



New York Ordnance Works – Baldwinsville, New York

Historical Photographic Analysis



Source: Baldwinsville Public Library NYOW Collection

Undated



Source: William G. Pomeroy Foundation

U.S. Army Corps of Engineers
Army Geospatial Center
Warfighter Support Directorate
Hydrologic & Environmental Analysis Branch
Environmental Analysis Team
7701 Telegraph Road
Alexandria, Virginia 22315-3864

FINAL REPORT | JANUARY 2020
Prepared for USACE New England District

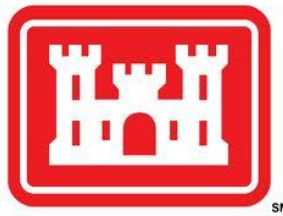


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Notice and Introduction

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By
U.S. Army Corps of Engineers
Army Geospatial Center
Warfighter Support Directorate
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NOTICE

The views, opinions, and conclusions in this report are those of the author and should not be construed as official Department of Army positions or policy unless so designated by other documentation.

Photographic items contained in this report may be restricted for use other than research. It is the responsibility of the party using photographs from this study to contact the Army Geospatial Center, Warfighter Support Directorate in order to ascertain clearance for use.

INTRODUCTION

This report presents the results of a historical photographic analysis (HPA) of four areas within the former New York Ordnance Works located in Onondaga County, New York.

The Hydrologic and Environmental Analysis Branch was tasked to research, collect, and analyze historical photographic and cartographic data relative to the project area. The primary objective of this study was to detail the character and extent of the former Acid Area, Ammonium Picrate Area, Landfill, and Bunker Area from 1941 through present day, with a focus on 1941 through 1947. An additional objective of this study was to delineate estimated wetland extent in and around the four defined areas of interest.



