Cascade Creek Subdivision

Conservation Analysis

PROJECT: **Cascade Creek Subdivision**

Tax Map I.D. Numbers: 132000-7167-00-245925

APPLICANT: **Hudson River Housing c/o Mary F. Linge**
313 Mill Street
Poughkeepsie, NY 12601

LOCATION: **Cascade Road**
Town of Amenia
Dutchess County, New York

DATE: **11/25/2024**

PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC
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1.0 INTRODUCTION

1.1 Project Description

The Cascade Creek Subdivision project (alternatively referred to as the "Project") is a subdivision of an existing 24.13-acre parcel (alternatively referred to as the "Project Site") located within the Suburban Residential "SR" zoning district. The subdivision will create twenty-eight (28) residential lots, and three (3) conservation parcels, and two new asphalt roadways with entrances onto NYS Route 22 and Cascade Road. The residential lots are intended to provide workforce housing for low-to-moderate income residents.

The proposed subdivision would be considered a "major, conservation subdivision" as defined by Amenia Town Code, which is permitted within the SR. The new twenty-eight (28) residential lots will utilize a common water supply (ie: on-site wells) and common sewage disposal service (ie: subsurface sewage disposal system), which allow the residentials lots to range from 0.25 to 0.50-acres. Conservation parcels will range between 1.9 to 9.8-acres and will preserve the Project Site's most important natural attributes, while also containing the common utilities required to support the subdivision.

Figure 1.1: Location Map

1.2 Conservation Analysis

The proposed Project is a "major conservation subdivision", as defined by the Amenia Town Code. As stated in §121-20, conservation subdivisions are only permitted within the RA, RR, and SR zoning districts and are "intended to allow design flexibility while preserving natural attributes of the land". The Applicant has determined that the additional design flexibility and density offered by a conservation subdivision provide more opportunities for workforce housing than a conventional subdivision and as such has prepared this Conservation Analysis in support of their application.

This document (Conservation Analysis) is required as part of any sketch plan submission for a conservation subdivision within the SR zoning district. This document has been prepare, in accordance to the criteria outlined in §121-20.A "Conservation Analysis", to assist the Planning Board in identifying lands with the most conservation value contained within the Project Site and to ensure those lands are protected from development as part of the conservation subdivision.

1.3 Location Data

The Project Site is an existing 24.13-acre parcel within the Town of Amenia (Parcel #: 132000-7167-00-245925) in the Town of Amenia, Dutchess County, New York. The Project Site is located 100 miles north of New York City and is approximately 0.5 miles north of the Amenia Town Hall. The Project Site maintains frontage along Cascade Road and NYS Route 22, which run parallel along its west and eastern borders. The site is adjacent to other high density (<1-acre) residential parcels to the north and east, large

(>5-acres) residential parcels to the west, and a commercial plaza to the south.

2.0 ZONING ANALYSIS

The following is a summary of the zoning information used to develop the Conservation Analysis.

2.1 Zoning District for Project Site

The Project Parcel is located within the Suburban Residential "SR" zoning district, as shown in Figure 2.1. As per the Town of Amenia Zoning Code §121-7 "Establishment of Districts", the intent of these zoning district is:

Suburban Residential "SR": "*The purpose of this district is to maintain the character of existing suburban density residential developments and to allow a limited extension of suburban growth patterns.*"

Minimum Lot Size (conventional subdivision layout): 1-acres

Minimum Lot Size (conservation subdivision layout): 8,000 SF (0.18-acres) to 40,000 SF (0.92-acres)*

*Depending on the availability of common or municipal water and sewage disposal services. See Town of Amenia Zoning Code, §121 – Attachment 2 – Dimensional Table, §121-11.D

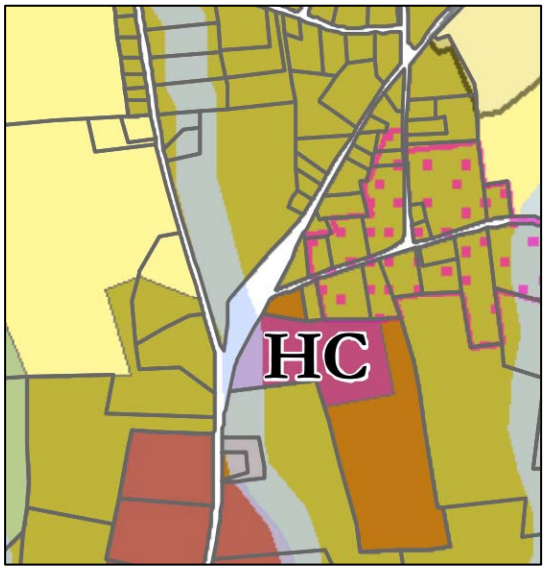

Figure 2.1: Zoning Map w/ Overlays

2.2 Zoning Overlays for Project Site

As highlighted in Figure 2.1, the Project Site is located within two (2) Overlay Districts which have influenced the design of the proposed Project. The Project Site is located in the following zoning overlays: Stream Corridor Overlay District (SCO) and Aquifer Overlay District (AQO). Additional information regarding each overlay district has been provided below:

2.2.A Stream Corridor Overlay District (SCO)

Per the Town of Amenia Zoning Code §121-14 "Stream Corridor Overlay District (SCO)" the SCO is designed to protect the town's stream corridors by preserving their scenic character, biodiversity, and water quality. This district regulates the land uses within stream corridors to protect water quality, scenic resources, and the overall community appearance in addition to reducing the risk of flood damage.

The SCO includes all land lying within 150' of the top of the bank on each side of all streams classified by the New York State Department of Environmental Conservation (NYSDEC) and identified on the Town of Amenia's "Hydrological Overlay District" Map. The project contains portions of one stream referenced in the above-referenced map:

- *Unnamed Stream #1 (Cascade Creek):* Beginning in the upland, northwestern, portion of the Project Site and flowing north-south along western border of the Project Site, until it exits the Project Site. From there the stream flows to western border of NYS Route 22, where it crosses under the road via an existing culvert and continues off-site.

See attached Zoning/Overlay District Exhibit in Appendix A.

Areas identified above located within the SCO will need to comply with additional setback requirements, as specified in §121-14.D:

- No principal structure shall be located within 100' of the watercourse.
- No accessory structure 200 S.F. or larger shall be located within 50' of the watercourse.

  *These setbacks shall not apply to docks, piers, bridges, and other structures which by their nature must be located on, adjacent to, or over the watercourse

The existing stream is proposed to be located within the two (2) conservation lots. As such, the stream will remain largely undisturbed, except where the access road and crossing are proposed to connect to Cascade Road, which will require approval from the USACE and the NYSDEC.

The limits of the SCO does extend into the proposed residential lots, however, no principal structures will be built within the 100' watercourse setback, due to the building setback restriction encumbering each of the lots.

2.2.B Aquifer Overlay District (AQO)

Per the Town of Amenia Municipal Code §121-15 "Aquifer Overlay District (AQO)" the AQO was created to protect the health and welfare of residents of the Town of Amenia by minimizing the potential for contamination and depletion of the Harlem Valley's aquifer system. The entire Town of Amenia is located within the aquifer overlay, which has been broken into two main aquifers: The Valley Bottom Aquifer and the Upland Aquifer.

The Project Site is located entirely within Primary Valley Bottom Aquifer.

With the Project Site being located entirely within the AQO, additional calculations will be required for any proposed development to assess whether or not consumption of water exceeds the natural recharge rate of the site.

Additionally, the Project Site is subject to additional restrictions such as: the limited placement of underground fuel/storage tanks, mitigation practices if consumption exceeds recharge rates, and requiring a Special Use Permit for new uses, for which the proposed project will already be required to obtain.

3.0 CONSERVATION ANALYSIS

The following is a summary of the environmental conditions/research information required for the Conservation Analysis.

3.1 Wetlands & Watercourses

There is one (1) water course present within the Project Site. The site also contains one (1) federal "wetland", however, this is associated with the boundary of the existing watercourse. Provided below is a summary of these features:

3.1.A Watercourse/Wetland

The Project Site contains one (1) watercourse, which has been identified by New York State Department of Environmental Conservation (NYSDEC):

1) *Stream #1 (Cascade Creek) – ±1,556 LF - C(T):* See "§2.2.A Stream Corridor Overlay District (SCO)" for stream location description. The stream is classified as "C(T)" by the NYSDEC, which indicates the stream is best used for "Fisheries, non-contact activities" and may also support a trout (T) population, which would require additional permitting from the NYSDEC and Army Corp of Engineers (USACE) for proposed disturbance within bed and/or banks of the watercourse.

   As per the National Wetland Inventory (NWI) Mapper, the stream maintains a classification code of R3UBH (Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded). A copy of the NWI Map has been included in Appendix A.

   As per FEMA FIRM Panel #36027C0331E, Stream #1 does not have any associated special flood hazard areas within the Project Site. A copy of the FIRMette prepared for the site has been included in Appendix A.

3.2 Slopes Exhibit

The Project Site is primarily composed of flat agricultural fields, with a very gradual change in topography occurring south to north. The highest portion of the site is located in the northeastern corner of the parcel at an elevation of about 620'. The lowest portion of the parcel is in the southern most point of the parcel at 578'. The greatest change in topography occurs along the banks of Cascade Creek along the western edge of the Project Site and within the stand of trees located in the middle of the parcel. The slopes exhibit, included in Appendix B, delineates the project area by percent slope as shown in Figure 3.1.

Figure 3.1 Slopes Table

Minimum Slope	Maximum Slope	Area (acres)	Percentage of Project Site (%)
0%	15%	23.04	95.5%
15%	30%	0.94	3.9%
30%	100%	0.15	0.6%

As shown on the table provided above, approximately 95.5% of the Project Site has a topography of 0-15% slopes, which provides adequate grade for a variety of uses and construction activities (i.e.: parking areas, septic systems, etc.). The remaining 4.5% of the steeper portions of the Project Site are generally located outside of ideal development areas and will be preserved within the proposed Conservation Areas.

See “Slopes Exhibit” in Appendix A.

3.3 Tree Areas

The Project Site primarily consist of agricultural fields, but several stands of tree exist along the perimeter of the parcel and within its center. Tree tracts located on site are primarily deciduous hardwoods.

The Project Site contains approximately ±4.5 acres of forested areas. In general, these forested tracks of lands are proposed to be located in conservation areas and such, will remain, unless utilities (ie: common septic) or road construction warrant select removal of trees. Located primarily around the perimeter of the project site, these forested areas screen the interior of the Project Site from adjacent properties and roadways.

See “Existing Land Cover Exhibit” in Appendix A.

3.4 Archeological Features

The New York State Historic Preservation Office’s (SHPO) online Cultural Resource Information System (CRIS) was consulted to determine if there were any National Register and/or Archeological Sensitivity areas associated with the Project Site. Based on a review of CRIS, it appears the Project Site does not contain any archaeological resources, nor is it within the Archaeological Buffer Area. The Project Site does contain several small sections of stone walls forming the northeast corner of the existing parcel.

See CRIS Map in Appendix C.

Due to the EAF identifying the Project Site as being adjacent to areas being sensitive for archaeological sites, a Phase 1A/1B Cultural Resource Survey was completed for the Project Site by Hudson Cultural Services (HCS). In a report titled “Phase 1A Literature Search & Sensitivity Assessment & Phase 1B Archaeological Field Reconnaissance Survey – Cascade Road Conservation Subdivision Project”, dated November 2024, HCS determined that no archaeological (historic or precontact) deposits were identified within the Project Site and that no additional cultural resource investigations are warrant for the proposed Project.

A copy of the above referenced report has been included in Appendix C.

3.5 Former Disturbance

Based on Dutchess County Aerial Access Imagery, the Project Site has been continuously used for agriculture (ie: row crops) since before 1936. There does not appear to be any record of any other form of prior development or disturbance for the Project Site.

Figure 3.2 Dutchess County Aerial Access Historic Imagery of the Project Site: 1936 & 2024

3.6 Land Coverages

The site contains four (4) main types of land cover:

Surface Water Features

The Project Site contains one (1) watercourse, a class C(T) stream, which is approximately +/- 1,556 linear feet or approximately 0.46-acres. The stream is located along the parcel's western border.

Forest

The Project Site contains approximately ±4.49-acres of forest that vary in connectivity, quality, and density across the property. The forest areas are primarily comprised of deciduous species and are located around the perimeter of the Project Site. A small patch of forest is located within the middle of parcel where the change of topography is steepest.

Agricultural (ie: Row Crops)

The Project Site contains approximately ±18.86-acres of active agricultural land used for row crops. Historical orthoimagery indicates the continued agricultural use of this land from 1936 to the present day. It is likely that the site was an active farm before the time period described, based on the observable disturbance of the Project Site.

Meadows, Grasslands, or Brushlands

The Project Site contains approximately ±0.32-acres of brush. This brush area is found at the edge of the northeast wooded area, likely the result of clearing or disturbance that resulted from agricultural activity.

The following is a summary of existing land coverages present on the Project Site:

Figure 3.3 Existing Land Cover

Existing Land Cover	
Land Cover Type	Acres
Watercourse	0.46
Forest	4.49
Agricultural (ie: Row Crops)	18.86
Meadows, Grasslands, or Brushlands	0.32
TOTAL	24.13

See "Existing Land Cover Exhibit" in Appendix A.

3.7 Prime Agricultural Soils and Soils of Statewide Importance

Based on a review of the United States Department of Agriculture's Web Soil Survey, the entire project contains soils that are prime or statewide important farm soils.

Figure 3.3 Agricultural and Prime Soils

Soils	Acres	Soil Designation
Copake Gravelly Silt Loam, undulating (CuB)	±8.30	Prime Agricultural Soils
Copake Gravelly Silt Loam, Rolling (CuC)	<0.01	Farmland of Statewide Importance
Stockbridge Silt Loam, 8 to 15 percent slopes (SkC)	±0.60	Farmland of Statewide Importance
Wappinger Loam (WE)	±15.30	Prime Agricultural Soils

Prime Agricultural Soils

The Project Site contains approximately ±23.6 acres of Prime Agricultural Soils, including Copake Gravelly Silt Loam, undulating (CuB) and Wappinger Loam (WE). These soils are generally the dominant soils found throughout the Project site

Soils of Statewide Importance

The Project Site contains approximately +/- 0.60 Farmland of Statewide Important Soils, including Stockbridge Silt Loam, 8 to 15 percent slopes (SkC) and a negligible amount of Copake Gravelly Silt Loam, Rolling (CuC). These soils comprise a very small portion of the Project Site located in the northeast and northwestern corners.

See "Prime Agricultural and Farm Soils Exhibit" in Appendix A.

3.8 Flora and Fauna

A review of New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper identified one (1) possible threatened/endangered species that may be present on the Project Site, the Bog Turtle.

Bog Turtle

The Project Site was assessed for the presence of habitat characteristics consistent with the 2017 bog turtle federal recovery plan. Per the Ecological Solutions report, there are no wetlands on the site and no potential for bog turtle habitat. The site is mainly farm field

with well drained soil and a class C(T) watercourse in close proximity to Cascade Road with no associated wetland component.

See "Phase I Bog Turtle Habitat Suitability Assessment Report" in Appendix B.

3.9 Summary of Environmental/Zoning Site Resources

The following table is a summary of the conservation/zoning resources, specified in §121-20 of the Amenia Zoning Code and discussed above, present on the Project Site.

Figure 3.4 Summary of Conservation Resources

Summary of Conservation Resources		
Quantity	**Acres**	**Percentage of Project Site**
Environmental Resources		
Conservation Analysis Items		
NYSDEC Wetland Areas (acres)	0.0 ac	0.0%
USACOE Wetland Areas (acres)	0.0 ac	0.0 %
Stream (LF)	1,556 LF	N/A
Stream (acres)	±0.46	1.9%
Slopes 15-30%	±0.94	3.9%
Slopes 30+%	±0.15	0.6%
Prime Farmland Soils	23.6 ac	97.8 %
Soils of Statewide Importance	0.61	2.2%
Land Cover Types		
Roads, buildings, and Other Impervious Surfaces	0.0	0.0%
Forest	±4.49	18.6%
Meadows, Grasslands, or Brushlands	±0.32	1.3%
Agricultural (ie: Row Crops)	±18.86	78.2%
Surface Water Features	±0.46	1.9%
Wetlands	0.0	0.0%
Non-vegetated	0.0	0.0%
Zoning Resources		
Zoning Districts		
Suburban Residential "SR"	24.13 ac	100.0%
Overlay Districts		
Scenic Protection Overlay (SPO)	0.0 ac	0.0%
Aquifer Overlay District (AQO) – Primary Valley Aquifer	24.13 ac	100%
Stream Corridor Overlay (SCO)	6.54 ac	27.1%
Resort Development Overlay (RDO)	0.0 ac	0.0%

4.0 CONSERVATION SUBDIVISION DESIGN

Based on the environmental, archeological, and conservation information collected and prepared as part of this report, the Applicant has developed the Cascade Creek [Conservation] Subdivision – Sketch Plan, pursuant to conservation subdivision provisions outlined in §120-20. The Project incorporates these findings into the design and layout of this subdivision, which maximizes the availability of workforce housing, while continuing to preserve the Project Site's existing conservation resources. The proposed Project will include:

- Twenty-eight (28) Residential (Workforce) Subdivision Lots, Lot Size Ranging 0.25 - 0.51-acres
- Three (3) Conservations Lots/Areas, Lot Size Ranging 1.92 - 9.81-acres
- 1,340 LF of New Town Road w/ Two New Connections to Existing Roadways (Cascade Road, NYS Route 22)
- Common Water Supply System
- Common Sewage Disposal System

In developing the proposed Project, the following calculations and regulations were used to develop the Cascade Creek [Conservation] Subdivision Sketch Plat as part of the require conservation analysis.

4.1 Density Calculations and Bonuses

4.1.A Density Calculations

The base number of residential lots that a parcel proposed to be subdivided can support is dependent on the density calculations outlined in §120-20.B of the Town of Amenia Zoning Code. These calculations are provided below:

Net Acreage (acres) = (Total Site Acreage - (Wetland(s) + Water Course(s) + Floodplain(s) + Slopes over 30% + (0.5 x Slopes 15%-30%))

Net Acreage x 0.85 (roads, irregular lot shape)

(SR Zoned Land) Net Acreage = (24.13 – 0.0 – 0.46 - 0.0 – 0.15 - (0.94 x 0.5))*0.85=19.59 Net SR Acres

19.59 acres/1-acres per lot* = **19.59 or 20 residential lots**

Base Number of Allowable Residential Lots = 20-Lots

4.1.B Density Bonuses

As stated above, the density calculations are for the base number of residential lots permitted with a Conservation Subdivision. As stated in the subsequent Town Code section §120-20.C this base density can be further increased (not to exceed 100% of base density) by advancing important goals of the Comprehensive Plan. As discussed above, the intent of the proposed Project is to provided workforce housing for the Town of Amenia. As such density bonus provision §121-20.C(5) is applicable to the proposed development:

"§121-20.C(5): If the applicant designates a minimum of 25% of the on-site units as workforce housing in accordance § 121-42, and all such units have a minimum of two bedrooms: a maximum density bonus of up to 50%. Applicants seeking a density bonus under this provision shall be exempt from the 10% mandatory workforce housing requirement in § 121-42."

Based on the proposed Project complying with this provision, the Base Density can be expanded to following:

Approvable Project Site Density = Base Number Of Allowable Residential Lots x 1.5 (50% Density Bonus for Workforce Housing Units Proposed)

20 Residential Lots x 1.5 Density Bonus = 30 residential lots

Total Number of Residential Lots Permitted w/ Density Bonuses = 30-Lots

Based on the information provided above, the proposed 28-residential lots are permissible based on the above Conservation Subdivision Density Calculations and Bonuses.

