
- Old Field
- Successional Shrubland

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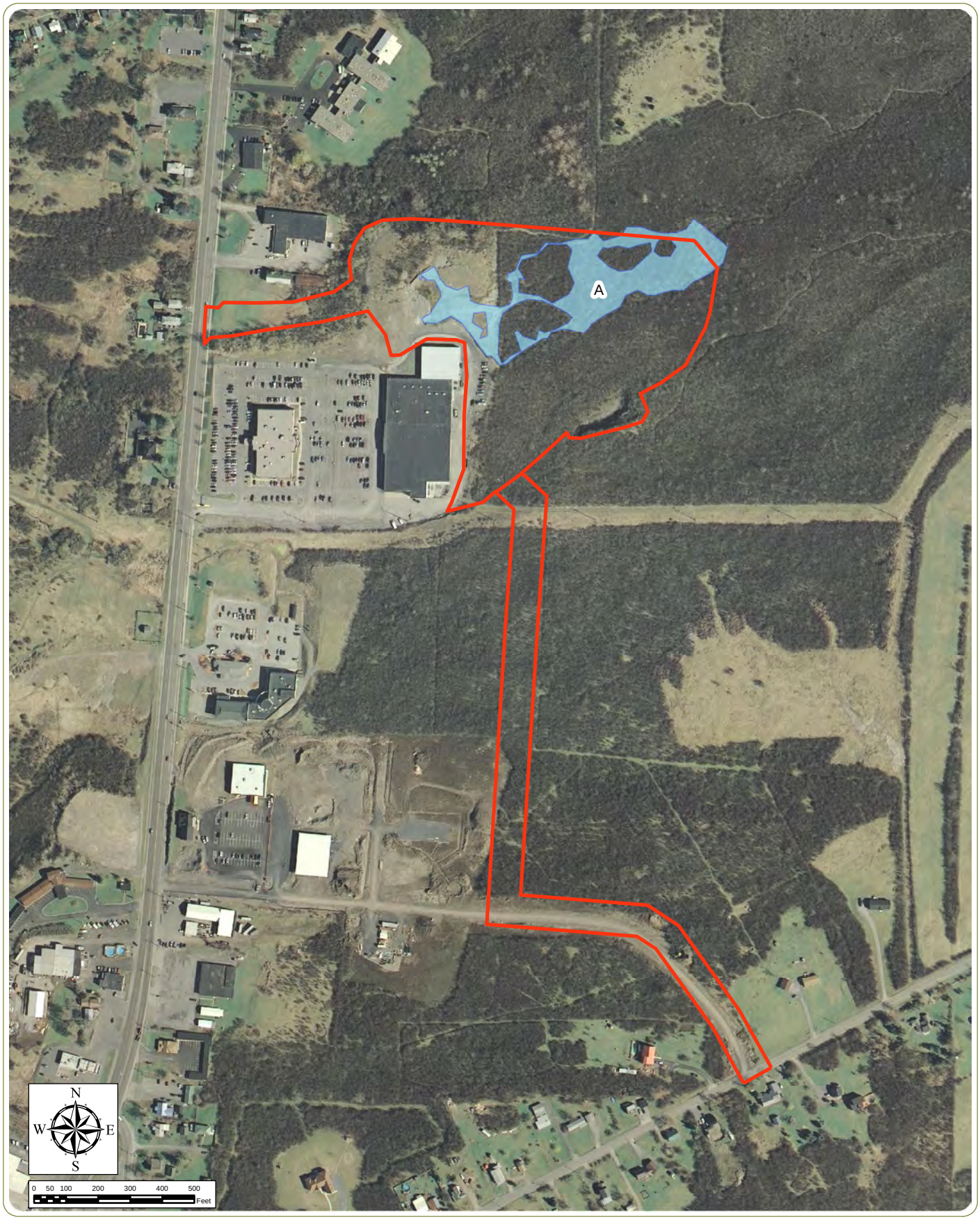

