

Appendix 9.6 Wetland Delineation Report

Wetland Delineation Report

Higher Ground Country Club
Management Co., LLC
Silo Ridge Resort Community
State Route 22
Town of Amenia
Dutchess County, New York

December 2006
10454.00



Prepared for:

Higher Ground Country Club
Management Co., LLC
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General Manager
P.O. Box 86, Route 22
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Wetland Delineation Report
**Higher Ground Country Club
Management Co., LLC
Silo Ridge Resort Community
State Route 22
Town of Amenia
Dutchess County, New York**

December 2006



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1.0 INTRODUCTION

This wetland delineation report was prepared by The Chazen Companies (TCC) at the request of Higher Ground Country Club Management Co, LLC, as part of proposed site developments on the Silo Ridge Resort Community. The country club property encompasses approximately 670+ acres of land situated on New York State Route 22, in the Town of Amenia, Dutchess County, New York. Figure 1.1-1, provides an illustration of the property on the 1984, *United States Geological Survey (USGS) Amenia Topographical Quadrangle*.

The wetland delineation for this site was conducted by TCC on May 3, 5, 6 2005 using the three parameter approach as described in the 1987, *US Army Corps of Engineers' Wetland Delineation Manual*.¹ The following sections of this report provide the results of the delineation including a description of the existing conditions of the site, topography, soils, wetlands and hydrology, vegetative communities, methodology, results, and regulatory jurisdiction. A map of the wetland survey is included for reference in Appendix D.

1.1 Applicant Information

The Applicant for this project is Higher Ground Country Club Management Co, LLC. The country club contact person is Mr. Robert Caeners, General Manager, Silo Ridge Country Club. Mr. Caeners is located at the Silo Ridge Country Club, P.O. Box 86, Amenia, New York 12501, (845) 373-7000 ext. 102.

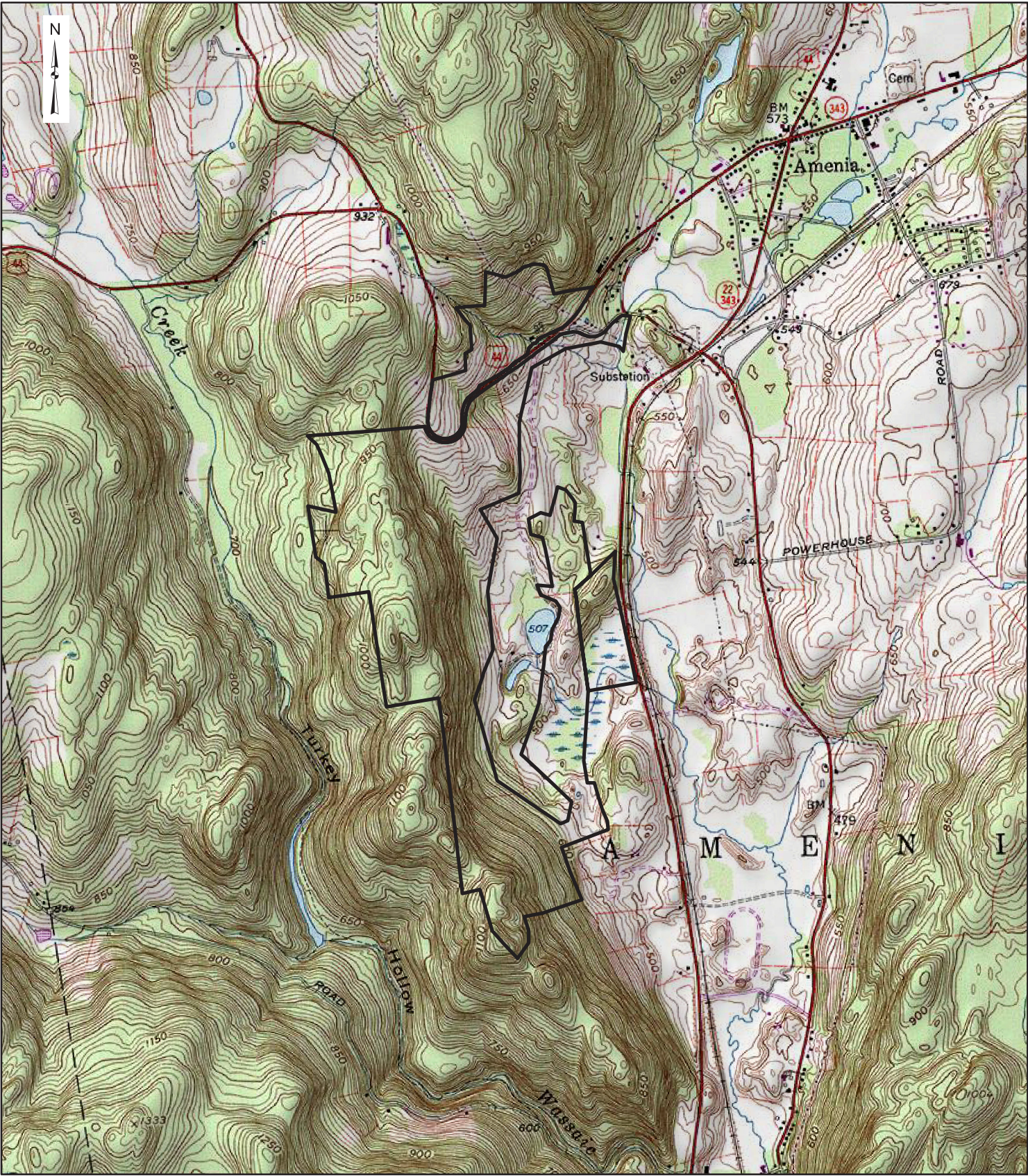
The Applicants' agent on this project is Mr. Dave Tompkins of The Chazen Companies. Mr. Tompkins' contact information is The Chazen Companies, 356 Meadow Avenue, Newburgh, New York, 12550, (845) 567-1133.

2.0 EXISTING CONDITIONS

The Silo Ridge Country Club is comprised of the main clubhouse, several maintenance buildings, and parking areas for faculty and visitors. The golf course is located in the northeast and central portions of the site. The western section of the site contains a ridgeline extending from the northern to southern boundary line. A New York State Department of Environment Conservation (NYSDEC) Wetland AM-15 is located in the southeast portion of the site.

¹ U.S. Army Corps of Engineers. 1987. Wetlands Delineation Manual, Technical Report Y-87-1.

Development to the north of the site consists primarily of residential homes and to the south is a landfill. Development to the east consists of several commercial/industrial properties, an area used to store storage tanks, and a gun club. The property to the west of the site consists of undeveloped land owned by the Tamarack Preserve.



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Figure 1.1-1 Site Location Map
Silo Ridge Country Club
Route 44
Town of Amenia, Dutchess County, New York

USGS Topographic Map

Date:	6/9/05
Scale:	1 inch equals 2,000 feet
Project #:	10454

2.1 Topography

The site topography is rolling to steep with elevations ranging from approximately 490 feet above mean sea level (msl) in the east-central portion of the site to approximately 1100 feet msl near the west-central boundary line. Figure 1.1-1, provides an illustration of the overall site topography.

2.2 Soils

According to the 2002 *Dutchess County Soil Survey*,² 17 soil types are mapped on the property. The following section provides a description of these soil types including soil properties, typical sequence, depth, and composition of soil groupings, hydric or non-hydric capabilities, and general location of the soils within the project area. Figure 2.2-1, "Soil Map," illustrates the location of the soils for this site.

Copake gravelly silt loam, rolling (CuC) – This Copake soil type is identified in the northeastern and central portions of the property. This mapping unit is comprised of very deep, well drained soils that were formed in glaciofluvial deposits high in limestone fragments. Permeability is moderate or moderately rapid in the surface layer and subsoil, and very rapid in the substratum. Surface runoff is medium and the hazard for erosion is moderate. The available water capacity is moderate. The depth to seasonal water table is more than six feet. Slopes range from five to 16 percent.

Copake gravelly silt loam, hilly (CuD) – This Copake soil type is located in the northeastern portion of the property. This mapping unit consist of very deep, well drained soils that formed in glaciofluvial deposits high in limestone fragments. Slopes are complex and range from 15 to 30 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and very rapid in the substratum. The available water capacity is moderate and the depth to seasonal high water is more than six feet. Surface runoff is medium and the hazard for erosion is severe.

Copake channery silt loam, fan, 3 to 8 percent slopes (CwB) – This Copake soil type is located in the central portion of the property. This mapping unit consists of very deep, gently sloping and well drained soils that formed in glacial outwash deposits. Slopes are complex and range from three to eight percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and very rapid in the substratum. The available water capacity is moderate and the depth to seasonal high water is three to six feet (April thru May). Surface runoff is slow and the hazard for erosion is slight.

² USDA Natural Resource Conservation Service. Soil map for Dutchess County, New York.

The typical sequence, depth, and composition of the layers of Copake soils are as follows.

0 to 6 inches – dark brown (10YR 3/3) gravelly silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many fine and medium roots; 15 percent rock fragments; neutral; abrupt smooth boundary;

6 to 8 inches – dark yellowish brown (10YR 4/6) gravelly loam; weak fine granular structure; very friable many fine and medium roots; 30 percent rock fragments; neutral; abrupt smooth boundary;

8 to 24 inches – olive brown (2.5Y 4/4) and yellowish brown (10YR 5/4) gravelly loam; weak fine subangular blocky structure; friable; common fine and few medium roots; 30 percent rock fragments; neutral; abrupt smooth boundary;

24 to 36 inches – light olive brown (2.5Y 4/4) and yellowish brown (10YR 5/4) gravelly loam; weak fine subangular blocky structure; friable; common fine and few medium roots; 30 percent rock fragments; neutral; abrupt smooth boundary;

36 to 42 inches – light olive brown (2.5Y 5/4) very gravelly loamy coarse sand; single grain; loose; 50 percent rock fragments; neutral; clear irregular boundary

42 to 80 inches – light olive brown (2.5Y 5/4) very gravelly loamy coarse sand; single grain; loose; 50 percent rock fragments; moderately alkaline; slightly effervescent.

Dutchess-Cardigan complex, hilly, rocky (DwD) –This soil complex is located on the very northern boundary line of the property. This mapping complex consists of very deep, well drained Dutchess soils and moderately deep, well drained Cardigan soils that formed in glacial till deposits. Slopes are complex and range from 15 to 30 percent. Permeability is moderate. The available water capacity is low to moderate and the depth to seasonal high water is more than six feet. Surface runoff is rapid and the hazard for erosion is severe.

The typical sequence, depth, and composition of the layers of Dutchess soils are as follows.

0 to 8 inches – dark brown (10YR 3/3) silt loam, light grayish brown (10YR 6/2) dry; weak fine granular structure; friable; many fine and few coarse roots; five percent rock fragments; neutral (limed); clear wavy boundary;

8 to 17 inches – yellowish brown (10YR 5/6) silt loam; weak medium platy parting to weak fine subangular blocky structure; friable; common fine and medium and few coarse roots; five percent rock fragments; moderately acid; clear wavy boundary;

17 to 28 inches – dark yellowish brown (10YR 4/4) silt loam; medium moderate subangular blocky structure; friable; few fine roots; ten percent rock fragments; moderately acid; gradual wavy boundary;

28 to 46 inches – yellowish brown (10YR 5/4) channery silt loam; weak coarse subangular structure; friable; few roots; 20 percent rock fragments; moderately acid; clear wavy boundary;

46 to 86 inches – light olive brown (2.5Y 5/4) channery silt loam; massive; firm; 20 percent rock fragments; moderately acid.