4.2 Bulk Requirements

Based on the Conservation Subdivision Provisions outlined in §121-.20.D-G, the implementation of a Conservation Subdivision allows for flexibility in establishing bulk regulation requirements for proposed lots. As such, the Sketch Plat has incorporated the following proposed bulk regulation requirements into the design and layout of proposed lots:

Proposed Conservation Subdivision Bulk Regulation Requirements			
Provision	**"SR" Bulk Regulation Requirements[1]**	**Conservation Subdivision Bulk Regulation Requirements**	**Proposed Bulk Regulation Requirements for Cascade Creek Subdivision**
Minimum Lot Area (Acres | SF)	1-acre | 43,560 SF	0.18-acres | 8,000 SF [2, 3]	0.25-acres | 10,890,000 SF [2,3]
Minimum Road Frontage (ft)	200'	50' [3]	75' [3]
Minimum Front Yard Setback (ft)	50'	25/40' [3]	25' [3]
Minimum Side Yard Setback (ft)	50'	10' [3]	10' [3]
Minimum Rear Yard Setback (ft)	30'	15' [3]	30' [3]
Maximum Building Height (ft)	35'	45' [3]	35' [3]

1) The Project Site is within the Suburban Residential "SR" zoning district. SR bulk regulation requirements are superseded by Conservation Subdivision provisions outlined in §121-20.D-G.
2) Pursuant to §121-20.D, minimum lot size within a Conservation Subdivision is contingent upon the availability of common water and sewer infrastructure. With the availability of common utilities, minimum lot size are the same as indicated for the hamlet districts in §121-11.D. §121-11.D(3) indicates the minimum lots size *"With common or municipal water supply and sewage disposal: 8,000 square feet."*
3) Pursuant to §121-20.F, minimum yard requirements and road frontage requirements shall conform with shall be the same as in the HM District for lots on Town roads. The "Proposed Conservation Subdivision Bulk Regulation Requirements" have designed to mirror "HM" district requirements.

4.3 Arrangement of Lots

Utilizing the Proposed Bulk Regulations requirements outlined above, the proposed Cascade Creek [Conservation] Subdivision lots were developed and arranged in a manner that maximizes the number of workforce housing lots while minimizing disturbance to identified conservation areas. The proposed subdivision has been arranged to:

- Cluster the 0.25 to 0.50-acre residential lots within flat, unwooded, areas of the Project Site to minimize land and habitat disturbance.
- Preserve existing interior wood tracts by including them within proposed Conservation Areas.
- Preserve the existing perimeter treeline and siting the lots within lowland areas of the Project Site to offer maximum screening from existing roadways and parcels.
- Locate proposed lots along a central proposed roadway with two separate entrances, allowing them to be constructed in phases.
- Provide conservation areas which contain the bulk of the site's existing watercourse, wooded areas, and agricultural land.
- Allow for the implementation of common sewer and water utilities.

In general, the siting considerations outlined above maximizes the amount of conservation land preserved within the proposed conservation areas, minimizes habitat fragmentation, and clusters residences to facilitate better circulation patterns and reduce disturbances associated with construction of the residences and supporting infrastructure (ie: roads, utilities).

5.0 CONCLUSION

To summarize, the proposed Project will create 28 new residential lots via a conservation subdivision, which will be used to provide workforce housing options to low-to-medium income residents. The proposed Cascade Creek [Conservation] Subdivision Sketch Plan provides a compact and efficient layout, which maximizes the availability of new workforce housing units, minimizes overall site disturbance, and protects the conservation lands identified in this report from future development.

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APPENDIX A

Project Site Exhibits

- Zoning/ Overlay District Exhibit
- National Wetland Inventory Map
- FEMA FIRMette – Map Panel 36027C0331E
- Slopes Exhibit
- Existing Land Covers Exhibit
- Prime Agricultural Soils & Soils of Statewide Importance Exhibit

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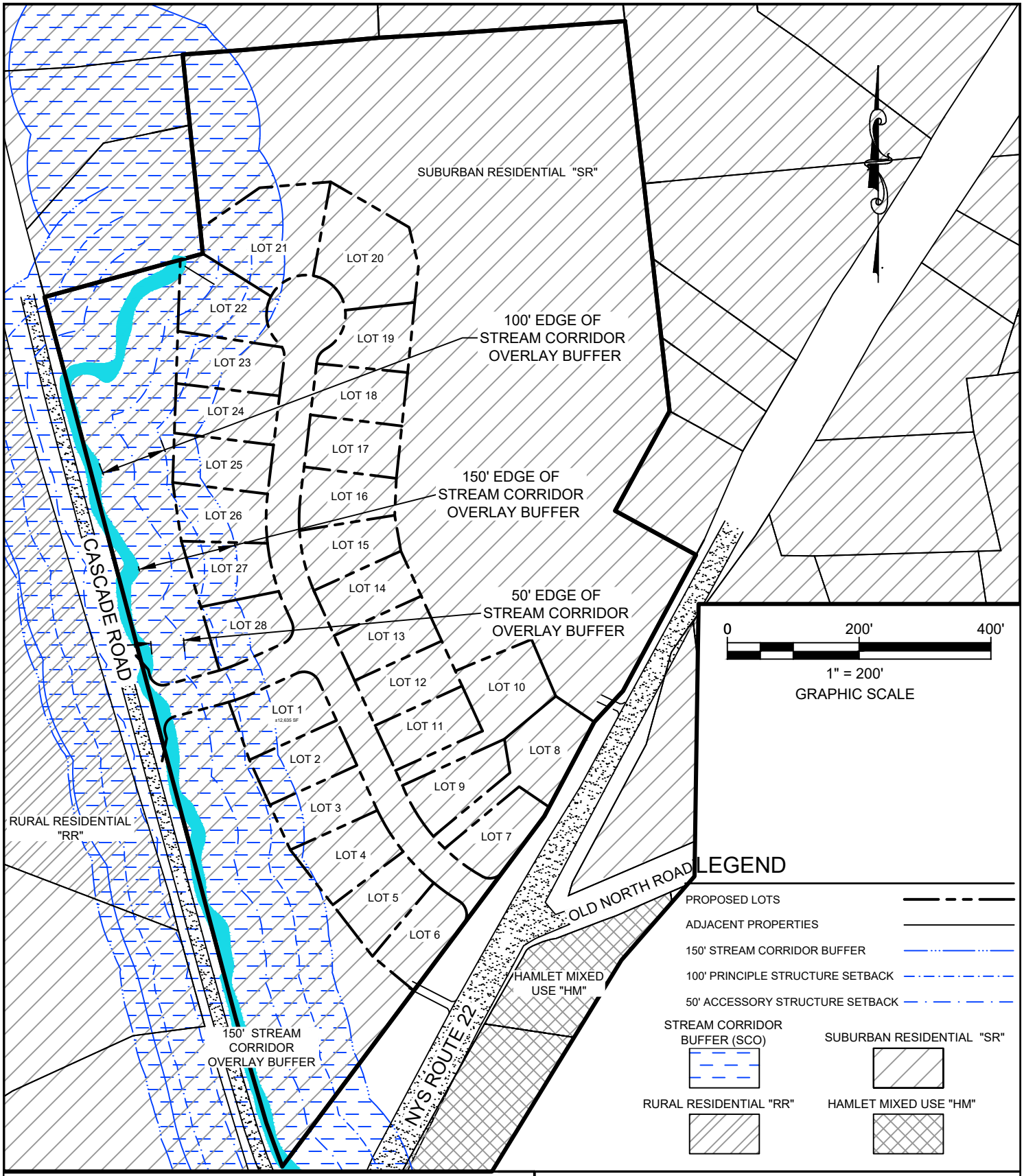

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CASCADE CREEK SUBDIVISION CONSERVATION ANALYSIS

TOWN OF AMENIA — DUTCHESS COUNTY, NY

ZONING/OVERLAY DISTRICT EXHIBIT

DATE	SCALE	DESIGNED BY:	DRAWN BY:	JOB NO.	SHEET NO.
11/25/2024	1"=200'	RED	RED	#24-019	A2

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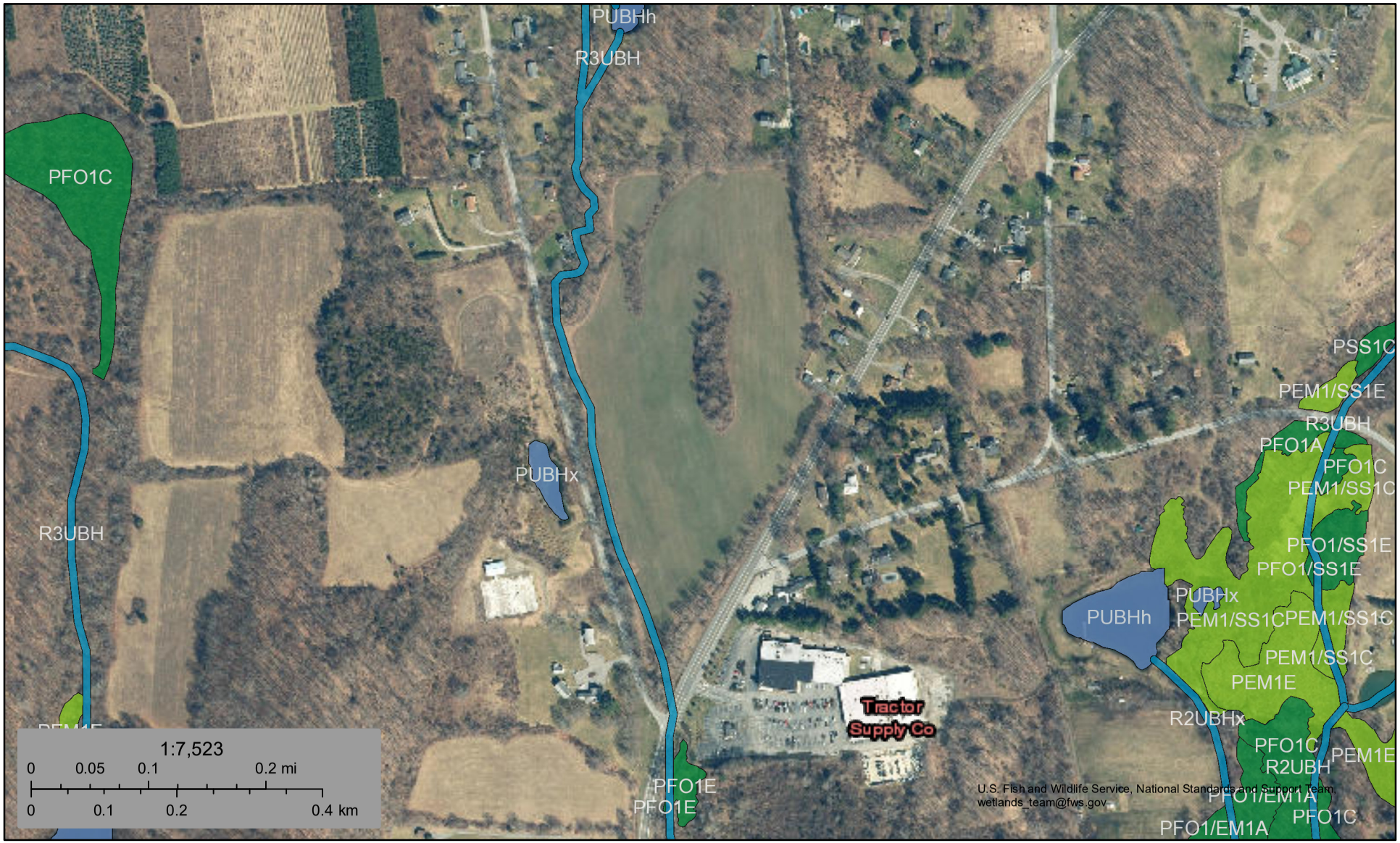
U.S. Fish and Wildlife Service
National Wetlands Inventory

Cascade Creek Subdivision - NWI Map



November 22, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
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National Flood Hazard Layer FIRMette

FEMA

73°33'37"W 41°51'58"N

73°32'59"W 41°51'31"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/22/2024 at 9:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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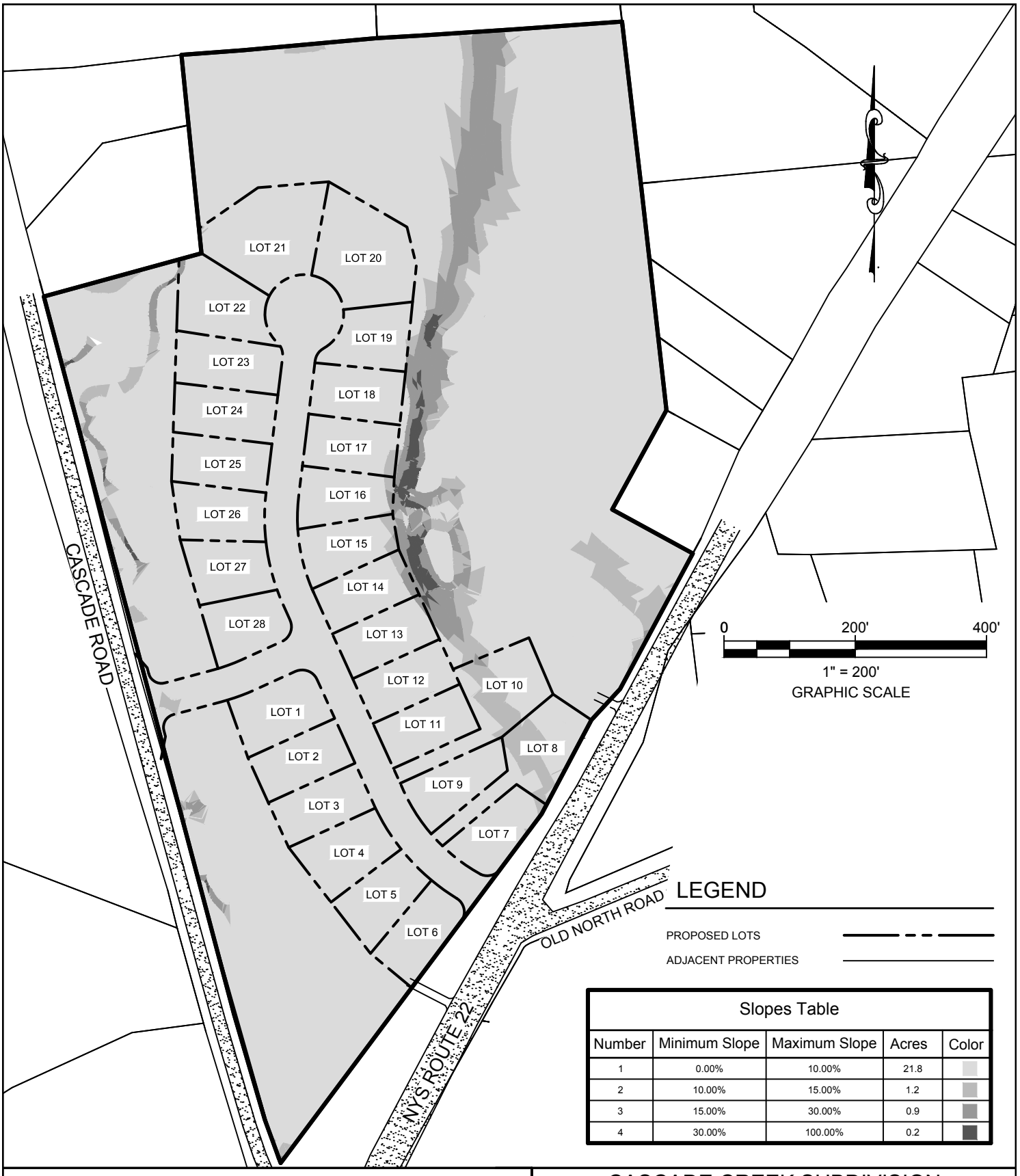

LEGEND

PROPOSED LOTS

ADJACENT PROPERTIES

Slopes Table				
Number	Minimum Slope	Maximum Slope	Acres	Color
1	0.00%	10.00%	21.8	
2	10.00%	15.00%	1.2	
3	15.00%	30.00%	0.9	
4	30.00%	100.00%	0.2	

RENNIA ENGINEERING DESIGN, PLLC

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CASCADE CREEK SUBDIVISION CONSERVATION ANALYSIS

TOWN OF AMENIA — DUTCHESS COUNTY, NY

SLOPES EXHIBIT

DATE	SCALE	DESIGNED BY:	DRAWN BY:	JOB NO.	SHEET NO.
11/25/2024	1"=200'	RED	RED	#24-019	A1

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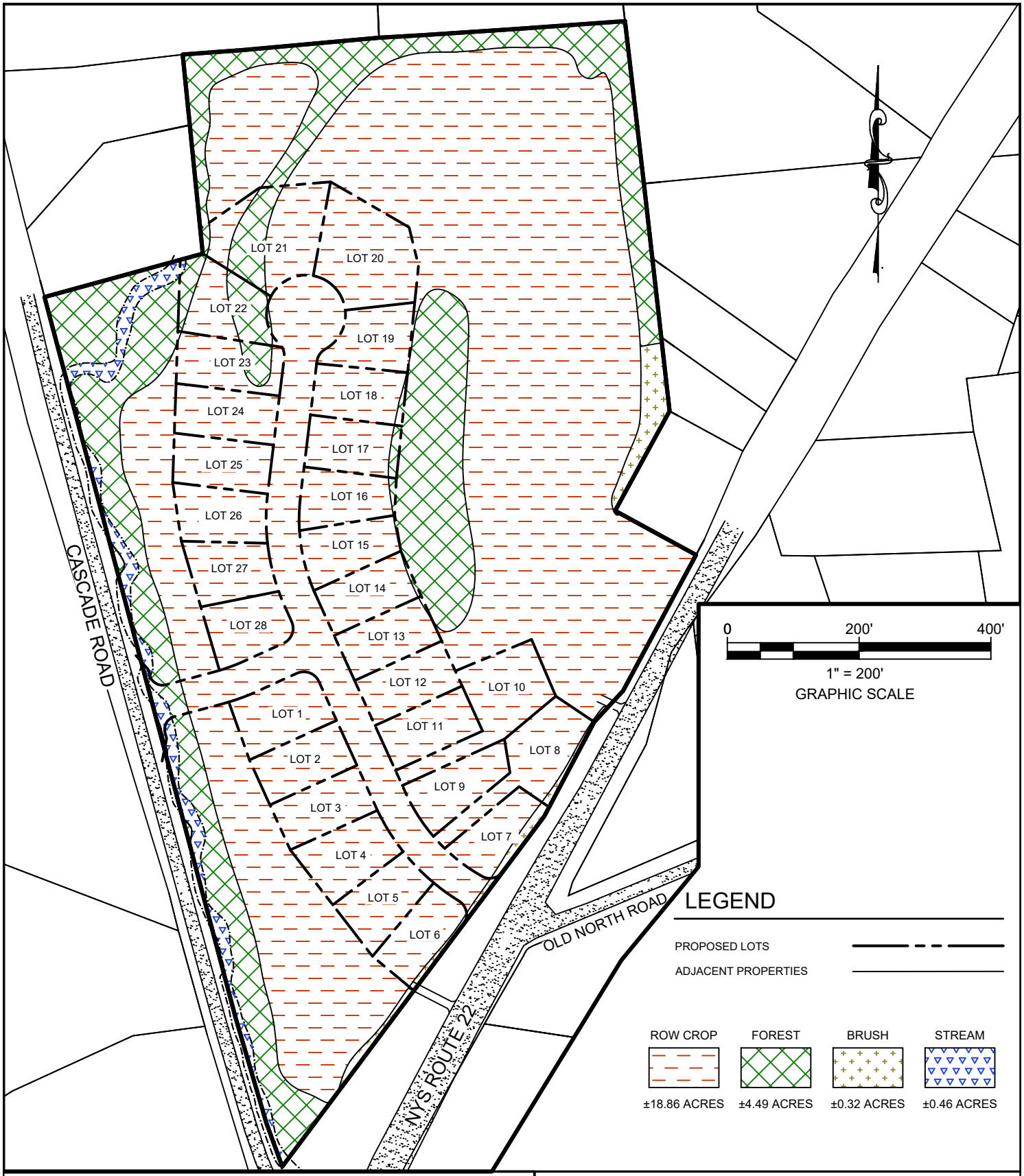

