

*Eastern Timber Rattlesnake
Habitat Assessment Report*

Quartararo Property
Town of Dover,
Dutchess County, NY

November 27, 2013
Revised February 10, 2014
Revised March 4, 2014 (add Soils Map)

Prepared by:

Michael Nowicki
Ecological Solutions, LLC
1248 Southford Road
Southbury, CT 06488
(203) 910-4716

1.0 INTRODUCTION	3
2.0 KNOWN TIMBER RATTLESNAKE HABITATS	4
3.0 TIMBER RATTLESNAKE HABITAT SURVEYS.....	5
4.0 RECOMMENDATIONS	6
Figure 1 Location Map.....	7
Figure 2 Limits of Observation	8

APPENDIX

Soils Map

Site Photographs, 1 - 48, dated 2/3/14

Photograph Location Plan, sheet 1 of 1, dated 2/3/14

1.0 INTRODUCTION

The property owner, John Quartararo, proposes to construct three single family residences, driveways and individual septic systems on 3 lots totaling approximately 97.679 acres (Lot #2 = 68.882, Lot #3 = 15.989, and Lot #4 = 12.808 acres) located on Chestnut Ridge Road in the Town of Dover, Dutchess County, NY. The remaining property identified as Lot #1 is 92.166 acres and contains an existing residence, driveway, and septic system (*Figure 1*).

As part of the environmental review for the project, New York State Department of Environmental Conservation (NYSDEC) Natural Heritage Program via correspondence dated October 9, 2013 confirmed that a New York State threatened species, Eastern Timber Rattlesnake (*Crotalus horridus*), or suitable habitat exists within 1.5 miles of the property.

The property was surveyed on November 24 and 25, 2013 for potential habitat. For this species dens and basking area are critical to the species survival. Forested habitat within 2.5 miles of den sites are used for foraging. Requirements for timber rattlesnake dens generally include a southeast to southwest facing rock formation of either fractured ledge or talus with a nearby open basking area with sufficient rock cover for gestating females and post-emergence basking.

The property is a large tract of generally densely wooded land with fields located along Chestnut Ridge Road and wetlands located throughout the property (*Figure 2*). There were no areas or conditions on the property that were identified as ledges or apparent basking area. However, it is known that timber rattlesnakes, particularly females, may move considerable distances overland (generally migrate from 1.3 to 2.5 miles (2 to 4 km) from their den each summer) and may utilize any open sunny or upland mixed forest area during the summer season for foraging.

2.0 KNOWN TIMBER RATTLESNAKE HABITATS

There is a property about 1.5 miles northeast of the Quartararo property that has a north/south running ridge and it is along this steep ridge on the western edge of Route 22 just west of the MTA railroad tracks where three confirmed dens are located and others suspected. The ridge is part of one long north-south geological feature comprised of Everett Schist. This increases the probability that other dens or den pockets may be found in the ridge. The ridge runs parallel to State Route 22 and is clearly visible from the road. There is suitable basking habitat that could be used as post-emergent basking for the snakes from those dens or by gestating females. This critical habitat tends to concentrate the snakes in those areas during basking and gestating periods.

Two additional dens off the property have been documented by the NYSDEC. One is located approximately 0.5 miles southeast of the southernmost tip of the property referenced above, and the other, a little over one mile south of that property. They are within the same geological feature. All of these dens are within 2.5 miles of the Quartararo property and therefore within travel distance for timber rattlesnakes especially for foraging. Rattlesnake movements, however, are dependent upon availability of suitable basking/gestating areas, successful foraging, and mating activity.

Other known Dutchess County dens are located to the east several miles away and on the east side of Route 22 which is a physical barrier to rattlesnake movements, so they are not being considered for any potential activity on this project.

