

**WETLAND DELINEATION REPORT
VARNA APARTMENTS**

**TOWN OF DRYDEN
TOMPKINS COUNTY, NEW YORK**

Prepared for:

**HUNT ENGINEERS ARCHITECTS AND SURVEYORS
4 Commercial Street, Suite 300
Rochester, NY 14614-1008**

Prepared by:

**TERRESTRIAL ENVIRONMENTAL SPECIALISTS, INC.
23 County Route 6, Suite A
Phoenix, New York 13135**

July 2018

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 BACKGROUND INFORMATION REVIEW	1
3.0 METHODS	1
4.0 RESULTS	2
4.1 Site Description.....	2
4.2 Site Ecology	3
4.3 Wetland/Water Descriptions.....	4
5.0 SUMMARY	5
6.0 REFERENCES	7

FIGURES

APPENDIX A – Photographs

APPENDIX B – Field Data Sheets

LIST OF FIGURES

(all figures follow text)

- Figure 1.** NYS DOT Topographic Map
- Figure 2.** NYS Freshwater Wetlands Map
- Figure 3.** National Wetlands Inventory Map
- Figure 4.** Soil Survey Map
- Figure 5.** Surface Water Classification Map
- Figure 6.** Aerial Photograph of Site
- Figure 7.** Wetland Location Map
- Figure 8.** Wetland Boundaries with Sample Plot and Photograph Locations

1.0 INTRODUCTION

Terrestrial Environmental Specialists, Inc. (TES) was contracted by Hunt Engineers Architects and Surveyors to perform a wetland delineation in the Town of Dryden, Tompkins County, New York, for a proposed apartment development project. The property is approximately 16.82 acres (separated into 3 parcels) in size and is located on NYS Route 366 (Dryden Road) in the Town of Dryden. The largest parcel is on the southern side of Dryden Road and is approximately 16 acres. The smaller parcels are located on the northern side of Dryden Road. The western parcel is 0.64 acre in size and the eastern parcel is 0.18 acre in size. The site is located within the hamlet of Varna. TES conducted this wetland delineation on May 7, 2018.

The wetland delineation was conducted following the methods outlined in the U.S. Army Corps of Engineers (Corps) Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual North Central and Northeast Region (U.S. Army Corps of Engineers, 2012).

This report includes a review of the background information, a methods section, results, which include site ecology, wetlands, and a summary of our findings.

2.0 BACKGROUND INFORMATION REVIEW

Prior to the field investigation at the site, TES assembled and reviewed available background information. This information included:

- the New York State Department of Transportation (NYSDOT) Topographic Map (Ithaca East Quadrangle) (Figure 1);
- the New York State Department of Environmental Conservation (NYSDEC) NYS Freshwater Wetlands Map (Figure 2);
- the National Wetlands Inventory (NWI) Map (Figure 3) published by the United States Fish and Wildlife Service (USFWS);
- the Soil Survey Map (Figure 4) prepared by the Natural Resources Conservation Service (NRCS);
- the Surface Water Classification Map (Figure 5) published by the NYSDEC; and
- a 2015 NYSGIS Clearinghouse aerial photograph (Figure 6).

The background resource maps were developed into figures with the site outlined.

3.0 METHODS

TES performed a detailed field review for wetlands on May 7, 2018. Wetland boundaries were delineated using the federal criteria for vegetation, soils, and hydrology (Environmental Laboratory 1987, U.S. Army Corps of Engineers 2012, Lichvar, Banks, *et al.* 2016, and USDA NRCS 2016).

Surveyor's ribbons were placed along the wetland boundaries based on observations of vegetation, soils, and hydrology conditions. Each wetland flag was labeled with a letter identifier of the wetland and was numbered consecutively (*e.g.* A-1, A-2, A-3, *etc.*). TES

surveyed the flagged wetland boundaries and Hunt Engineers Architects and Surveyors determined the acreages.

Vegetation data was collected in all of the sample plots. Ocular estimates of the percent (%) areal cover by plant species for each vegetation layer (tree, shrub, woody vine, and herbaceous layers) were recorded. The sample plots varied in size by the vegetation layer sampled. The sizes were a 30-foot radius for the trees and woody vines, a 15-foot radius for the shrubs, and a 5-foot radius for the herbaceous layer.

The presence of wetland vegetation was determined when more than 50% of the dominant species in a sample plot had an indicator status of obligate (OBL), facultative-wet (FACW), or facultative (FAC). The dominant species for each layer in a plot were determined by ranking the species in decreasing order of percent cover and recording those species which, when cumulatively totaled, immediately exceeded 50% of the total cover of that layer. Additionally, any plant species that comprised 20% or more of the total cover for each layer was considered to be a dominant species.

Scientific nomenclature for plant species generally follows *A Checklist of New York State Plants* (Mitchell and Tucker 1997) and *Catalogue of the Vascular Plants of New York State* (Werier, 2017). The indicator status for each dominant plant species was determined using the *North American Digital Flora: National Wetland Plant List, version 2.4.0* (Lichvar and Kartesz 2016). Species not listed were considered to be upland. Principal technical guides to determine species identification were *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (Gleason and Cronquist 1991), *New Britton and Brown Illustrated Flora* (Gleason 1952), and *Gray's Manual of Botany* (Fernald 1950).

Soil and hydrology data were collected in soil test pits and soil borer holes to a minimum depth of 18 inches within each sample plot. Soil characteristics were noted along the soil profile at the depth specified by the Corps criteria (U.S. Army Corps of Engineers 2012). Procedures for identifying hydric soils as outlined in the *Field Indicators of Hydric Soils in the United States* (USDA NRCS 2016) were also followed. Soil colors were determined by using the Munsell color chart. Primary and secondary indicators of hydrology were also noted at each sample plot.

4.0 RESULTS

The following section of the report provides a description of the project setting and the delineated wetlands.

4.1 Site Description

The New York State Department of Transportation (NYSDOT) topographic map (Figure 1) shows that the site is located along Dryden Road in the Town of Dryden, Tomkins County, New York. The project site is made up of three different parcels approximately 16.82 acres in total size. The largest parcel is on the southern side of Dryden Road and is approximately 16 acres. The eastern border of the largest parcel runs along an old rail line. The smaller parcels are located on the northern side of Dryden Road. The western parcel is 0.64 acre in size and the eastern parcel is 0.18 acre in size. Both of the smaller parcels are residential lots although the

eastern lot is abandoned. Elevation at the site ranges from 1000 feet above mean sea level (amsl) to 920 amsl. The site has a north-western aspect.

The NYS Freshwater Wetlands map (Figure 2) shows that there are no mapped freshwaters wetlands on site or in the vicinity.

The National Wetlands Inventory (NWI) map (Figure 3) prepared by the United States Fish and Wildlife Service (USFWS) shows no mapped wetlands on the site. The NWI map is intended as an advisory map and is not intended as a map of regulated wetlands.

The Soil Survey map (Figure 4) obtained from the Tompkins County Soil Survey shows that the site contains seven (7) mapped soil types. The soils types, drainage class, and hydric rating are shown in Table 1 below.