Samaritan Medical Center Senior Living Campus

City of Watertown, Jefferson County, New York

Figure 7: Wetland Delineation Map

April 2011

Notes: USGS 2003 Orthoimagery

Project Boundary

Delineated Wetland

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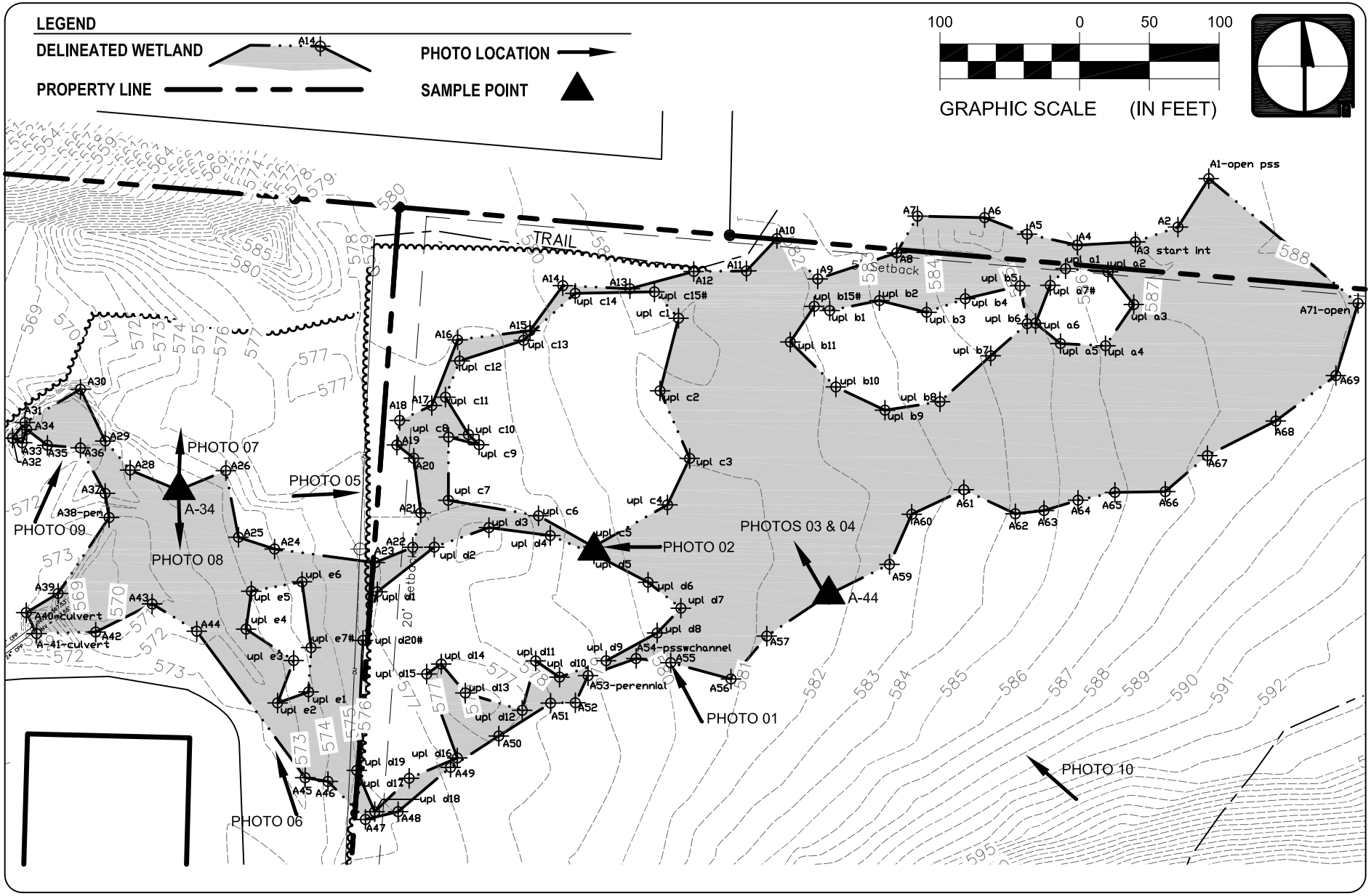