Methodology

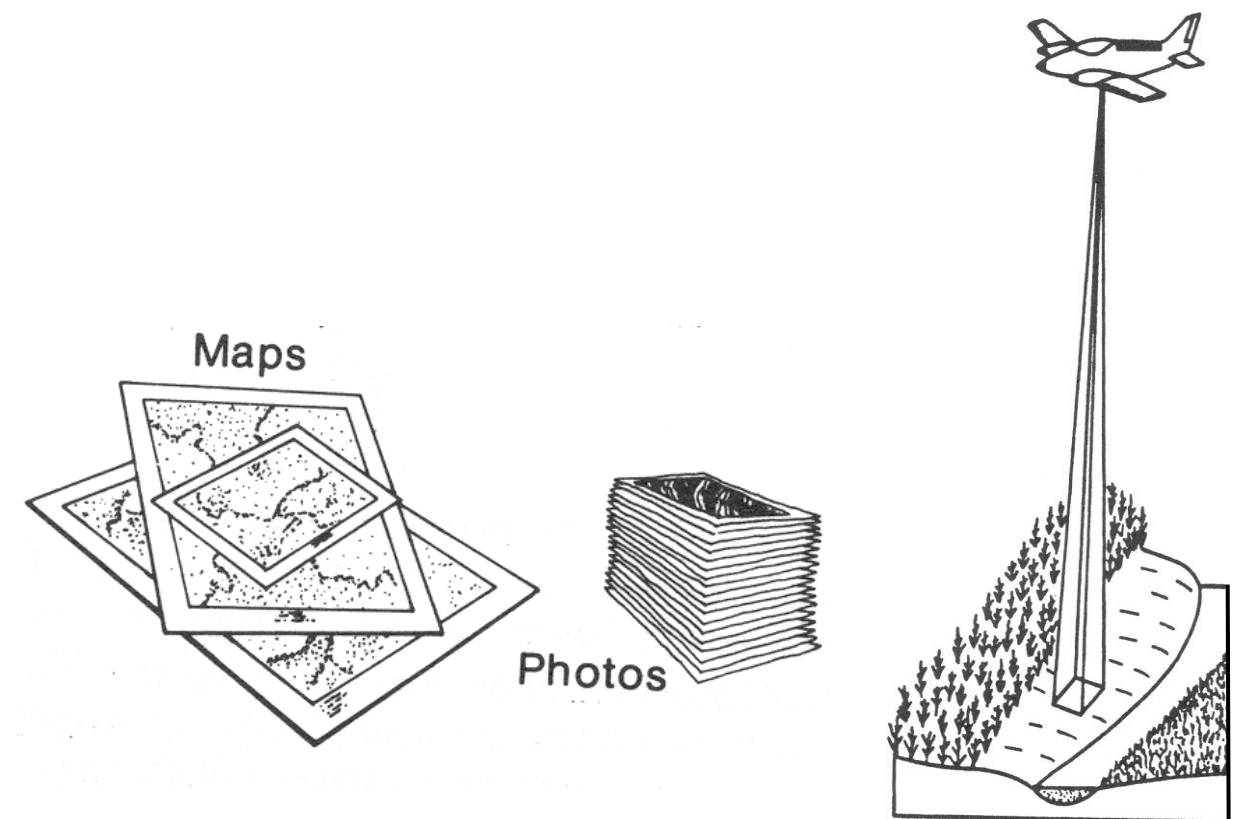
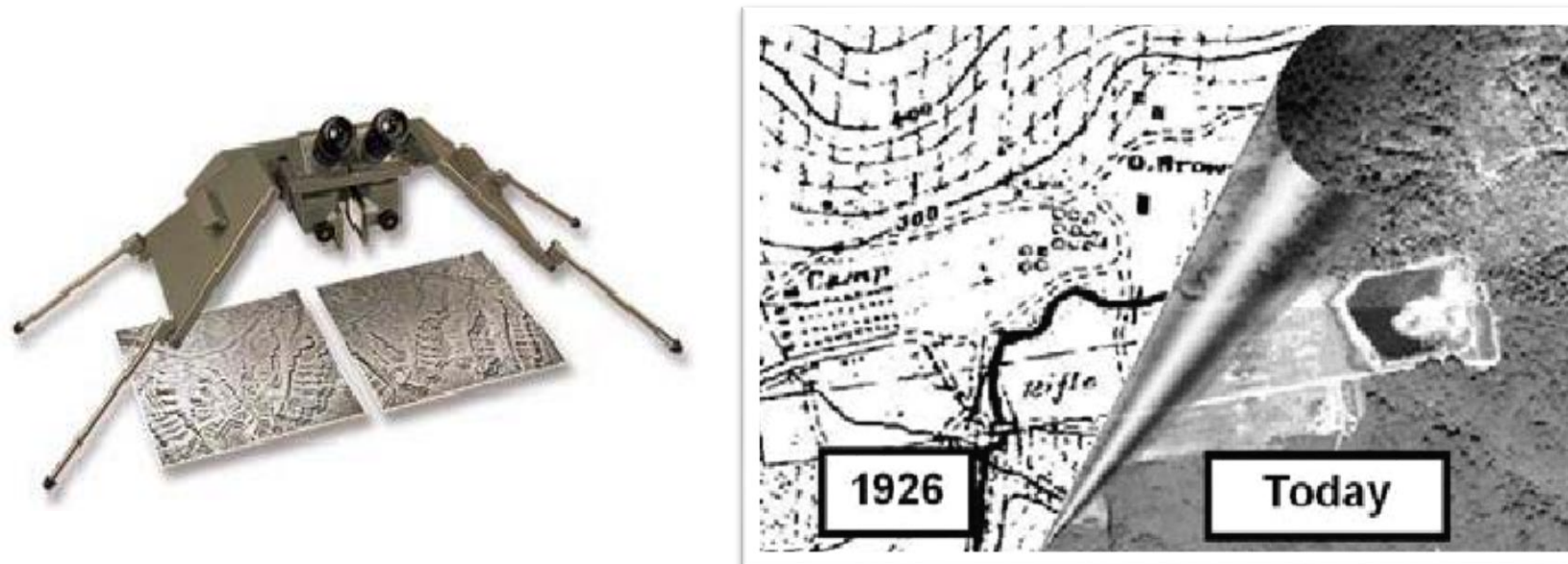
The analysis presented in this report is primarily based upon interpretation of panchromatic and multispectral aerial photography and satellite imagery over the project area, spanning the years 1938 through 2019. Significant features, derived through photo analysis, are displayed in this study. Building, road, and other site names and numbers are derived from historical maps, still photographs, and other textual documents.