Table 1. Soil Type with Drainage Class and Hydric Rating

Soil Type	Drainage Class	Hydric Rating (%)
Ab - Alluvial Land	Poorly drained	55
BtF - Bath, Valois, and Lansing soils, 35 to 60 percent slopes	Well drained	0
DgB - Darien gravelly silt loam, 2 to 8 percent slopes	Somewhat poorly drained	10
HdA - Howard gravelly loam, 0 to 5 percent slopes	Well drained	0
HsD3 - Hudson silty clay loam, 12 to 20 percent slopes, eroded	Moderately well drained	0
OcC3 - Ovid silty clay loam, 6 to 12 percent slopes, eroded	Moderately well drained	10
RkB - Rhinebeck silt loam, 2 to 6 percent slopes	Somewhat poorly drained	10

The Tompkins County Soil Survey map shows an intermittent drainage channel on the project site. Alluvial land (Ab) is associated with these intermittent drainage swales. Alluvial land is considered to be a hydric soil unit.

The Surface Water Classification map (Figure 5) prepared by the NYSDEC shows no mapped surface waters on site.

The aerial photograph of the project site (Figure 6) shows that the site contains open field areas, deciduous forest upland, scrub-shrub upland, a pond, emergent wetland, and several residential structures. The aerial shows piles of debris scattered throughout the largest parcel.

4.2 Site Ecology

The study area consists of open field areas, scrub-shrub upland, deciduous forest uplands, and several residential structures.

The open field areas were located in the more southern parts of the project site. Herbaceous species included wild carrot (*Daucus carota*) (UPL), wild strawberry (*Fragaria vesca*) (UPL), bedstraw (*Galium mollugo*) (FACU), and common dandelion (*Taraxacum officinale*) (FACU).

Much of the site consisted of deciduous forest uplands. Tree species included black cherry (*Prunus serotina*) (FACU), white ash (*Fraxinus americana*) (FACU), and boxelder (*Acer negundo*) (FAC).

Throughout the site, there are scattered areas of scrub-shrub upland. Commonly seen species in the shrub layers were honeysuckle (*Lonicera morrowii*) (FACU), and European buckthorn (*Rhamnus cathartica*) (FAC).

The remainder of the site contained wetlands that will be described in the next section of the report.

4.3 Wetland/Water Descriptions

TES delineated one (1) wetland and two (2) intermittent streams. These wetland/waters are shown on Figure 7. These wetlands/waters are identified as Stream A, Wetland B, and Stream C. Each wetland/water delineated on site has a surface water connection to each other. Field data sheets and photographs are provided in Appendix A and B respectively. Plot and photograph locations are shown on Figure 8.

Stream A

TES delineated Stream A in the southern portion of the site (Figure 6). Stream A is approximately 340 feet long and flows east to west originating off site to the east. Stream A has surface water connections to wetland B and Stream C.

Stream A had a width that varied from 2 feet to 5 ft. The substrate was composed of silt and cobble. The water depth was on average was 5 inches deep. There was no vegetation growing in the stream. Stream A was determined to be an intermittent stream.

Stream A is associated with Fall Creek which is part of a tributary system of Cayuga Lake. The Corps would have jurisdiction over Stream A.

Wetland B

TES delineated Wetland B in the southern portion of the project site (Figure 6). Wetland B is 0.5 acres in size and is noted as a PEM cover type. Wetland B is partially emergent wetland while the rest of it is a pond.

Wetland B was dominated by broadleaf cattail (*Typha latifolia*) (OBL) and common reed (*Phragmites australis*) (FACW).

Soils in Wetland B are mapped as Alluvial land. Soil samples fit the NRCS F1 indicator for Loamy Mucky Mineral. Wetland hydrology was indicated by Surface Water (A1), High Water Table (A2), Saturation (A3), Drainage Patterns (B10), and FAC-Neutral Test (D5).

Wetland B meets the Corps three-parameter criteria (*i.e.* dominated by wetland vegetation, containing hydric soils, and having sufficient wetland hydrologic factors) for identifying and delineating wetlands. Wetland B has surface water connections associated with Stream A and Stream C that is part of a tributary system to Cayuga Lake. Stream A flows into Wetland B and Wetland B outlets into Stream C. The Corps would have jurisdiction over these areas.

Stream C

TES delineated Stream C in the southern portion of the site (Figure 6). Stream C is approximately 230 feet long and flows east to west extending off site to the west. Stream C has surface water connections with Wetland B and Stream A.

Stream C had a width that varied from 2 feet to 6 ft. The substrate was composed of silt and cobble. The water depth was on average was 4 inches deep. There was no vegetation growing in the stream. Stream C was determined to be an intermittent stream.

Stream C flows into Fall Creek off the project site which is part of a tributary system of Cayuga Lake. The Corps would have jurisdiction over Stream C.

5.0 SUMMARY

Terrestrial Environmental Specialists, Inc. was contracted by Hunt Engineers Architects and Surveyors to delineate wetlands on the Varna Apartments site. The 16-acre site is located along Dryden Road in the Town of Dryden, Tompkins County, New York. TES conducted this wetland delineation on May 7, 2018.

TES collected and reviewed available background information and maps, including a topographic map, wetland maps, a soils map and descriptions, a surface water classification map, and a recent aerial photograph to locate potential wetlands on the site and to identify current features and conditions.

The project site consists of open field areas, deciduous forest uplands, scrub-shrub uplands, and residential structures. There are no mapped NYSDEC freshwater wetlands or mapped surface waters on site.

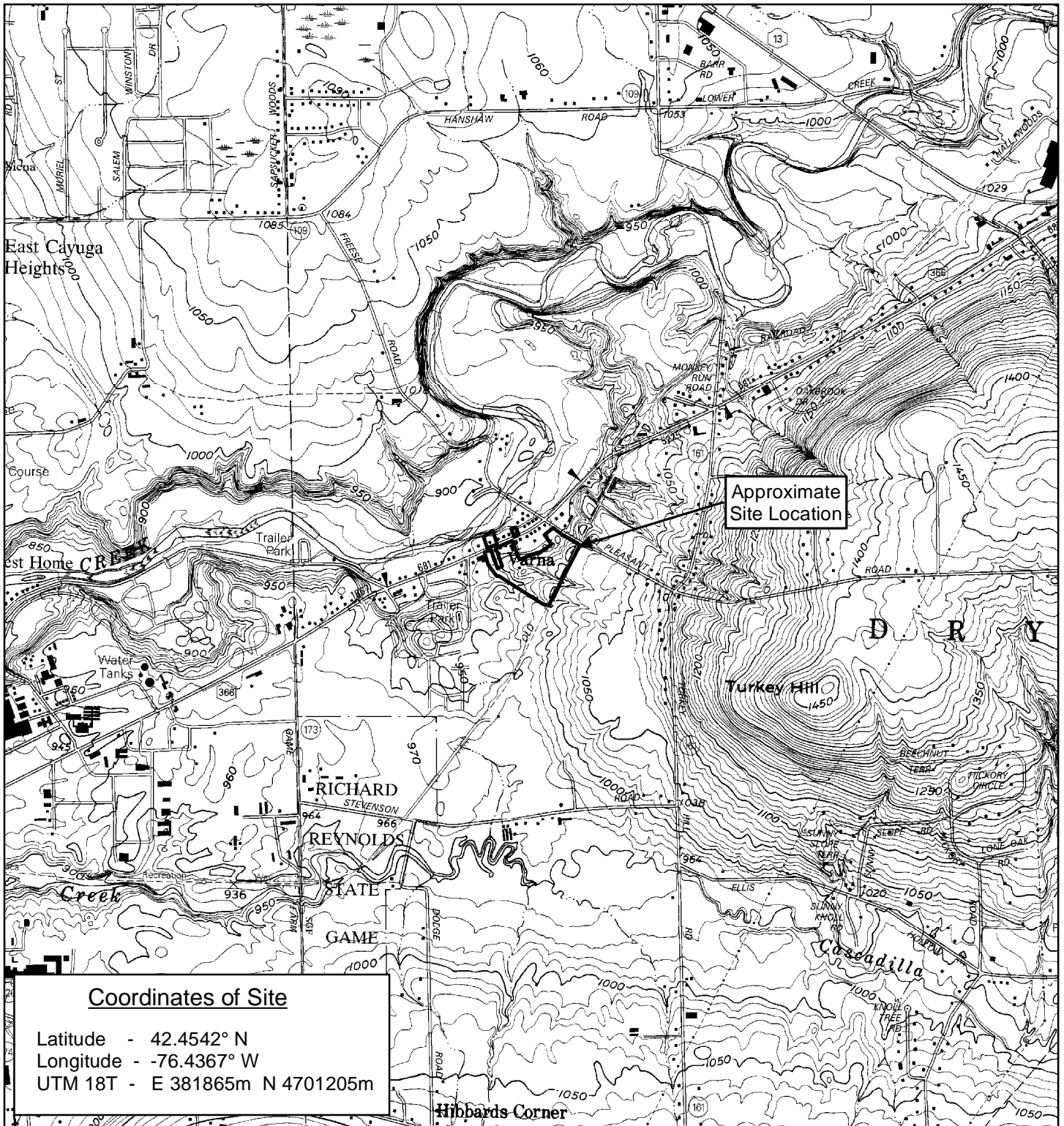
TES delineated one (1) wetland and two (2) intermittent streams on the project site. Stream A (340 feet) is an intermittent stream located in the southern portion of the site flowing east to west. Stream A has a surface water connection with Wetland B and Stream C. Wetland B (0.5 acre) is a PEM wetland located in the southern portion of the site. Wetland B has surface water connections with both Stream A and Stream C. Stream C (230 feet) is an intermittent stream located in the southern portion of the site flowing east to west. Stream C has a surface water connection with Wetland B and Stream A.