PROJECT TITLE: **SAMARITAN MEDICAL CENTER SENIOR LIVING CENTER**		edr JOB NUMBER: **11021**	
DRAWING TITLE: **WETLAND A**		DRAWING NUMBER: **FIGURE 8**	
DRAWN BY: **RMS**	CHECKED BY: **NB, JH**	SCALE: **1"=100'**	DATE: **APRIL 2011**

DWGPATH

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APPENDIX B

Routine Wetland Determination Forms

Stream Inventory

EDR

Observer:
Name: Nate Butera
Weather: Rain

Project Information:
Name: Samaritan
Number: 11021 Date: 4/13/11

Stream Name: Unnamed Stream

Stream Location (nearest road, structure, etc.) :
Samaritan Hospital
Adjacent Community: Successional shrubland / Disturbed / Developed land

Stream Gradient - gentle ✓
- moderate ___
- steep ___

Bank Width: 2-4'

Stream Width: 6"

Water Depth: 6"-1'

Substrate:
- Bed Rock ___
- Boulder ___
- Cobble ✓
- Gravel ___
- Sand ___
- Silt ___
- Clay ___

Instream Cover:
- Undercut bank ___
- Overhanging vegetation ✓
- Logs/woody debris ___
- Deep pools ___
- Other Grass

Flow:
- Permanent ___
- Intermittent ✓

Photo # See photolog
Flag #'s A-51

Additional Comments: This is representative of all on-site streams

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DATA FORM
ROUTINE WETLAND DETERMINATION
Northcentral and Northeast Regional Supplement

274 North Goodman Street
Rochester, New York 14607

Project Number: 11021 Town: Watertown Sampling Date: 4/13/11
County: Jefferson
Applicant: Gymo State: New York Community: Scrub-Shrub
Data Point ID (i.e. 2W@Wet. G): 1W @ Wet A Nearest Flag to Data Point: A-61

Investigator(s): Nate Butera and Erick Kockard

Landform: Hillside/Seep (Toe of Slope) Depressional Riparian

Landscape Position: Flat Undulating (Sloping) Convex Concave

Are climatic/hydrologic conditions on the site typical for this time of year? (Yes) No

Do Normal Circumstances exist on site? (Yes) No

Is the area a potential problem area? Yes (No)

Is the site significantly disturbed? Yes (No)

Approximate Slope (%): 10%

Hydrology

Primary Indicators (min. - 1 required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imegery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ✓ Marl Deposits (B15)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (min. - 2 required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D-1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopogrephic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations

Inundation Present? Yes ✓ No ___
Saturated Conditions? Yes ✓ No ___

Depth of Water (inches): 6 inches
Depth to Sat. Soil (inches): ___
Depth to Water (inches): ___

Stream Characteristics

Stream type:	Morphology:		Stream Gradient:		Substrate:				Flow:	
Perennial	Bank Width		Gentle	✓	Bed Rock		Sand		No Flow	
✓ Intermittent	Stream Width		Moderate		Boulder		Silt		Gentle	✓
	Water Depth		Steep		Cobble	✓	Clay	✓	Moderate	
					Gravel				Heavy	

Adjacent Community Type: ___

Instream Conditions:

- ✓ Obscurred Banks
- ___ Well Defined Banks
- ___ Eroded/Undercut Bank
- ___ Deep Pools
- ___ Riffles & Pools
- ___ Overhanging Vegetation
- ___ Vegetated Channel
- ___ Other ___

Remarks Intermittent stream associated with wetland complex. Wetland hydrology exists

Project Number: 11021 Sampling Date: 4/13/11

Applicant: Gymo Data Point ID: 1W a wet A

Soil Map Unit: Newstead Silt loam

Soils Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	Matrix %	Redux Features Color (moist)	Frequency[1]	Type[2]	Loc[3]	Texture, Structure, Other
0-14	10YR 2/1		10YR 5/3	MA	RM	M	Silt loam
14+	10YR 3/2		10YR 3/3	C	RM	M	Sandy loam

[1]Frequency: F=Few, MA=Moderately Abundant, C=Common

[2]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[3]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Problematic Hydric Soil Indicators[3]