Visible signatures such as size, shape, shadow, tone, texture, and pattern allow features to be identified on image data. Limitations inherent in some of these data include substandard photo reproduction (i.e. granularity, washout, or vagueness of the image, scale, variations in time of day and tidal levels, and atmospheric haze).

Images are projected in NAD 1983 UTM Zone 18N, North American Datum of 1983 (NAD83). Georectification was completed using ArcGIS. Measurements in this report are in feet and are approximated.

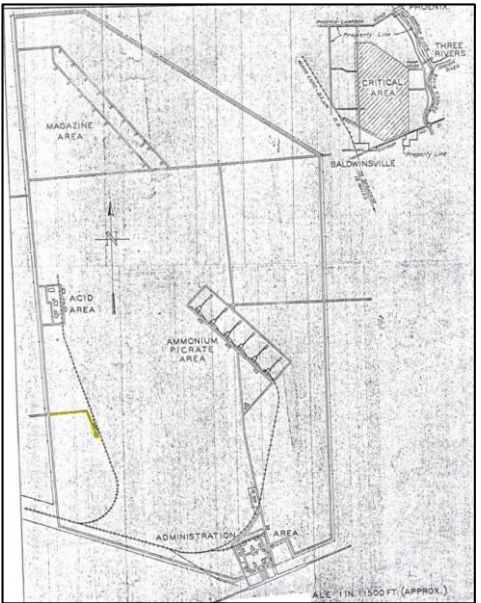
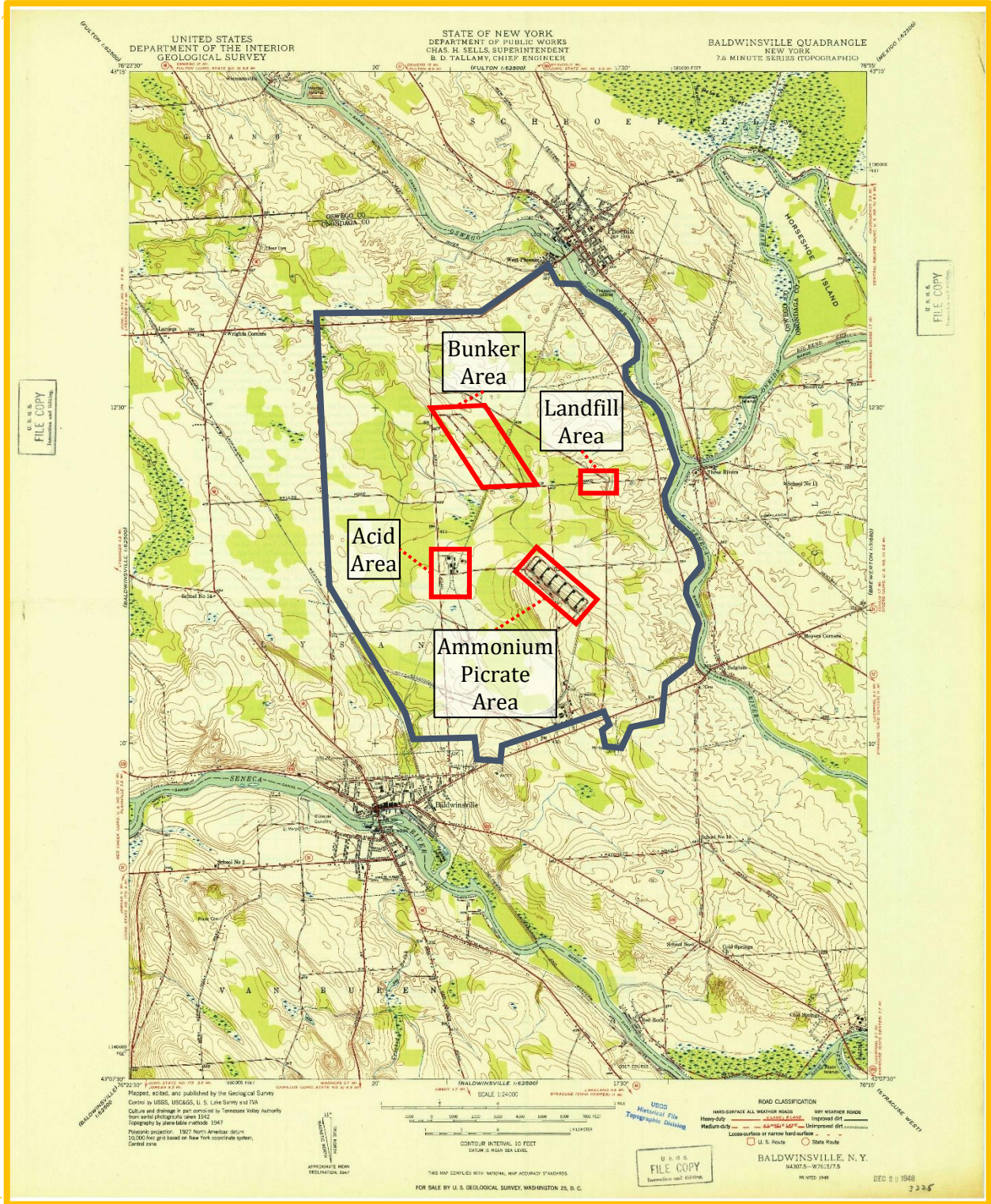
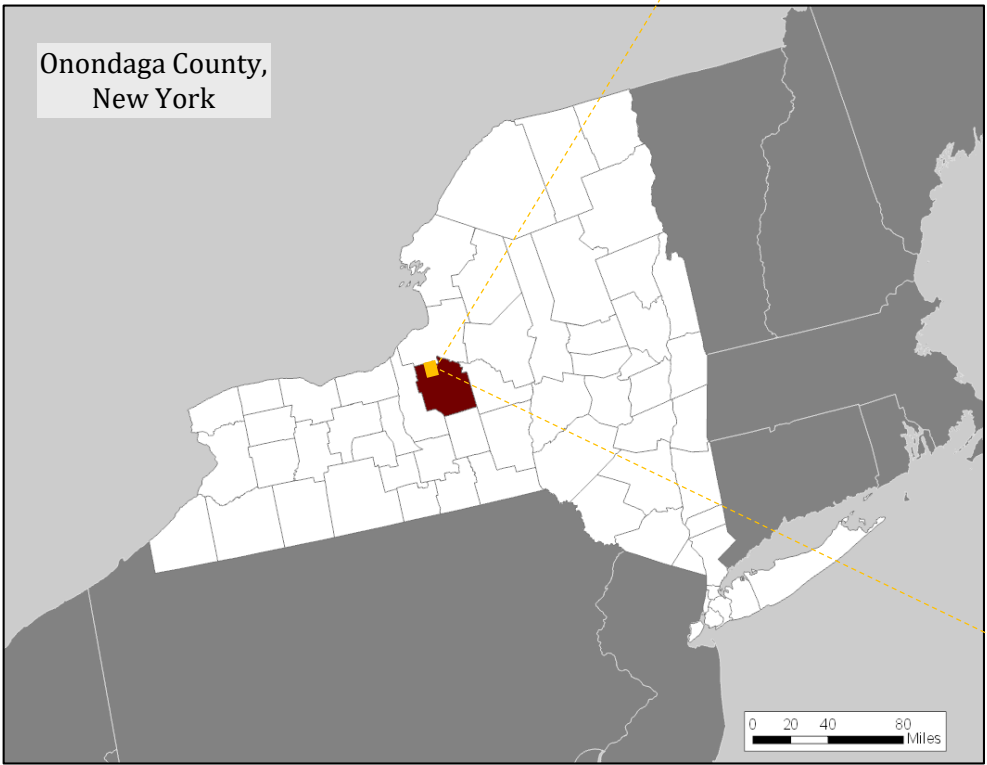
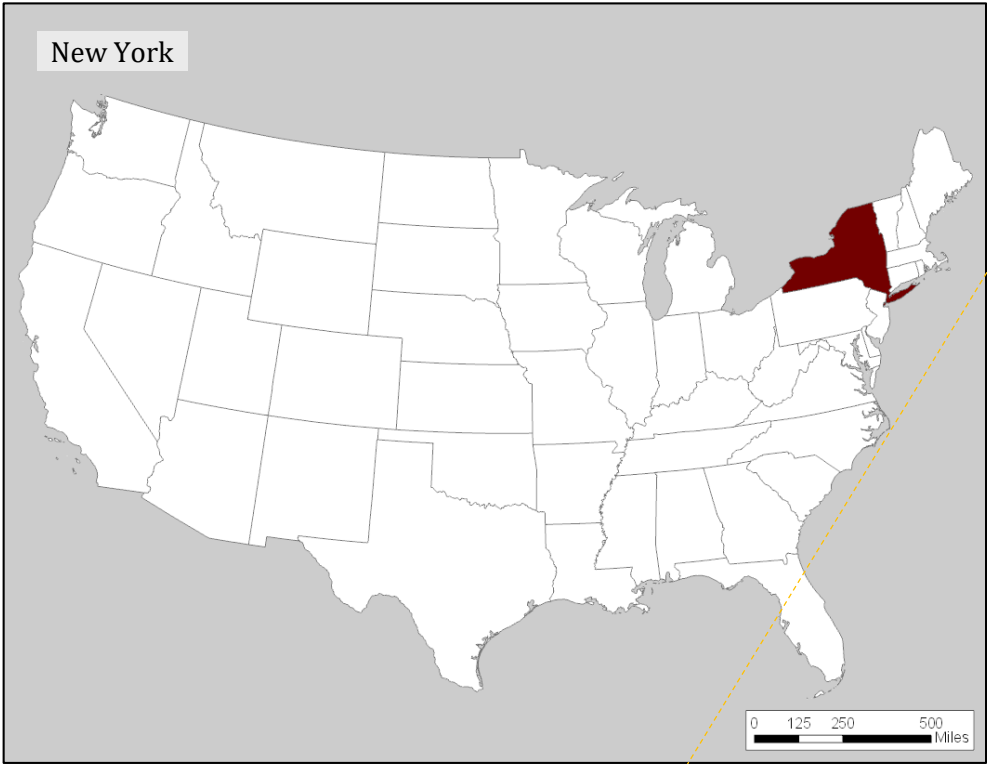
Historical Photographic Analysis