Stream A, Wetland B, and Stream C all have surface water connection to Fall Creek and are therefore part of a tributary system of Cayuga Lake. The Corps would have jurisdiction over all these areas.

6.0 REFERENCES

- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Fernald, M. L. 1950. Gray's Manual of Botany, 8th Edition. American Book Company, New York, NY.
- Gleason, H. A. 1952. The New Britton and Brown Illustrated Flora of the United States and Adjacent Canada. Hafner Press, New York, NY (3 vols).
- Gleason, H. A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx NY.
- Robert W. Lichvar, D. L. Banks, W. N., G. Kirchner, and N.C. Melvin. 2016. Northcentral and Northeast 2016 Regional Wetland Plant List. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016 30: 1-17 published 28 April 2016.
- Mitchell, R. S. and G. C. Tucker. 1997. A Revised Checklist of New York State Plants. The State Education Department, NYS Museum Bulletin No. 490, Albany, NY.
- United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Department of Agriculture Natural Resource Conservation Service. 2016. *Field Indicators of Hydric Soils in the United States*, Version 8.0. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- United States Department of Agriculture Natural Resource Conservation Service. 2012. List of Hydric Soils: National List; All States. Available online at: soils.usda.gov/use/hydric.
- United States Department of Agriculture Natural Resource Conservation Service. Soil Survey for Tompkins County, New York. Available online at: <https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=NY>. Accessed May 2018.
- United States Department of Homeland Security FEMA Flood Map Service Center. Flood Rate Insurance Panels. Available online at: <https://msc.fema.gov/portal/advanceSearch>. Accessed May 2018.
- Werier, D. 2017. Catalogue of the Vascular Plants of New York State. Memoirs of the Torrey Botanical Society: Volume 27. The Torrey Botanical Society. Bronx, New York.