The typical sequence, depth, and composition of the layers of Cardigan soils are as follows.

0 to 8 inches – dark brown (10YR 3/3) channery silt loam; light brownish gray (10YR 6/2) dry; moderate medium granular structure; very friable; few fine roots; 25 percent rock fragments; slightly acid (limed); smooth boundary;

8 to 12 inches – yellowish brown (10YR 5/6) channery silt loam; weak medium subangular blocky structure; friable; few fine roots; 25 percent rock fragments; moderately acid; clear wavy boundary;

12 to 20 inches – yellowish brown (10YR 5/6) channery loam; weak fine subangular blocky structure; friable; few fine roots; 25 percent rock fragments; strongly acid; clear wavy boundary;

20 to 30 inches – dark yellowish brown (10YR 4/4) channery silt loam; weak fine and medium subangular blocky structure; friable; few fine and medium roots; 30 percent rock fragments; strongly acid; abrupt wavy boundary;

30 inches – very dark gray, folded shale bedrock.

Fluvaquents-Udifuvents complex, frequently flooded (Ff) – This soil complex is located in the central portion of the property. This mapping unit consists of nearly level, very deep, somewhat poorly drained to very poorly drained Fluvaquents and very deep, moderately well drained to somewhat excessively drained Udifuvents. Slopes range from 0 to 3 percent. Permeability is very rapid to slow. The available water capacity is high to low and the depth to seasonal high

water is 0.5 to six feet (Oct thru June). Surface runoff is slow to ponded and the hazard for erosion is moderate. There is no pedon for Fluvaquents or Udifluvents.

Galway-Farmington complex, hilly (GfD) –This soil complex is located in the central portion of the property. This mapping unit consists of moderately deep; well drained and moderately well drained Galway soils and shallow well drained and somewhat excessively drained Farmington soils that formed in glacial till deposits. Slopes are complex and range from 15 to 30 percent. Permeability is moderate. The available water capacity is low to very low and the depth to seasonal high water is from 1.5 to 3 feet (March thru April) up to more than six feet. Surface runoff is rapid and the hazard for erosion is severe.

The typical sequence, depth, and composition of the layers of Galway soils are as follows.

0 to 6 inches – dark brown (10YR 3/3) gravelly loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary;

6 to 10 inches – dark yellowish brown (10YR 4/4) gravelly loam; moderate fine subangular blocky structure; friable; many fine roots; 15 percent rock fragments; neutral; clear wavy boundary;

10 to 15 inches – dark brown (10YR 4/3) gravelly loam; moderate fine and medium subangular blocky structure; friable; many fine roots; 20 percent rock fragments; neutral; abrupt smooth boundary;

15 to 30 inches – dark brown (10YR 3/3) gravelly loam; weak medium and course subangular blocky structure; friable; common fine roots; 25 percent rock fragments; neutral; abrupt irregular boundary;

30 to 31 inches – dark brown (10YR 3/3) gravelly loam; massive; friable; many fine roots; 30 percent rock fragments; mildly alkaline; slightly effervescent; abrupt irregular boundary;

31 inches – white (10YR 8/1) limestone bedrock.

The typical sequence, depth, and composition of the layers of Farmington soils are as follows.

0 to 7 inches – dark brown (10YR 3/3) loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine and very fine roots; five percent rock fragments; neutral; abrupt smooth boundary;

7 to 15 inches – light olive brown (2.5Y 5/6) very fine sandy loam; weak medium subangular blocky parting to weak fine granular structure; very friable; common fine and very fine roots; ten percent rock fragments; neutral; abrupt smooth boundary;

15 inches – hard gray dolomitic limestone bedrock; some rock fragments at the surface of the bedrock; slight effervescent.

Hollis-Chatfield-Rock outcrop complex, steep (HoE) – This soil complex is located in the eastern portion of the property. This mapping unit consists of shallow, well drained and somewhat excessively drained Hollis soils; moderately deep, well drained and somewhat excessively drained Chatfield soils; and areas of rock outcrop. Slopes are complex and range from 25 to 45 percent. Permeability is moderate to moderately rapid. The available water capacity is very low and the depth to seasonal high water is more than six feet. Surface runoff is very rapid and the hazard for erosion is very severe.

The typical sequence, depth, and composition of the layers of Hollis soils are as follows.

0 to 3 inches – dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine roots; five percent rock fragments; strongly acid; abrupt smooth boundary;

3 to 10 inches – dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; very friable; common fine roots; five percent rock fragments; strongly acid; abrupt smooth boundary;

10 to 15 inches – olive brown (2.5Y 4/4) loam; weak medium subangular blocky structure; friable; few fine roots; ten percent rock fragments; strongly acid; abrupt smooth boundary;

15 inches – folded micaceous schist bedrock.

The typical sequence, depth, and composition of the layers of Chatfield soils are as follows.

0 to 9 inches – dark brown (10YR 3/3) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine few medium and coarse roots; five percent rock fragments; very strongly acid; abrupt smooth boundary;

9 to 15 inches – olive brown (10Y 4/4) loam; weak fine and medium subangular blocky structure; very friable; many fine roots; five percent rock fragments; moderately acid; abrupt wavy boundary;

15 to 23 inches – olive brown (2.5Y 4/4) loam; weak medium subangular blocky structure; friable; common fine roots; five percent rock fragments; moderately acid; abrupt wavy boundary;

23 to 27 inches – dark grayish brown (2.5Y 4/2) gravelly fine sandy loam; weak medium and coarse subangular blocky structure; friable; few fine roots; 20 percent rock fragments; strongly acid; abrupt wavy boundary;

27 to 30 inches – dark grayish brown (2.5Y 4/2) gravelly fine sandy loam; massive; firm; 20 percent rock fragments; strongly acid; abrupt wavy boundary;

30 inches – folded; micaceous schist and granitic bedrock.

Nassau-Cardigan complex, rolling, very rocky (NwC) – This soil complex is located in the western portions of the property. This mapping unit consists of shallow, somewhat excessively drained Nassau soils and moderately deep, well drained Cardigan soils that formed in glacial till deposits. Slopes are complex and range from five to 16 percent. Permeability is moderate. The available water capacity is low to very low and the depth to seasonal high water is more than six feet. Surface runoff is medium and the hazard for erosion is moderate.

Nassau-Rock outcrop complex, steep (NxE) – This soil complex is located in the western portion of the property. This mapping unit consists of shallow, somewhat excessively drained Nassau soils and areas of rock outcrop. Slopes are complex and range from 25 to 45 percent. Permeability is moderate. The available water capacity is very low and the depth to seasonal high water is more than six feet. Surface runoff is very rapid and the hazard for erosion is very severe.

Nassau-Rock outcrop complex, very steep (NxF) – This soil complex is located in the western portion of the property. This mapping unit consists of shallow, somewhat excessively drained Nassau soils and areas of rock outcrop. Slopes are complex and range from 45 to 70 percent. Permeability is moderate. The available water capacity is very low and the depth to seasonal high water is more than six feet. Surface runoff is very rapid and the hazard for erosion is very severe.

The typical sequence, depth, and composition of the layers of Nassau soils are as follows.

0 to 5 inches – dark grayish brown (10YR 4/2) channery silt loam; moderate fine granular structure; very friable; many fine and few medium roots; 30 percent rock fragments; very strongly acid; abrupt wavy boundary;

5 to 16 inches – yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; very friable; many fine roots; 55 percent rock fragments; very strongly acid; abrupt smooth boundary;

16 inches – dark gray (10YR 4/1) folded rippable shale bedrock in upper part, hard below, nearly vertical.

Stockbridge silt loam, 8 to 15 percent slopes (SkC) – This soil unit is located in the northern portions of the property. This mapping unit consists of very deep, sloping, and well drained Stockbridge soils that formed in glacial till deposits. Slopes are smooth and range from eight to 15 percent. Permeability is moderate in the surface layer and subsoil, slow to moderately slow in the substratum. The available water capacity is high and the depth to seasonal high water is more than six feet. Surface runoff is rapid and the hazard for erosion is moderate.

Stockbridge silt loam, 15 to 25 percent slopes (SkD) – This soil unit on this site is located in the northern portions of the property. This mapping unit consists of very deep, sloping, and well drained Stockbridge soils that formed in glacial till deposits. Slopes are complex and range from 15 to 25 percent. Permeability is moderate in the surface layer and subsoil, slow to moderately slow in the substratum. The available water capacity is high and the depth to seasonal high water is more than six feet. Surface runoff is rapid and the hazard for erosion is severe.

Stockbridge silt loam, 25 to 45 percent slopes (SkE) – This soil unit is located in the northern portions of the property. This mapping unit consists of very deep, sloping, and well drained Stockbridge soils that formed in glacial till deposits. Slopes are complex and range from 25 to 45 percent. Permeability is moderate in the surface layer and subsoil, slow to moderately slow in the substratum. The available water capacity is high and the depth to seasonal high water is more than six feet. Surface runoff is very rapid and the hazard for erosion is very severe.

Stockbridge-Farmington complex, hilly, rocky (SmD) – This soil complex is located in the south-central portion of the property. This mapping unit consists of very deep, well drained Stockbridge soils and shallow, well drained and somewhat excessively drained Farmington soils that formed in glacial till deposits. Slopes are complex and range from 15 to 30 percent. Permeability is moderate in the surface layer and subsoil, slow to moderately slow in the substratum. The available water

capacity is high to very low and the depth to seasonal high water is more than six feet. Surface runoff is rapid and the hazard for erosion is severe.

The typical sequence, depth, and composition of the layers of Stockbridge soils are as follows.

0 to 6 inches – very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; friable; many fine and very fine roots; five percent rock fragments; neutral; clear smooth boundary;

6 to 11 inches – dark brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; many fine and very fine roots; five percent rock fragments; neutral; clear smooth boundary;

11 to 23 inches – yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common fine and very fine roots; few fine tubular pores; five percent rock fragments; neutral; gradual wavy boundary;

23 to 80 inches – brown (10YR 5/3) silt loam; massive; firm; five percent rock fragments; neutral; very slightly effervescent below 42 inches.

Udorthents, smoothed (Ud) – This soil unit is located in the southeastern portion of the property. This mapping unit consists of very deep, somewhat excessively drained to moderately well drained soils that have been altered by cutting and filling. Slopes are dominantly zero to eight percent but range from eight to 25 percent on the sides of excavations and along highways. There are no soil properties for this soil type.

Udorthents, wet substratum (Ud) – This soil unit is located in the northeastern portion of the property. This mapping unit consists of moderately well drained soils that have been altered by filling. Slopes are dominantly zero to eight percent but range from eight to 25 percent on the sides of excavations and along highways. There are no soil properties for this soil type. Udorthents soils do not have a pedon.

Wayland silt loam (Wy) – This soil unit is located in the near the eastern boundary line near the central portion of the property. This mapping unit consists of very deep, nearly level, and poorly drained and very poorly drained Wayland soils that formed in alluvium deposits. Slopes are smooth and range from zero to three percent. Permeability is moderately slow or moderate in the surface layer, slow in the subsoil and substratum. The available water capacity is high and the depth to seasonal high water is 0.5 to one foot (November-June). Surface runoff is slow and the hazard for erosion is slight. This soil unit is on the New York State Hydric Soils List.