- Identification of features by size, shape, shadow, tone, texture and pattern
- Change detection of man-made or naturally-occurring features
- Placing locations of historical features on the current landscape

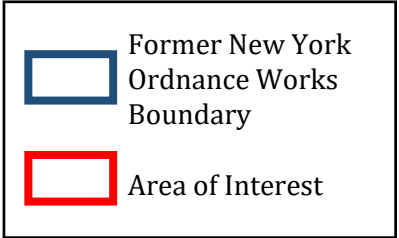




Project Area Location



1942 Map of NYOW
Source: Baldwinsville Public Library
NYOW Collection



Source: Library of Congress

1948



Spatial Sources

Date	Scale	Source
1938 September 05	1:20,000	National Archives at College Park
1942 January 15	1:32,000	National Archives at College Park
1943 April 11	1:20,000	National Archives at College Park
1943 April 18	oblique	National Archives at College Park
1944 February 25	Aerial and oblique	National Archives at College Park
1944 August 31	1:12,000	National Archives at College Park
1949 June 01	1:13,000	National Archives at College Park
1951 May 25	oblique	National Archives at College Park
1951 October 05	1:24,000	Cornell University: New York State Aerial Photographs
1956 May 07	1:24,000	U.S. Geological Survey
1966 June 22	1:24,000	Cornell University: New York State Aerial Photographs
1972 May 06	1:20,500	U.S. Geological Survey
1981 April 16	1:80,000	U.S. Geological Survey
1982 April 29	1:80,000	U.S. Geological Survey
1995 March 27 & 28	1 meter pixel resolution	U.S. Geological Survey
2003 April 14	1:14,400	U.S. Geological Survey
2019 September 25	49 cm pixel resolution	Digital Globe



Historical Review

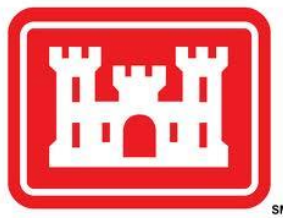
The former NYOW site was acquired from private owners in various parcels in 1942 to establish a facility for manufacture of ammonium picrate during World War II. Ammonium picrate is a stable, high explosive compound used in the production of armor piercing shells. The facility was designed and built by Lummus Company and included 146 structures totaling 380,393 square feet. Construction began on 06 April 1942 and was completed on 29 May 1943. Operated by National Aniline Defense Corporation, a Division of Allied Chemical and Dye Corporation, operations began on 22 January 1943, were shut down on 15 March 1944, and the property was declared surplus on 30 August 1945 (USACE, 1981).