3.0 TIMBER RATTLESNAKE HABITAT SURVEYS

The Quartararo property was assessed for potential timber rattlesnake habitat (dens, basking area, foraging area) by walking through all parts of the property to view the hillsides, valleys, and wooded terrain. In addition to the ground surveys, various aerial photographs were used to help identify potential basking areas. Dens and basking areas are the most critical habitat for this species. The property is mostly a maturing second growth deciduous forest (maples, oaks, hickory) and secondary species ranging in size from young to mature woods which was most likely logged many decades ago. Approximately 10% of the property is open field area located along Chestnut Ridge Road with one field within the interior of the property. There were no observed areas on the property that offered potential den or basking locations since there are no suitable ledges or talus slides.

Requirements for timber rattlesnake dens generally include a southeast to southwest facing rock formation of either fractured ledge or talus with a nearby open basking area with sufficient rock cover for gestating females and post-emergence basking. There were no areas of the property identified that had ledges or apparent basking area. The majority of the property is densely wooded including areas of both gentle and steep slopes. The wooded areas do offer potential foraging habitat because of the cover offered by the canopy and abundance of prey (rodents) located here.

4.0 RECOMMENDATIONS

The Quartararo property is located within 1.5 miles of known or potential den and basking areas. The property was assessed on two occasions and no areas of the property were identified that had potential den or basking habitat. However, since the property is generally wooded in generic terms it is potentially useable as a travel corridor or as habitat for foraging although there are no unique features on this property that make it more suitable for these activities than many of the properties in the area.

Although the land will not be significantly altered except for light construction activities some mitigation measures are appropriate and are often required by the NYSDEC especially if clearing for the residences is conducted during the summer months. The following will be applied to development on this property to avoid impacts:

Seasonal restrictions

Disturbance activities, including movement of construction vehicles, excavation, and alteration of vegetation, should be conducted during the period when the snakes would be expected to be hibernating and are less likely to be directly impacted by above-ground disturbances. The acceptable work period is November 1st through March 31st.

Temporary barrier

When ground disturbance is likely to occur from land clearing activities occurring outside of the work periods, a temporary restrictive (Stechert, 2001) barrier will be installed around the perimeter of the disturbance footprint of small projects (< 1 acre). The barrier should be: 1) installed before the end of the acceptable work period and maintained until the end of the construction phase of the project or until the beginning of the next acceptable work period, whichever occurs first, 2) inspected daily and, if necessary, repaired immediately to a fully functional condition¹, and 3) constructed in accordance with the following design specifications:

- made of ¼ inch square hardware cloth or wire mesh;
- a minimum of 48" high;
- anchored into the ground with reinforcement bars placed on the "disturbance side" of the barrier and spaced between 6 – 8 feet apart;
- secured at the base (barrier/ground interface) with at least 6" of fence material covered with soil backfill.

¹ The effectiveness of the barrier will be diminished and snakes may be able to gain access to the disturbance area if debris (e.g. tree limbs, soil) is allowed to overtop or pile up along side of the barrier.