The typical sequence, depth, and composition of the layers of Wayland soils are as follows.

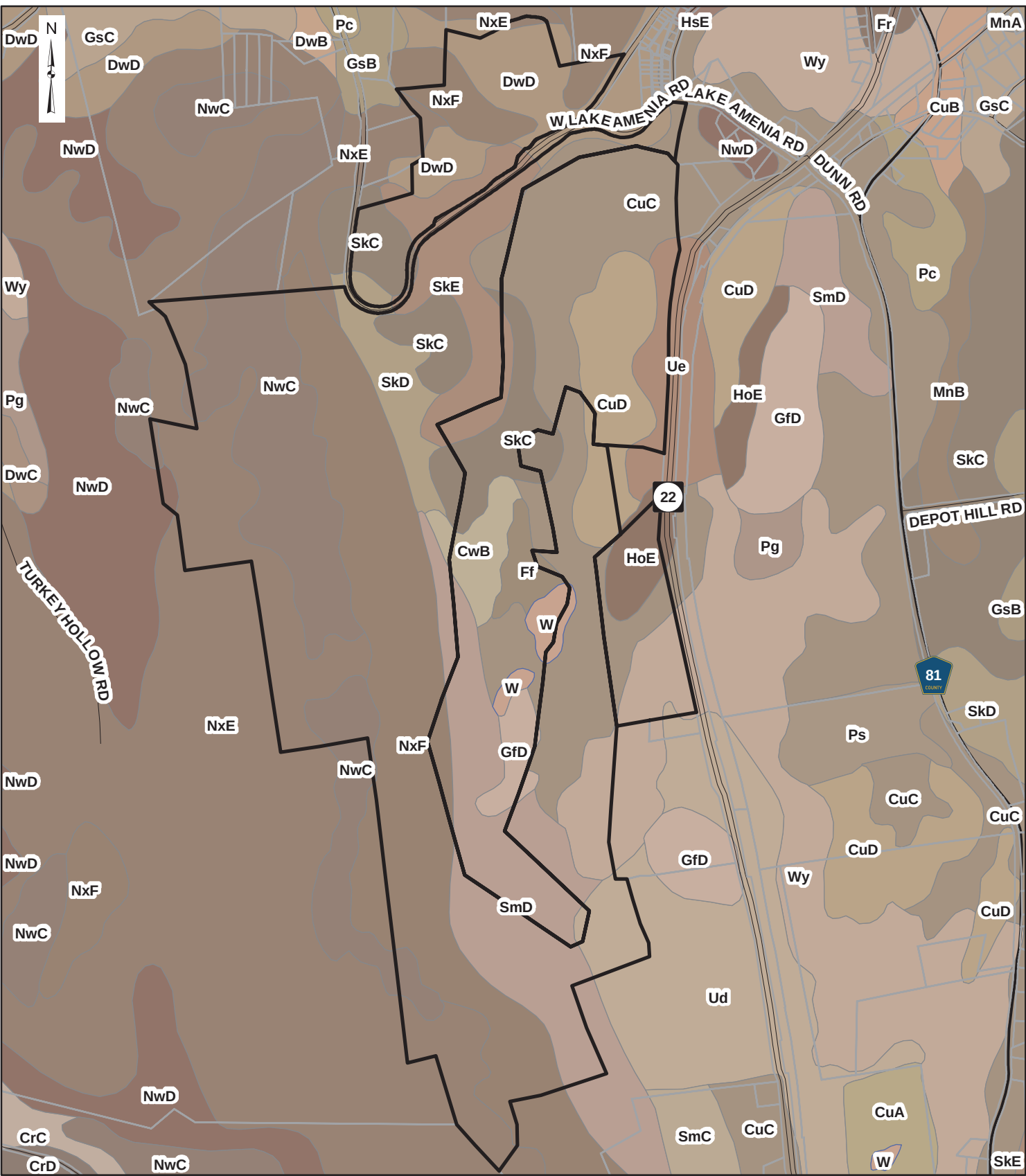
0 to 9 inches – very dark gray (10YR 3/1) silt loam, gray (5YR 5/1) dry; moderate fine and medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary;

9 to 13 inches – gray (10YR 5/1) silt loam; weak coarse prismatic structure; friable; common fine roots; neutral; clear wavy boundary;

13 to 21 inches – gray (5Y 5/1) silty clay loam; many medium prominent yellowish brown (10YR 5/6) and few fine prominent dark brown (10YR 3/3) mottles; weak coarse prismatic structure; firm; few fine roots along faces of peds; neutral; clear wavy boundary;

21 to 31 inches – gray (5Y 5/1) silt loam; many medium and coarse prominent yellowish brown (10YR 5/4) and common medium prominent yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure; firm; slightly sticky and slightly plastic; neutral; clear wavy boundary.

31 to 80 inches – gray (5Y 5/1) silt loam; many medium and coarse prominent yellowish brown (10YR 5/4) and common medium prominent yellowish brown (10YR 5/6) mottles; massive; firm; slightly sticky and slightly plastic; neutral; very slightly effervescent in the lower part.



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Figure 2.2-1 Soil Map

Silo Ridge Country Club

Route 44

Town of Amenia, Dutchess County, New York

Dutchess County Soil Survey

Date:	6/9/05
Scale:	1 inch equals 1,200 feet
Project #:	10454

2.3 Watercourses and Wetland Mapping

2.3.1 Watercourses

The site is located within the drainage basin of Ten Mile River, which then flows southeast into the Housatonic River. There are two perennial streams (Cascade Brook, Stream L), six intermittent streams and eight ponds located within the property. Cascade Brook is a Class C(T) indicating that its trout waters. Cascade Brook is approximately 12 to 15 feet wide with banks three to six feet high. Water depth ranges from six inches to four feet with the stream containing silt to boulders substrate.

All other streams and ponds on-site are Class “C” waterbodies. The “C” classification³ is for waters supporting fisheries and suitable for non contact activities. Table 2.3.1 below lists brief descriptions of each stream on-site. See Figure 1.1-1, “Site Location Map” for reference.

Table 2.3.1 Stream Characteristics

Stream Name ⁴	Class	Width	Bank Height	Substrate
Amenia/Cascade Brook, “C1,C2,C3”	C (Ts)	10 to 12 feet	3 to 6 feet	Silt to boulders
E	C	1 to 3 feet	0.5 to 1 foot	Silt to sand
G	C	2 to 4 feet	0.5 to 2 feet	Silt to cobble
J/OO	C	2 to 6 feet	1 to 6 feet	Silt to boulders
L	C	3 to 6 feet	1 to 3 feet	Silt to cobble
M/P	C	2 to 4 feet	0.5 to 3 feet	Silt to cobble
R/S	C	2 to 5 feet	1 to 6 feet	Silt to bedrock
V	C	3 to 8 feet	2 to 6 feet	Silt to bedrock

³ 6 NYCRR 682.5

⁴ It should be noted that all streams and ponds labeled herein are referred on the Wetland Survey Map as “wetlands”. The labeling on the Wetland Survey Map does not separate the nomenclature of waterbodies, watercourses, and/or wetlands on the property.

Table 2.3.1.2 Pond Characteristics

Pond Name	Acres	Pond Name	Acres
A*	0.52	J2 (Northwest)	0.15
B	0.87	H	0.51
D	0.43	K	2.06
J1 (Southeast)	0.42	Z	5.53

*Pond A was determined to be isolated by the US Army Corps of Engineers on their site visit of September 18, 2006. The eight ponds or open water areas total approximately 10.5 acres and are scattered throughout the site.

2.3.2 Wetland Mapping

According to the 1990, *National Wetland Inventory (NWI) Map*,⁵ *Amenia Quadrangle*, one stream, two ponds, and three wetlands are mapped within the property. The first is Cascade Brook situated in the northeast portion of the site, which is mapped as R3UBH - [R] Riverine, [3] Upper Perennial, [UB] Unconsolidated Bottom, [H] Permanently Flooded. The two ponds located in the center portion of the site are mapped as PUBH - [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded. A wetland on the western portion of the site is mapped as PFO1E - [P] Palustrine, [FO] Forested, [1] Broad-leaved Deciduous, [E] Seasonally Flooded/Saturated. A wetland in the northern portion of the site is mapped PUBHx - [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated. The large wetland located in the east-central portion of the property is mapped with several different codes including PEM1Fh - [P] Palustrine, [EM] Emergent, [1] Persistent, [F] Semi-permanently Flooded, [h] Diked/Impounded; PFO1C - [P] Palustrine, [FO] Forested, [1] Broad-leaved Deciduous, [E] Seasonally Flooded; PFO1Eh - [P] Palustrine, [FO] Forested, [1] Broad-leaved Deciduous, [E] Seasonally Flooded/Saturated, [h] Diked/Impounded; and PSS1Eh - [P] Palustrine, [SS] Scrub-shrub, [1] Broad-leaved Deciduous, [E] Seasonally Flooded/Saturated, [h] Diked/Impounded.

⁵ National Wetland Inventory Mapping is not a "regulatory map," and does not designate the official boundaries of federal wetlands. For the purposes of regulation under Section 404 of the Clean Water Act, federal wetlands are only designed by an on-site wetland delineation conducted in accordance to the 1987 US Army Corps of Engineers Wetland Delineation Manual.

Table 2.3.2 “NWI Definitions” defines the terms used to describe these wetlands identified within the project area. Figure 2.3-1, “NWI and NYSDEC Wetland Mapping” provides an illustration of these wetland resources adjacent to the study area.

According to the 1973, *NYSDEC Wetland Inventory Map, Amenia Quadrangle*, the wetland in the southeast portion of the site is NYSDEC Wetland AM-15. NYSDEC Wetland AM-16 is mapped off-site on the east side of NYS Route 22.