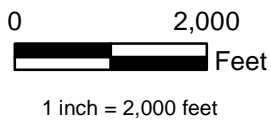
FIGURES

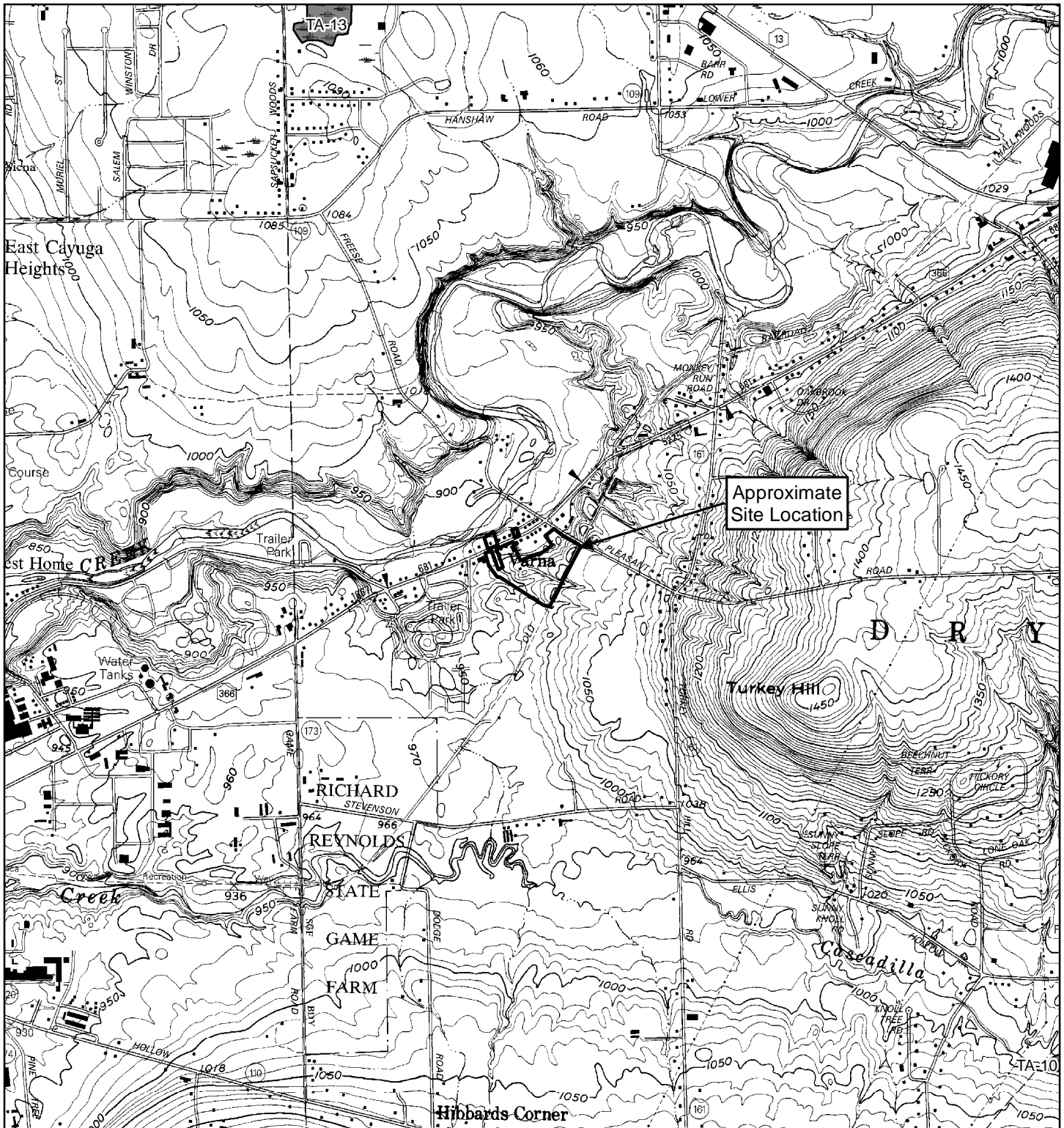


**Figure 1. NYS DOT
Topographic Map**

Site Location

Ithaca East Quadrangle
1996





Approximate Site Location

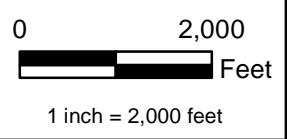
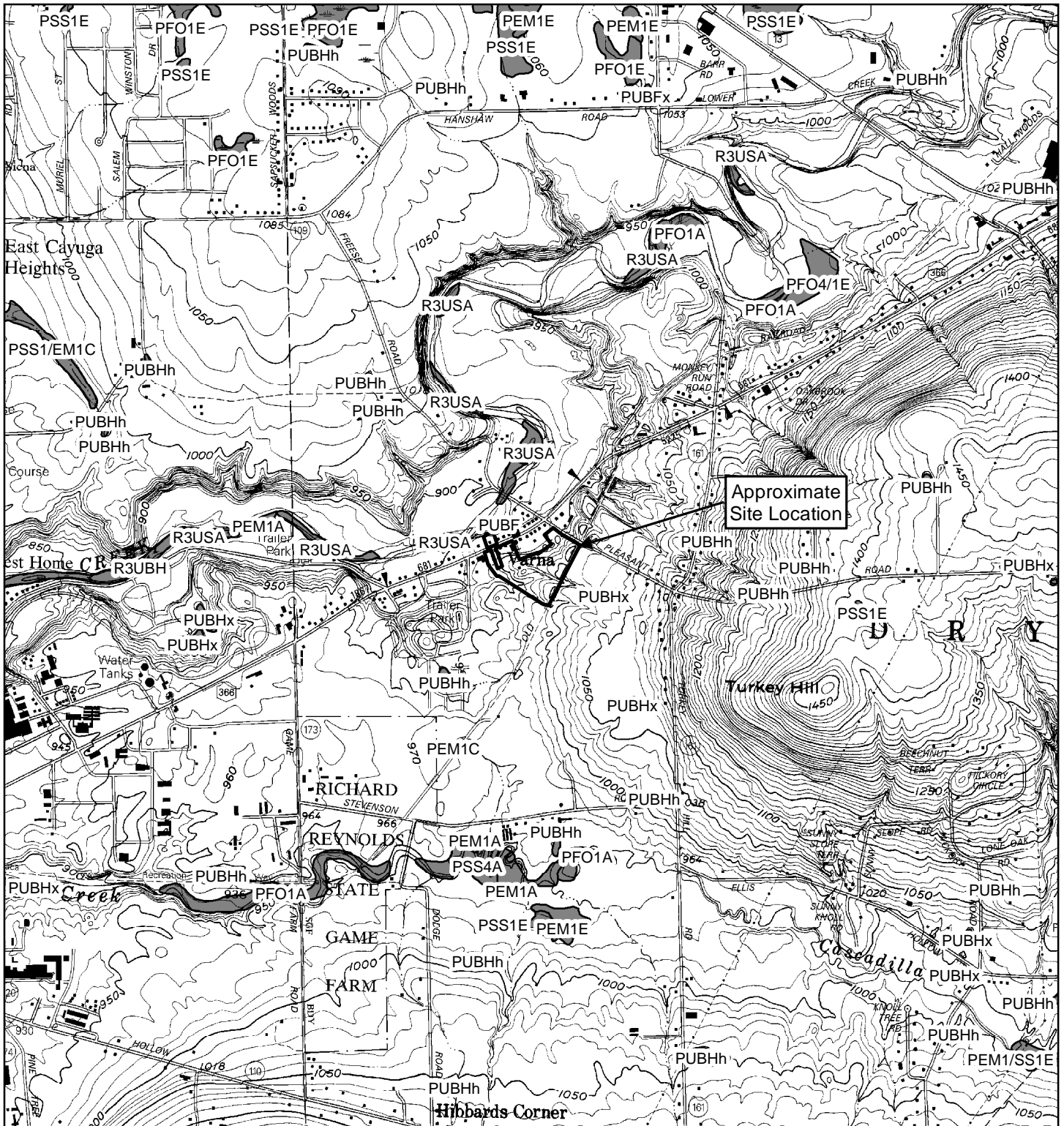


Figure 2. NYS Freshwater Wetlands Map

NYS Department of Environmental Conservation
cugir.mannlib.cornell.edu
 Tompkins County
 1999



Approximate Site Location

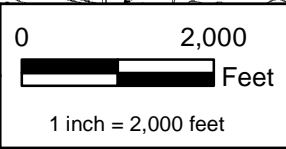
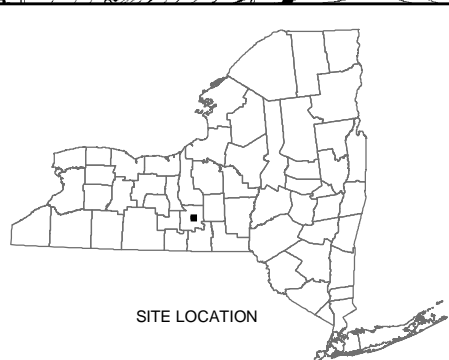