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CASCADE CREEK SUBDIVISION CONSERVATION ANALYSIS

TOWN OF AMENIA — DUTCHESS COUNTY, NY

EXISTING LAND COVER EXHIBIT

DATE	SCALE	DESIGNED BY:	DRAWN BY:	JOB NO.	SHEET NO.
11/25/2024	1"=200'	RED	RED	#24-019	A3

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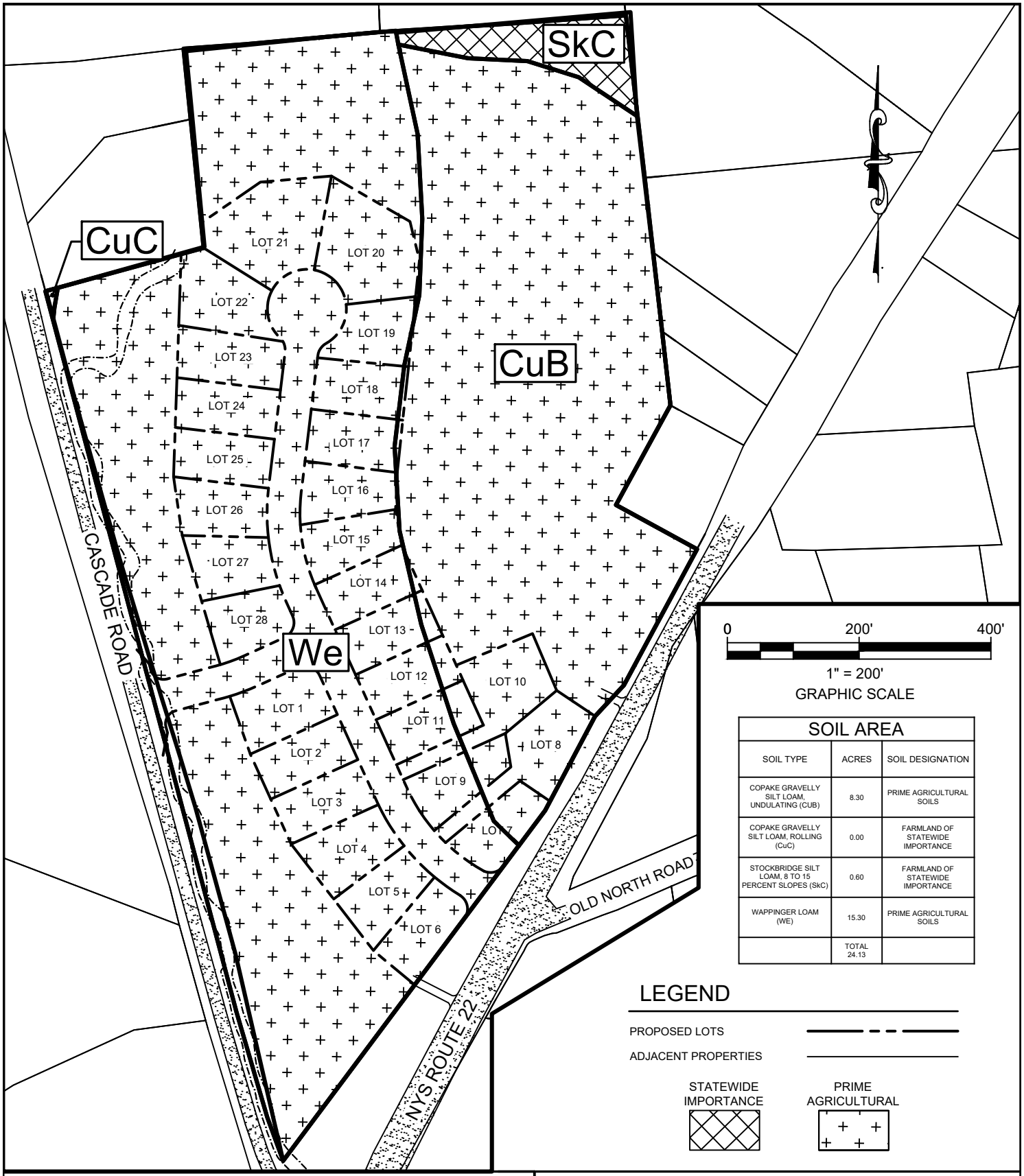

0 200' 400'

1" = 200'

GRAPHIC SCALE

SOIL AREA		
SOIL TYPE	ACRES	SOIL DESIGNATION
COPAKE GRAVELLY SILT LOAM, UNDULATING (CUB)	8.30	PRIME AGRICULTURAL SOILS
COPAKE GRAVELLY SILT LOAM, ROLLING (CuC)	0.00	FARMLAND OF STATEWIDE IMPORTANCE
STOCKBRIDGE SILT LOAM, 8 TO 15 PERCENT SLOPES (SkC)	0.60	FARMLAND OF STATEWIDE IMPORTANCE
WAPPINGER LOAM (WE)	15.30	PRIME AGRICULTURAL SOILS
	TOTAL 24.13	

LEGEND

PROPOSED LOTS

ADJACENT PROPERTIES

STATEWIDE IMPORTANCE

PRIME AGRICULTURAL

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CASCADE CREEK SUBDIVISION CONSERVATION ANALYSIS

TOWN OF AMENIA DUTCHESS COUNTY, NY

PRIME AGRICULTURAL AND FARM SOILS EXHIBIT

DATE	SCALE	DESIGNED BY:	DRAWN BY:	JOB NO.	SHEET NO.
11/25/2024	1"=200'	RED	RED	#24-019	A1

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APPENDIX B

Environmental Reports/Exhibits

- NYSDEC Environmental Resource Map
- Threatened and Endangered Species/Habitat Suitability Assessment Report, dated 9/25/2021

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Cascade Creek Subdivision - ERM

November 22, 2024

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

New York State, State of Connecticut, Maxar, Esri, HERE, Garmin, iPC

Author: Rennia Engineering Design, PLLC.
Not a legal document

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Phase I Bog Turtle
Habitat Suitability Assessment Report

34 Cascade Road Site
Town of Amenia
Dutchess County, NY

September 11, 2024

Prepared by:

Michael Nowicki
Ecological Solutions, LLC
121 Leon Stocker Drive
Stratton, VT 05360
(203) 910-4716

INTRODUCTION

Ecological Solutions, LLC completed an evaluation of the wetland area on the 18 acres site located at 34 Cascade Road in the Town of Amenia for the presence of bog turtle (*Glyptemys muhlenbergii*) habitat. The site is located between Cascade Road on the western boundary and Route 22 to the east.

BACKGROUND

The bog turtle is a semi-aquatic freshwater turtle that prefers open, shallow wetlands with soft soils that are saturated by perennial groundwater discharge. Habitat and associated flora vary throughout the bog turtle's range; however, in the northern part of its range (Connecticut, Massachusetts, New York, New Jersey, Pennsylvania) the bog turtle exhibits a strong preference for fens fed by calcium-rich groundwater from limestone, marble or other calcareous material. These palm-sized, secretive turtles spend much of their lives hidden in soft soils or under plant material, which serves as a refuge and aids in thermoregulation. The bog turtle is one of the few turtles that remain within its core wetland habitat to nest, typically selecting hummock-forming plants on which to deposit its eggs. Bog turtles living in groundwater-fed, calcareous wetland habitats with low open vegetation may use areas of apparently less suitable habitat seasonally. Bog turtles are omnivorous and can live more than 50 years (Ernst et al. 1994). The U.S. Fish and Wildlife Service listed the bog turtle as *Threatened* in 1997 because of loss of habitat (USFWS 2001). It is listed as *Endangered* by the New York State Department of Environmental Conservation (NYSDEC).

METHOD

A Phase 1 habitat evaluation was completed at the wetland area. Suitable bog turtle habitat is defined by the presence of the following habitat criteria consistent with the federal bog turtle survey guidelines contained in the Bog Turtle Recovery Plan (USFWS 2001):

- Substrate of saturated organic and/or mineral soil
- Groundwater derived hydrologic regime
- Herbaceous and scrub/shrub vegetation including sedges and hummock forming vegetation

FIELD OBSERVATION/WETLAND DESCRIPTION

There are no wetland areas located on the site. There is a class C(T) watercourse located along Cascade Road that runs the length of the site. The Web Soil Survey identifies the soils on the site as well drained Wappinger loam and Copake gravelly loam with a depth to water table of at least 3 feet.

SUMMARY

There are no wetlands on the site and no potential bog turtle habitat. The site is mainly farm field with well drained soil and a class C(T) watercourse in close proximity to Cascade Road with no associated wetland component.

REFERENCES

Ernst, C.H., R.W. Barbour and J.E. Lovich. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington DC. 578 p.

USFWS. 2001. Bog turtle (*Clemmys muhlenbergii*), northern population recovery plan. U.S. Fish and Wildlife Service, Hadley, MA. 103 p.

PHOTOGRAPHS

Center of the site

Center of the site

Figure 1

Map Unit Symbol	Map Unit Name
CuB	Copake gravelly silt loam, undulating
CuC	Copake gravelly silt loam, rolling
SkC	Stockbridge silt loam, 8 to 15 percent slopes
We	Wappinger loam

APPENDIX C

Archaeological Exhibits/Studies:

- CRIS Mapper

- Phase 1A Literature Search & Sensitivity Assessment & Phase 1B Archaeological Field Reconnaissance Survey – Cascade Road Conservation Subdivision Project", dated November 2024

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PHASE 1A LITERATURE SEARCH AND SENSITIVITY ASSESSMENT & PHASE 1B ARCHAEOLOGICAL FIELD RECONNAISSANCE SURVEY

CASCADE ROAD CONSERVATION SUBDIVISION PROJECT

34 CASCADE ROAD
TOWN OF AMENIA, DUTCHESS COUNTY, NEW YORK

PREPARED FOR:

HUDSON RIVER HOUSING, INC.
313 MILL STREET
POUGHKEEPSIE,, NY, 12601

H·C·S
Hudson Cultural Services
PO BOX 124
LAGRANGEVILLE NEW YORK 12540

NOVEMBER 2024

MANAGEMENT SUMMARY

SHPO Project Review Number (if available): **24PR08937**

Involved State and Federal Agencies:

Phase of Survey: **Phase 1A Literature Search & Sensitivity Assessment & Phase 1B Archaeological Field Reconnaissance Survey**

Location Information:

Location: **34 Cascade Road**

Minor Civil Division: **Amenia**

County: **Dutchess County**

USGS Quadrangle: **2023 Amenia**, **NY** Q**uadrangle**

Survey Area (English & Metric)

Length: **1535'/6212 m**

Width: **870'/265.2 m**

Number of Acres (Project Parcel): **±23.9 acres** (**9.67 ha**)

Number of Acres Impacted (Project APE): **±13.9 acres** (**5.63 ha**)

Archaeological Survey Overview

Number & Interval of Shovel Tests: **216 @50'** (**15.24 m**) **intervals**

Number & Size of Units: N/A

Width of Plowed Strips: N/A

Surface Survey Transect Interval: N/A

Results of Archaeological Survey

Number & name of precontact sites identified: 0

Number & name of historic sites identified: 0

Number & name of sites recommended for Phase II/Avoidance: 0

Report Author (s): **Franco Zani Jr**, **Beth Selig**, **MA**, **RPA**.

Date of Report: **November 21**, **2024**

HCS Project: **24–10–801**

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LIST OF FIGURES

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I. Phase 1A Literature Search and Sensitivity Assessment

A. Cascade Road Conservation Subdivision Project Description

In October of 2024, Hudson Cultural Services (HCS) was retained by Hudson River Housing to complete a Phase 1A Literature Search and Sensitivity Assessment and Phase 1B Field Reconnaissance Survey of the Cascade Road Conservation Subdivision Project, located at 34 Cascade Road, in the Town of Amenia, Dutchess County, New York.

The purpose of the Phase 1 Cultural Resources Survey is to determine whether previously identified cultural resources (historic and archeological sites) are located within the boundaries of the proposed project, and to evaluate the potential for previously unidentified cultural resources to be located within the boundaries of the Project Parcel of Potential Effect (APE). All work was completed in accordance with the *Standards for Cultural Resource Investigations and the Curation of Archeological Collections published by the New York Archeological Council* (NYAC) and recommended for use by New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The report has been prepared according to New York State OPRHP's *Phase 1 Archaeological Report Format Requirements*, established in 2005.

The background research as well as the cultural and environmental overviews were completed by Matt Chmura, Franco Zani Jr and Beth Selig, MA, RPA, President and Principal Investigator with HCS. A project site visit was conducted by Franco Zani Jr. and Fiona Shackleton on October 28, 2024 to observe and photograph existing conditions within the Project Parcel. The information gathered during the walkover reconnaissance is included in the relevant sections of the report.

The Cascade Road Conservation Subdivision Project (hereafter "the Project") consists of ±23.9 acres (9.67 ha) located at 34 Cascade Road. The Parcel is a mixture of wooded and fallow farmland turned hayfield. The Parcel is generally level, with a gradual rise in the eastern and northeastern portions. An unnamed stream is located west of the Project Parcel. A light understory is present in the wooded areas along the perimeter of the property.

The proposed project includes the construction of twenty-eight (28) single family homes over a series of four phases, wells with pump houses, septic systems and associated infrastructure. The proposed project will impact ±13.9 acres (5.63 ha) of the larger parcel (Project APE).

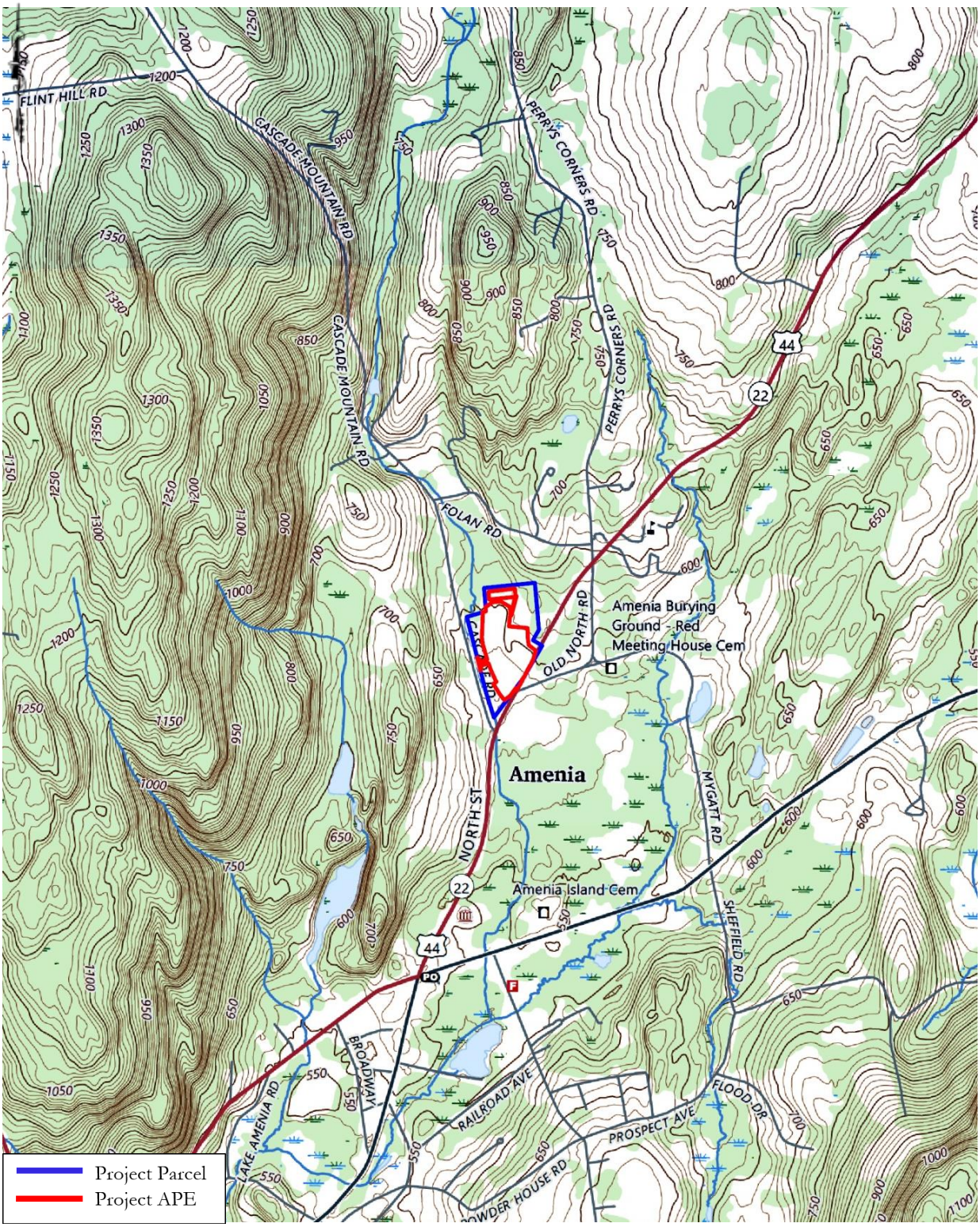


Figure 1: 2023 USGS Topographical Map. Amenia and Millerton NY Quadrangles. 7.5 Minute Series. (Source: USGS.gov.) Scale: 1" = 2,000'.

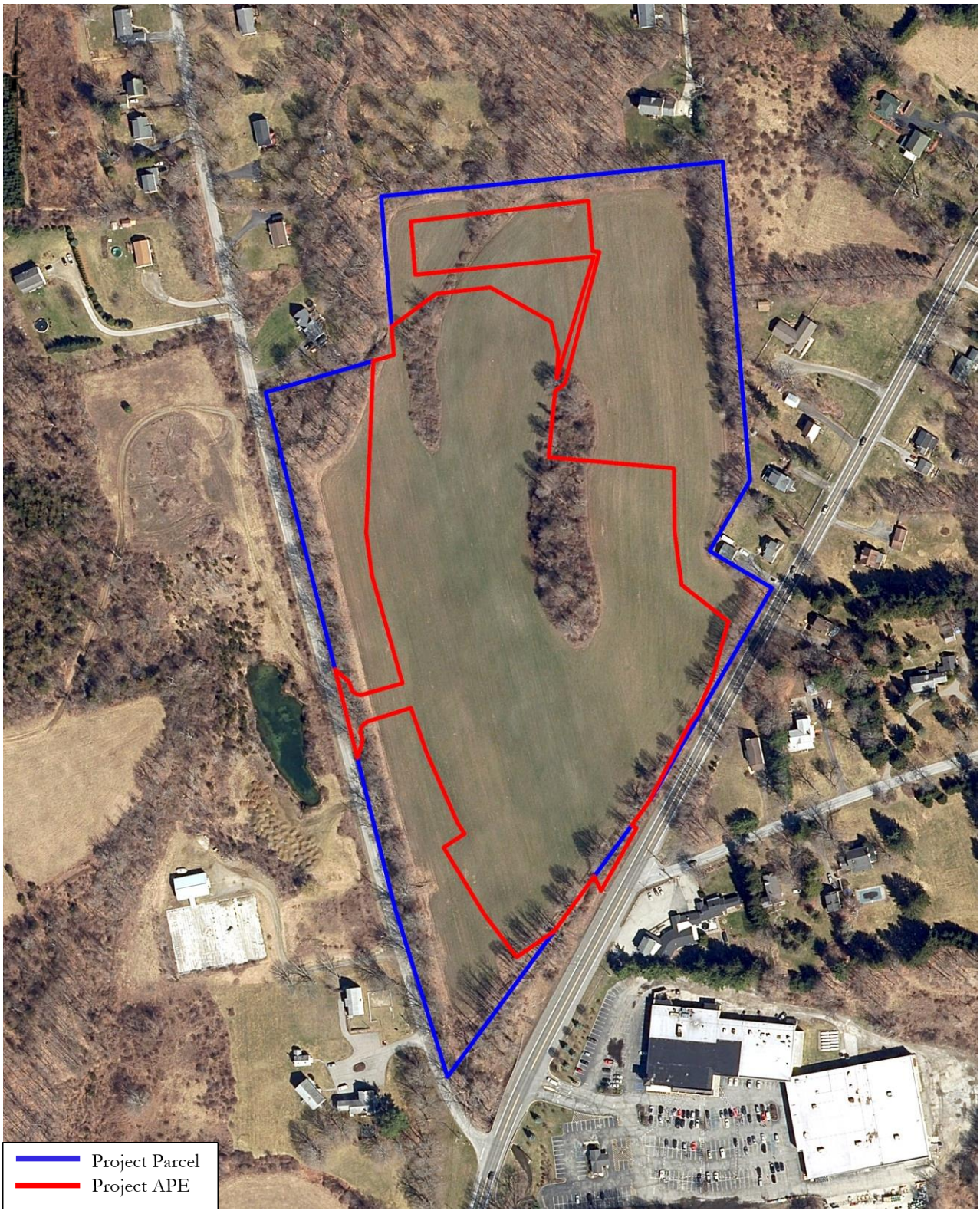


Figure 2: 2021 Aerial Image showing the Project APE. (Source: NYS GIS Clearinghouse.) Scale: 1" = 300'.