Table 2.3.2 NWI Definitions

Term	Definition
Riverine	Wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water.
Palustrine	Non-tidal wetlands dominated by trees, shrubs, persistent emergent, or emergent mosses and lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.0 ppt.
Upper Perennial	This Subsystem is characterized by a high gradient and fast water velocity. There is no tidal influence, and some water flows throughout the year. This substrate consists of rock, cobbles, or gravel with occasional patches of sand. There is very little floodplain development.
Scrub/shrub	Includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions.
Emergent	Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants
Broad leaved deciduous	A class of woody vegetation (shrubs and trees) that have leaves not needles that are shed annually as part of the trees natural cycle.
Persistent	Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.
Unconsolidated bottom	Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and vegetative cover less than 30%.
Permanently Flooded	Water covers the land surface throughout the year in all years.
Semi-permanently flooded	Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface
Seasonally Flooded/Saturated	Surface water is present for extended periods especially early in the growing season and when surface water is absent, substrate remains saturated near the surface for most of the growing season.
Seasonally Flooded	Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.
Diked/Impounded	Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
Excavated	Lies within a basin or channel excavated by man
Source: US Department of the Interior Fish and Wildlife Service National Wetland Inventory	

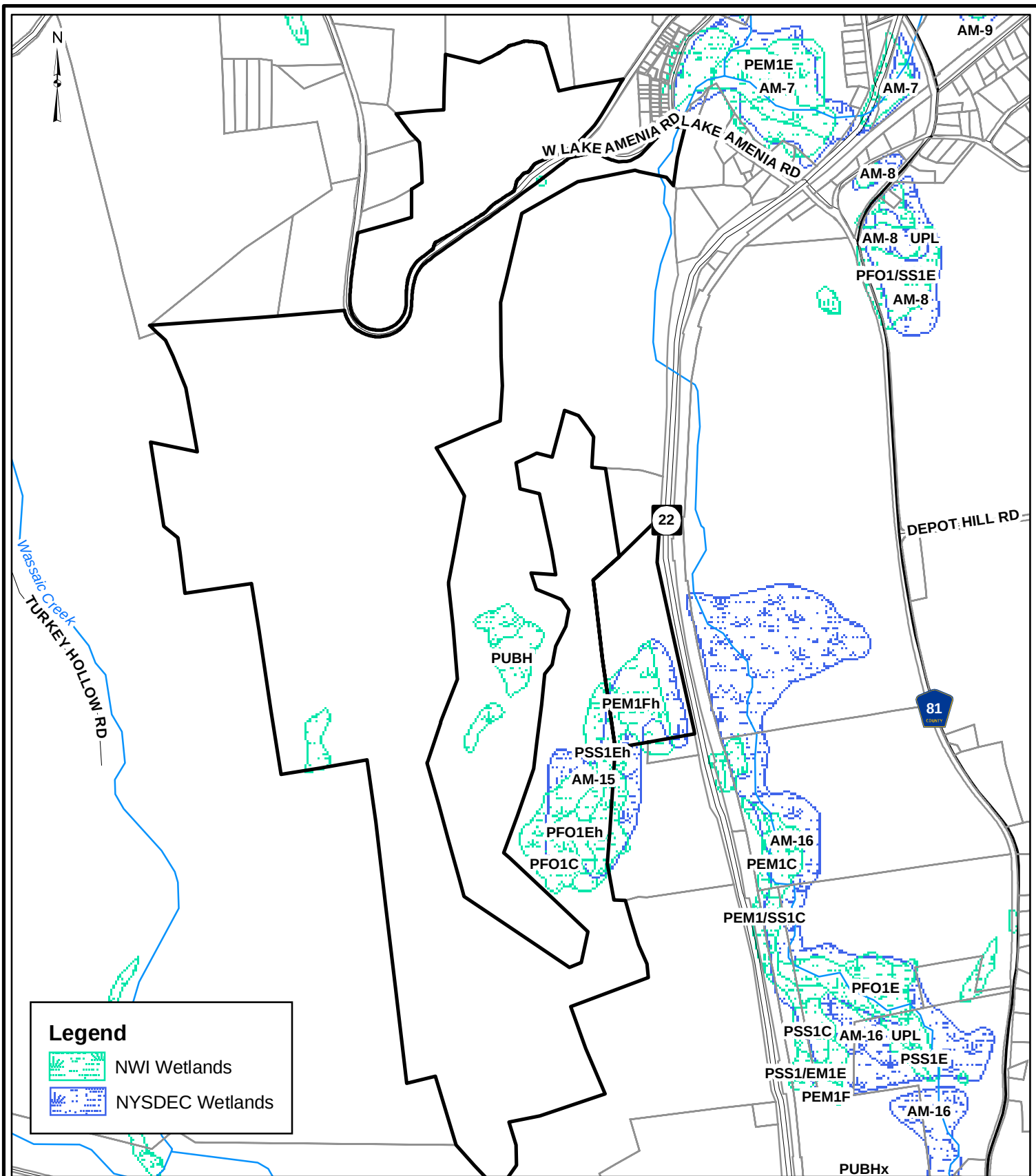


Figure 2.3-1 NWI and NYSDEC Wetland Mapping

**Silo Ridge Country Club
Route 44
Town of Amenia, Dutchess County, New York**

Date:	6/9/05
Scale:	1 inch equals 1,200 feet
Project #:	10454

THE Chazen COMPANIES
ENGINEERS/SURVEYORS
PLANNERS
ENVIRONMENTAL SCIENTISTS
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2.4 Vegetative Communities

Nine plant communities were identified within the Silo Ridge Country Club property as defined in “Ecological Communities of New York State.”⁶ These communities are listed below. The following section provides a description of these communities and their approximate locations within the subject site. Table 2.4.1 found in Appendix C provides a list of the vegetation identified on-site. Figure 2.4-1, “Aerial Imagery,” illustrates the different vegetation on an ortho photograph.

Successional southern hardwood forest - This community has established in the northern and central portions of the property. As described by Reschke in Edinger, et al.⁷ this community is comprised of a hardwood or mixed forest that occurs on sites that have been cleared for farming, logging or otherwise disturbed. Species found within this community on the property include sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), white oak (*Quercus alba*), tartarian honeysuckle (*Lonicera tatarica*), multiflora rose (*Rosa multiflora*), garlic mustard (*Alliaria petiolata*), rue-anemone (*Thalictrum thalictroides*), and false Solomon’s seal (*Maianthemum racemosum*).

Beech-maple mesic forest – This community is a hardwood forest with sugar maple and beech codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils. This forest community dominates the western portion of the property along the east facing slopes. A small patch of this community is located to the north of the existing clubhouse. Vegetation within this community within the property includes sugar maple, paper birch (*Betula papyrifera*), American beech (*Fagus grandifolia*), red oak, red trillium (*Trillium erectum*), Dutchman’s breeches (*Dicentra cucullaria*), wild columbine (*Aquilegia canadensis*), and northern maidenhair (*Adiantum pedatum*).

Shallow emergent marsh – This community consists of a marsh meadow that occurs on mineral soils or deep muck soils that generally are permanently saturated and seasonally flooded. This marsh is better drained than a deep emergent marsh; water depths may range from approximately six inches to three feet during flood stages, but the water level usually drops by mid to late summer and the substrate becomes exposed during an average year.

⁶ Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.136 pgs.

⁷ Ibid

This community is located in several small areas within the golf course in the south-central portion of the property and within parts of large NYSDEC wetland on the eastern portion of the property. Vegetation found within these wetlands includes broadleaf cattail (*Typha latifolia*), purple loosestrife (*Lythrum salicaria*), skunk cabbage (*Symplocarpus foetidus*) and common duckweed (*Lemna minor*).

Red maple swamp – This community is a hardwood swamp that occurs in poorly drained depressions, usually on inorganic soils. This community is located in several areas within the property including along Cascade Brook, and in the northern and central portions of the property associated with several intermittent streams. Vegetation found within this community on the property includes red maple, eastern cottonwood (*Populus deltoides*), red osier dogwood (*Cornus sericea*), silky dogwood (*Cornus amomum*), skunk cabbage, and marsh fern (*Thelypteris palustris*).

Shrub swamp – This community is an inland wetland dominated by tall shrubs that occurs along the shores of a lake or river, in a wet depression or valley not associated with lakes, or as a transitional zone between a marsh, fen, or bog and a swamp or upland community. This community is located along the western edge of the NYSDEC wetland on the eastern portion of the site. Vegetation within this community includes tartarian honeysuckle, silky dogwood, red osier dogwood, marsh fern, and skunk cabbage.

Highbush blueberry bog thicket – This community is an ombrotrophic or weakly minerotrophic peatland dominated by tall, deciduous, ericaceous shrubs and peat mosses; the water is usually nutrient-poor and acidic. The community is located near the top of the ridge in the west-central portion of the property. Vegetation within this community includes highbush blueberry (*Vaccinium corymbosum*), mountain laurel (*Kalmia latifolia*), cinnamon fern (*Osmunda cinnamomea*), and sphagnum moss (*Sphagnum* spp.).

Common reed/purple loosestrife marsh – This community occupies much of the NYSDEC wetland as well as a wetland swale located in the northeastern portion of the property. This community type is a marsh that usually has been disturbed by draining, filling, etc. which reed grass and purple loosestrife have become dominant⁸. Vegetation within these wetlands on-site includes common reed (*Phragmites australis*), purple loosestrife, and cattail.

Successional old field – a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed and then abandoned. This community is located in the north and northwestern sections of the property and in the very

⁸ Ibid

southern portion of the site. Vegetation within this community includes bluegrass (*Poa* spp.), panicgrass (*Panicum* spp.), red and white clover (*Trifolium pratense*, *T. repens*), and Queen Anne's lace (*Daucus carota*).

Mowed lawn – This community generally occurs as residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and less than 30 percent cover by trees. Ornamental and/or native shrubs may be present but usually less than 50 percent cover. For this site, the mowed community is the golf course lawns located in the central and northeastern portions of the property.

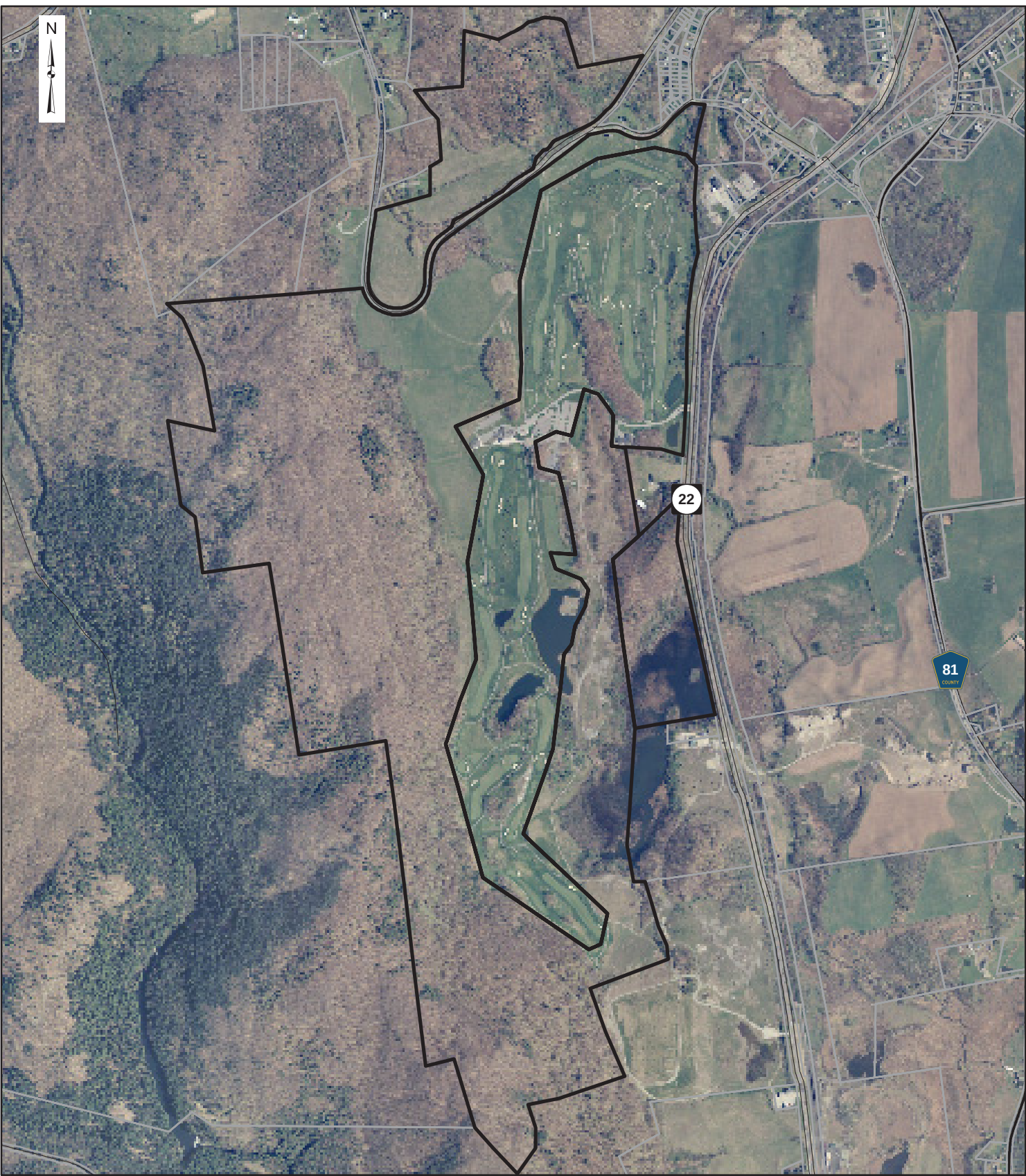


Figure 2.4-1 Aerial Imagery
Silo Ridge Country Club
Route 44
Town of Amenia, Dutchess County, New York

Dutchess County Real Property Services - 2000 Orthophoto

3.0 METHODOLOGY

The wetland delineation for the subject site was conducted on May 3, 5, 6, 2005 and on November 3, 2005 by Mr. Steven A. Finch, Mr. Auggie Ruggerio, and Mr. Jason Tourscher of the Chazen Companies. The delineation was established in the field using the three-parameter approach as described in the 1987, *US Army Corps of Engineers' Wetland Delineation Manual*.⁹ The boundary was established using flagging marked with consecutively numbered wetland flags along the wetland boundary.