Figure 3. National Wetlands Inventory Map

U.S. Fish & Wildlife Service
www.fws.gov/nwi

Ithaca East Quadrangle
2014

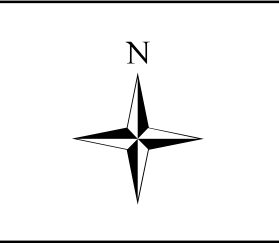
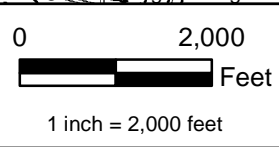
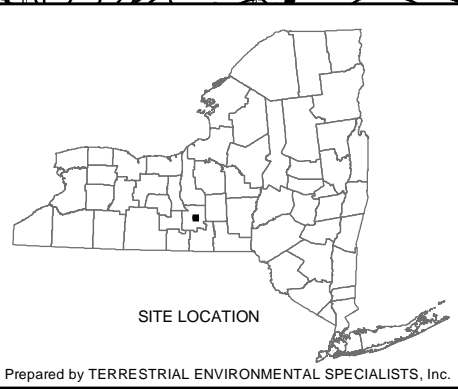
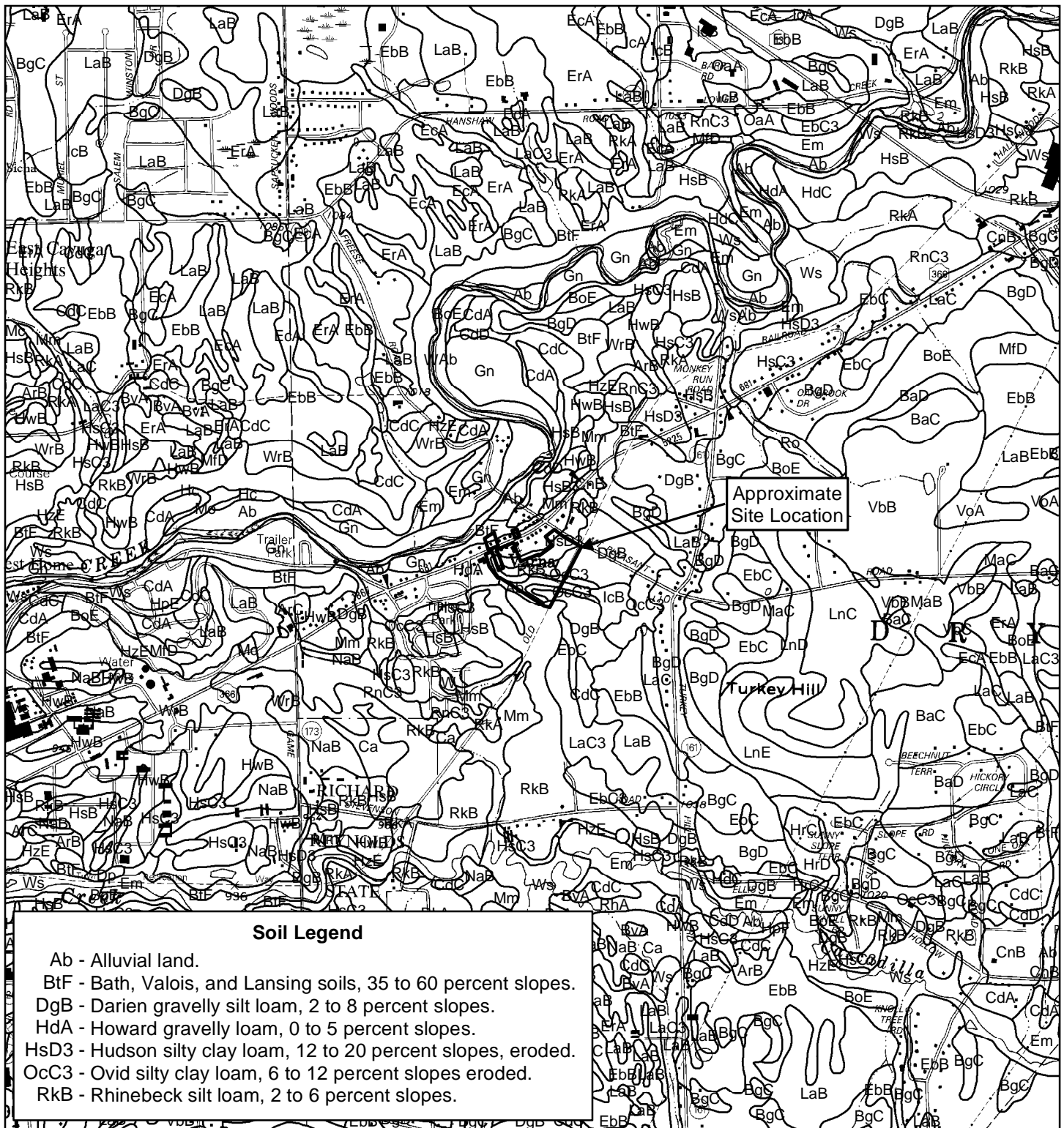
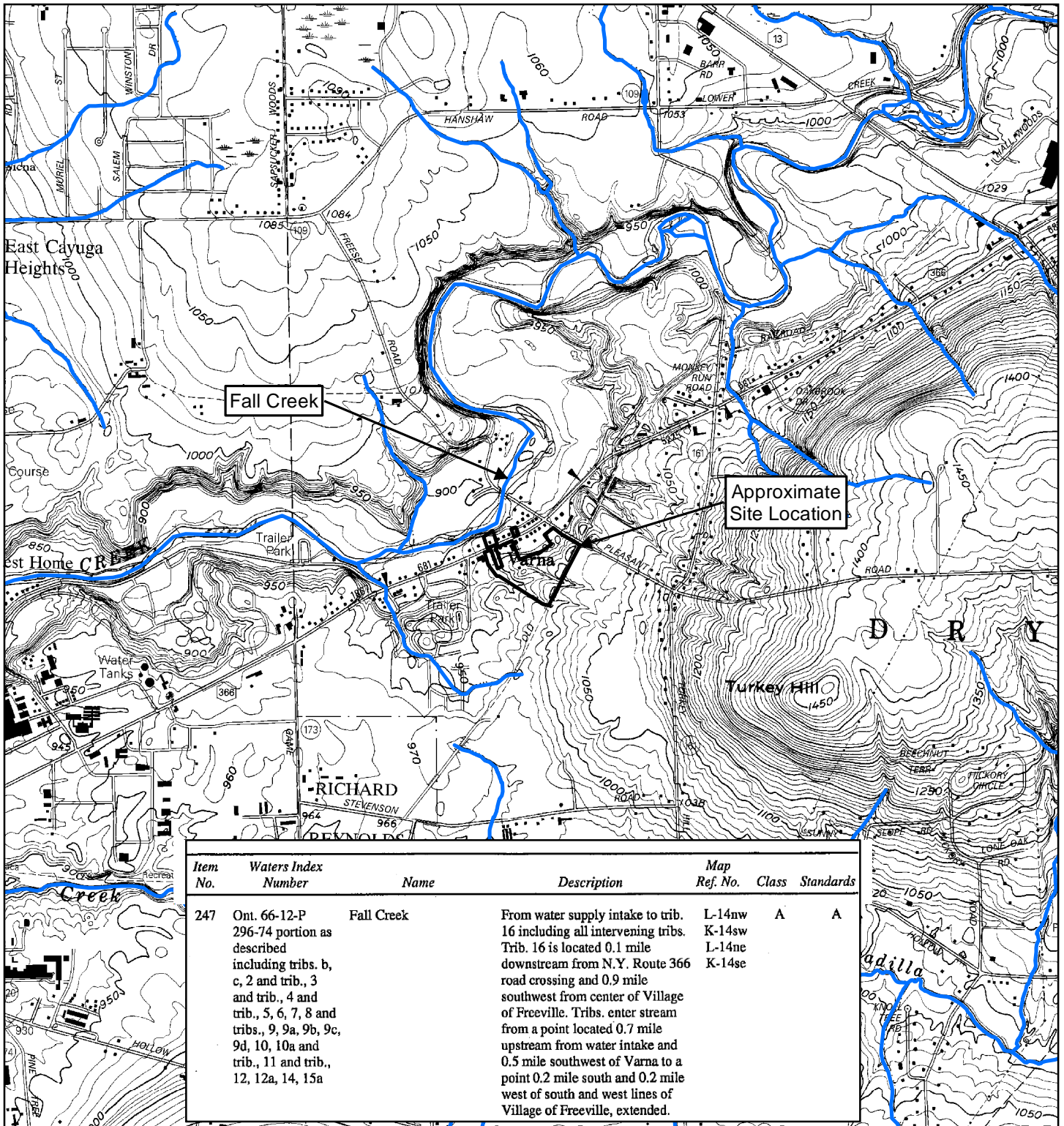
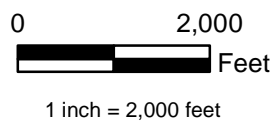