___ 2 cm Muck (A10)
___ Coast Prairie Redox (A16)
___ 5 cm Mucky Peat or Peat (S3)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Iron-Manganese Masses (F12)
___ Piedmont Floodplain Soils F19)
___ Mesic Spodic (TA6)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Remarks Hydric Soils exist

Wetland Determination

Hydrophytic Vegetation Present? (Yes) No
Hydric Soil Present? (Yes) No
Wetland Hydrology Present? (Yes) No
Is this Sampling Point Within a Wetland? (Yes) No

Hydrologic Connectivity to Off-site Wetlands? Yes No (N/A)
Does Any Part of this Delineated Wetland/Stream Extend Past the Flagged Boundary? (Yes) No N/A
Is this Wetland Potentially Isolated? Yes No (N/A)

Is the wetland mapped in the NWI? Yes (No) If yes, indicate classification _____
Is the wetland a mapped state wetland? Yes (No) If yes, indicate wetland ID _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
Northcentral and Northeast Regional Supplement

274 North Goodman Street
Rochester, New York 14607

Project Number: 11021 Town: Watertown Sampling Date: 4/13/11
County: Jefferson
Applicant: Gymo State: New York Community: Successional Shrubland
Data Point ID (i.e. 2W@Wet. G): 16 @ WetA Nearest Flag to Data Point: A-61

Investigator(s): Nate Butera, Eric Lockard

Landform: Hillside/Seep Toe of Slope Depressional Riparian

Landscape Position: Flat Undulating Sloping Convex Concave

Are climatic/hydrologic conditions on the site typical for this time of year? (Yes) No

Do Normal Circumstances exist on site? (Yes) No

Is the area a potential problem area? Yes (No)

Is the site significantly disturbed? Yes (No)

Approximate Slope (%): _____

Hydrology

Primary Indicators (min. - 1 required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (min. - 2 required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D-1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations

Inundation Present? Yes ____ No ____
Saturated Conditions? Yes ____ No ____

Depth of Water (inches): _____
Depth to Sat. Soil (inches): _____
Depth to Water (inches): _____

Stream Characteristics

Stream type:	Morphology:		Stream Gradient:		Substrate:				Flow:	
___ Perennial	Bank Width	_____	Gentle	_____	Bed Rock	_____	Sand	_____	No Flow	_____
___ Intermittent	Stream Width	_____	Moderate	_____	Boulder	_____	Silt	_____	Gentle	_____
	Water Depth	_____	Steep	_____	Cobble	_____	Clay	_____	Moderate	_____
					Gravel	_____			Heavy	_____

Adjacent Community Type: _____

Instream Conditions:

___ Obscurred Banks
___ Well Defined Banks
___ Eroded/Undercut Bank
___ Deep Pools
___ Riffles & Pools
___ Overhanging Vegetation
___ Vegetated Channel
___ Other _____

Remarks Upland datapoint

Project Number: 11021

Applicant: Gymo

Sampling Date: 4/13/11

Data Point ID: 1U @ wet A

Soil Map Unit: Benson - Galoo complex

Soils

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	Matrix %	Redux Features Color (moist)	Frequency[1]	Type[2]	Loc[3]	Texture, Structure, Other
0-12	10yR 5/3		—	—	—	—	Silt loam
13+	10yR 5/4		—	—	—	—	Silt loam

[1]Frequency: F=Few, MA=Moderately Abundant, C=Common

[2]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[3]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Problematic Hydric Soil Indicators[3]

___ 2 cm Muck (A10)
___ Coast Prairie Redox (A16)
___ 5 cm Mucky Peat or Peat (S3)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Iron-Manganese Masses (F12)
___ Piedmont Floodplain Soils F19)
___ Mesic Spodic (TA6)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in remarks)

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Remarks Upland, Hydric Soils do not exist

Wetland Determination

Hydrophytic Vegetation Present? Yes (No)
Hydric Soil Present? Yes (No)
Wetland Hydrology Present? Yes (No)
Is this Sampling Point Within a Wetland? Yes (No)

Hydrologic Connectivity to Off-site Wetlands? Yes No (N/A)
Does Any Part of this Delineated Wetland/Stream Extend Past the Flagged Boundary? Yes No (N/A)
Is this Wetland Potentially Isolated? Yes No (N/A)