Photo 1: Access to the Project APE is over a dirt bridge over a large drainage channel that extends the length of the Project Parcel. View to the north.

Photo 2: View to the southwest across the Project Parcel from near NY-22.

Photo 3: View to the west across the Project Parcel from the eastern extent near NY-22.

Photo 4: View to the north across the Project Parcel from the southeastern portion of the APE near NY-22.

Photo 5: View to the east along the southern boundary of the APE from Transect 1.

Photo 6: The baseline for Transects 12 through 21 began along the area of overgrowth seen to the right. View to the north.

B. Environmental Conditions

The landscape within the Project Parcel is a mixture of wooded and fallow farm field areas, with a light understory and gentle slopes. The highest elevation within the Parcel is 625' (190.5 m) Above Mean Sea Level (AMSL) along the northeastern boundary. The landscape descends to the southwest to 580' (176.8 m) along the southwestern boundary of the parcel. The average elevation of the parcel is 600' (182.9 m) AMSL.

Ecology

The Project Parcel lies within the Eastern Broadleaf Forest. This province is dominated by tall, broadleaf deciduous trees that provide a continuous canopy during the summer, and completely shed their leaves during the winter months. During the spring, a ground cover of herbs develops quickly, but is greatly reduced as the trees reach full foliage and shade the ground. Forest vegetation can be divided into three separate distinctions: mixed mesophytic, Appalachian oak, and pine-oak (Bailey 1995).

Geology

The Project Parcel is situated within the Northeastern Highlands physiographic province, which covers the majority of the mountainous portions of New England and New York. The portion of the Northeastern Highlands Province in which the Project Parcel is located is specifically identified as the Western New England Marble Valleys, bordered on the east by the Berkshire Transition, and on the west by the Taconic Foothills (Bryce et al, 2010).

The Western New England Marble Valleys is an ecoregion that includes portions of the Massachusetts' Berkshire Valley that extends into the eastern side of New York. This ecoregion consists of less resistant limestones and marbles when compared to neighboring regions like the Taconic Mountains to the northeast, and the Taconic Foothills to the west. This results in an ecoregion comprised of narrow valleys with well-drained, limestone derived soils. A large portion of forested areas have been cleared for agriculture, with the remaining forested areas comprised of species-rich transition hardwoods and northern hardwoods. Calcareous fens, swamps, and floodplains can be found in other natural areas throughout the ecoregion (Bryce et al, 2010).

Drainage

Drainage on the property is primarily into an unnamed stream, to the west of the Project Parcel along Cascade Road. This unnamed stream flows into the Wassaic Creek before flowing into the Ten Mile River south of the Project Parcel. The Ten Mile River is a tributary of the Housatonic River. Numerous Native American sites have been identified adjacent to the Housatonic River.

Soils

Soil surveys provide a general characterization of the types and depths of soils that are found in an area. The characteristics of the soils within the Project Parcel have an important impact on the potential for the presence of cultural material since the types of soils present affect the ability of an area to support human populations. The Soil Survey's mapped boundaries are considered approximate, as they generally correspond poorly to the actual boundaries of landforms and soils types within an area. The soils located within the Project consist of gravelly silt loam, gravelly loams, loams and sandy loams. This soil type forms on landforms consisting of terraces, outwash plains, and deltas, till plains, hills and drumlinoid ridges and flood plains (Natural Resources Conservation Service). Details of the soils within the Project have been included below in Table 1.

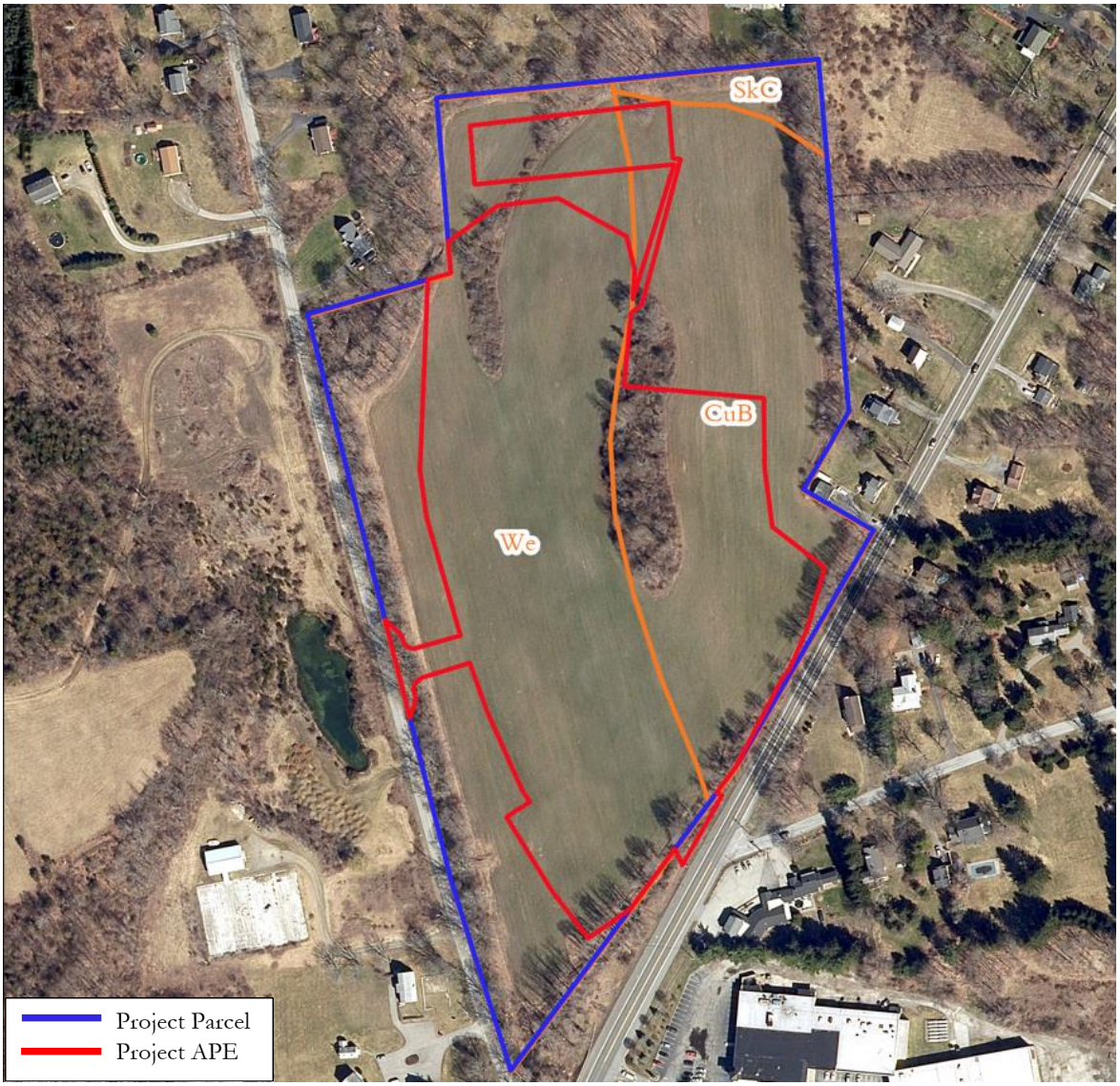


Figure 3: Aerial Image showing soil units within the Project Parcel. (Source: Natural Resources Conservation Service.) Scale: 1" = 300.

Table 1: Soil Unit Descriptions (Natural Resources Conservation Service)

Map Symbol	Map Unit Name	Soil Horizons & Texture	Slope	Drainage	Landform
CuB	Copake gravelly silt loam, undulating	H1 – 0 to 6 inches: gravelly silt loam H2 – 6 to 36 inches: gravelly loam H3 – 36 to 80 inches: stratified very gravelly coarse sand gravelly loamy fine sand	3 to 8%	Well drained	Terraces, outwash plains, deltas
SkC	Stockbridge silt loam	H1 – 0 to 6 inches: silt loam H2 – 6 to 23 inches: silt loam H3 – 23 to 80 inches: silt loam	8 to 15%	Well drained	Till plains, hills, drumlinoid ridges
We	Wappinger loam	H1 – 0 to 9 inches: loam H2 – 9 to 33 inches: loam H3 – 33 to 37 inches: sandy loam H4 – 37 to 60 inches: extremely gravelly sand	0 to 2%	Well drained	Flood plains

C. Recorded Archaeological Sites and Surveys

On October 27, 2024, HCS reviewed the combined site files of the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) and the New York State Museum (NYSM) for information regarding previously recorded archeological sites within one mile (1.6 km) of the Project APE. HCS also consulted regional Native American sources (e.g. Beauchamp 1900; Parker 1920; Ritchie 1980; Ritchie and Funk 1973) for descriptions of regional archeological sites. In addition, a review of the site files was completed to identify properties on the State and National Register of Historic Places (S/NRHP).

Previously Recorded Archaeological Sites

Two previously documented archaeological sites have been identified within a one-mile radius of the Project Parcel boundaries.

Table 2: Previously Recorded Archaeological Sites within one mile radius.

Site Number	**Site Name**	**Distance from Project**	**Time Period**	**Site Type/ Materials Recovered**	**S/NRHP Status**
NYSM 3135	A.C. Parker, Dutchess County	1957.4 / 596.6 m	Precontact	"On lands of Myron P. Benton… 1 of 2 burial sites mentioned."	Undetermined
NYSM 8206	A.C. Parker, Dutchess County	4,040.2' / 1231.5 m	Precontact	Burial site "Near Amasa D. Colemans"	Undetermined

No archaeological sites have been identified adjacent to the boundaries of the Project APE.

Previously Completed Archaeological Surveys

As part of the research for this project, surveys completed for projects in the general area were consulted. One archaeological survey has been completed within a one-mile radius of the Project Parcel. This survey was for a proposed fiber optic line and alternate route which ran from Stephentown to White Plains. No archaeological sites were identified within the vicinity of the current Project APE as a result of this survey.

D. National Register Eligible/Listed Sites

The National Register Database and OPRHP files were reviewed to identify structures on or in the vicinity of the Project Parcel that have been listed on the National Register of Historic Places or identified as National Register Eligible. The Indian Rock Schoolhouse on Mygatt Road, east of the Project Parcel is located within one-half mile, and will not be directly impacted as a result of the Project.

E. Native American Context

For millennia, the Hudson River Valley has served as important trade route and highway, connecting its past inhabitants to other regions of the American Northeast. The areas east of the Hudson River, stretching as far north as Lake Champlain and as far south as the mouth of the Hudson River, are the traditional homelands of the Muhheconneok, or "The People of the Waters that are Never Still" (Stockbridge Munsee Band of Mohican Indians, n.d.). Dutchess County was historically inhabited by a second Algonquian-speaking tribe,

the Wappinger, meaning "easterner," whose territory ranged as far north as Roeliff Jansen Kill in Columbia County and south to the mouth of the Hudson River (Swanton 1952).

New York State's earliest occupants are associated with the Paleoindian Period, c. 12,000-8,000 before present (BP). These early inhabitants were highly mobile hunter-gatherers widely dispersed across a tundra-like landscape, residing in temporary camps on elevated terraces near the shores of proglacial lakes and major waterways (Lothrop et al. 2017). Subsistence was likely broad-based and likely included hunting of caribou herds. Sites of this period are most easily recognized by their fluted Clovis points and related stone tool kits. Several Paleoindian camps have been identified in the Hudson River Valley, including the West Athens Hill quarry site in Greene County (Ritchie and Funk 1973: 6-7) and Kings Road and Swale sites in the Town of Coxsackie (Funk 1976). Several other well-documented Paleoindian sites have been identified in the southeastern New York, such as Twin Fields and Dutchess Quarry (Lothrop and Bradley 2012).

Increasing evidence of human occupation during the Archaic Period (9000-3000 BP) parallels climactic warming and the gradual retreat of the Laurentide Ice Sheet. Archaic populations were still bands of mobile hunter-gatherers who left behind a minimal footprint (Ritchie and Funk 1973). Population numbers during the Early and Middle Archaic Periods (8,000-6,000 BP) were low, and sites dating to these periods are rare, more commonly associated with stable southern environments in New Jersey and coastal New York (Ritchie and Funk 1973: 337).). However, some sites have been identified in the Central and Lower Hudson Valley, such as Mohonk Rockshelter (Eisenberg 1991), Grouse Bluff (Lindner 1992), and the Sylvan Lake and North Bowdoin Rockshelters in Dutchess County (Funk 1966; Kinsey 1972). Charred botanicals and zooarchaeological remains from such sites indicate Early and Middle Archaic inhabitants utilized a wide variety of resources, including acorns, berries, white-tailed deer, and turkey, as well as aquatic resources (Ritchie and Funk 1973). By the Late Archaic Period (6,000-3,000 BP), environmental conditions had stabilized to that of modern climates (Sirkin 1977), and Indigenous Populations had developed territorial seasonal settlement patterns, aggregating in camps (~100 individuals) in uplands adjacent to rich aquatic resources during the summer months and dispersing to small, backcountry, ephemeral rock shelters in the winter (Pagoulatos 2003). The lithic tools kits were comprised of small stemmed projectile points, including recognizable Narrow-Stemmed Point and Laurentian Traditions (Funk and Wellman 1984; Ritchie and Funk 1973:38), chipped stone tools (e.g. utilized flakes, scrapers, and drills), and a marked increase in ground stone tools (e.g. celts, mortars and pestles), indicative of increased food processing.

The Late Archaic trends of increasing resource exploitation, sedentary lifeways, and increasing population numbers intensified during the Woodland Period (2700 BP-Contact). As human occupations became increasingly sedentary, people modified their lithic tool kits to accommodate shifts in subsistence patterns and began developing new methods and styles of pottery production (Snow 1980). The Early Woodland Period (2700 -2000 BP), in particular, saw marked elaboration of existing mortuary practices through the introduction of copper metal ornaments (Ritchie 1994: 179), as well as significant subsistence shifts through intensified cultivation of native wild plants like chenopodium (goosefoot) (Ritchie and Funk 1973).

By the Middle Woodland (2000 – 1000 BP), the early inhabitants of New York State had developed a rich material culture, possible maize cultivation (Hart et al. 2003; Hart 2008), long-distance trade networks, complex burial patterns, and frequent use of cord-marked ceramics (Ritchie 1968, Ritchie and Funk 1973). The Late Woodland Period's (1000 BP-400 BP) growing reliance on maize, bean, and squash agriculture accelerated population growth and facilitated patchy shifts in social structure (Hart and Reith 2002). Settlement patterns shifted to accommodate developing agricultural hamlets, exhibiting a high degree of sociocultural and economic heterogeneity (Reith 2002; Peterson et al. 2002). By the Late Woodland Period, distinct archaeological patterns associated with early cultural groups had developed. Compared to the large

permanent and semi-permanent fortified villages associated with Haudenosaunee settlement patterns, Algonquian settlement patterns were "mobile, fluid, and variable" (Chilton 1996:75). Mid-sized longhouses and small, circular wik-wam houses were typically located on floodplains and hilltops overlooking rivers. In comparison with their Haudenosaunee neighbors, subsistence methods relied less on full-scale horticulture and more on broad-based strategies emphasizing foraging and fishing (Lavin 2004). Several Woodland Period sites have been identified in Dutchess County, such as the Goat Island Rock Shelter (Chilton 1992).

Contact Period identifies the start of settler colonialism, in which the European settlers arrived in New York State and began extracting resources and interacting with indigenous communities (1500-1650 AD). This period is predominantly informed by European documented history and the presence (or absence) of European material culture within the archaeological record. Early contact with Europeans occurred in the 1590s as Dutch and French trappers traveled up and down the Mahicannituck, "the river that floats two ways", now known as the Hudson River. At the time of European contact, two Algonquin-speaking Indian nations, the Wappinger and the Mohican, occupied Dutchess County (Salomon 1983). These people were sedentary, living in small permanent villages and growing crops such as maize and squash. The region remained relatively uncolonized until the seventeenth century, when Dutch explorers returned to the Hudson River Valley in 1609 (Ritchie and Funk 1973). European settlements brought about considerable change for Indigenous Communities. The economic imperative of the fur trade and the demand for European goods affected indigenous subsistence, as well as the social, technological, and political structure of their communities. Economic competition over furs, and changing alliances between Dutch, French, English powers, sparked increasing conflict amongst indigenous groups (Hunter 1978), ultimately pitting the powerful Haudenosaunee nations against Algonquian-speaking peoples in the so-called Beaver Wars. Continued interaction with Europeans further decimated local populations through smallpox, diphtheria, and scarlet fever epidemics (Stockbridge Munsee Band of Mohican Indians, n.d.).

Though the territorial extent of the Muhheconneok traditionally included all the land east of the Hudson River, stretching as far north as Lake Geroge and Lake Champlain, persistent conflict with the powerful Mohawk Nation pushed Mohican communities across the present-day New York-Massachusetts state boarder to resettle in Stockbridge, Massachusetts. By this time, the dwindling Wappinger tribe, their population ravaged by war and disease and their land stolen through questionable "sales" to European settlers, joined their Lenape relatives in Stockbridge, Massachusetts. During the Revolutionary War, the Stockbridge Indigenous Community supported American efforts to overthrow British colonial rule. Their only reward, however, was to have more of their land stolen by debt, mortgage, and other fraudulent means. Aware of plans for their removal from Stockbridge, MA, the Stockbridge Indigenous Community relocated to New Stockbridge, NY, near Oneida Lake in the mid-1780s onto land gifted to them by the Oneida, who had fought alongside the Mohicans and Wappingers during the Revolutionary War. By the early 19th century, however, there was growing pressure to remove all indigenous peoples from within the boundaries of New York State.