Figure 1 Location Map

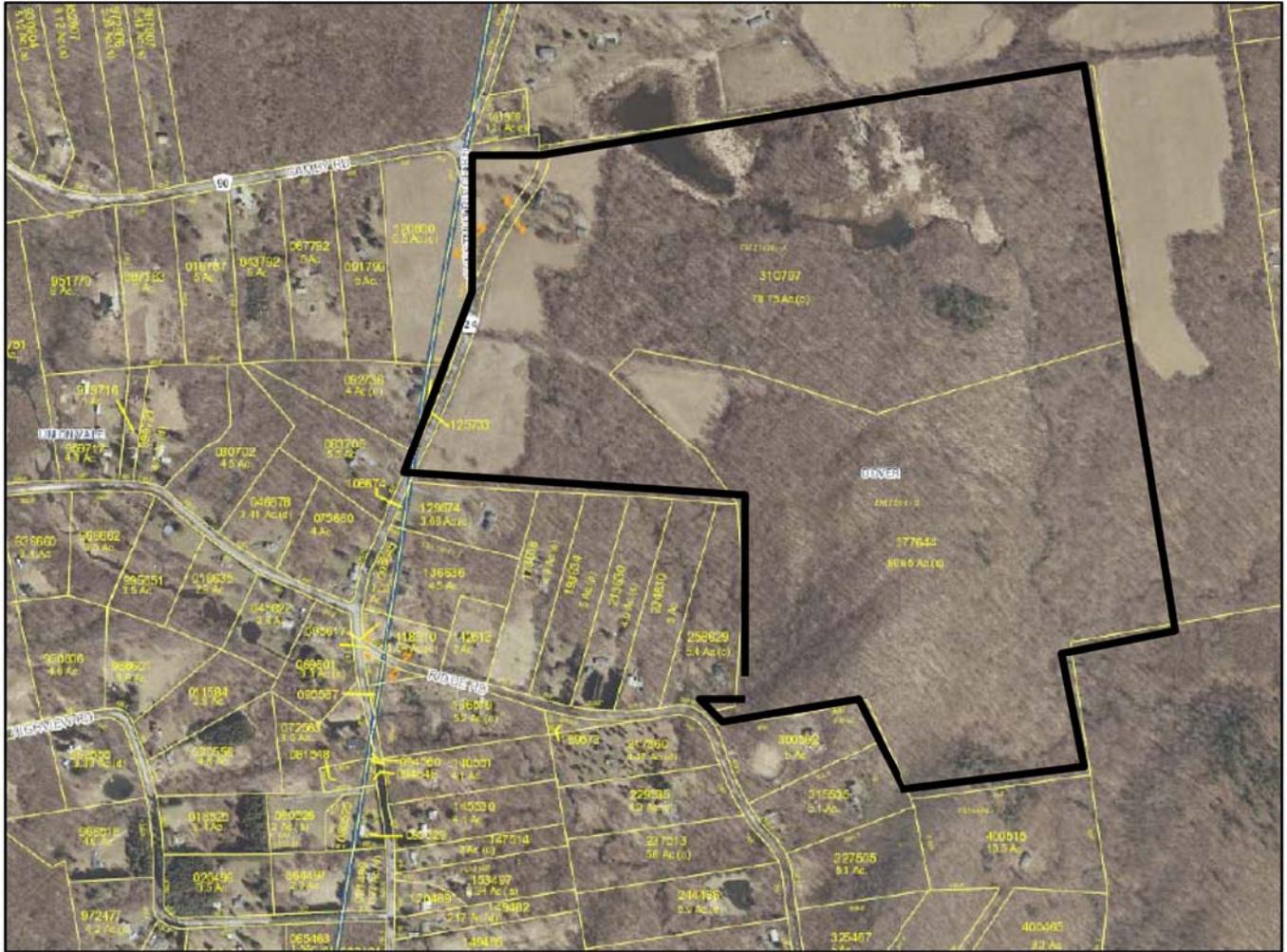