At representative points along the wetland boundary, data were collected in the wetlands and uplands to document the existing vegetation, soils and hydrology. This information was later transferred onto the data sheets contained in Appendix A, "Wetland Data Sheets."

Using a Dutch auger, soil samples were taken to approximately 16 to 18 inches deep at representative points along the boundary to characterize the on-site soil conditions. Soil colors were documented using a Munsell Soil Color Chart. Hydrology was assessed by evaluating each area for inundation, saturation, water marks, drainage channels, or other field indicators (or lack thereof) of wetland hydrology.

Vegetation identified at each of the sampling locations was described in terms of the dominant species in the overstory, understory/shrub, vine, and herbaceous layers. Overstory vegetation represents the canopy tree species greater than six inches in diameter. Understory/shrub vegetation is comprised of woody tree species between two and six inches in diameter, and saplings and shrubs less than two inches in diameter and three to 12 feet in height. Ground layer vegetation consists of both woody and herbaceous vegetation less than three feet in height. The indicator status of each dominant plant species was determined using the "National List of Plant Species that Occur in Wetlands – Northeast (Region 1)."¹⁰

Photographs were taken of the site at the wetland and upland data points, and at other representative locations throughout the project area. These photographs are presented in Appendix B, "Site Photographs."

Following the establishment of the wetland boundary in the field, the wetland boundary was surveyed using GPS technology and plotted on the site map. The

⁹ U.S. Army Corps of Engineers. 1987. Wetlands Delineation Manual, Technical Report Y-87-1.

¹⁰ Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northeast (Region 1), USFWS Biological Report 88 (26.1).

wetland survey is located in Appendix D. The US Army Corps of Engineers made a site visit inspection on September 18, 2006 and identified isolated wetlands as discussed below. The NYSDEC also made a site inspection on May 31, 2006 and has subsequently validated the wetland boundary map.

4.0 RESULTS AND DISCUSSION

This section discusses each wetland or wetland group identified on the site, its location on the site, the soils, hydrological, and vegetative characteristics of the wetland, and the number of flags in the wetland line. In addition, this section briefly addresses whether the on-site wetlands are isolated under SWANCC v. ACOE and provides a brief overview of the wetland regulations (Federal, and State) as they relate to the site and the proposed Silo Ridge Country Club expansions. Table 4.0.1 below provides a summary of the on-site wetlands that were delineated on the Silo Ridge property. Each wetland is discussed in greater detail below. A list of plant species found on the property is listed in Appendix C. A copy of the wetland survey map for this property is included in Appendix D.

Table 4.0.1 Summary of On-site Wetlands

Name	Acreage	Flag Numbers	Regulating Authority
Wetland C-1	1.12	C3-C62	ACOE
Wetland C-2	1.31	C1-C3, C62-C145, CC1-CC94	ACOE
Wetland C-3	0.02		ACOE
Wetland G-1	0.33	G27-G62, GG1-GG45	ACOE
Wetland I	0.06	I1-I14	Isolated
Wetland J/JJ	2.46	J30-J136, JJ48-JJ231	ACOE
Wetland L/LL	26.03	L1-L135, LL1-LL116	ACOE, NYSDEC (AM-15) NYSDEC Wetland AM-15 is located south at the carpath and ends at flags L-40/LL-33
Wetland N/O	0.15, 0.04	N1-N11, NN1-NN12	ACOE

Wetland S	0.34	S1-S26, SS1-SS39	Isolated
Wetland U	2.78	U1-U15, UU1- UU67	Isolated
Wetland W	1.30	W1-W55 WW1-WW101	ACOE
Wetland X	0.25	X1-X18	ACOE
Total Area	36.19		

Isolated indicates that based on the ACOE's site inspections, the Wetland is hydrologically isolated from waters of the United States and is not regulated under The Clean Water Act pursuant to The US Supreme Court in SWANCC v. ACOE.

4.1 Wetlands

Wetland C-1

Wetland C-1 is an approximately 1.12 acre wetland/stream complex established in the northeastern portion of the site. The wetland is very linear (through alterations with the surrounding land when the golf course was created) with hydrology coming from a pond located several feet north of the wetland and connected with a culvert pipe. Water slowly moves south through the wetland and discharging into Cascade Brook. The wetland is an emergent swamp community dominated by vegetation including reed canary grass (*Phalaris arundinacea*), cattail, purple loosestrife, and sedges (*Carex* spp.). Hydrologic indicators include inundation, saturation, and oxidized root channels. Soils were a low chroma dark gray (2.5Y 3/1) sandy clay loam with mottles at four inches and deeper of a chroma of olive (2.5Y 3/4).

Wetland C-2

This wetland/stream complex has established in the northeastern portion of the site associated with Cascade Brook. This wetland is approximately 1.31 acre in size. Wetland C-2 is a red maple swamp dominated by red maple, multiflora rose, jewelweed (*Impatiens capensis*), tussock sedge (*Carex stricta*), sensitive fern (*Onoclea sensibilis*), and common reed. Hydrologic indicators include inundation; saturation, drainage patterns, and water stained leaves in the wetlands. Soils are a low chroma dark gray (2.5Y 3/1) silt loam. Hydric soil indicators include reducing soil conditions, and gleyed or low chroma colors.

Wetland C-3

This is a small wetland area, 0.02 acre in size, added to the wetland delineation by the ACOE during the September 18, 2006 site inspection.

Wetland G-1

Wetland G-1 is red maple swamp community associated with Stream G located within the northeastern portion of the property. The wetland is approximately 0.33 acres in size. Dominant vegetation within this wetland includes red maple, ironwood (*Carpinus caroliniana*), spicebush (*Lindera benzoin*), skunk cabbage, sensitive fern, and marsh marigold (*Caltha palustris*). Hydrologic indicators include inundation saturation, and drainage patterns. Soils are a low chroma dark gray (10YR 2/1) and olive gray (2.5Y 5/1) sandy gravelly loam.

Wetland I

Wetland I is an isolated wetland located in the north central portion of the property and is approximately 0.06 in size. This wetland is a common reed marsh community dominated by vegetation including common reed, purple loosestrife, cattail, soft rush (*Juncus effusus*), and arrowleaf tear-thumb (*Polygonum sagittatum*). Hydrologic indicators include inundation, saturation, and oxidation. Soils are a low chroma dark gray (2.5Y 3/2) with abundant olive gray (2.5Y 5/1) mottles with a gravelly clay loam texture.

Wetland J

Wetland J is a series of small red maple forested wetlands associated with Stream J located in the west-central portion of the property. These wetlands are 2.46 in size.

Dominant vegetation within these wetlands includes red maple, multiflora rose, spicebush, skunk cabbage, and jewelweed. Hydrologic indicators include inundation, saturation, drainage patterns, and water-stained leaves. Soils are a low chroma dark gray (2.5Y 3/1) and dark gray (2.5Y 4/1) with brown (10YR 4/6) mottles with a clay loam texture.

Wetland L/LL

Wetland L is a complex wetland system that contains several wetland communities including a shallow emergent, scrub-shrub, common reed/purple loosestrife, and open water communities. This wetland is NYSDEC Wetland AM-15. The NYSDEC Wetland limits extend southward from flags L-40/LL-33. The wetland is approximately 26.03 acres and is located in the southeast portion of the site west of SR 22. Dominant vegetation within this wetland includes red maple, tartarian honeysuckle, silky dogwood, common reed, sensitive fern, and skunk cabbage. Hydrologic indicators include inundation, saturation, drainage patterns, water stained leaves, and oxidized root channels. Soils are a low chroma dark gray (10YR 3/2) with dark olive gray (2.5Y 4/1) abundant mottles at one location in the northern boundary line and dark olive gray (2.5Y 3/1) with brown (7.5YR 4/6) mottles in the western portion of the wetland.

Wetland N/O

These are two wetlands that were originally created on the golf course as water hazards, but through time have become shallow emergent wetland communities. These two wetlands are approximately 0.15 acres (Wetland N) and 0.04 acres (Wetland O) in size located in the south-central portion of the property. Dominant vegetation within these wetlands includes cattail, purple loosestrife, and duckweed (*Lemna* spp.). Hydrologic indicators found include inundation. Soils are a low chroma color.

Wetland S

Wetland S is a small red maple forested wetland community associated with Stream S. The wetland is located in the northwest corner of the property and is approximately 0.34 acres in size. Dominant vegetation within the wetland includes red maple, multiflora rose, skunk cabbage, and sensitive fern. Hydrologic indicators include saturated soils, drainage patterns, and water-stained leaves. Soils consist of low chroma.

Wetland U

Wetland U is an isolated highbush blueberry bog thicket community approximately 2.78 acres in size located in the west-central portion of the property approximately three-quarters up the ridge. Dominant vegetation includes mountain laurel, highbush blueberry, fringed sedge (*Carex crinita*), cinnamon fern, and sphagnum moss. Hydrologic indicators include inundation, water-stained leaves, and drainage patterns. Soils consist of low chroma.

Wetland W

Wetland W is a red maple forested wetland that is approximately 1.30 acres in size located near the west-central boundary line on top of the ridge. Dominant vegetation within the wetland include red maple, green ash (*Fraxinus pennsylvanica*), highbush blueberry, silky dogwood, royal fern (*Osmunda regalis*), and tussock sedge (*Carex stricta*). Hydrologic indicators include inundation, saturation, water-stained leaves, and drainage patterns. Soils were dark brown (10YR 2/2) organic loam from zero to six inches transitioning to a gray (2.5Y 5/1) clay loam up to 13 inches.

Wetland X

Wetland X is a red maple forested wetland that is approximately 0.25 acres in size located just south of Wetland W. Dominant vegetation consists of red maple, American elm, ironwood, royal fern, cinnamon fern, and soft rush. Hydrologic indicators include inundation, saturation, and water-stained leaves. Soils were dark brown (10YR 2/1) clay loam from zero to six inches transitioning to an olive brown (2.5Y 4/2) with brown (2.5Y 4/6) clay loam up to 16 inches.