Figure 4. Soil Survey Map
 Natural Resources Conservation Service
 Soil Survey Geographic Database
 (NRCS SSURGO)
 Tompkins County Soil Survey
 2013



Title 6 NYCRR, Chapter X
Article 14, Part 898.4 (1996)

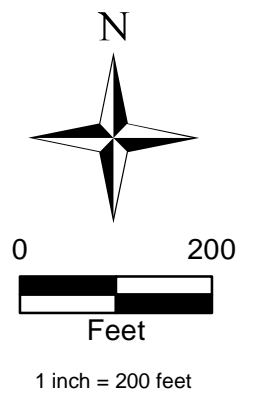
Map L-14nw



**Figure 5. Surface Water
Classification Map**

NYS DEC

Ithaca East Quadrangle

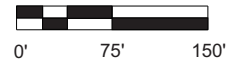
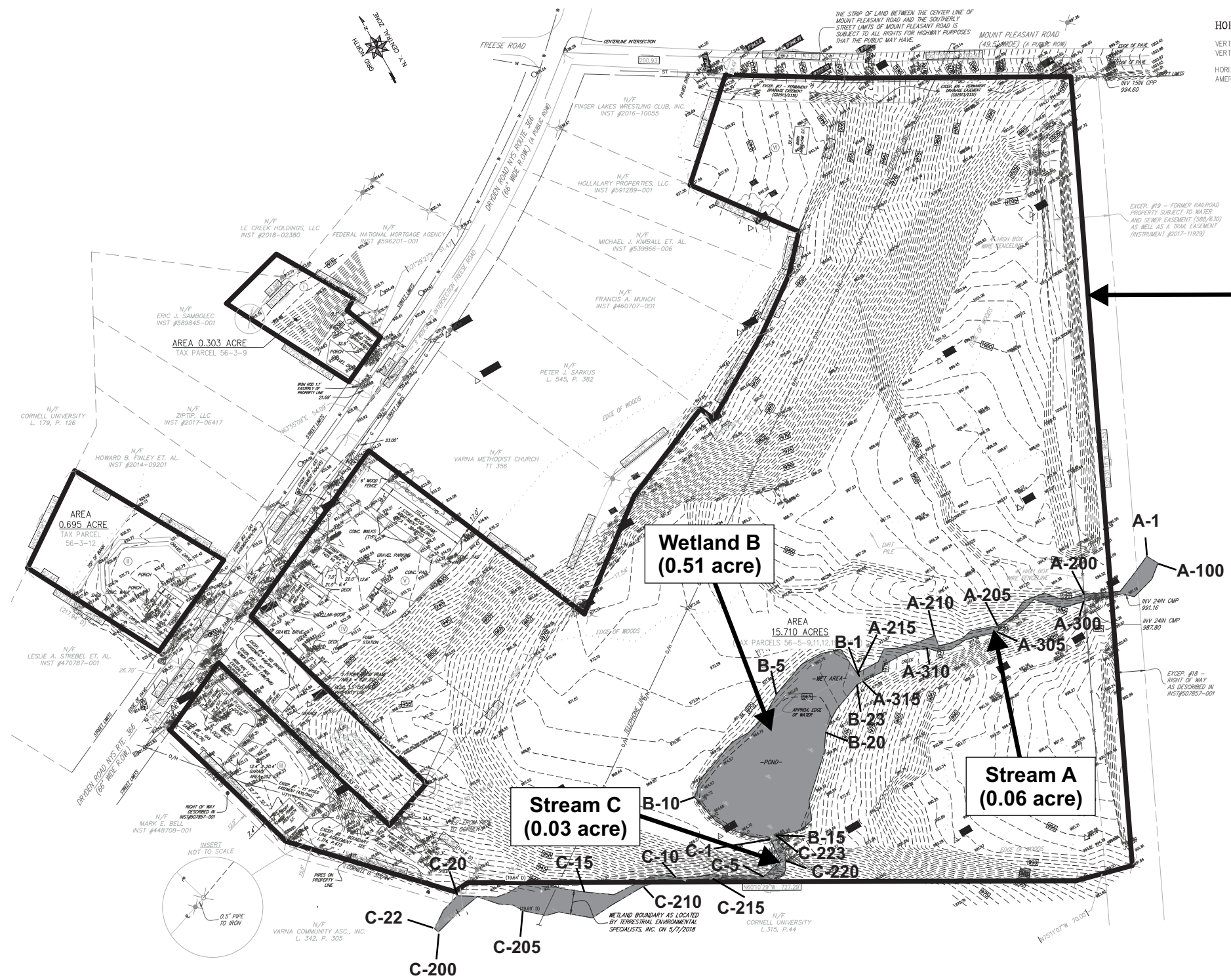


Aerial Photograph Obtained
from NYS GIS Clearinghouse
2015

Figure Prepared by
Terrestrial Environmental
Specialists, Inc.

Figure 6.
**Aerial Photograph
of Site**

Wetlands delineated by TES, Inc. on May 7, 2018.
 Wetlands surveyed by Hunt Engineers & Surveyors.



APPROXIMATE SCALE IN FEET

Approximate Study Area

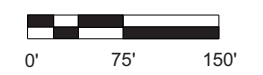
Figure Prepared by
 Terrestrial Environmental
 Specialists, Inc.