A treaty between New York State and the Menominee and Ho-Chunk (Winnebago) in Wisconsin was negotiated in 1822, and the Stockbridge Mohicans were forcibly relocated. Initially, the Stockbridge Mohicans settled on the Fox River. Once the economic importance of the river was noted, however, they were resettled on the eastern shores of Lake Winnebago, eventually incorporating another group of Algonquian-speaking relatives, the Lenni Lenape/Munsees, to form the Stockbridge Munsee Band of Mohican Indians. Their current reservation in Shawano County was obtained in 1856 through a treaty with the Menominee. Today's descendants of the Stockbridge Munsee community have continually pushed for Federal recognition of Indigenous territorial and governmental rights, and in 2010, won a major settlement in New York State for the unconstitutional seizure of the New Stockbridge territory. Today, many

descendants of the Stockbridge Munsee still reside in the Stockbridge-Munsee Community in Shawano County, Wisconsin, while maintaining strong connections to their ancestral territory through their Tribal Historic Preservation Offices located in New York State (Stockbridge-Munsee Band of Mohican Indians, n.d.).

F. Historic Context

Dutchess County, one of New York's original counties, was created in 1683, and at that time included all of Putnam County and part of Columbia County (Cronon 1983). The county was divided into thirteen patents, with the Rombout Patent being one of the earliest. Dutch settlement on the patents began in the late 1600s, with English Quakers from Rhode Island and Long Island moving into the eastern part of the county in the 1740s (Cronon 1983). The Rombout Patent, consisting of about 85,000 acres, and encompassing the present towns (townships) of Poughkeepsie, LaGrange, Wappingers, Fishkill, East Fishkill, and Beacon, was bought in 1683 by three New York businessmen.

The current Town of Amenia was previously included in two patents: the Great Nine Partners Patent and The Oblong. The Great Nine Partners Patent was granted to Colonel Caleb Heathcote and his partners in 1697. The original patent was divided into nine water lots, and thirty-six principle lots, with the nine members dividing the lots in equal portions. The Oblong, or Equivalent land, is a land patent which was ceded to New York from Connecticut in 1731 due to a mistake made when establishing the original colony lines. This occurred in 1664 when both colonies agreed on a boundary from Long Island Sound to the Massachusetts border. The landmarks used to mark the boundary were not clearly understood, resulting in Connecticut settlers on New York land. Both parties agreed to rectify the error however, the settlers wanted to remain in Connecticut, so the equivalent amount of land was given to New York from a different location (Reed 1875).

The first European settlers in what is now the Town of Amenia was Mr. Richard Sackett and his family. Originally a resident of New York City, Mr. Sackett applied for a license to purchase land from Indians living in the area in 1703. The license was granted, and Mr. Sackett moved his family there before 1711. The exact date of occupation is unknown. In 1706, Mr. Sackett was part of the Little Nine Partners Patent. At the time of this first settlement in Amenia, the entire population of Dutchess and Putnam counties was about four hundred and fifty, and the closest European settlement in the county was Poughkeepsie. The settlement at Amenia would remain sparsely populated until the 1720's and 1730's. Capt. Garret Winegar settled in 1724, Henry Nase moved to the area in 1725 and the Row, Knickerbacker, and VanDusen families relocated to the area prior to 1731 (Reed 1875).

The population of Amenia would gradually grow as more of the Nine Partners Patent and The Oblong patent lots were divided and sold through the eighteenth century. Originally formed as a precinct on March 20, 1762, Amenia officially became a town on March 7, 1788. The name, Amenia, is attributed to an early settler named Dr. Thomas Young, who was also a poet. Dr. Young lived in Amenia for several years and married one of Capt. Winegar's daughters. On March 26, 1823, the towns of Amenia and Northwest were reorganized, changing the boundary between the two (Reed 1875).

The settlement in Amenia focused on agricultural. Initially only producing enough to feed their families, the eventual surplus in wheat led to the first source of income for most settlers. Mills sprang up throughout the area, with the first opening at Leedsville in 1740 and a second opening at the Steel Works. Tanneries and leatherworking as a trade grew along with agriculture. The majority of settlers in the area did not initially participate in trading, instead choosing to relay on what they produced. This meant shoes, harnesses, and other leather products were made locally from leather sourced from their own livestock. Textiles were much

the same, with families producing their own material and clothing. This self-sufficient live style of the settlers allowed them to mostly avoid the failing continental currency during the War of 1812 (Reed, 1875).

The Town of Amenia continued to grow after the war ended. A seminary was founded in 1835 to promote the settlers' ideals in the importance of higher education. Agriculture began a shift away from wheat to focus more on corn and livestock. Furnaces for smelting iron were constructed, taking advantage of local sources of iron ore (Reed 1875). The Willson & Eaton Company was formed in 1878 as a retail and wholesaler dealing in a variety of goods including coal, lime, lumber, and livestock feed. The Sheffield Farms Slosson Decker Company was founded for the production of casein. The Harlem Valley Brick and Supply Company was formed in 1906, and was producing thirty thousand bricks per day by 1909 (Hasbrouck 1909).

Cartographic Research

HCS examined historical maps of Dutchess County to identify possible structures, previous road alignments and other landscape features or alterations that could affect the likelihood that archeological and/or historic resources could be located within the Project APE. These maps are included in this report, with the boundaries of the Project APE superimposed. Nineteenth century maps frequently lack the accuracy of location and scale present in modern surveys. As a result of this common level of inaccuracy on the historic maps, the location of the Project APE is drafted relative to the roads, structures, and other features as they are drawn, and should be regarded as approximate. The historic maps included in this report depict the sequence of road construction and settlement/development in the vicinity of the Project APE.

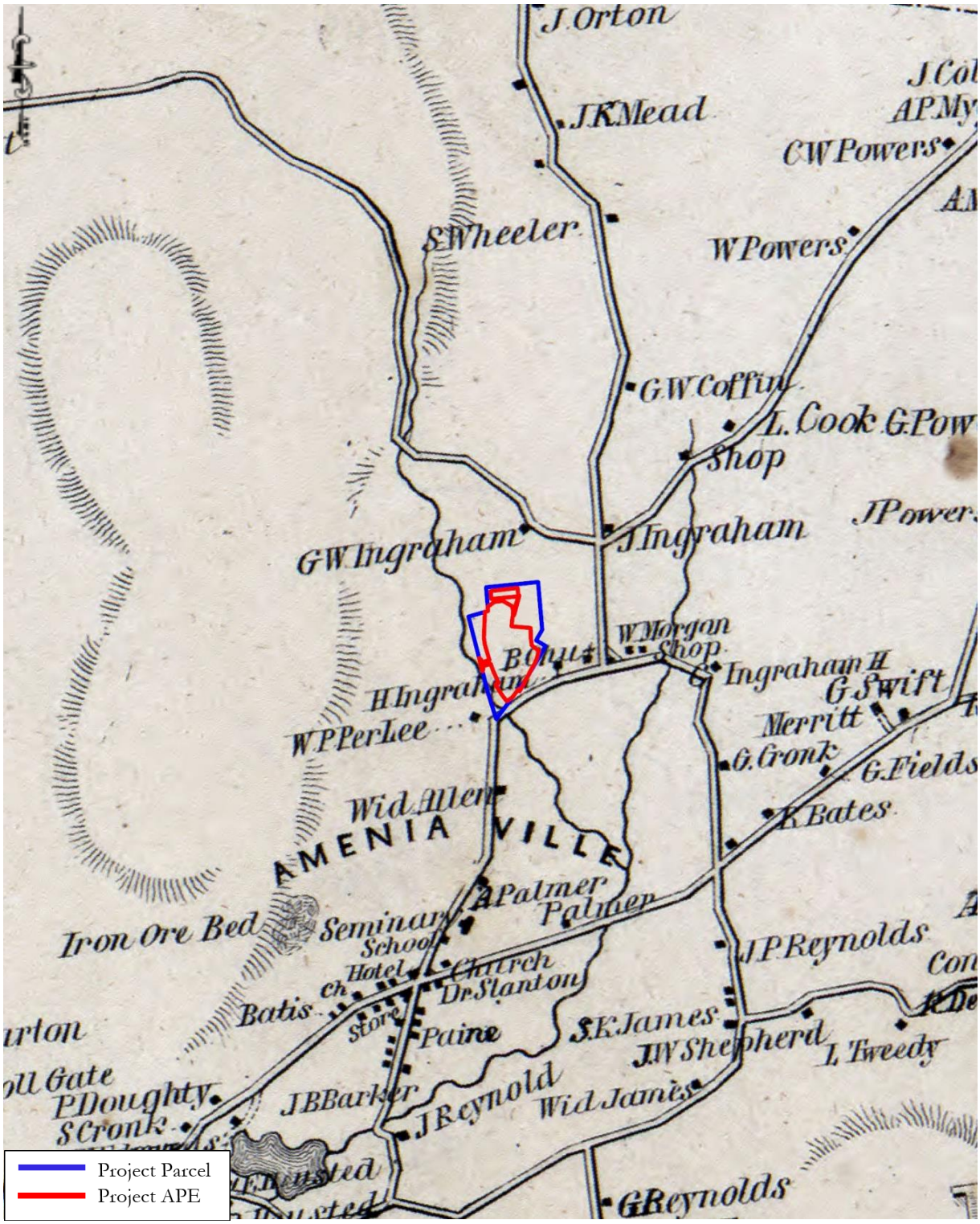


Figure 4: 1850 J.C. Sidney *Atlas of Dutchess County, New York.* (Source: Library of Congress) Scale: 1" = 2,000'.

The earliest map showing the Project Parcel was published by J.C. Sidney in 1850. The *Atlas of Dutchess County* shows that the Project Parcel is bordered on the west by a structure owned by W.P. Perlee, and to the east by a structure owned by H. Ingraham. Structures owned by B. Chut, W. Morgan and a Shop are located further to the east, and a structure owned by the Widow Allen is located to the southwest. No structures are present within the Project Parcel.

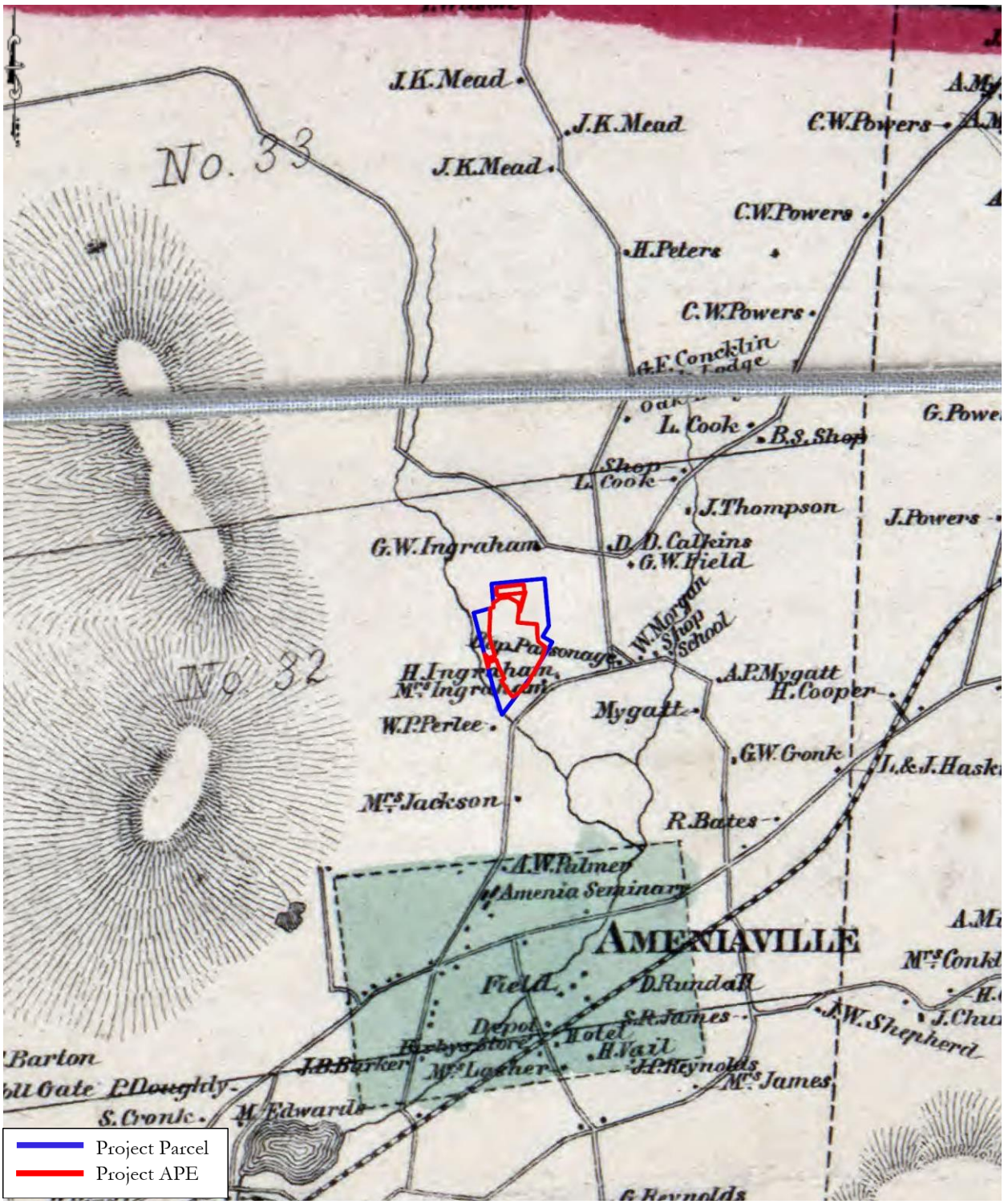


Figure 5: 1858 Bachman & Corey *Map of Dutchess Co., New York: from Actual Surveys.* (Source: Library of Congress) Scale: 1" = 2,000'.

The 1858 Bachman & Corey *Map of Dutchess Co.* indicates minimal change around the Project Parcel. The property to the southwest is still owned by W.P. Perlee, and structures to the east are owned by H. Ingraham and Mrs. Ingraham. A Baptist Parsonage is now located near the structure owned by W. Morgan and the unnamed shop. This small cluster of buildings now includes a school. No structures are within the Project Parcel.

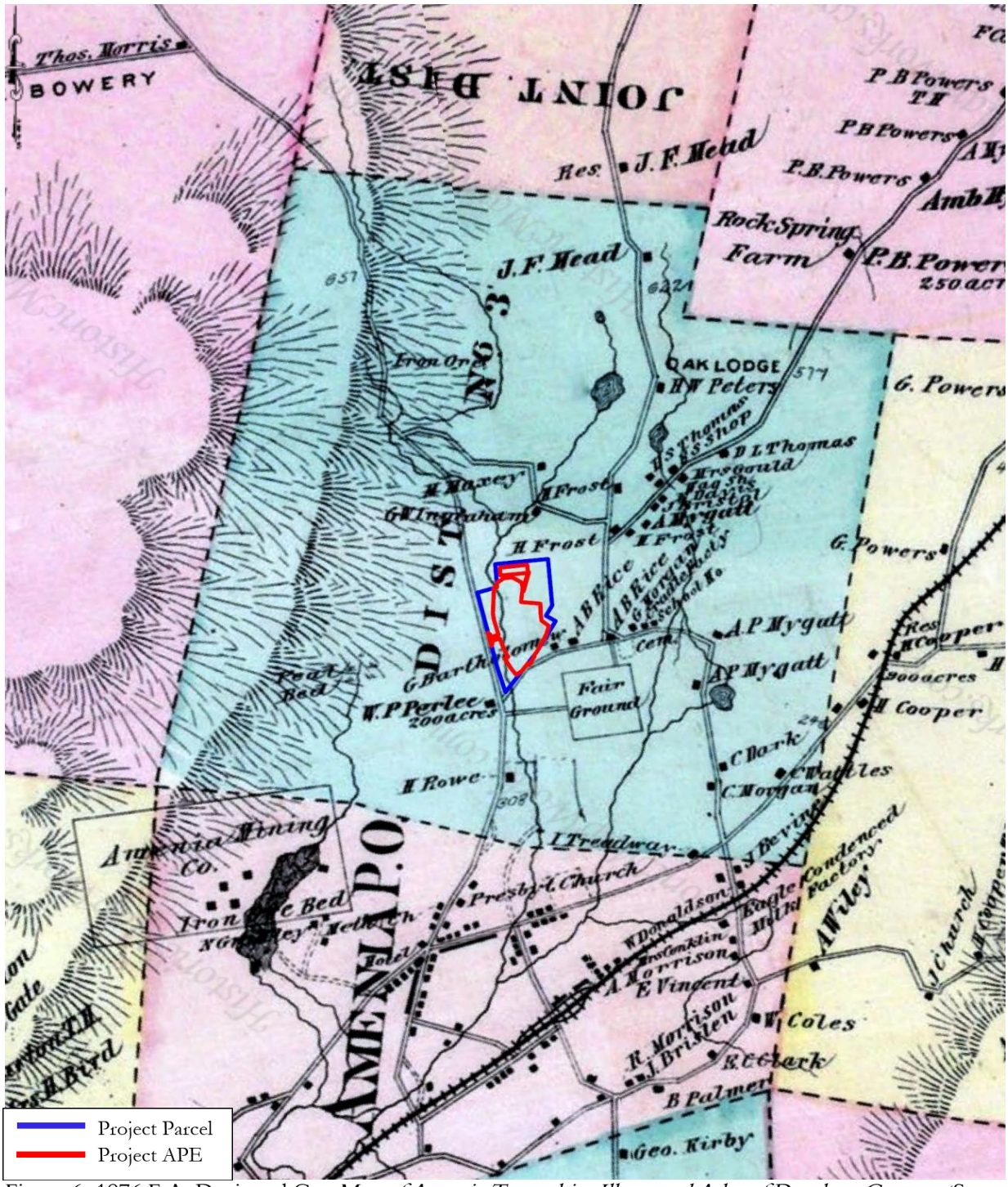


Figure 6: 1876 F.A. Davis and Co. *Map of Amenia Township, Illustrated Atlas of Dutchess County.* (Source: Historic Map Works) Scale: 1" = 2,000'.

The 1867 F.A. Davis and Company *Map of Amenia Township* shows the area around the Project Parcel has experienced gradual growth. Cascade Road has now been constructed adjacent to the Project Parcel. W.P. Perlee still owns a structure and 200 acres to the southwest. G. Bartholomew and A.B. Rice now own structures to the east of the Project Parcel. A.B. Rice now owns what was the Parsonage building. To the east are structures owned by G. Morgan, a Cradle Factory and the school. Across the road to the southeast is a Fairground and a Cemetery. No structures are within the boundaries of the Project Parcel.