4.3 Regulated Wetlands and Waters On-site

4.3.1 US Army Corps of Engineers

Pond A and Wetlands I, S and U are not subject to regulation under The Clean Water Act because during the field inspection no hydrological connection was found connecting these wetlands to waters of the US. Wetland I is surrounded by an open field in all directions followed by the golf course to the east. There was no indication of any hydrologic connection from the wetland to any other regulated waters of the US. Wetland U is located on a flat section on the ridge. A hydrologic flow is observed leaving the wetland but quickly dissipates leaving no hydrologic indicators down the ridge toward the golf course. During the field inspection, the

ACOE also found that Wetlands S and Pond A were also isolated. Hence, per the review of the ACOE, these wetlands are not jurisdictional and are not regulated by the ACOE because they are considered to meet the criteria of isolated wetlands identified in the 2001 court ruling *SWANCC v ACOE*¹¹.

Under Section 404 of the Clean Water Act, the ACOE regulates the discharge of dredged or fill material into waters of the United States. The ACOE has field verified the wetland boundaries on the site.¹² A written jurisdictional determination will confirm the extent of the wetlands and waters on-site, which will be included with a permit application if the proposed design imposes impact to these waters. Accordingly, any activity that proposes to discharge dredged or fill material into the wetlands or watercourses on-site would require a permit from the ACOE.

4.3.2 NYSDEC Regulations

As mentioned in Section 2.3 “Hydrology and Wetland Mapping,” there is one NYSDEC wetland (AM-15) identified within the subject property as Wetland L/LL under NYSDEC jurisdiction.

The NYSDEC wetland (Wetland L/LL) will require a 100-foot wetland buffer around the perimeter of the wetland. Any work within the buffer of the wetland will require a NYSDEC Buffer Disturbance Permit. Also, a NYSDEC 401 Water Quality Certification will be required with any federal wetland permits. Further, as stated above, if the project proposes any stream impacts (i.e., culvert maintenance, repair, rehabilitation, outfall structures, etc.) to the on-site tributary, a stream disturbance permit will be required from the NYSDEC.

5.0 CONCLUSION

The wetland delineation for this site identified nine wetland systems totaling 36.19 acres. Pond A Wetlands I, S and U are judged to be isolated under the SWANCC ruling as they do not have a surface hydrological connection to waters of the US. All other wetlands and streams on-site are regulated by the ACOE. Also, Wetland L/LL is regulated by the NYSDEC as this wetland is NYSDEC wetland AM-15.

¹¹ Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers, 531 US 159 (2001) (SWANCC).

¹² Waters of the United States as defined in Section 8, Nationwide Permits Complete Vol. 1, 2002 edition. Wetland Training Institute. Page 214.

Appendix A: Data Sheets

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland Date: 3-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: CC46 out State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Fraxinus pennsylvanica</u>	Tree	FACW
2. <u>Impatiens capensis</u>	Herb	FACW
3. <u>Rosa multiflora</u>	Shrub	FACU
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		67%
Remarks:		

HYDROLOGY

____ Recorded Data (Describe in Remarks Section) ____ Stream, Lake or Tide Guage ____ Aerial Photographs ____ Other <u>X</u> No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil <u>>15</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: ____ Inundated ____ Saturated in Upper 12 Inches ____ Water Marks ____ Drift Lines ____ Sediment Deposits ____ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ____ Oxidized Root Channels in Upper 12" ____ Water Stained Leaves ____ Local Soil Survey Data <u>X</u> FAC-Neutral Test ____ Other (explain in Remarks Section)
Remarks:	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland Date: 3-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: CC46 out State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-15		2.5Y 3/2		Loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☐ Yes ☒ No Hydric Soils Present? ☐ Yes ☒ No	Is this Sampling Point within a Wetland? ☐ Yes ☒ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland Date: 6-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: JJ78out State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Allium petiolata</u>	<u>Herb</u>	<u>FACU-</u>
2. <u>Impatiens capensis</u>	<u>Herb</u>	<u>FACW</u>
3. <u>Rosa multiflora</u>	<u>Shrub</u>	<u>FACU</u>
4. <u>Solidago sp.</u>	<u>Herb</u>	<u>NI</u>
5. <u>Symplocarpus foetidus</u>	<u>Herb</u>	<u>OBL</u>
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		<u>50%</u>
Remarks:		

HYDROLOGY

____ Recorded Data (Describe in Remarks Section) ____ Stream, Lake or Tide Guage ____ Aerial Photographs ____ Other <u>X</u> No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil <u>>15</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: ____ Inundated ____ Saturated in Upper 12 Inches ____ Water Marks ____ Drift Lines ____ Sediment Deposits ____ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ____ Oxidized Root Channels in Upper 12" ____ Water Stained Leaves ____ Local Soil Survey Data ____ FAC-Neutral Test ____ Other (explain in Remarks Section)
Remarks:	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland Date: 6-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: JJ78out State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-9		2.5Y 2.5/1		Loam
9-18		2.5Y 3/3		Loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☒ No Wetland Hydrology Present? ☐ Yes ☒ No Hydric Soils Present? ☐ Yes ☒ No	Is this Sampling Point within a Wetland? ☐ Yes ☒ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland/wet Date: 6-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: JJ94in State: NY

- A.** Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>
2. <u>Impatiens capensis</u>	<u>Herb</u>	<u>FACW</u>
3. <u>Lindera benzoin</u>	<u>Shrub</u>	<u>FACW-</u>
4. <u>Rosa multiflora</u>	<u>Shrub</u>	<u>FACU</u>
5. <u>Symplocarpus foetidus</u>	<u>Herb</u>	<u>OBL</u>
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		<u>80%</u>
Remarks: 		

HYDROLOGY

____ Recorded Data (Describe in Remarks Section) ____ Stream, Lake or Tide Guage ____ Aerial Photographs ____ Other <u>X</u> No Recorded Data Available Field Observations Depth of Surface Water <u> <=2 </u> (in.) Depth to Free Water in pit: <u> </u> (in.) Depth to Saturated Soil <u> <=1 </u> (in.)	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 Inches ____ Water Marks ____ Drift Lines ____ Sediment Deposits <u>X</u> Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ____ Oxidized Root Channels in Upper 12" <u>X</u> Water Stained Leaves ____ Local Soil Survey Data <u>X</u> FAC-Neutral Test ____ Other (explain in Remarks Section)
Remarks: 	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland/wet Date: 6-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: JJ94in State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-5		2.5Y 3/1		Clay loam
5-18		2.5Y 4/1	10YR 4/6	Clay loam

Hydric Soils Indicators:

- | | |
|---|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☒ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No Hydric Soils Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland/wet Date: 7-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: LL87in State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Acer rubrum</u>	<u>Tree</u>	<u>FAC</u>
2. <u>Carex stricta</u>	<u>Herb</u>	<u>OBL</u>
3. <u>Impatiens capensis</u>	<u>Herb</u>	<u>FACW</u>
4. <u>Onoclea sensibilis</u>	<u>Herb</u>	<u>FACW</u>
5. <u>Phragmites australis</u>	<u>Herb</u>	<u>FACW</u>
6. <u>Rosa multiflora</u>	<u>Shrub</u>	<u>FACU</u>
7. <u>Solidago canadensis</u>	<u>Herb</u>	<u>FACU-</u>
8. <u>Symplocarpus foetidus</u>	<u>Herb</u>	<u>OBL</u>
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		<u>75%</u>
Remarks: 		

HYDROLOGY

____ Recorded Data (Describe in Remarks Section) ____ Stream, Lake or Tide Guage ____ Aerial Photographs ____ Other <u>X</u> No Recorded Data Available Field Observations Depth of Surface Water <u><=12</u> (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil <u><=1</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: <u>X</u> Inundated <u>X</u> Saturated in Upper 12 Inches ____ Water Marks ____ Drift Lines ____ Sediment Deposits <u>X</u> Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ____ Oxidized Root Channels in Upper 12" <u>X</u> Water Stained Leaves ____ Local Soil Survey Data <u>X</u> FAC-Neutral Test ____ Other (explain in Remarks Section)
Remarks: 	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: woodland/wet Date: 7-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: LL87in State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-18		2.5Y 3/1	7.5YR 4/6	Silt loam

Hydric Soils Indicators:

- | | |
|---|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☒ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No Hydric Soils Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: Herbaceous Date: 7-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: LL77out State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Gallium sp.</u>	Herb	NI
2. <u>Onoclea sensibilis</u>	Herb	FACW
3. <u>Rosa multiflora</u>	Shrub	FACU
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		50%
Remarks:		

HYDROLOGY

____ Recorded Data (Describe in Remarks Section) ____ Stream, Lake or Tide Guage ____ Aerial Photographs ____ Other <u>X</u> No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil <u>>18</u> (in.)	Wetland Hydrology Indicators: Primary Indicators: ____ Inundated ____ Saturated in Upper 12 Inches ____ Water Marks ____ Drift Lines ____ Sediment Deposits ____ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ____ Oxidized Root Channels in Upper 12" ____ Water Stained Leaves ____ Local Soil Survey Data ____ FAC-Neutral Test ____ Other (explain in Remarks Section)
Remarks:	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: Herbaceous Date: 7-May-05
Applicant/Owner: _____ Transect ID: _____ County: Dutchess
Investigator A. Ruggiero Plot ID: LL77out State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-18		2.5Y 3/2		Clay loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Is this Sampling Point within a Wetland? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	
Hydric Soils Present? ☐ Yes ☒ No	

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 3-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: C47 State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u><i>Typha latifolia</i></u>	HERB	OBL
2. <u><i>Lythrum salicaria</i></u>	HERB	FACW+
3. <u><i>Phalaris arundinacea</i></u>	HERB	FACW+
4. <u><i>Carex spp.</i></u>	HERB	
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		
11. _____		
12. _____		
13. _____		
14. _____		
15. _____		
16. _____		
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		100%
Remarks: 		

HYDROLOGY

___ Recorded Data (Describe in Remarks Section) ___ Stream, Lake or Tide Guage ___ Aerial Photographs ___ Other ___ No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil _____ (in.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☒ Oxidized Root Channels in Upper 12" ☒ Water Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (explain in Remarks Section)
Remarks: none	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 3-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: C47 State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-4	A/B	2.5Y 3/1		Sandy clay loam
4+	B	2.5Y 3/1		Gravelly clay loam

Hydric Soils Indicators:

- | | |
|---|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☒ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☒ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No Hydric Soils Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 3-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: GG State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:		STRATUM	INDICATOR
1.	<u>Acer rubrum</u>	TREE	FAC
2.	<u>Carpinus caroliniana</u>	TREE	FAC
3.	<u>Lindera benzoin</u>	SHRUB	FACW-
4.	<u>Symplocarpus foetidus</u>	HERB	OBL
5.	<u>Onoclea sensibilis</u>	HERB	FACW
6.	<u>Alliaria petiolata</u>	HERB	FACU-
7.	<u>Caltha palustris</u>	HERB	OBL
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
13.	_____	_____	_____
14.	_____	_____	_____
15.	_____	_____	_____
16.	_____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):			<u>86%</u>
Remarks:			

HYDROLOGY

☐ Recorded Data (Describe in Remarks Section) ☐ Stream, Lake or Tide Guage ☐ Aerial Photographs ☐ Other ☐ No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil _____ (in.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 Inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) ☐ Oxidized Root Channels in Upper 12" ☐ Water Stained Leaves ☐ Local Soil Survey Data ☐ FAC-Neutral Test ☐ Other (explain in Remarks Section)
Remarks: none	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: _____ Community ID: Upland Date: _____
Applicant/Owner: _____ Transect ID: _____ County: _____
Investigator: _____ Plot ID: GG State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-4	A	10YR 2/1		sandy gravelly loam
4+	B	2.5Y 2.5/1		sandy gravelly loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No Hydric Soils Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
--	--