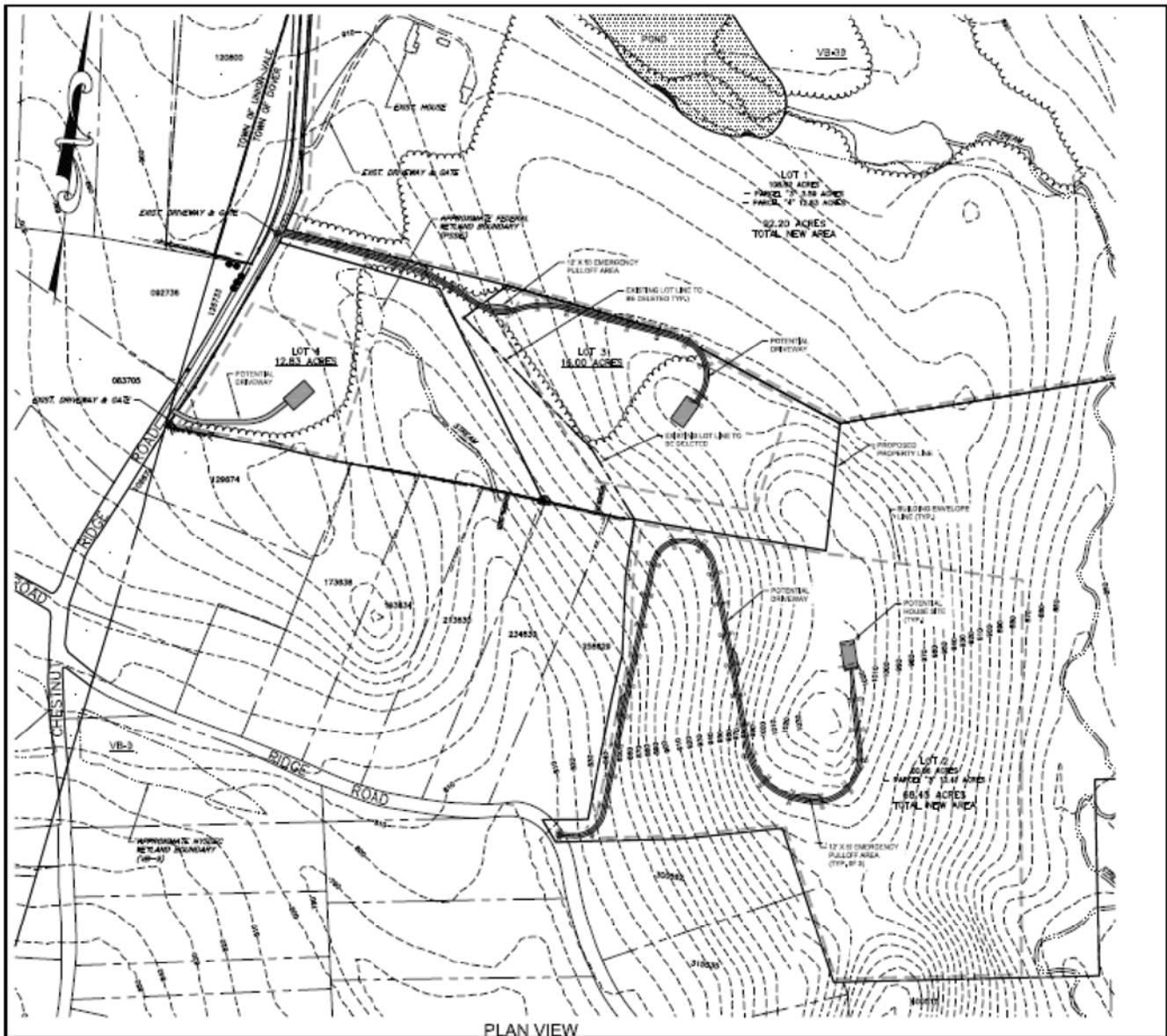