Is the wetland mapped in the NWI? Yes (No) If yes, indicate classification _____
Is the wetland a mapped state wetland? Yes (No) If yes, indicate wetland ID _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
Northcentral and Northeast Regional Supplement

274 North Goodman Street
Rochester, New York 14607

Project Number: 11021 Town: Watertown Sampling Date: 4/13/11
County: Jefferson
Applicant: Gymo State: New York Community: Emergent
Data Point ID (i.e. 2W@Wet. G): 2W@WetA Nearest Flag to Data Point: A-40

Investigator(s): Nate Barbera

Landform: (Hillside/Seep) Toe of Slope Depressional Riparian

Landscape Position: (Flat) Undulating Sloping Convex Concave

Are climatic/hydrologic conditions on the site typical for this time of year? (Yes) No

Do Normal Circumstances exist on site? Yes (No)

Is the area a potential problem area? Yes (No)

Is the site significantly disturbed? (Yes) No

Approximate Slope (%): 3

Hydrology

Primary Indicators (min. - 1 required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (min. - 2 required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D-1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations

Inundation Present? Yes ✓ No ___
Saturated Conditions? Yes ✓ No ___

Depth of Water (inches): 3 inches
Depth to Sat. Soil (inches): ___
Depth to Water (inches): ___

Stream Characteristics

Stream type: Perennial; ✓ Intermittent

Morphology: Bank Width 1'; Stream Width 6"; Water Depth 10"

Stream Gradient: Gentle ___; Moderate ___; Steep ___

Substrate: Bed Rock ✓; Boulder ___; Cobble ___; Gravel ___; Sand ___; Silt ___; Clay ___

Flow: No Flow ___; Gentle ✓; Moderate ___; Heavy ___

Adjacent Community Type: ___

Instream Conditions:

- ✓ Obscurred Banks
- ___ Well Defined Banks
- ___ Eroded/Undercut Bank
- ___ Deep Pools
- ___ Riffles & Pools
- ___ Overhanging Vegetation
- ___ Vegetated Channel
- ___ Other ___

Remarks

Emergent Wetland / Wetland hydrology is from wetland complex flowing into wetland from 2 different areas (intermittent stream). Water disperses over bedrock (not channelized, no vegetation) before entering a ditch/culvert and emergent area. Water also observed coming out of ground near Flag A-40.

Project Number: 11021

Applicant: Gayand

Sampling Date: 4/13/11

Data Point ID: D.W @ Wet A

Soil Map Unit: Urban land

Soils

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	Matrix %	Redux Features Color (moist)	Frequency[1]	Type[2]	Loc[3]	Texture, Structure, Other
0-1	Gley 2 5/5PB		—	✓	—	—	Silt Loam

[1]Frequency: F=Few, MA=Moderately Abundant, C=Common

[2]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[3]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
✓ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Problematic Hydric Soil Indicators[3]

___ 2 cm Muck (A10)
___ Coast Prairie Redox (A16)
___ 5 cm Mucky Peat or Peat (S3)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Iron-Manganese Masses (F12)
___ Piedmont Floodplain Soils F19)
___ Mesic Spodic (TA6)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in remarks)

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Remarks Lack of soil because of exposed bedrock

Hydric Soils.

Wetland Determination

Hydrophytic Vegetation Present? (Yes) No

Hydric Soil Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No

Hydrologic Connectivity to Off-site Wetlands? Yes No (N/A)

Does Any Part of this Delineated Wetland/Stream Extend Past the Flagged Boundary? (Yes) No N/A

Is this Wetland Potentially Isolated? Yes No (N/A)

Is the wetland mapped in the NWI? Yes (No) If yes, indicate classification _____

Is the wetland a mapped state wetland? Yes (No) If yes, indicate wetland ID _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
Northcentral and Northeast Regional Supplement

274 North Goodman Street
Rochester, New York 14607

Project Number: 11021 Town: Watertown Sampling Date: 4/13/11
County: _____
Applicant: GymO State: New York Community: Disturbed Landfill