Base Map Provided by
 Hunt Engineers Architects
 and Surveyors

Figure 7.
 Wetland Survey Map

Legend

- A-1W - Plot Location
- 1 → - Photograph Location and Direction

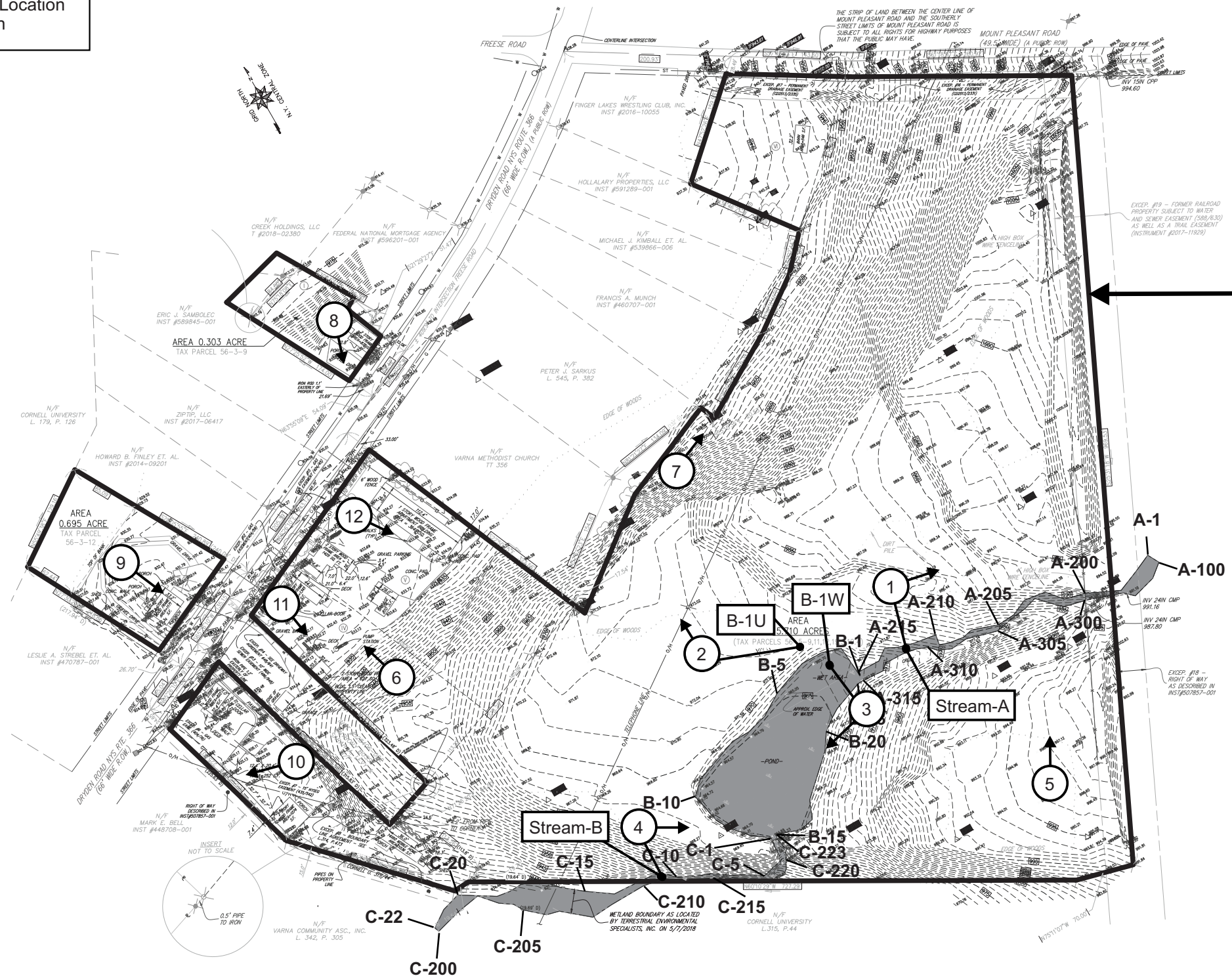


APPROXIMATE SCALE IN FEET

Figure Prepared by
Terrestrial Environmental
Specialists, Inc.

Base Map Provided by
Hunt Engineers Architects
and Surveyors

Figure 8.
**Wetland Boundaries with
Sample Plot Locations
and
Photograph Locations
and Directions**



**Approximate
Study Area**

**Wetlands delineated by TES, Inc. on May 7, 2018.
Wetlands surveyed by Hunt Engineers & Surveyors.**

APPENDIX A – Photographs



Photo 1. Plot Stream-A photo facing east.



Photo 2. Plot B-1U photo facing north.



Photo 3. Plot B-1W photo facing west.



Photo 4. Plot Stream-C photo facing south-east.



Photo 5. Upland area photo facing north-east.



Photo 6. Upland area photo facing north-west.



Photo 7. Upland area photo facing east.



Photo 8. North-eastern residential parcel photo facing south-west.



Photo 9. North-western parcel photo facing south.



Photo 10. North-western portion of southern parcel facing west.



Photo 11. Residential area photo facing south.

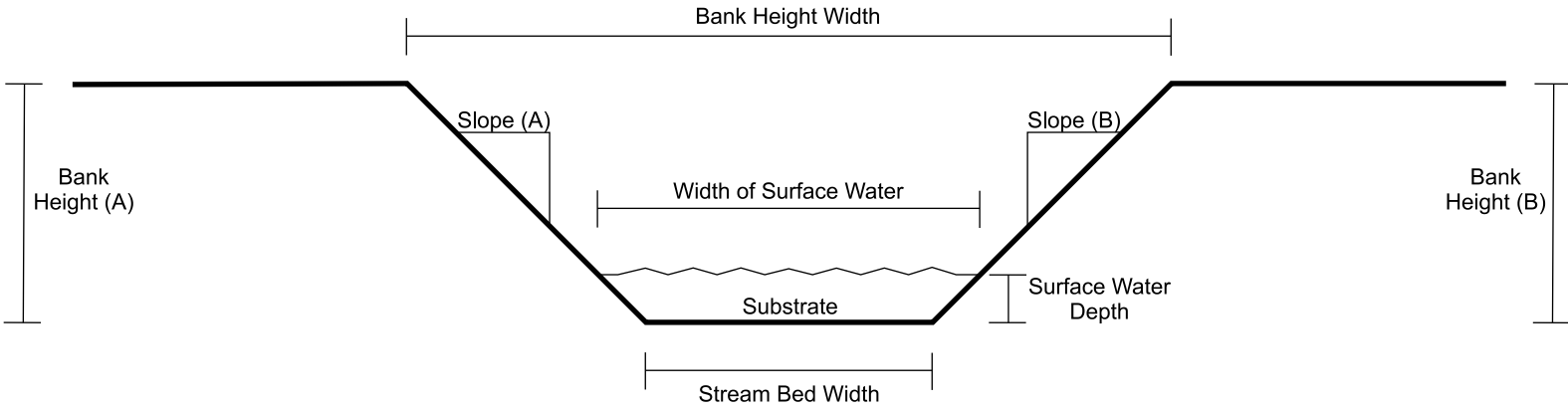


Photo 12. Residential area photo facing south-east.

APPENDIX B – Field Data Sheets

Stream Determination Data Form

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Stream ID: _____
 Investigator(s): _____ Section, Township, Range: _____
 Watershed: _____ Coordinates: _____
 Associated Wetland/Water Feature: _____ Sampling Point: _____ Photo Number: _____



Slope (A): _____ Slope (B): _____ Stream Bed Width: _____ Bank height Width: _____
 Bank Height (A): _____ Bank Height (B): _____ Surface Water Depth: _____
 Substrate: _____

Braided Stream: Yes _____ No _____ (If yes, photo number _____) Direction of Flow: _____
 Wrack Line: Yes _____ No _____ (If yes, bank height _____) Gradient: _____ OHWM: _____
 Stream Type: Ephemeral _____ Intermittent _____ Perennial _____
 Riffles/Runs/Pools: _____

Remarks:

Vegetation:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Varna Apartments w/Hunt - HUN-4338 **City/County:** Dryden/Tompkins County **Sampling Date:** 07-May-18
Applicant/Owner: _____ **State:** NY **Sampling Point:** B-1U
Investigator(s): BC/NR **Landform (hillslope, terrace, etc.):** Hillside

Soil Map Unit Name: Alluvial Land **Cover Type:** OF

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , **Soil** , or **Hydrology** significantly disturbed? **Are "Normal Circumstances" present?** Yes No
Are Vegetation , **Soil** , or **Hydrology** naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> If yes, optional Wetland Site ID: <input style="width: 100%;" type="text"/>
Remarks: Section, Township, Range: N/A. Local relief: None. Slope(%): 20%. Subregion (LRR or MLRA): LRR. Latitude: 42.453728. Longitude: -76.436734. Datum: NAD83. NWI Classification: N/A. Flag Number: B-3. Field Photo Number: 8 (north-east), 9 (east), 10 (west).	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 30 feet)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>70</u> x 5 = <u>350</u> Column Totals: <u>100</u> (A) <u>470</u> (B) Prevalence Index = B/A = <u>4.700</u>
Sapling/Shrub Stratum (Plot size: 15 feet)				
1. Lonicera morrowii	15	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
15 = Total Cover				
Herb Stratum (Plot size: 5 feet)				
1. Daucus carota	35	<input checked="" type="checkbox"/> 41.2%	UPL	
2. Fragaria vesca	20	<input checked="" type="checkbox"/> 23.5%	UPL	
3. Trifolium repens	5	<input type="checkbox"/> 5.9%	FACU	
4. Taraxacum officinale	10	<input type="checkbox"/> 11.8%	FACU	
5. Galium mollugo	15	<input type="checkbox"/> 17.6%	UPL	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
85 = Total Cover				
Woody Vine Stratum (Plot size: 30 feet)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)
 Definitions of Vegetation Strata: Tree--Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub--Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. (1 m) tall. Herb--All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. Woody vines--All woody vines greater than 3.28 ft. in height.