Figure 2 Limits of Observation



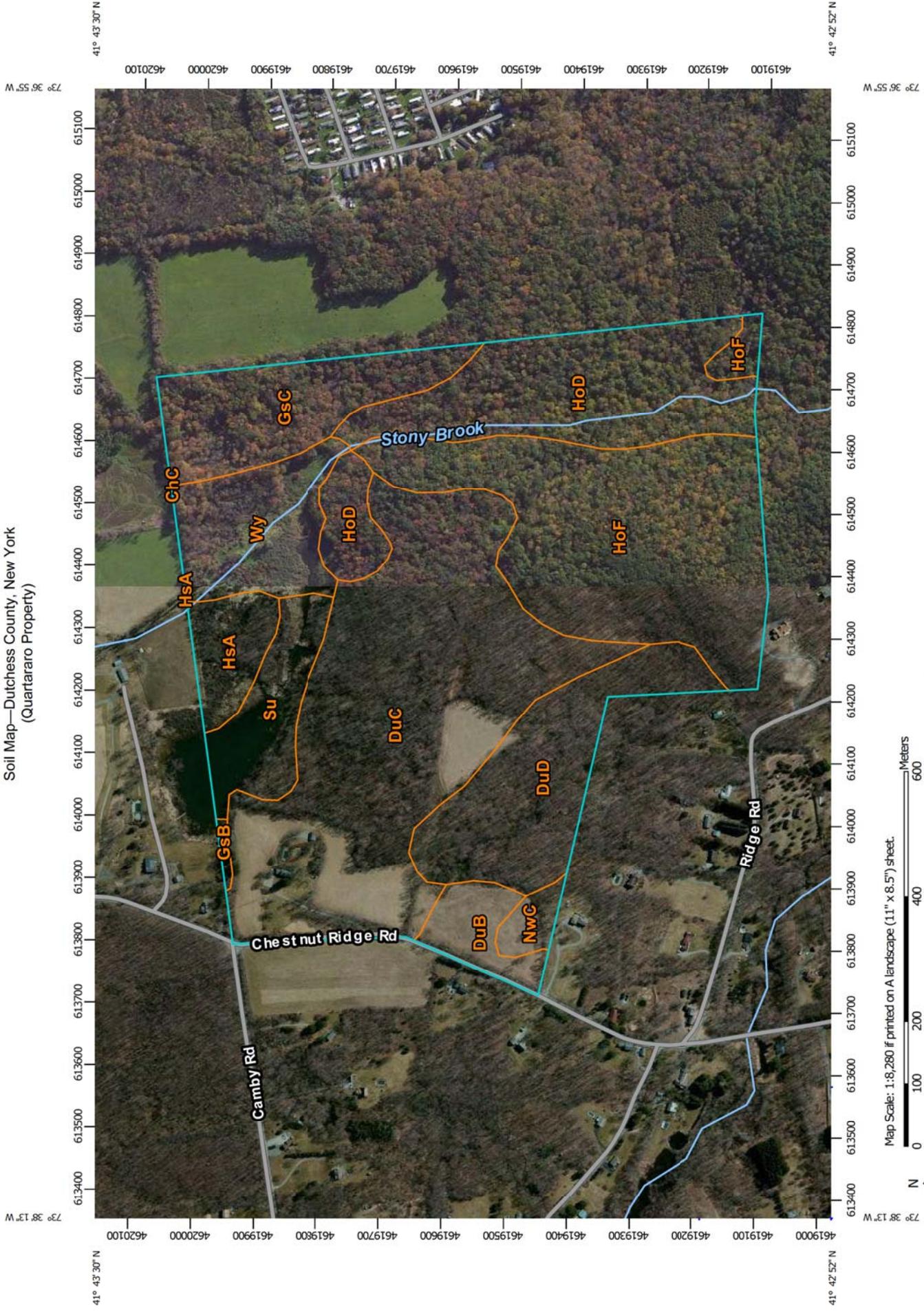
APPENDIX

Soils Map

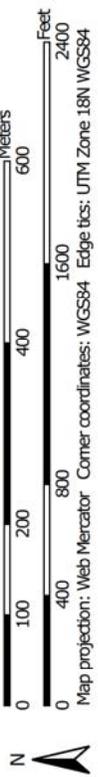
Site Photographs, 1 - 48, dated 2/3/14

Photograph Location Plan, sheet 1 of 1, dated 2/3/14

Soil Map—Dutchess County, New York
(Quartararo Property)



Map Scale: 1:8,280 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Very Stony Spot
 Soil Map Unit Points	 Wet Spot
 Special Point Features	 Other
 Blowout	 Special Line Features
 Borrow Pit	Water Features
 Clay Spot	 Streams and Canals
 Closed Depression	Transportation
 Gravel Pit	 Rails
 Gravelly Spot	 Interstate Highways
 Landfill	 US Routes
 Lava Flow	 Major Roads
 Marsh or swamp	 Local Roads
 Mine or Quarry	Background
 Miscellaneous Water	 Aerial Photography
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 10, Dec 15, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2011—Apr 16, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Dutchess County, New York (NY027)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChC	Charlton loam, 8 to 15 percent slopes	0.0	0.0%
DuB	Dutchess silt loam, 3 to 8 percent slopes	4.8	2.5%
DuC	Dutchess silt loam, 8 to 15 percent slopes	55.8	29.6%
DuD	Dutchess silt loam, 15 to 25 percent slopes	18.6	9.9%
GsB	Georgia silt loam, 3 to 8 percent slopes	0.4	0.2%
GsC	Georgia silt loam, 8 to 15 percent slopes	14.6	7.8%
HoD	Holis-Chatfield-Rock outcrop complex, hilly	26.7	14.1%
HoF	Holis-Chatfield-Rock outcrop complex, very steep	39.5	20.9%
HsA	Hoosic gravelly loam, nearly level	5.4	2.9%
NwC	Nassau-Cardigan complex, rolling, very rocky	2.0	1.1%
Su	Sun silt loam	8.6	4.5%
Wy	Wayland silt loam	12.4	6.6%
Totals for Area of Interest		188.9	100.0%