Data Point ID (i.e. 2W@Wet. G): 2U @ Wet A Nearest Flag to Data Point: A.40

Investigator(s): Nate Butera, Eric Lockard

Landform: **Hillside/Seep** **Toe of Slope** **Depressional** **Riparian**

Landscape Position: **Flat** **Undulating** **Sloping** **Convex** **Concave**

Are climatic/hydrologic conditions on the site typical for this time of year? **Yes** **No**

Do Normal Circumstances exist on site? **Yes** **No**

Is the area a potential problem area? **Yes** **No**

Is the site significantly disturbed? **Yes** **No**

Approximate Slope (%): 0

Hydrology

Primary Indicators (min. - 1 required; check all thet apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain In Remarks)

Secondary Indicators (min. - 2 required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D-1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations

Inundation Present? Yes ____ No ____
Saturated Conditions? Yes ____ No ____

Depth of Water (inches): _____
Depth to Sat. Soil (inches): _____
Depth to Water (inches): _____

Stream Characteristics

Stream type:
___ Perennial
___ Intermittent

Morphology:
Bank Width _____
Stream Width _____
Water Depth _____

Stream Gradient:
Gentle _____
Moderate _____
Steep _____

Substrate:
Bed Rock _____
Boulder _____
Cobble _____
Gravel _____
Sand _____
Silt _____
Clay _____

Flow:
No Flow _____
Gentle _____
Moderate _____
Heavy _____

Adjacent Community Type: _____

Instream Conditions:
___ Obscurred Banks
___ Well Defined Banks
___ Eroded/Undercut Bank
___ Deep Pools
___ Riffles & Pools
___ Overhanging Vegetation
___ Vegetated Channel
___ Other _____

Remarks Upland Area

Project Number: 11021

Applicant: Gymo

Sampling Date: 4/13/11

Data Point ID: 21/2 wet 1

Soil Map Unit: Urban land

Soils Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	Matrix %	Redux Features Color (moist)	Frequency[1]	Type[2]	Loc[3]	Texture, Structure, Other
0-12	10YR 5/5		—	—	—	—	Gravel

[1]Frequency: F=Few, MA=Moderately Abundant, C=Common

[2]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[3]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Problematic Hydric Soil Indicators[3]

___ 2 cm Muck (A10)
___ Coast Prairie Redox (A16)
___ 5 cm Mucky Peat or Peat (S3)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8)
___ Thin Dark Surface (S9)
___ Iron-Manganese Masses (F12)
___ Piedmont Floodplain Soils F19)
___ Mesic Spodic (TA6)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in remarks)

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Remarks Upland - Heavily disturbed - Fill Soil
Can't pass 12 inches due to rock

Wetland Determination

Hydrophytic Vegetation Present? Yes (No)
Hydric Soil Present? Yes (No)
Wetland Hydrology Present? Yes (No)
Is this Sampling Point Within a Wetland? Yes (No)

Hydrologic Connectivity to Off-site Wetlands? Yes No (N/A)
Does Any Part of this Delineated Wetland/Stream Extend Past the Flagged Boundary? Yes No (N/A)
Is this Wetland Potentially Isolated? Yes No (N/A)

Is the wetland mapped in the NWI? Yes (No) If yes, indicate classification _____
Is the wetland a mapped state wetland? Yes (No) If yes, indicate wetland ID _____

APPENDIX C

Photo Documentation

PHOTO 01:

Intermittent stream channel located in the northern portion of Wetland A.

PHOTO 02:

Intermittent stream channel located in the central portion of Wetland A.

PHOTO 03:

Representative emergent marsh wetland community surrounded by a scrub-shrub wetland community located in the northeastern portion of Wetland A.

PHOTO 04:

Representative scrub-shrub and emergent marsh wetland community located in the central portion of Wetland A.

PHOTO 05:

Representative upland within the Project site.

PHOTO 06:

Intermittent stream/ditch immediately adjacent to the Samaritan Hospital parking lot.

PHOTO 07:

Rock outcrop adjacent to the emergent area in Wetland A.

PHOTO 08:

Representative emergent wetland area located in the western portion of Wetland A.

PHOTO 09:

Ponded area located in the western portion of Wetland A.

PHOTO 10:

Representative photograph of the Project site.