Soil

Sampling Point: B-1U

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

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR	4/2	100%					Silt Loam	
2-18+	10YR	4/3	70%	10YR	5/6	30%		Loam	

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3) (except in MLRA 143)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Muck Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)

- Stripped Matrix (S6) (Drop in LRR R?)
- Dark Surface (S7) (MLRA 149B of LRR S)
- Polyvalue Below Surface (S8) (LRR R, S)
- Thin Dark Surface (S9) (LRR R, S)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, S)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12)
- Piedmont Floodplain Soils (F19)
- Red Parent Material (TF2)
- 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):

Hydric Soil Present? Yes No

Remarks:

Indicators for Problematic Hydric Soils: Mesic Spodic (TA6) (MLRA 144A, 145, 149B). Very Shallow Dark Surface (TF12).

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 along 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 (minimum of two 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 (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

- Surface Water Present? Yes No
- Water Table Present? Yes No
- Saturation Present? (includes capillary fringe) Yes No

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Varna Apartments w/Hunt - HUN-4338 City/County: Dryden/Tompkins County Sampling Date: 07-May-18

Applicant/Owner: _____ State: NY Sampling Point: B-1W

Investigator(s): BC/NR Landform (hillslope, terrace, etc.): Flat

Soil Map Unit Name: Alluvial Land Cover Type: PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/> If yes, optional Wetland Site ID: <input style="width: 100%;" type="text"/>
Remarks: Section, Township, Range: N/A. Local relief: Concave. Slope(%): 2%. Subregion (LRR or MLRA): LRR. Latitude: 42.453657. Longitude: -76.436611. Datum: NAD83. NWI Classification: N/A. Flag Number: B-2. Field Photo Number: 5 (south-west), 6 (west), 7 (north).	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: 30 feet)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: 15 feet)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>65</u> x 1 = <u>65</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>135</u> (B) Prevalence Index = B/A = <u>1.350</u>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Herb Stratum (Plot size: 5 feet)				
1. Typha latifolia	65	<input checked="" type="checkbox"/> 65.0%	OBL	
2. Phragmites australis	35	<input checked="" type="checkbox"/> 35.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Woody Vine Stratum (Plot size: 30 feet)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)

Definitions of Vegetation Strata: Tree--Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub--Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. (1 m) tall. Herb--All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. Woody vines--All woody vines greater than 3.28 ft. in height.

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: B-1W

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18+	2.5YR	3/1	100%				Clay Loam	

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

- | | | |
|--|---|--|
| <p>Hydric Soil Indicators:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) (except in MLRA 143) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) | <ul style="list-style-type: none"> <input type="checkbox"/> Stripped Matrix (S6) (Drop in LRR R?) <input type="checkbox"/> Dark Surface (S7) (MLRA 149B of LRR S) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, S) <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, S) <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) | <p>Indicators for Problematic Hydric Soils³:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, S) <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Piedmont Floodplain Soils (F19) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> 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): _____

Hydric Soil Present? Yes No

Remarks: _____

Indicators for Problematic Hydric Soils: Mesic Spodic (TA6) (MLRA 144A, 145, 149B). Very Shallow Dark Surface (TF12).

Hydrology

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) 	<p>Secondary Indicators (minimum of two required)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
--	--

Field Observations:

Surface Water Present? Yes No Depth (inches):

Water Table Present? Yes No Depth (inches):

Saturation Present? (includes capillary fringe) Yes No Depth (inches):

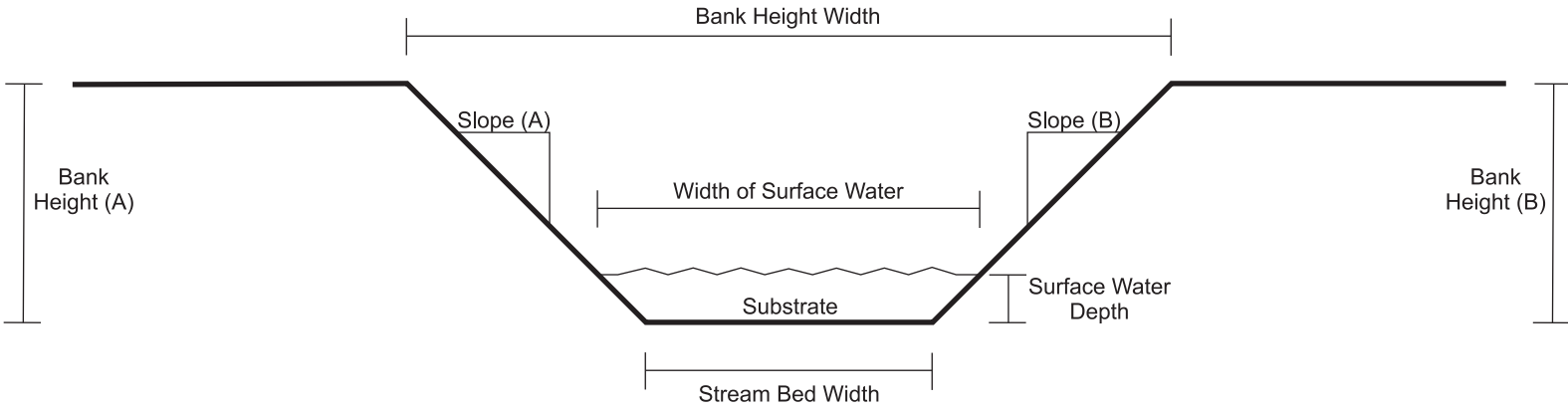
Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____

Remarks: _____

Stream Determination Data Form

Project/Site: Varna Apartments w/ Hunt - HUN-4338 City/County: Dryden/Tompkins County Sampling Date: 7-May-2018
 Applicant/Owner: _____ State: NY Stream ID: Stream-C
 Investigator(s): BC/NR Section, Township, Range: _____
 Watershed: Cayuga Lake Watershed Coordinates: Lat 42.453375, Long -76.437750
 Associated Wetland/Water Feature: Wetland B, Stream A Sampling Point: Stream-C Photo Number: 14 (south-east)



Slope (A): 20% Slope (B): 20% Stream Bed Width: 2-4 feet Bank height Width: 10 feet
 Bank Height (A): 4.5 feet Bank Height (B): 4.5 feet Surface Water Depth: 2-6 inches
 Substrate: Silt and cobble.

Braided Stream: Yes No (If yes, photo number _____) Direction of Flow: west
 Wrack Line: Yes No (If yes, bank height _____) Gradient: _____ OHWM: 1 inch
 Stream Type: Ephemeral _____ Intermittent Perennial _____
 Riffles/Runs/Pools: _____

Remarks:
 Stream A flows into Wetland B and Wetland B outlets into Stream C. Stream C flows into Fall Creek off site.

Vegetation:
 No vegetation in the stream.