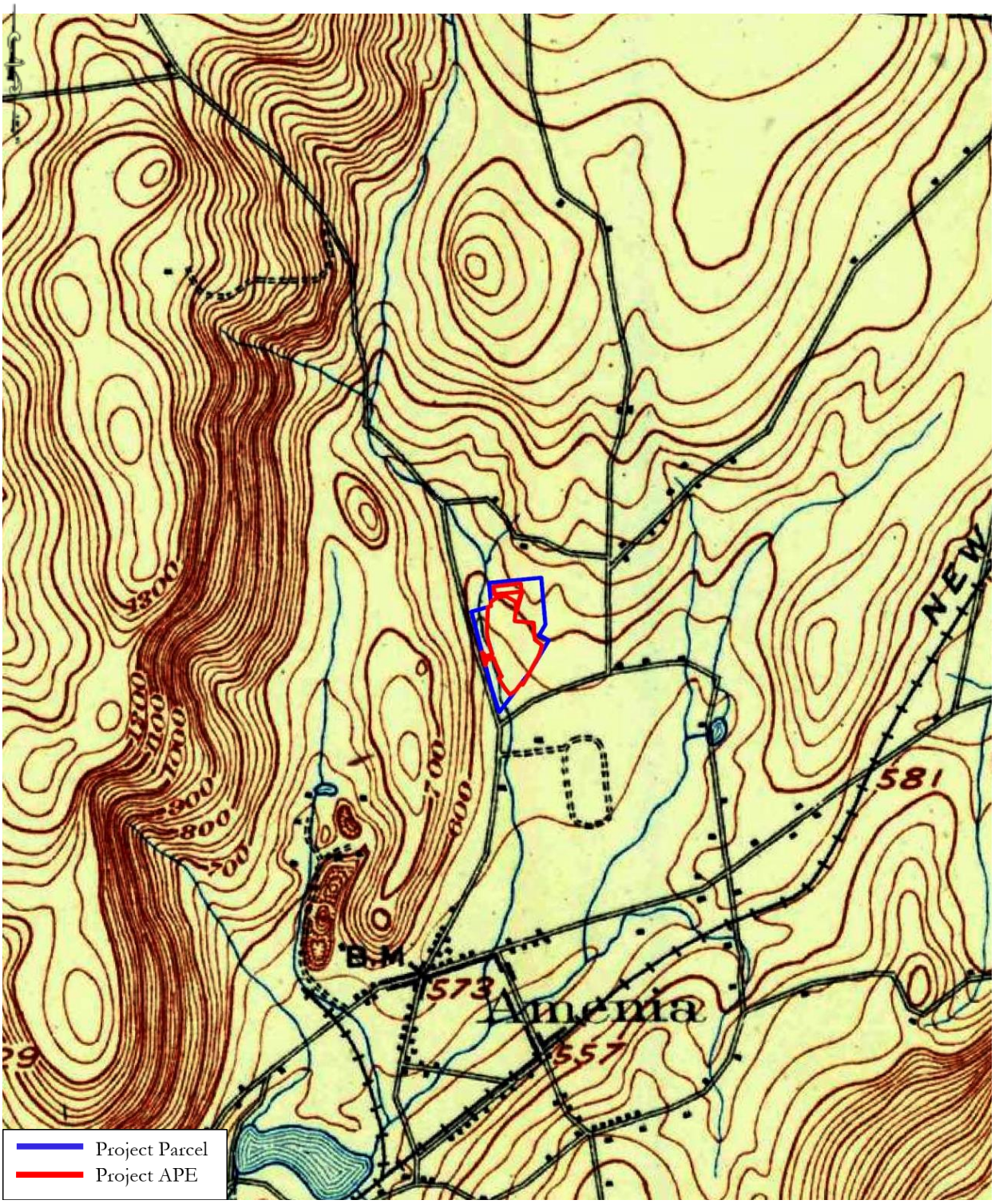


Figure 7: 1902 USGS Topographic Map, Millbrook Quadrangle, New York (Source: USGS.gov) Scale: 1" = 2,000'.

Topographical maps do not generally show the names of landowners, but show the landscape conditions, buildings and roadways. The 1903 Topographical Map shows that area remains relatively unchanged. The structures to the southwest and east of the Project Parcel are no longer present. Structures further to the east are still present, as is the fairgrounds to the southeast. The cemetery to the southeast is no longer shown.

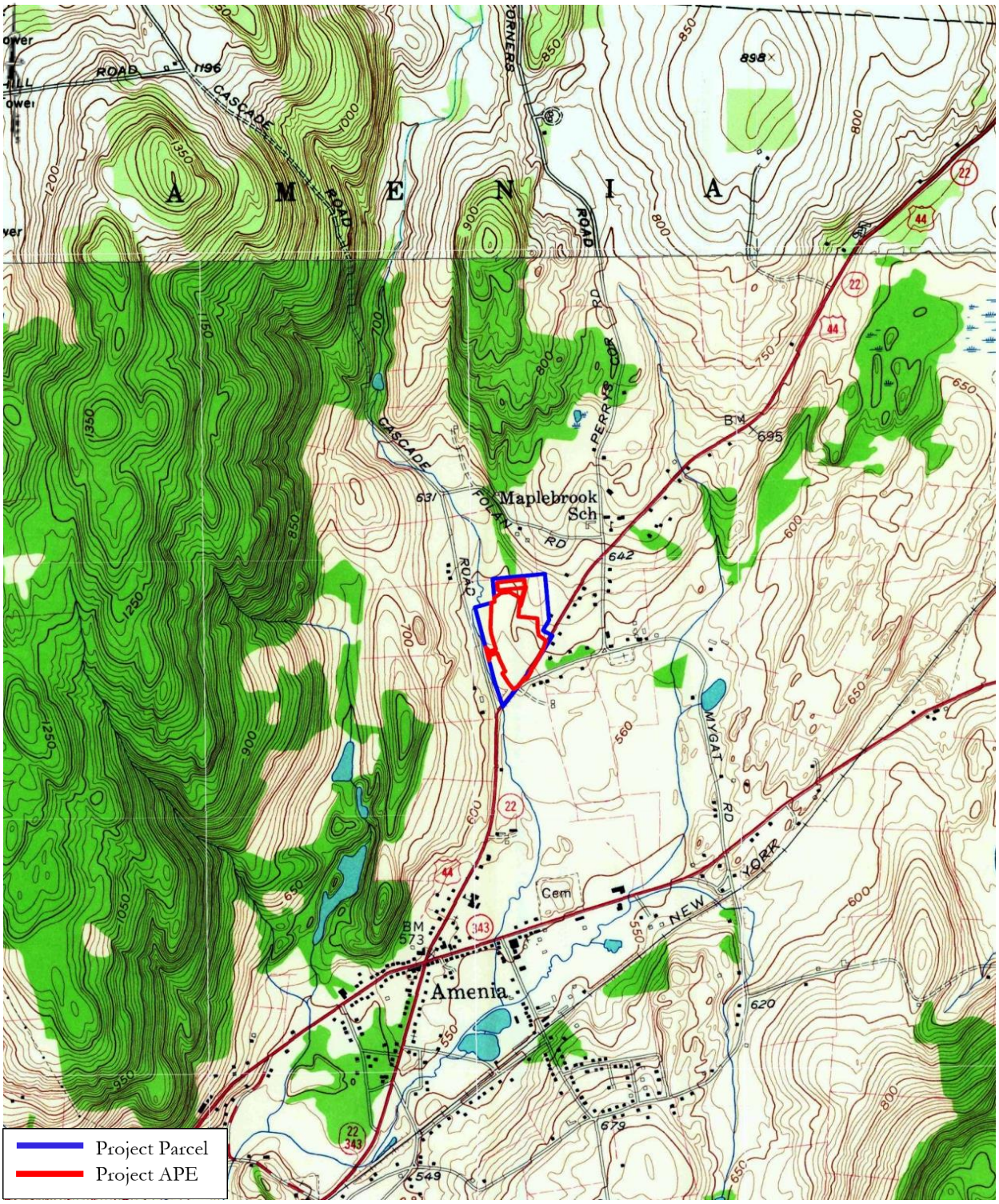


Figure 8: 1955/1958 USGS Topographical Map Millerton and Amenia Quadrangles. 7.5 Minute Series. New York. (Source: USGS.gov) Scale: 1" = 2,000'.

The 1955 Topographical Map was updated in 1958. This map shows that in the mid twentieth century, significant changes in the vicinity of the project have taken place. NY-22 to the southeast has been constructed, and a number of structures have been constructed to the west, southeast and east of the Project Parcel.

Aerial Review

A review of the historic aerial images available was completed to understand land use changes in the mid to late twentieth century. Relevant images are included in the report.

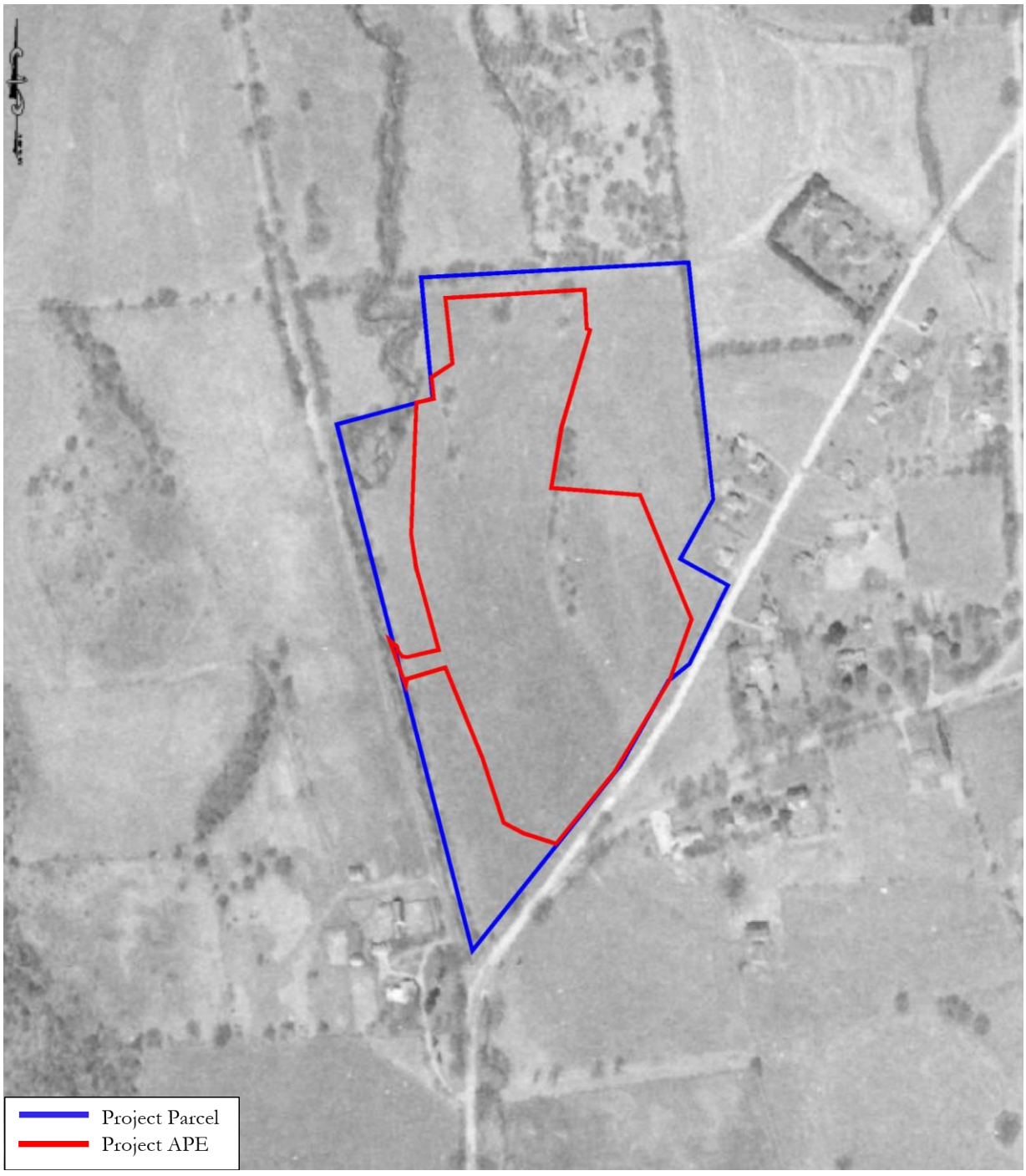


Figure 9: 1950 Aerial Image. (Source: Dutchess County Parcel Access) Scale: 1"=350'.

The 1950 aerial image shows that the Project Parcel is primarily agricultural fields. NYS Route 22 has been widened to the south of the APE. A stream is visible crossing the northwestern corner of the Project Parcel, and flowing along the western boundary. Trees border the fields on all sides.

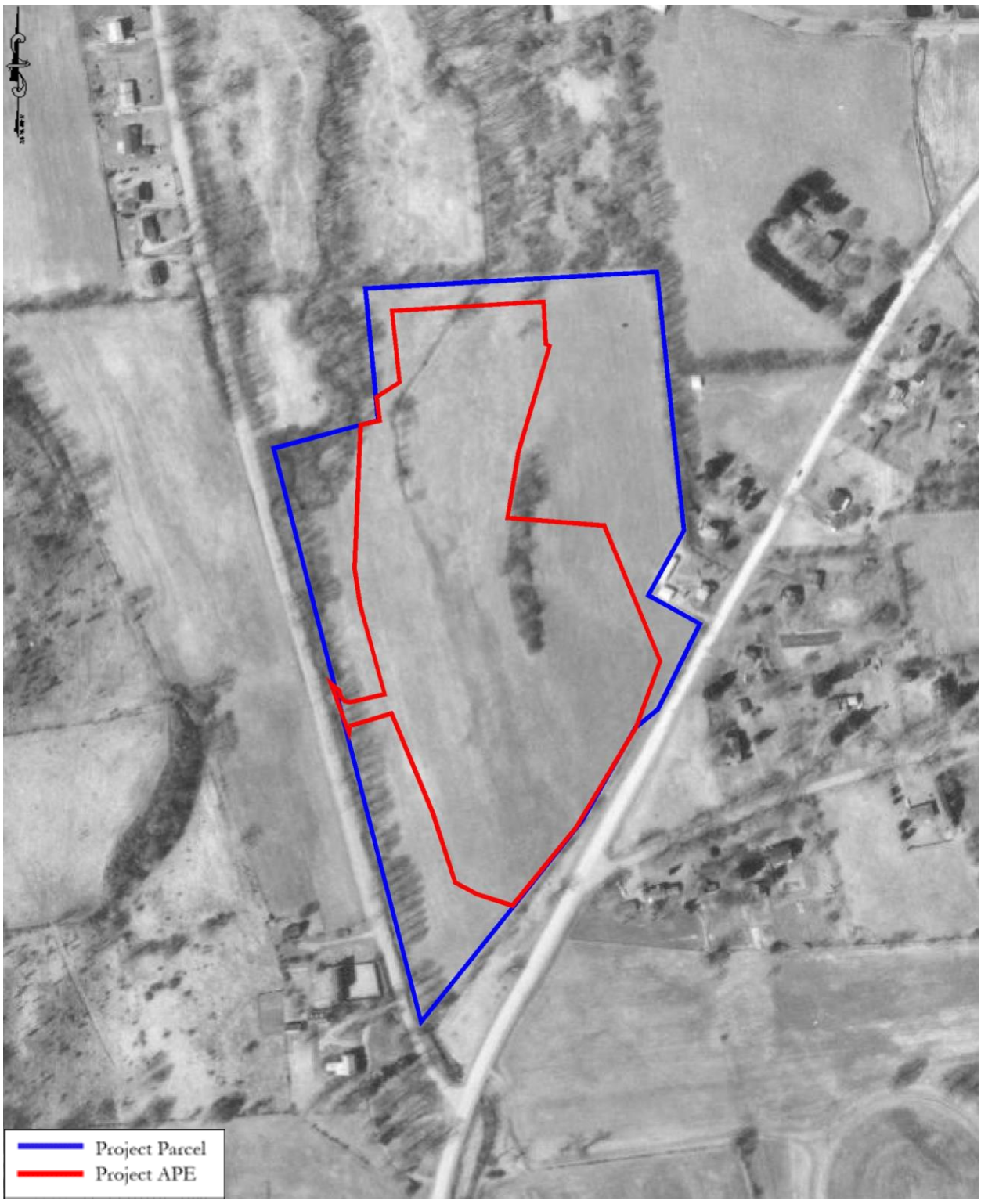


Figure 12: 1970 Aerial Image. (Source: Dutchess County Parcel Access) Scale: 1"=300'.

The 1974 aerial image shows portions of the Project Parcel have been left fallow. The northwestern portion near the old road, and the southeastern borders are wooded. No structures are located adjacent to the boundaries of the Project.

Photo 7: A drainage channel in the northwestern portion of the Parcel is overgrown. View to the northeast.

Photo 8: View northwest along Transect 3 from the southern extent.

Photo 9: View northwest along Transect 10 from the southern extent.

Photo 10: View northwest along the eastern portion of the APE and Transect 28.

G. Assessment of Sensitivity for Cultural Resources

An assessment of whether significant cultural resources are likely to be present within the Project Parcel must consider what is known of the history of the area, including likely locations of archaeological sites and proximity to known sites. In addition, to the history of the immediate area, details pertaining to whether any historic structures or features are known to exist within the Project boundaries, must be considered. Disturbance to the landscape and the soils on the property are also considered in this assessment.

Precontact Sensitivity

The Project Parcel is located in an area that has been identified having archaeological potential. The environmental factors present within the Project Parcel including well drained soils, level terrain and close proximity to fresh water increase the overall Precontact sensitivity of the parcel. Precontact period sites have been identified along Wassaic Creek and the Ten Mile River, which are located in close proximity to the Project Parcel. Therefore, the precontact period sensitivity is considered to be high.

Historic Sensitivity

Cartographic research confirmed that the Parcel has not contained any historic structures. The historic maps indicate structures were located to the east of the Project Parcel. No historic structures are located within the boundaries of the Project Parcel or the Project APE; therefore, the historic sensitivity is considered to be low.

H. Summary and Recommendations

The environmental conditions present in within the Cascade Road Conservation Subdivision Project indicate that the Project Parcel contains archaeological sensitivity. Therefore, it is the recommendation of HCS a Phase 1B archaeological field reconnaissance survey to determine if archaeological sites are present within the Project APE.

II. Phase 1B Archaeological Field Reconnaissance Survey

In October of 2024 HCS conducted an initial walkover of the Cascade Road Conservation Subdivision Project Area of Potential Effect (APE) to assess the existing conditions of the Project Parcel. Areas selected for subsurface testing were identified and areas of disturbance, slope and wetland areas were eliminated from testing. The APE is considered to be the ±13.9 acres (5.63 ha) within the ±23.9 acre (9.67 h) Parcel.

The results of the Phase 1A confirmed that the Project Parcel is located in an area of precontact and historic period activity. In addition, the landscape closely conforms to an ecological model that indicates that the level, undisturbed portions of the Project Parcel are moderate for cultural materials. Phase 1B field investigations took place on October 28-31, 2024, under the supervision of Franco Zani Jr., and Beth Selig, MA, RPA.

I. Archaeological Survey Methodology

Areas selected for subsurface testing were identified during an intensive walkover inspection which evaluated the landscape to determine areas of prior disturbance, slopes in excess of 12% grade, saturated or wet soils and document evidence of former land usage. Shovel tests were excavated at intervals of 50' (15m) along transects conforming to the land surface and the boundaries of the Project Parcel. The locations of the tests and disturbed areas were recorded on a large-scale map that shows surveyed borders and the locations of the various structures or features identified (Field Reconnaissance Map).

Shovel tests (STs) approximately 45 cm in diameter, were spaced 50 feet apart and excavated at least 10 cm into sterile subsoil, unless impeded by rocks or other obstructions. This subsurface testing strategy was applied in areas of undisturbed soils and that were well drained and did not contain surface water. All soils excavated from shovel tests were screened through 0.25-inch hardware cloth. Shovel test profiles were recorded on standard field forms which included stratigraphic depths, Munsell soil color, texture and inclusions, disturbances, and artifacts (Appendix A). The presence of clearly modern materials, such as plastic fragments, modern bottle glass fragments, or twentieth-century architectural materials were noted on field forms, but HCS does not generally collect these materials for analysis or inclusion in the artifact assemblage. If any precontact period or potentially significant historic-period artifacts had been recovered from shovel tests, then these finds would have been bagged, labeled with standard project provenience information. Following completion of the archaeological fieldwork, all recovered materials would be washed, identified, inventoried and re-bagged in labeled clean 4-mil archival quality plastic bags. All artifacts recovered would then be identified and described based on material type and standard descriptive characteristics and included in an artifact inventory.

J. Archaeological Survey Results

During the walkover inspection the field team noted an overgrown drainage channel through the northern portion of the Project APE, and a drainage channel having been dug between NY-22 and the Project Parcel. These drainage channels are visible on the 1970 Aerial image (Figure 11).

Testing began in the southern portion of the Project APE, with TR 1 and TR 11 placed adjacent to NY-22 and progressing to the northwest. Transects 12 through 20 began along the southeastern boundary of the APE and progressed to the northwest. Transect 21 progressed north toward the areas of the proposed septic system. Transects 22 through 24 progressed west, testing this location. The soils identified were an olive brown, mottled olive and brown, olive brown, brown or dark yellowish brown gravelly loam or very gravelly sandy loam overlying yellowish brown, brown, light olive brown, olive brown very gravelly loam or gravelly sandy loam.