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #1 – Lot 4 - Driveway



Photo #2 – Lot 4 – facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #3 – Lot 4 - facing Southeast



Photo #4 – Lot 3 – Existing Driveway facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #5 – Lot 3 – Existing Driveway facing East



Photo #6 – Lot 4 – Rear lot view facing Southwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #7 – Lot 3 – Existing Field facing East



Photo #8 – Lot 3 – House Site facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #9 – Lot 3 – House Site facing West



Photo #10 – Lot 3 – House Site facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #11 – Lot 3 – Rear Lot facing South



Photo #12 – Lot 2 – facing East (property corner)

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #13 – Lot 2 – facing South



Photo #14 – Lot 2 – facing South

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #15 – Lot 2 – facing North



Photo #16 – Lot 2 – facing Southwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #17 – Lot 2 – facing South



Photo #18 – Lot 2 – facing Southwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #19 – Lot 2 – facing Northeast



Photo #20 – Lot 2 – facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #21 – Lot 2 – facing West



Photo #22 – Lot 2 – facing West

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #23 – Lot 2 – facing South



Photo #24 – Lot 2 – facing Southwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #25 – Lot 2 – facing Northwest



Photo #26 – Lot 2 – facing Northwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #27 – Lot 2 – facing Northwest



Photo #28 – Lot 2 – facing Northwest

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #29 – Lot 2 – facing North



Photo #30 – Lot 2 – facing North

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #31 – Lot 2 – facing North



Photo #32 – Lot 2 – facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #33 – Lot 2 – facing North



Photo #34 – Lot 2 – facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #35 – Lot 2 – facing North



Photo #36 – Lot 2 – facing East (potential house site)

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #37 – Lot 2 – facing South (Sewage Disposal Area)



Photo #38 – Lot 2 – facing Southeast (Sewage Disposal Area)

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #39 – Lot 2 – facing West (Potential Driveway Area)



Photo #40 – Lot 2 – facing South (Potential Driveway Area)

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #41 – Lot 2 – facing South (Potential Driveway Area)



Photo #42 – Lot 2 – facing Southeast

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #43 – Lot 2 – facing West



Photo #44 – Lot 2 – facing North

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #45 – Lot 2 – facing Southeast



Photo #46 – Lot 3 – facing East

RENNIA ENGINEERING DESIGN, PLLC
CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