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 5-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: I State: NY

- A. Do normal circumstances exist on this site? _____ ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) _____ ☐ Yes ☒ No
C. Is the area a potential Problem Area? _____ ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u><i>Typha latifolia</i></u>	<u>HERB</u>	<u>OBL</u>
2. <u><i>Lythrum salicaria</i></u>	<u>HERB</u>	<u>FACW+</u>
3. <u><i>Juncus effusus</i></u>	<u>HERB</u>	<u>FACW+</u>
4. <u><i>Polygonum saggitatum</i></u>	<u>HERB</u>	<u>OBL</u>
5. <u><i>Lemna minor</i></u>	<u>HERB</u>	<u>OBL</u>
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -):		<u>100%</u>
Remarks:		

HYDROLOGY

Recorded Data (Describe in Remarks Section) ___ Stream, Lake or Tide Guage ___ Aerial Photographs ___ Other ___ No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil _____ (in.)	Wetland Hydrology Indicators: Primary Indicators: <u>x</u> Inundated <u>x</u> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required) <u>x</u> Oxidized Root Channels in Upper 12" ___ Water Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (explain in Remarks Section)
Remarks:	
none	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 5-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: I State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-16	A/B	2.5Y 3/2	2.5Y 5/1 abundant	gravelly clay loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks:

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: WET Date: 6-Mar-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: L State: NY

- A. Do normal circumstances exist on this site? ☒ Yes ☐ No
B. Is this site significantly disturbed (Atypical Situation) ☐ Yes ☒ No
C. Is the area a potential Problem Area? ☐ Yes ☒ No
(If needed, explain on reverse)

VEGETATION

DOMINANT PLANT SPECIES:	STRATUM	INDICATOR
1. <u>Cornus sericea</u>	<u>Shrub</u>	<u>FACW+</u>
2. <u>Lonicera tatarica</u>	<u>Shrub</u>	<u>FACU</u>
3. <u>Onoclea sensibilis</u>	<u>Herb</u>	<u>FACW</u>
4. <u>Symplocarpus foetidus</u>	<u>Herb</u>	<u>OBL</u>
5. <u>Solidago spp.</u>	<u>Herb</u>	
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____
11. _____	_____	_____
12. _____	_____	_____
13. _____	_____	_____
14. _____	_____	_____
15. _____	_____	_____
16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 75%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks Section) ___ Stream, Lake or Tide Guage ___ Aerial Photographs ___ Other ___ No Recorded Data Available Field Observations Depth of Surface Water _____ (in.) Depth to Free Water in pit: _____ (in.) Depth to Saturated Soil _____ (in.)	Wetland Hydrology Indicators: Primary Indicators: ___ Inundated <u>x</u> Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits <u>x</u> Drainage Patterns in Wetlands Secondary Indicators (2 or more required) <u>x</u> Oxidized Root Channels in Upper 12" <u>x</u> Water Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (explain in Remarks Section)
Remarks:	

DATA FORM
ROUTINE WETLANDS DETERMINATION
(1987 ACOE Wetlands Delineation Manual)

Project/Site: Silo Ridge Community ID: Wet Date: 6-May-05
Applicant/Owner: Higher Ground Transect ID: _____ County: Dutchess
Investigator S. Finch Plot ID: L State: NY

SOILS

Map Unit Name: _____ Drainage Class: _____
(Series and Phase): _____ Field Observations: _____
Taxonomy (Subgroup): _____ Confirm Mapped Type: ☐ Yes ☐ No

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concentrations, Structure, etc.
0-16+	A/B	10YR 3/2	2.5Y 4/1 abundant	Sandy clay loam

Hydric Soils Indicators:

- | | |
|--|---|
| ☐ Histosol | ☐ Concretions |
| ☐ Histic Epipedon | ☐ High Organic Content |
| ☐ Sulfidic Odor | ☐ Organic Streaking in Sandy Soils |
| ☐ Aquic Moisture Regime | ☐ Listed on Local Hydric Soils List |
| ☐ Reducing Conditions | ☐ Listed on National Hydric Soils List |
| ☐ Gleyed or Low-Chroma Colors | ☐ Other (Explain in Remarks Section) |

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No Wetland Hydrology Present? ☒ Yes ☐ No Hydric Soils Present? ☒ Yes ☐ No	Is this Sampling Point within a Wetland? ☒ Yes ☐ No
--	--

Remarks:

Appendix B: Site Photographs



Photo #1
Pond A.



Photo #2
Pond B.



Photo #3
Perennial stream(C,CC-line) exiting the eastern boundary line.



Photo #4
Perennial stream (C,CC-line) located along eastern boundary line



Photo #5
Wetland C.



Photo #6
Intermittent stream (E-line).



Photo #7
Wetland GG.



Photo #8
Isolated Wetland I.



Photo #9
One of several wetlands along the J,JJ-wetland/stream line.



Photo #10
Eastern view of Wetland L along the wetland line LL.



Photo #11
Southeastern view of Wetland L from the L-line.



Photo #12
Eastern view of Wetland L.



Photo #13
Southwestern view of Wetland L with transition to uplands.



Photo #14
Southern view of Wetland L along New York State Route 23.



Photo #15
Springhead of a ditched intermittent stream (QQ-line).



Photo #16
Facing south along the ditched intermittent stream (QQ-line).



Photo #17

An intermittent stream located near the north central portion of the property (R,RR-line).



Photo #18

The end of an intermittent stream located near the north central portion of the property (R,RR-line).



Photo #19

An intermittent stream located near the north central portion of the property (R,RR-line) at a culvert at New York State Route 44.

Appendix C: Vegetation List

List of Flora of Silo Ridge and Indicator Status

Scientific Name	Common Name	Indicator Status
Trees		
<i>Acer negundo</i>	Boxelder	FAC+
<i>Acer pensylvanicum</i>	Striped maple	FACU
<i>Acer rubrum</i>	Red maple	FAC
<i>Acer saccharum</i>	Sugar maple	FACU-
<i>Aesculus hippocastanum</i>	Horse chestnut	UPL
<i>Betula papyrifera</i>	Paper birch	FACU
<i>Betula pendula</i>	European birch	UPL
<i>Betula populifolia</i>	Gray birch	FAC
<i>Carya ovata</i>	Shagbark hickory	FACU-
<i>Castanea dentata</i>	American chestnut	UPL
<i>Crataegus</i> spp.	Hawthorn	UPL
<i>Fagus grandifolia</i>	American beech	FACU
<i>Fraxinus americana</i>	White ash	FACU
<i>Fraxinus pennsylvanica</i>	Green ash	FACW
<i>Malus</i> spp.	Apple	NI
<i>Picea glauca</i>	White spruce	FACU
<i>Pinus strobus</i>	White pine	FACU
<i>Platanus occidentalis</i>	Sycamore	FACW-
<i>Populus deltoides</i>	Eastern cottonwood	FAC
<i>Populus grandidentata</i>	Bigtooth aspen	FACU-
<i>Populus tremuloides</i>	Quaking aspen	FACU
<i>Prunus serotina</i>	Black cherry	FACU
<i>Quercus alba</i>	White oak	FACU-
<i>Quercus prinus</i>	Chestnut oak	UPL
<i>Quercus rubra</i>	Red oak	FACU-
<i>Rhus hirta</i>	Staghorn sumac	UPL
<i>Salix babylonica</i>	Weeping willow	FACW-
<i>Ulmus americana</i>	American elm	FACW-
<i>Tsuga canadensis</i>	Eastern hemlock	FACU
Shrubs		
<i>Amelanchier</i> spp.	Serviceberry	NI
<i>Berberis thunbergii</i>	Japanese barberry	FACU
<i>Betula lenta</i>	Sweet birch	FACU
<i>Carpinus caroliniana</i>	American hornbeam	FAC
<i>Cornus amomum</i>	Silky dogwood	FACW
<i>Cornus sericea</i>	Red-osier dogwood	FACW+
<i>Euonymus atropurpureus</i>	Burning bush	FACU
<i>Hamamelis virginiana</i>	Witch-hazel	FAC-
Scientific and common names and wetland indicator categories are from Reed (1988) and Tiner et al. (1995). Newcomb, Lawrence. 1977. <u>Newcomb's Wildflower Guide</u>. Little, Brown and Company. Boston. Reschke, Carol. 2002. <u>Ecological Communities of New York State</u>. 2nd ed. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY. FAC: Facultative FACU: Facultative upland FACW: Facultative wetland NI: Non-indicator OBL: Obligate UPL: Upland +: more frequent in wetlands -: less frequent in wetlands *: tentative agreement		

List of Flora of Silo Ridge and Indicator Status (cont.)

Scientific Name	Common Name	Indicator Status
Shrubs (cont.)		
<i>Kalmia latifolia</i>	Mountain Laurel	FACU
<i>Lindera benzoin</i>	Spicebush	FACW-
<i>Rosa multiflora</i>	Multiflora rose	FACU
<i>Rubus occidentalis</i>	Black raspberry	UPL
<i>Rubus</i> spp.	Blackberry	NI
<i>Salix discolor</i>	Pussy willow	FACW
<i>Vaccinium corymbosum</i>	Highbush blueberry	FACW-
<i>Viburnum dentatum</i>	Northern arrow-wood	FAC
Herbs		
<i>Aquilegia canadensis</i>	Red columbine	FAC
<i>Alliaria petiolata</i>	Garlic mustard	FACU-
<i>Anemone quinquefolia</i>	Wood anemone	FACU
<i>Apocynum androsaemifolium</i>	Spreading dogbane	FACU
<i>Arctium minus</i>	Common burdock	UPL
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-
<i>Asarum canadense</i>	Canadian wildginger	NI
<i>Brassica nigra</i>	Black mustard	UPL
<i>Caltha palustris</i>	Yellow marsh marigold	OBL
<i>Cichorium intybus</i>	Chicory	FACU
<i>Coptis groenlandica</i>	Goldthread	FACW
<i>Coronilla varia</i>	Purple crownvetch	UPL
<i>Daucus carota</i>	Queen Anne's lace	UPL
<i>Dicentra cucullaria</i>	Dutchman's breeches	UPL
<i>Echinocystis lobata</i>	Wild cucumber	FAC
<i>Equisetum palustre</i>	Marsh horsetail	FACW
<i>Euphorbia cyparissias</i>	Cypress spurge	FACU
<i>Fragaria</i> spp.	Strawberry	NI
<i>Galium aparine</i>	Cleavers	FACU
<i>Hepatica americana</i>	Round-lobed Hepatica	UPL
<i>Hypericum</i> spp.	St. John's wart	NI
<i>Impatiens capensis</i>	Jewelweed	FACW
<i>Lemna</i> spp.	Duckweed	NI
<i>Lycopodium</i> spp.	Clubmoss	NI
<i>Lythrum salicaria</i>	Purple loosestrife	FACW+
<i>Phytolacca americana</i>	American pokeweed	FACU+
<i>Plantago major</i>	Common plantain	FACU
<i>Polygonum sagittatum</i>	Arrowleaf tearthumb	OBL
<i>Potentilla</i> spp.	Cinquefoil	NI
Scientific and common names and wetland indicator categories are from Reed (1988) and Tiner et al. (1995). Newcomb, Lawrence. 1977. <u>Newcomb's Wildflower Guide</u>. Little, Brown and Company. Boston. Reschke, Carol. 2002. <u>Ecological Communities of New York State</u>. 2nd ed. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY. FAC: Facultative FACU: Facultative upland FACW: Facultative wetland NI: Non-indicator OBL: Obligate UPL: Upland +: more frequent in wetlands -: less frequent in wetlands *: tentative agreement		