Transects 25 through 28 were completed in the eastern portion of the Project Parcel in the area reserved for septic expansion. Transects began at the northern extent of this area, and progressed to the south. The soils identified were a dark yellowish brown, brown, yellowish brown or olive brown gravelly sand with cobbles overlaying a yellowish brown gravelly sand or a grayish brown gravelly loam.

A total of two hundred and thirty one (231) shovel tests were planned within the Project APE. Fifteen (15) could not be excavated due to areas of prior disturbance (grading), and slope in excess of 12% grade. No cultural material was identified in any of the completed shovel tests.

K. Summary and Recommendations

In November of 2024, Hudson Cultural Services completed a Phase 1A Literature Search and Sensitivity Assessment and Phase 1B Archaeological Field Reconnaissance Survey of the Cascade Road Conservation Subdivision Project in the Town of Amenia, Dutchess County New York.

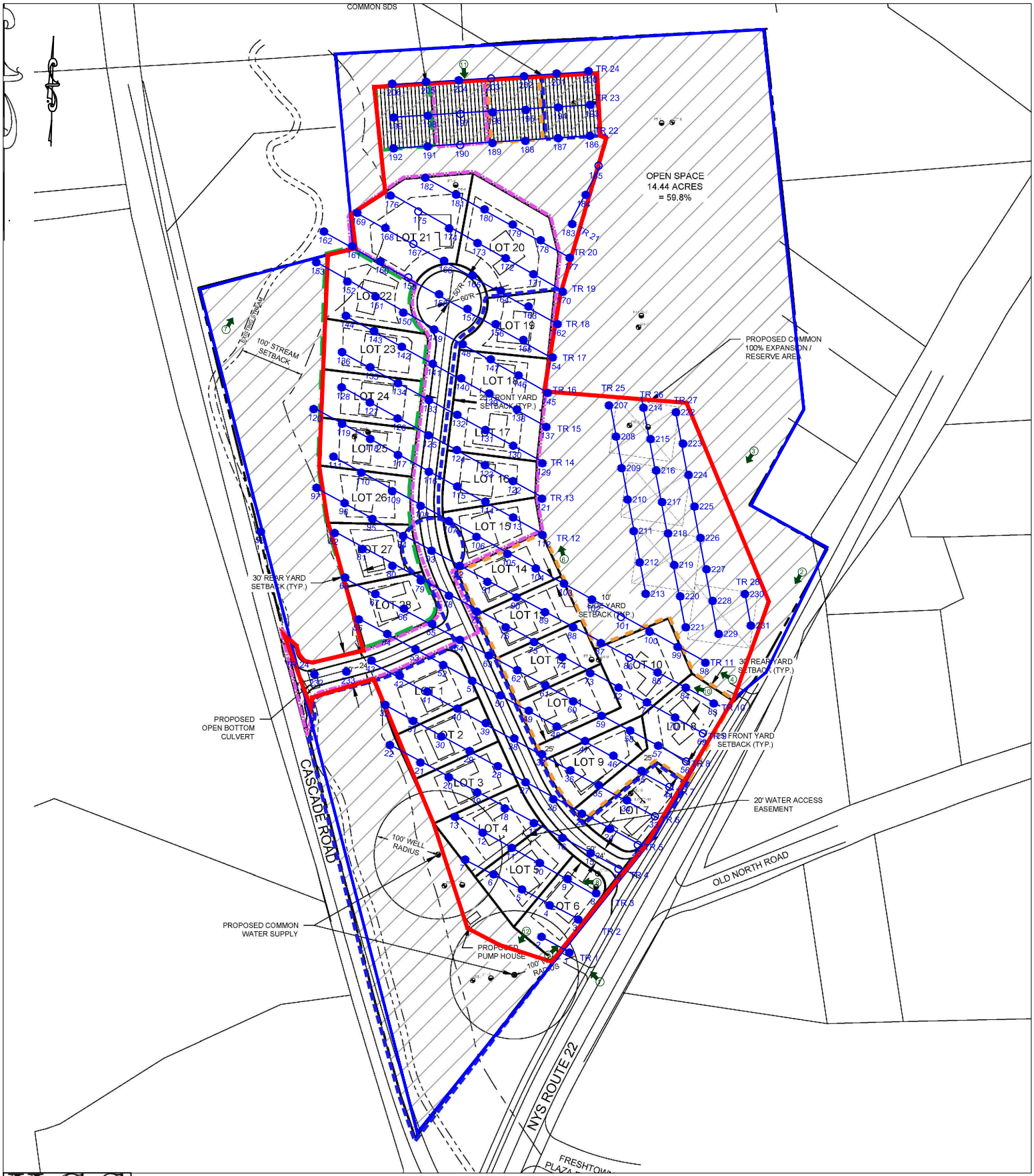
A thorough review of the existing body of archaeological data relevant to the Project Parcel was undertaken, and the probability of encountering Precontact and/or historic cultural remains within the APE was assessed. The proposed project includes the construction of twenty-eight (28) single family homes, wells and well houses, septic systems and associated infrastructure. The Project APE includes ±13.9 acres (5.63 ha) that will be disturbed by construction activities.

A total of two hundred and sixteen (216) shovel tests were completed within the boundaries of the Project APE. No archaeological (historic or precontact) deposits were identified within the Project APE.

It is the recommendation of HCS that no additional cultural resources investigations are warranted for the proposed Project Parcel.

Photo 11: View south across the APE from near the northern boundary of the APE.

Photo 12: View to the southwest along the southern boundary of the Project APE.



Hudson Cultural Services

Figure 11: Cascade Road Conservation Subdivision Project Phase 1B Archaeological Field Reconnaissance Map
Scale 1" = 150'

LEGEND

- ST — Sterile Shovel Test Location
- ST — Planned Shovel Test, Not Excavated
- Project Parcel boundaries
- Project APE boundaries
- 1 — Photographic View

0 100 200

(IN FEET)
1 inch = 200 ft.

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Appendix A: Shovel Test Records