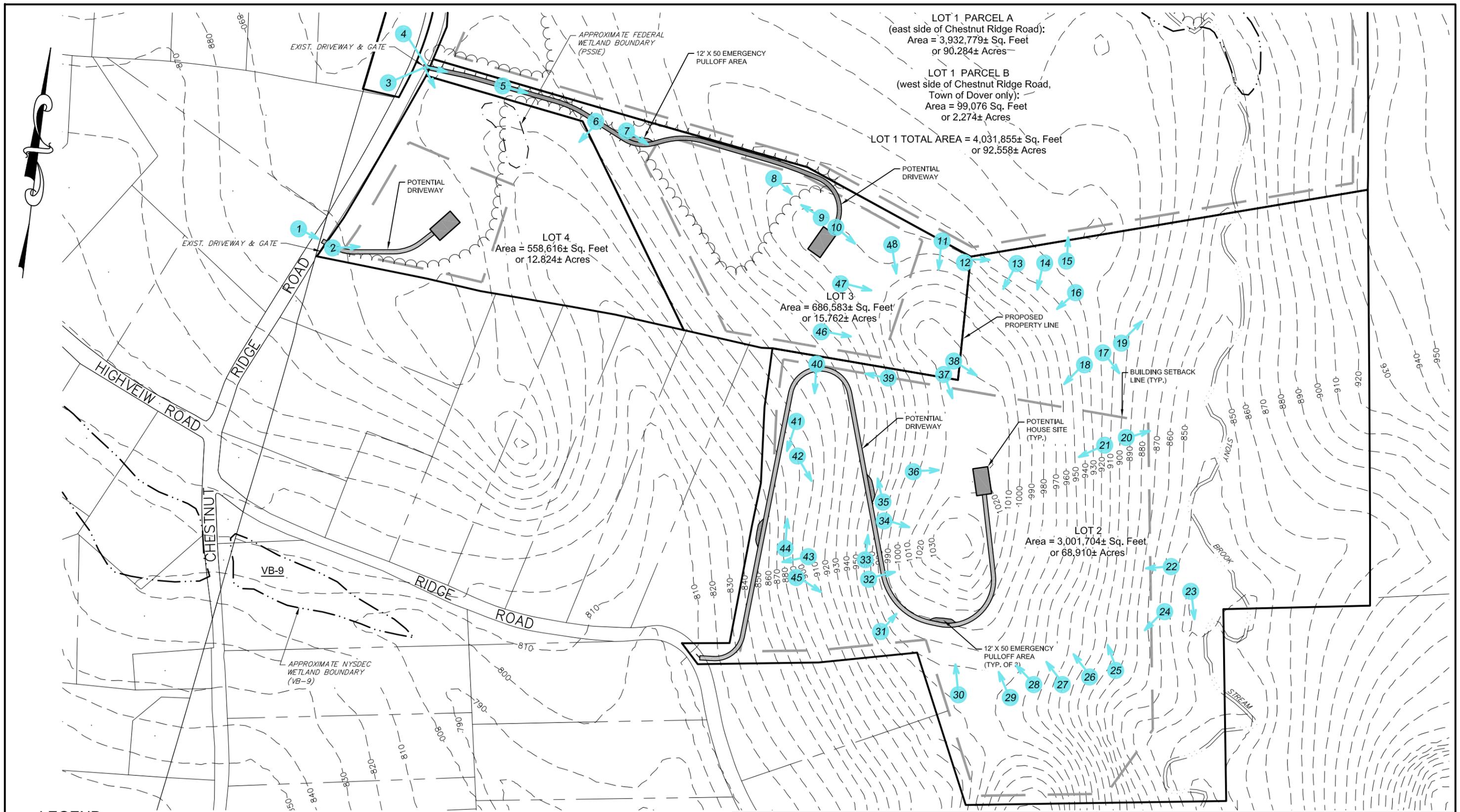
Inspection Date: 2/3/14
Project: Quartararo Property
Chestnut Ridge Road
Town of Dover, NY



Photo #47 – Lot 3 – facing East

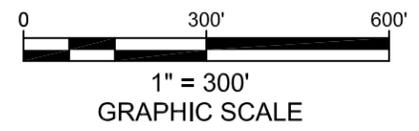


Photo #48 – Lot 3 – facing South



LEGEND

PROPERTY LINE	
10 FT. CONTOUR	
TREE LINE	
STREAM	
PROPOSED BUILDING ENVELOPE LINE	
PHOTO LOCATION / DIRECTION	



ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556
Copyright 2008, All Rights Reserved

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSON TO ALTER THESE PLANS, SPECIFICATIONS OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.

LANDS OF QUARTARARO						
TOWN OF DOVER	DUTCHESS COUNTY, NY					
PHOTOGRAPH LOCATION PLAN						
DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
2/3/14	1"=300'	RAR	RED	RAR	13-013	1 of 1