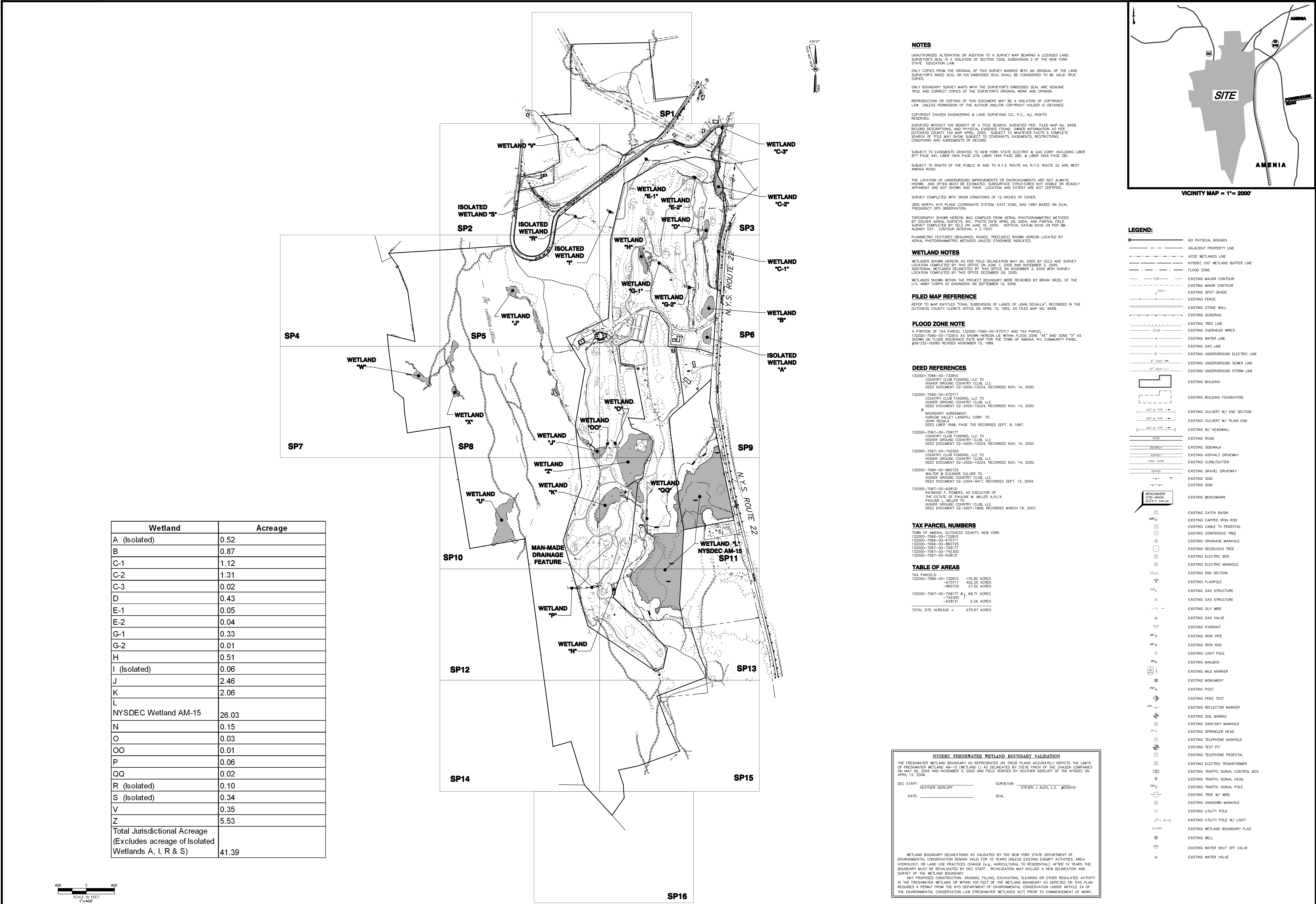
List of Flora of Silo Ridge and Indicator Status (cont.)

Scientific Name	Common Name	Indicator Status
Herbs (cont.)		
<i>Ranunculus</i> spp.	Buttercup	NI
<i>Rudbeckia hirta</i>	Blackeyed susan	FACU-
<i>Sanguinaria canadensis</i>	Bloodroot	NI
<i>Sisymbrium officinale</i>	Hedge mustard	FACU
<i>Smilacina racemosa</i>	False solomon's seal	FACU-
<i>Solidago canadensis</i>	Canada goldenrod	FACU
<i>Sphagnum</i> spp.	Sphagnum	NI
<i>Symplocarpus foetidus</i>	Skunk cabbage	OBL
<i>Taraxacum officinale</i>	Common dandelion	FACU-
<i>Thalictrum</i> spp.	Meadow-rue	NI
<i>Thalictrum thalictroides</i>	Rue anemone	UPL
<i>Trifolium campestre</i>	Field clover	FACU
<i>Trifolium pratense</i>	Red clover	FACU-
<i>Trifolium repens</i>	White clover	FACU-
<i>Tussilago farfara</i>	Coltsfoot	FACU
<i>Trillium erectum</i>	Red trillium	FACU-
<i>Viola macloskeyi</i>	Small white violet	FACW+
<i>Viola</i> spp.	Violet	NI
<i>Veratrum viride</i>	False hellebore	FACW+
Ferns		
<i>Adiantum pedatum</i>	Northern maidenhair fern	FAC-
<i>Athyrium filix-femina</i>	Common ladyfern	FAC
<i>Dryopteris marginalis</i>	Marginal woodfern	FACU-
<i>Matteucchia struthiopteris</i>	Ostrich fern	FACW
<i>Onoclea sensibilis</i>	Sensitive fern	FACW
<i>Osmunda cinnamomea</i>	Cinnamon fern	FACW
<i>Polypodium vulgare</i>	Common polypody	NI
<i>Polystichum acrostichoides</i>	Christmas fern	FACU-
<i>Pteridium aquilinum</i>	Brackenfern	FACU
<i>Thelypteris noveboracensis</i>	New York fern	FAC
<i>Thelypteris palustris</i>	Marsh fern	FACW+
Vines		
<i>Toxicodendron radicans</i>	Poison ivy	FAC
<i>Vitis</i> spp.	Grapevine	NI
Grasses and Sedges		
<i>Andropogon</i> spp.	Broomsedge	NI
<i>Carex pensylvanica</i>	Pennsylvania sedge	UPL
<i>Carex stricta</i>	Upright sedge	OBL
<i>Carex</i> spp.	Sedge	NI
<i>Eleocharis</i> spp.	Spikerush	NI
Scientific and common names and wetland indicator categories are from Reed (1988) and Tiner et al. (1995). Newcomb, Lawrence. 1977. <u>Newcomb's Wildflower Guide</u>. Little, Brown and Company. Boston. Reschke, Carol. 2002. <u>Ecological Communities of New York State</u>. 2nd ed. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY. FAC: Facultative FACU: Facultative upland FACW: Facultative wetland NI: Non-indicator OBL: Obligate UPL: Upland +: more frequent in wetlands -: less frequent in wetlands *: tentative agreement		

List of Flora of Silo Ridge and Indicator Status (cont.)

Scientific Name	Common Name	Indicator Status
Grasses and Sedges (Cont.)		
<i>Juncus effusus</i>	Soft rush	FACW+
<i>Phalaris arundinacea</i>	Reed canarygrass	FACW+
<i>Phragmites australis</i>	Common reed	FACW
<i>Poa</i> spp.	Bluegrass	NI
<i>Scirpus cyperinus</i>	Woolgrass	FACW+
<i>Typha latifolia</i>	Broad leaved cattail	OBL
Scientific and common names and wetland indicator categories are from Reed (1988) and Tiner et al. (1995). Newcomb, Lawrence. 1977. <u>Newcomb's Wildflower Guide</u>. Little, Brown and Company. Boston. Reschke, Carol. 2002. <u>Ecological Communities of New York State</u>. 2nd ed. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY. FAC: Facultative FACU: Facultative upland FACW: Facultative wetland NI: Non-indicator OBL: Obligate UPL: Upland +: more frequent in wetlands -: less frequent in wetlands *: tentative agreement		

Appendix D: Wetland Map



Silo Ridge Country Club
Resort Community

tblk-image-1.jpg

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Dutchess County Office:
21 Fox Street
Poughkeepsie, New York 12601
Phone: (845) 454-3888

Capital District Office:
141 West Street
Troy, New York 12180
Phone: (518) 273-0555

Orange County Office:
156 Westway Avenue
Saugerties, New York 12550
Phone: (845) 367-1133

North County Office:
125 Oak Street
Slate Falls, New York 12851
Phone: (518) 852-2013

SILO RIDGE
MAP OF WETLAND SURVEY
PREPARED FOR
HIGHER GROUND COUNTRY CLUB MANAGEMENT CO., LLC
TOWN OF AMENIA, DUTCHESS COUNTY, NEW YORK

drawn: M.C. checked: MM
date: 1/13/06 scale: 1" = 400'
project no: 10454
sheet no: T1
1 OF 17

Drawing Name: K:\1\10454-10560\10454 Survey\Map\ARCHIVE\ARCHIVE_WETLANDS_REV-5_20070530\T1-OVERALL-WETLANDS-10454.dwg
DWG Author: JIM WETLANDS-10454_10454.dwg
Date Printed: May 31, 2007, 5:59pm

MEMORANDUM

To: File Record
From: Steve Finch
cc: Dave Tompkins, Barbara Beall
Date: June 15, 2007
Re: Condition of delineated wetlands on 2.2 acre parcel
Job #: 10454.02

On May 14, 2007, I conducted a site visit of the 2.2 acre parcel, located to the northeast of the existing property for the purposes of conducting a wetland assessment and delineation.

This property abuts Wetland S located to the south on the main parcel. As part of the site assessment and delineation, it was noted that two flags previously placed for Wetland S extended onto this 2.2 acre property and thus were not shown on the original delineation. I noted a need for the revised wetland survey to include these two flags previously located.

Also, six additional flags were identified on the north side of the existing driveway. This area was also labeled as Wetland S1A through S1-3 OE and SS1A through SS3A OE. There was an ephemeral connection observed between this additional delineated wetland area and the existing Wetland S.

Previously during the ACOE site visit on September 12, 2006, the ACOE determined that Wetland I and Stream R/S on the main parcel were isolated because there was no defined flow exiting these two wetlands and flowing downstream into a tributary to an interstate waterbody. Since Wetland S on the 2.2 acre parcel is located upstream of the isolated wetland system, the additional wetland areas identified on the 2.2 acre parcel would be considered isolated as well.

TCC discussed this assumption with the ACOE by e-mail dated 5-17-2007. The ACOE staff requested that the survey of the wetlands on the 2.2 acre parcel be provided to the office, along with data sheets and photographs. The ACOE indicated that they may or may not need to visit the site, given the fact that they previously identified wetlands downstream of this location isolated.