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
TR 1	1	1	0-11	0-28	2.5Y 4/4	Olive brown very gravelly loam	NCM
		2	11-16	28-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	2	1	0-12	0-30	2.5Y 4/4	Olive brown very gravelly loam	NCM
		2	12-17	30-44	10YR 5/3	Brown gravelly loam	NCM
TR 2	3	1	0-11	0-29	2.5Y 4/4, 10YR 5/3	Mottled olive brown and brown very gravelly loam	NCM
		2	11-16	29-41	10YR 5/3	Brown gravelly loam	NCM
	4	1	0-11	0-28	2.5Y 4/4, 10YR 5/3	Mottled olive brown and brown very gravelly loam	NCM
		2	11-16	28-41	10YR 5/3	Brown gravelly loam	NCM
	5	1	0-10	0-26	2.5Y 4/4, 10YR 5/3	Mottled olive brown and brown very gravelly loam	NCM
		2	10-16	26-40	10YR 5/3	Brown gravelly loam	NCM
	6	1	0-11	0-27	2.5Y 4/4, 10YR 5/3	Mottled olive brown and brown very gravelly loam	NCM
		2	11-12	27-30	10YR 5/3	Brown gravelly loam. Stopped by dense gravel.	NCM
	7	1	0-9	0-24	10YR 5/3	Brown gravelly loam	NCM
		2	9-15	24-37	10YR 5/6	Yellowish brown gravelly loam	NCM
TR 3	8	1	0-10	0-25	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-16	25-40	2.5Y 4/4	Olive brown gravel	NCM
	9	1	0-12	0-30	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	12-16	30-40	2.5Y 4/4	Olive brown very gravelly loam	NCM
	10	1	0-10	0-26	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-15	26-39	2.5Y 5/4	Light olive brown very gravelly loam	NCM
	11	1	0-7	0-19	10YR 3/4	Dark yellowish brown loam with gravel	NCM
		2	7-11	19-29	10YR 5/6	Yellowish brown loam with gravel	NCM
	12	1	0-9	0-23	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	9-14	23-36	2.5Y 5/4	Light olive brown very gravelly loam with cobbles	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	13	1	0-8	0-20	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	8-13	20-34	2.5Y 5/4, 2.5Y 6/4	Mottled light olive brown and light yellowish brown gravelly loam	NCM
TR 4	14					Not excavated: Disturbed (road fill and drainage ditch)	
	15	1	0-13	0-32	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	13-17	32-43	2.5Y 4/4	Olive brown gravelly loam	NCM
	16	1	0-14	0-36	2.5Y 3/3	Dark olive brown gravelly loam	NCM
		2	14-20	36-50	2.5Y 4/4	Olive brown gravelly loam	NCM
	17	1	0-11	0-29	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	11-16	29-40	2.5Y 5/3	Light olive brown gravelly loam	NCM
	18	1	0-8	0-20	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	8-12	20-31	10YR 5/6	Yellowish brown gravelly loam	NCM
	19	1	0-10	0-25	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-14	25-35	2.5Y 4/4	Olive brown extremely gravelly loam	NCM
	20	1	0-9	0-22	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	9-11	22-27	5YR 4/6	Yellowish red loam	NCM
		3	11-15	27-39	2.5Y 5/4	Light olive brown loam	NCM
	21	1	0-10	0-25	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-14	25-36	10YR 5/6	Yellowish brown gravelly loam. Stopped by rock.	NCM
	22	1	0-10	0-26	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-15	26-39	2.5Y 5/4	Light olive brown loam	NCM
TR 5	23					Not excavated: Disturbed (road fill and drainage ditch)	
	24	1	0-11	0-29	2.5Y 3/4	Dark olive brown very gravelly loam	NCM
		2	11-15	29-39	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	25	1	0-12	0-30	2.5Y 4/4	Olive brown very gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	12-19	30-47	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	26	1	0-13	0-34	2.5Y 5/3	Light olive brown gravelly loam with cobbles	NCM
		2	13-18	34-45	10YR 5/2	Grayish brown very gravelly loam	NCM
	27	1	0-11	0-29	2.5Y 5/3	Light olive brown gravelly loam with cobbles	NCM
		2	11-16	29-41	10YR 5/2	Grayish brown very gravelly loam	NCM
	28	1	0-13	0-33	2.5Y 5/3	Light olive brown gravelly loam with cobbles	NCM
		2	13-19	33-49	10YR 5/2	Grayish brown very gravelly loam	NCM
	29	1	0-15	0-37	2.5Y 4/3	Olive brown very gravelly loam	NCM
		2	15-20	37-50	10YR 5/3	Brown gravelly loam	NCM
	30	1	0-11	0-27	10YR 3/4	Dark yellowish brown gravelly loam	NCM
		2	11-14	27-36	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		3	14-20	36-50	10YR 4/4	Dark yellowish brown loam	NCM
	31	1	0-12	0-31	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	12-18	31-45	10YR 5/3	Brown gravelly loam	NCM
	32	1	0-11	0-29	10YR 5/3	Brown very gravelly loam with cobbles	NCM
		2	11-14	29-35	10YR 5/6	Yellowish brown gravelly loam. Stopped by rock.	NCM
TR 6	33					Not excavated: Disturbed (road fill and drainage ditch)	
	34	1	0-11	0-29	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	11-15	29-39	2.5Y 4/4	Olive brown very gravelly loam	NCM
	35	1	0-16	0-40	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	16-21	40-53	2.5Y 4/4	Olive brown fine sandy loam	NCM
	36	1	0-9	0-24	2.5Y 4/3	Olive brown very gravelly loam	NCM
		2	9-13	24-34	2.5Y 4/3	Olive brown gravelly loam	NCM
	37	1	0-9	0-23	2.5Y 4/3	Olive brown very gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	9-14	23-35	2.5Y 4/3	Olive brown gravelly loam	NCM
	38	1	0-8	0-21	2.5Y 4/4	Olive brown gravelly loam with cobbles	NCM
		2	8-13	21-34	2.5Y 4/4	Olive brown loam with fine gravel and cobbles	NCM
	39	1	0-11	0-28	2.5Y 4/4	Olive brown gravelly loam with cobbles. Stopped by rock.	NCM
	40	1	0-13	0-34	2.5Y 5/4	Light olive brown loam with gravel and cobbles. Stopped by rock.	NCM
	41	1	0-10	0-26	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	10-14	26-36	2.5Y 5/4	Light olive brown loam	NCM
	42	1	0-14	0-35	2.5Y 4/3	Olive brown gravelly loam. Stopped by rock.	NCM
	43	1	0-12	0-31	2.5Y 4/3	Olive brown gravelly loam with cobbles. Stopped by rock.	NCM
TR 7	44					Not excavated: Disturbed (road fill and drainage ditch)	
	45	1	0-11	0-28	10YR 4/4, 10YR 5/4	Mottled dark yellowish brown and yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	28-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	46	1	0-10	0-26	10YR 4/4, 10YR 5/3	Mottled dark yellowish brown and brown gravelly loam	NCM
		2	10-16	26-40	10YR 5/3	Brown gravelly loam	NCM
	47	1	0-13	0-34	10YR 5/3	Brown gravelly loam	NCM
		2	13-16	34-41	10YR 5/6	Yellowish brown gravelly loam. Stopped by rock.	NCM
	48	1	0-11	0-29	10YR 5/3, 10YR 6/1	Mottled brown and gray very gravelly loam with cobbles. Stopped by rock.	NCM
	49	1	0-11	0-28	10YR 5/3, 10YR 6/1	Mottled brown and gray very gravelly loam with cobbles	NCM
		2	11-18	28-45	10YR 5/4	Yellowish brown gravelly loam	NCM
	50	1	0-13	0-33	10YR 4/4	Dark yellowish brown very gravelly loam	NCM
		2	13-18	33-45	10YR 5/4	Yellowish brown gravelly loam	NCM
	51	1	0-11	0-28	10YR 4/4	Dark yellowish brown very gravelly loam	NCM
		2	11-16	28-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	52	1	0-12	0-30	10YR 5/3	Brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	12-16	30-40	10YR 5/6	Yellowish brown gravelly loam	NCM
	53	1	0-11	0-28	10YR 5/3	Brown very gravelly loam with cobbles	NCM
		2	11-13	28-32	10YR 5/6	Yellowish brown gravelly loam with cobbles. Stopped by rock.	NCM
	54	1	0-13	0-32	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	13-17	32-44	10YR 5/4	Yellowish brown gravelly loam. Stopped by rock.	NCM
	55	1	0-11	0-29	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-16	29-41	10YR 5/4	Yellowish brown gravelly loam	NCM
TR 8	56					Not excavated: Disturbed (road fill and drainage ditch)	
	57	1	0-8	0-20	2.5Y 4/4	Olive brown very gravelly loam	NCM
		2	8-11	20-28	2.5Y 5/4	Light olive brown extremely gravelly loam. Stopped by rock.	NCM
	58	1	0-13	0-34	10YR 3/3	Dark brown gravelly loam	Discarded: modern cl
		2	13-19	34-47	10YR 4/3	Brown loam	NCM
	59	1	0-10	0-26	2.5Y 5/4	Light olive brown gravelly loam	NCM
		2	10-14	26-36	5Y 5/6	Olive gravelly loam	NCM
	60	1	0-9	0-22	10YR 5/3	Brown gravelly loam	NCM
		2	9-15	22-38	10YR 5/3	Brown extremely gravelly loam	NCM
	61	1	0-7	0-18	10YR 5/3	Brown gravelly loam	NCM
		2	7-11	18-27	10YR 5/3	Brown extremely gravelly loam. Stopped by rock.	NCM
	62	1	0-11	0-28	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	11-15	28-38	2.5Y 3/3	Dark olive brown extremely gravelly loam	NCM
	63	1	0-11	0-29	2.5Y 4/4	Olive brown extremely gravelly loam. Stopped by dense gravel.	NCM
	64	1	0-10	0-25	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	10-18	25-45	2.5Y 5/3, 2.5Y 5/6	Mottled light olive brown fine sandy loam	NCM
	65	1	0-6	0-16	2.5Y 5/4	Light olive brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	6-10	16-26	2.5Y 6/4	Light yellowish brown very gravelly loam	NCM
	66	1	0-10	0-26	10YR 3/3	Dark brown gravelly loam	NCM
		2	10-15	26-38	2.5Y 3/2	Dark grayish brown loam	NCM
	67	1	0-14	0-35	10YR 4/3	Brown gravelly loam	NCM
		2	14-18	35-45	2.5Y 5/4	Light olive brown gravelly loam with cobbles	NCM
	68	1	0-9	0-24	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	9-14	24-35	2.5Y 5/6	Light olive brown sandy loam	NCM
TR 9	69					Not excavated: Disturbed (road fill and drainage ditch)	
	70	1	0-8	0-20	2.5Y 5/4	Light olive brown very gravelly sandy loam. Stopped by rock.	NCM
	71	1	0-12	0-31	10YR 5/3	Brown gravelly loam	NCM
		2	12-17	31-42	10YR 5/4	Yellowish brown gravelly loam	NCM
	72	1	0-10	0-25	10YR 5/3	Brown gravelly loam	NCM
		2	10-14	25-35	10YR 5/4	Yellowish brown loam	NCM
	73	1	0-11	0-29	2.5Y 5/3	Light olive brown gravelly loam	NCM
		2	11-16	29-40	10YR 5/6	Yellowish brown loam	NCM
	74	1	0-8	0-20	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	8-12	20-30	2.5Y 5/4	Light olive brown sand and gravel	NCM
	75	1	0-9	0-22	2.5Y 5/3	Light olive brown gravelly loam	NCM
		2	9-13	22-32	2.5Y 5/3	Light olive brown extremely gravelly loam	NCM
	76	1	0-13	0-33	2.5Y 4/4	Olive brown gravelly loam with cobbles	NCM
		2	13-17	33-43	2.5Y 4/4	Olive brown sand and gravel	NCM
	77	1	0-9	0-24	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	9-13	24-34	2.5Y 4/4	Olive brown gravelly sand with cobbles	NCM
	78	1	0-13	0-34	2.5Y 4/4	Olive brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	13-17	34-44	2.5Y 4/4	Olive brown sand and gravel	NCM
	79	1	0-12	0-30	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	12-18	30-45	2.5Y 4/4	Olive brown sand and gravel	NCM
	80	1	0-9	0-22	2.5Y 4/4	Olive brown gravelly loam	Discarded: modern bo
		2	9-13	22-33	2.5Y 6/4	Light yellowish brown gravelly sand and cobbles	NCM
	81	1	0-13	0-33	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	13-17	33-44	10YR 5/6	Yellowish brown gravelly loam	NCM
	82	1	0-12	0-31	10YR 4/3	Brown gravelly loam	NCM
		2	12-16	31-41	2.5Y 5/4	Light olive brown sand	NCM
TR 10	83	1	0-11	0-27	10YR 5/2, 10YR 5/6	Mottled grayish brown and yellowish brown very gravelly loam with cobbles	NCM
		2	11-16	27-40	10YR 5/6	Yellowish brown gravelly loam	NCM
	84	1	0-11	0-29	2.5Y 4/4	Olive brown gravelly fine sandy loam with cobbles	NCM
		2	11-15	29-39	10YR 5/6	Yellowish brown gravelly fine sandy loam	NCM
	85	1	0-12	0-30	2.5Y 4/4	Olive brown gravelly fine sandy loam with cobbles	NCM
		2	12-16	30-41	10YR 5/6	Yellowish brown gravelly fine sandy loam	NCM
	86					Not excavated: slope	
	87	1	0-16	0-40	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	16-20	40-50	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	88	1	0-11	0-29	2.5Y 4/4	Olive brown gravelly loam with cobbles	NCM
		2	11-16	29-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	89	1	0-12	0-30	2.5Y 4/4	Olive brown gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	90	1	0-13	0-34	2.5Y 4/4	Olive brown gravelly loam with cobbles	NCM
		2	13-19	34-49	10YR 4/4	Dark yellowish brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	91	1	0-12	0-30	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	12-16	30-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	92	1	0-10	0-25	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	10-15	25-37	10YR 5/4	Yellowish brown gravelly loam	NCM
	93	1	0-10	0-26	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	10-15	26-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	94	1	0-9	0-24	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	9-14	24-35	10YR 5/4	Yellowish brown gravelly loam	NCM
	95	1	0-10	0-25	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles. Stopped by rock.	NCM
	96	1	0-11	0-28	10YR 4/4	Dark yellowish brown very gravelly loam	NCM
		2	11-16	28-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	97	1	0-8	0-20	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	8-12	20-31	10YR 5/4	Yellowish brown gravelly loam	NCM
TR 11	98	1	0-12	0-30	10YR 5/3	Brown very gravelly sandy loam with cobbles	NCM
		2	12-16	30-41	10YR 5/6	Yellowish brown gravelly sandy loam	NCM
	99	1	0-11	0-29	10YR 5/3	Brown very gravelly sandy loam with cobbles	NCM
		2	11-16	29-40	10YR 5/6	Yellowish brown gravelly sandy loam	NCM
	100	1	0-11	0-27	10YR 5/4	Yellowish brown very gravelly sandy loam with large cobbles. Stopped by rock.	NCM
	101					Not excavated: Outside of Project APE	
	102	1	0-11	0-28	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	11-12	28-31	10YR 5/4	Yellowish brown gravelly loam. Stopped by rock.	NCM
	103	1	0-10	0-26	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	10-16	26-41	10YR 5/4	Yellowish brown gravelly loam	NCM
	104	1	0-12	0-30	10YR 4/3	Brown gravelly loam with cobbles	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	12-16	30-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	105	1	0-11	0-28	10YR 5/2	Grayish brown very gravelly sandy loam with cobbles	NCM
		2	11-16	28-40	10YR 5/3	Brown gravelly loam	NCM
	106	1	0-12	0-30	10YR 5/2	Grayish brown very gravelly sandy loam with cobbles. Stopped by rock.	NCM
	107	1	0-15	0-37	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	15-20	37-50	10YR 5/3	Brown gravelly loam	NCM
	108	1	0-12	0-30	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	12-17	30-44	10YR 5/3	Brown gravelly loam	NCM
	109	1	0-11	0-27	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	11-15	27-37	10YR 5/4	Yellowish brown gravelly loam	NCM
	110	1	0-11	0-27	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	11-15	27-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	111	1	0-9	0-24	10YR 3/4	Dark yellowish brown very gravelly loam	NCM
		2	9-15	24-39	10YR 5/4	Yellowish brown gravelly loam	NCM
TR 12	112	1	0-12	0-30	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	113	1	0-12	0-31	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	12-17	31-44	10YR 5/1	Gray gravelly loam	NCM
	114	1	0-12	0-31	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	12-17	31-43	10YR 5/1	Gray gravelly loam	NCM
	115	1	0-9	0-22	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	9-16	22-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	116	1	0-12	0-30	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 5/4	Yellowish brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	117	1	0-13	0-32	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	13-18	32-45	10YR 5/4	Yellowish brown gravelly loam	NCM
	118	1	0-8	0-21	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	8-13	21-34	10YR 5/4	Yellowish brown gravelly loam	NCM
	119	1	0-11	0-27	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	27-38	10YR 5/4	Yellowish brown gravelly loam	NCM
	120	1	0-11	0-29	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-16	29-40	10YR 4/6	Dark yellowish brown very gravelly loam	NCM
TR 13	121	1	0-10	0-25	10YR 3/4	Dark yellowish brown gravelly loam	NCM
		2	10-12	25-31	2.5Y 4/3	Olive brown loam	NCM
		3	12-17	31-43	2.5Y 5/4	Light olive brown loam	NCM
	122	1	0-10	0-26	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	10-14	26-36	2.5Y 5/2	Grayish brown gravelly loam	NCM
	123	1	0-8	0-20	2.5Y 5/2	Grayish brown very gravelly loam. Stopped by rock.	NCM
	124	1	0-8	0-20	2.5Y 5/2	Grayish brown very gravelly loam	NCM
		2	8-13	20-32	2.5Y 5/2	Grayish brown sand, gravel and cobbles	NCM
	125	1	0-9	0-23	2.5Y 5/4	Light olive brown very gravelly loam	NCM
		2	9-14	23-36	2.5Y 5/4	Light olive brown extremely gravelly loam	NCM
	126	1	0-13	0-34	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	13-17	34-44	2.5Y 4/3	Olive brown sand	NCM
	127	1	0-9	0-22	2.5Y 4/4	Olive brown gravelly fine sandy loam	NCM
		2	9-13	22-32	2.5Y 5/4	Light olive brown fine sandy loam	NCM
	128	1	0-9	0-23	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	9-14	23-35	2.5Y 5/6	Light olive brown loam with cobbles. Stopped by rock.	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
TR 14	129	1	0-11	0-28	10YR 3/3	Dark brown gravelly loam	NCM
		2	11-15	28-38	10YR 3/4	Dark yellowish brown gravelly loam	NCM
	130	1	0-11	0-29	2.5Y 5/4	Light olive brown gravelly loam. Stopped by rock.	NCM
	131	1	0-10	0-26	2.5Y 4/3	Olive brown gravelly loam. Stopped by rock.	NCM
	132	1	0-9	0-22	2.5Y 5/3	Light olive brown gravelly loam	NCM
		2	9-13	22-32	2.5Y 5/3	Light olive brown very gravelly loam	NCM
	133	1	0-10	0-25	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	10-15	25-38	2.5Y 4/3	Olive brown sand and gravel	NCM
	134	1	0-9	0-24	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	9-16	24-41	2.5Y 5/2	Grayish brown loam	NCM
	135	1	0-9	0-23	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	9-13	23-34	2.5Y 4/3	Olive brown sand and gravel	NCM
	136	1	0-14	0-36	10YR 4/4	Dark yellowish brown fine sandy loam with cobbles	NCM
		2	14-18	36-46	10YR 5/4	Yellowish brown gravelly loam	NCM
TR 15	137	1	0-11	0-27	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	27-37	10YR 5/4	Yellowish brown gravelly loam	NCM
	138	1	0-11	0-28	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	28-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	139	1	0-11	0-28	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	11-16	28-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	140	1	0-12	0-30	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	141	1	0-12	0-31	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	12-17	31-43	10YR 5/4	Yellowish brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	142	1	0-10	0-26	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	Discarded: terracotta
		2	10-12	26-30	10YR 5/4	Yellowish brown gravelly loam. Stopped by rock.	NCM
	143	1	0-9	0-23	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	9-14	23-35	10YR 5/4	Yellowish brown gravelly loam	NCM
	144	1	0-10	0-26	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	10-16	26-40	10YR 5/4	Yellowish brown gravelly loam	NCM
TR 16	145	1	0-12	0-30	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	12-17	30-44	10YR 5/4	Yellowish brown gravelly loam	NCM
	146	1	0-11	0-29	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-16	29-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	147	1	0-12	0-30	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 5/4	Yellowish brown gravelly loam	NCM
	148	1	0-11	0-28	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	28-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	149	1	0-11	0-27	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-15	27-39	10YR 5/3	Brown gravelly loam	NCM
	150	1	0-12	0-30	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	12-16	30-41	10YR 5/3	Brown gravelly loam	NCM
	151	1	0-11	0-28	2.5Y 5/3	Light olive brown gravelly loam	NCM
	152	1	0-10	0-26	10YR 4/3	Brown very gravelly loam with cobbles	NCM
		2	10-15	26-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	153	1	0-8	0-21	10YR 3/3	Dark brown gravelly loam with cobbles. Stopped by rock.	NCM
TR 17	154	1	0-12	0-30	10YR 4/3	Brown very gravelly loam	NCM
		2	12-16	30-40	10YR 5/3	Brown gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	155	1	0-14	0-35	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	14-17	35-44	10YR 5/4	Yellowish brown gravelly loam	NCM
	156	1	0-8	0-21	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	8-13	21-34	10YR 5/6	Yellowish brown gravelly loam	NCM
	157	1	0-10	0-25	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	10-15	25-37	10YR 5/6	Yellowish brown gravelly loam	NCM
	158	1	0-12	0-31	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	12-17	31-44	10YR 5/3	Brown gravelly loam	NCM
	159					Not excavated: Disturbed (area dug out)	
	160	1	0-11	0-28	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	11-15	28-38	10YR 6/2	Light brownish gray gravelly loam	NCM
	161	1	0-11	0-28	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	11-15	28-38	10YR 5/3	Brown gravelly loam	NCM
TR 18	162	1	0-11	0-28	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	11-12	28-30	10YR 5/4	Yellowish brown gravelly loam. Stopped by rock.	NCM
	163	1	0-12	0-31	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	12-17	31-44	10YR 5/4	Yellowish brown gravelly loam	NCM
	164	1	0-12	0-30	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	12-16	30-41	10YR 5/4	Yellowish brown gravelly loam	NCM
	165	1	0-9	0-23	10YR 4/2	Dark grayish brown very gravelly loam with cobbles. Stopped by rock.	NCM
	166	1	0-13	0-33	10YR 3/4	Dark yellowish brown gravelly loam with cobbles	NCM
		2	13-17	33-44	10YR 5/3	Brown gravelly loam	NCM
	167					Not excavated: Disturbed (area dug out)	
	168	1	0-7	0-19	10YR 5/3	Brown very gravelly loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
		2	7-12	19-30	10YR 6/4	Light yellowish brown gravelly loam	NCM
	169	1	0-8	0-20	10YR 4/2	Dark grayish brown very gravelly loam with cobbles	NCM
		2	8-13	20-34	10YR 5/3	Brown gravelly loam	NCM
TR 19	170	1	0-9	0-23	2.5Y 5/4	Light olive brown gravelly loam	NCM
		2	9-13	23-34	2.5Y 4/4	Olive brown sand and gravel	NCM
	171	1	0-10	0-26	10YR 3/3	Dark brown gravelly loam	NCM
		2	10-14	26-36	10YR 3/4	Dark yellowish brown gravelly loam	NCM
	172	1	0-9	0-23	10YR 3/4	Dark yellowish brown gravelly loam	NCM
		2	9-13	23-34	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	173	1	0-8	0-21	2.5Y 5/4	Light olive brown gravelly loam. Stopped by rock.	NCM
	174	1	0-14	0-36	10YR 4/4	Dark yellowish brown gravelly loam. Stopped by rock.	NCM
	175					Not excavated: Disturbed (dug out drainage)	
	176	1	0-9	0-23	10YR 3/3	Dark brown gravelly loam	NCM
		2	9-14	23-35	10YR 5/6	Yellowish brown loam	NCM
TR 20	177	1	0-16	0-40	10YR 3/3	Dark brown loam	NCM
		2	16-20	40-51	10YR 3/2	Very dark grayish brown loam	NCM
	178	1	0-13	0-33	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	13-17	33-44	10YR 5/4	Yellowish brown gravelly sand	NCM
	179	1	0-8	0-20	10YR 3/3	Dark brown gravelly fine sandy loam	NCM
		2	8-14	20-36	10YR 4/2	Dark grayish brown loam	NCM
		3	14-18	36-46	10YR 4/3	Brown gravelly sand	NCM
	180	1	0-11	0-27	2.5Y 4/4	Olive brown gravelly loam	NCM
		2	11-13	27-33	2.5Y 4/3	Olive brown fine sandy loam	NCM
		3	13-18	33-45	2.5Y 5/3	Light olive brown loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	181	1	0-14	0-35	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	14-18	35-45	2.5Y 4/2	Dark grayish brown loam	NCM
	182	1	0-11	0-29	2.5Y 4/3	Olive brown gravelly loam	NCM
		2	11-15	29-39	2.5Y 4/3	Olive brown extremely gravelly loam	NCM
TR 21	183	1	0-15	0-39	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	15-20	39-50	10YR 5/4	Yellowish brown gravelly loam	NCM
	184	1	0-15	0-38	10YR 4/4	Dark yellowish brown very gravelly loam with cobbles	NCM
		2	15-19	38-48	10YR 5/4	Yellowish brown gravelly loam	NCM
	185					Not excavated: slope	
TR 22	186	1	0-13	0-33	10YR 3/4	Dark yellowish brown very gravelly sandy loam with cobbles	NCM
		2	13-19	33-47	10YR 4/4	Dark yellowish brown gravelly sandy loam	NCM
	187	1	0-10	0-26	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	10-16	26-41	10YR 5/4	Yellowish brown loam	NCM
	188	1	0-11	0-27	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	11-15	27-39	10YR 5/4	Yellowish brown gravelly loam	NCM
	189	1	0-12	0-30	10YR 3/4	Dark yellowish brown gravelly loam with cobbles	NCM
		2	12-16	30-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	190					Not excavated: Disturbed (dug out drainage channel)	
	191	1	0-15	0-37	10YR 3/2	Very dark grayish brown gravelly loam with cobbles	NCM
		2	15-19	37-49	10YR 5/2	Grayish brown gravelly loam	NCM
	192	1	0-11	0-27	10YR 3/2	Very dark grayish brown gravelly loam with cobbles	NCM
		2	11-15	27-38	10YR 4/6	Dark yellowish brown gravelly sand	NCM
TR 23	193	1	0-12	0-30	10YR 4/4	Dark yellowish brown gravelly loam with cobbles	NCM
		2	12-16	30-41	10YR 5/4	Yellowish brown gravelly sandy loam	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	194	1	0-9	0-24	10YR 3/3	Dark brown gravelly loam	NCM
		2	9-16	24-40	10YR 4/4	Dark yellowish brown loam	NCM
	195	1	0-12	0-30	10YR 4/3	Brown gravelly loam	NCM
		2	12-16	30-40	10YR 4/4	Dark yellowish brown gravelly loam	NCM
	196	1	0-11	0-29	10YR 3/3	Dark brown very gravelly loam	NCM
		2	11-15	29-38	10YR 4/2	Dark grayish brown gravelly loam	NCM
		3	15-19	38-48	10YR 5/4	Yellowish brown loam	NCM
	197					Not excavated: Disturbed (dug out drainage)	
	198	1	0-8	0-20	10YR 3/4	Dark yellowish brown gravelly loam	NCM
		2	8-13	20-32	10YR 3/4	Dark yellowish brown very gravelly sandy loam	NCM
	199	1	0-8	0-20	10YR 3/4	Dark yellowish brown gravelly loam	NCM
		2	8-13	20-32	10YR 3/4	Dark yellowish brown very gravelly sandy loam	NCM
TR 24	200	1	0-8	0-21	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	8-14	21-35	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
	201	1	0-9	0-22	10YR 5/4	Yellowish brown gravelly loam. Stopped by large root.	NCM
	202	1	0-9	0-22	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	9-14	22-35	10YR 5/4	Yellowish brown gravelly loam	NCM
	203					Not excavated: Disturbed (built up from dug out drainage)	
	204	2	0-10	0-25	10YR 5/3	Brown gravelly loam	NCM
		1	10-14	25-35	10YR 5/4	Yellowish brown gravelly loam	NCM
	205	1	0-14	0-35	10YR 4/3	Brown gravelly loam	NCM
		2	14-18	35-45	10YR 4/4	Dark yellowish brown sandy loam	NCM
	206	1	0-6	0-16	10YR 4/4	Dark yellowish brown gravelly sandy loam	NCM
		2	6-11	16-29	10YR 5/4	Yellowish brown gravelly sandy loam with cobbles	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
TR 25	207	1	0-10	0-26	10YR 5/3	Brown gravelly sand with cobbles. Stopped by rock.	NCM
	208	1	0-12	0-30	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	12-17	30-42	10YR 5/6	Yellowish brown gravelly sand	NCM
	209	1	0-10	0-26	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	10-14	26-36	10YR 5/6	Yellowish brown gravelly sand	NCM
	210	1	0-11	0-29	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	11-16	29-41	10YR 5/6	Yellowish brown gravelly sand	NCM
	211	1	0-11	0-27	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	11-15	27-39	10YR 5/6	Yellowish brown gravelly sand	NCM
	212	1	0-11	0-29	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	11-16	29-40	10YR 5/6	Yellowish brown gravelly sand	NCM
	213	1	0-11	0-27	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	11-15	27-38	10YR 5/6	Yellowish brown gravelly sand	NCM
TR 26	214	1	0-9	0-23	10YR 4/4	Dark yellowish brown gravelly fine sandy loam	NCM
		2	9-13	23-33	10YR 5/6	Yellowish brown fine sandy loam	NCM
	215	1	0-11	0-27	10YR 5/4	Yellowish brown gravelly sandy loam with cobbles. Stopped by rock.	NCM
	216	1	0-9	0-23	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	9-11	23-29	10YR 5/4	Yellowish brown gravelly fine sandy loam. Stopped by rock.	NCM
	217	1	0-10	0-25	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	10-14	25-36	10YR 5/6	Yellowish brown gravelly fine sandy loam	NCM
	218	1	0-8	0-20	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	8-9	20-24	10YR 5/6	Yellowish brown gravelly fine sandy loam with cobbles. Stopped by rock.	NCM
	219	1	0-9	0-24	10YR 5/4	Yellowish brown gravelly fine sandy loam	NCM
		2	9-10	24-26	10YR 5/6	Yellowish brown fine sandy loam with cobbles. Stopped by rock.	NCM

TR	ST	Level	Depth (in)	Depth (cm)	Munsell	Soil Description	Cultural Material
	220	1	0-11	0-27	10YR 4/4	Dark yellowish brown gravelly fine sandy loam	NCM
		2	11-15	27-37	10YR 5/6	Yellowish brown gravelly loam	NCM
	221	1	0-11	0-28	10YR 5/4	Yellowish brown gravelly fine sandy loam. Stopped by rock.	NCM
TR 27	222	1	0-12	0-31	2.5Y 5/3	Light olive brown gravelly sand with cobbles. Stopped by rock.	NCM
	223	1	0-14	0-35	2.5Y 5/3	Light olive brown gravelly sand with cobbles. Stopped by rock.	NCM
	224	1	0-11	0-28	2.5Y 5/3	Light olive brown gravelly sand with cobbles	NCM
		2	11-17	28-43	10YR 5/6	Yellowish brown gravelly sandy loam	NCM
	225	1	0-7	0-18	2.5Y 5/3	Light olive brown gravelly sand with cobbles. Stopped by rock.	NCM
	226	1	0-14	0-36	2.5Y 5/3	Light olive brown gravelly sand with cobbles. Stopped by rock.	NCM
	227	1	0-11	0-28	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	11-17	28-44	10YR 5/6	Yellowish brown gravelly sandy loam	NCM
	228	1	0-13	0-32	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	13-15	32-37	10YR 5/6	Yellowish brown gravelly sandy loam. Stopped by rock.	NCM
	229	1	0-11	0-27	10YR 4/4	Dark yellowish brown gravelly sandy loam with cobbles	NCM
		2	11-15	27-39	10YR 5/6	Yellowish brown gravelly sandy loam	NCM
TR 28	230	1	0-13	0-32	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	13-17	32-44	10YR 5/6	Yellowish brown gravelly sand	NCM
	231	1	0-12	0-30	10YR 4/4	Dark yellowish brown gravelly sand with cobbles	NCM
		2	12-16	30-40	10YR 5/6	Yellowish brown gravelly sand	NCM
TR 29	232	1	0-11	0-28	10YR 5/3	Brown very gravelly loam with cobbles	NCM
		2	11-16	28-40	10YR 5/6	Yellowish brown gravelly loam	NCM
	233	1	0-13	0-33	10YR 4/4	Dark yellowish brown gravelly loam	NCM
		2	13-19	33-47	10YR 5/2	Grayish brown gravel loam	NCM