The facility was designed to produce 60,000 pounds of ammonium picrate per 24-hour day, seven days a week. The plant included an administration area, boiler house area, ammonium picrate area, acid area, and magazine storage area. The facility encompassed approximately 2,100 acres of the 6,800-acre property; the remainder was farmland.

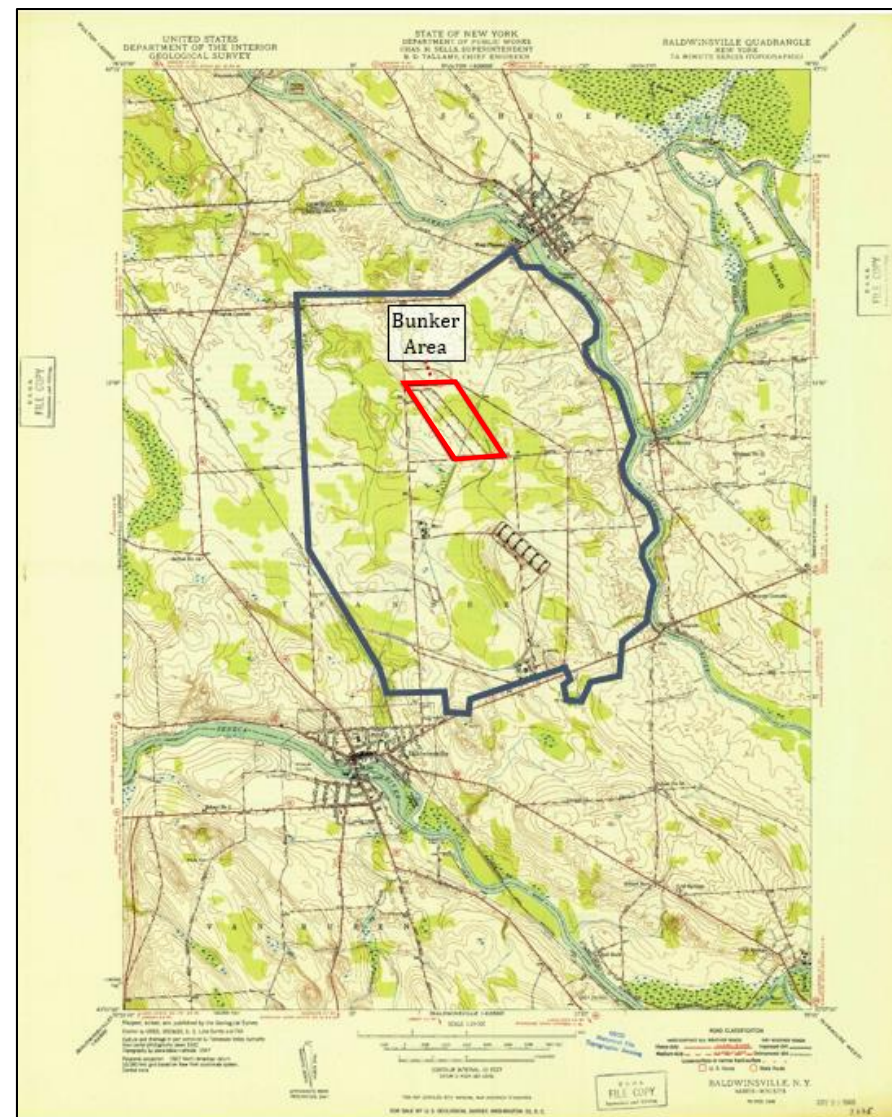
After 30 August 1945, the 6,800-acre property was transferred to the Reconstruction Finance Corporation (RFC). Subsequently, approximately 4,700 acres was classified as farmland and assigned to the Farm Credit Administration for disposal. By 1947, all tracts of land designated as farmland had been sold, including 2,600 acres to the NYSDEC for use as the Three Rivers State Wildlife Management Area (WMA) and 1,895 acres subdivided among 98 individual owners (USACE, 2006). The Department of Defense (DoD) had previously used a portion of the acreage of the Three Rives WMA for the storage of ordnance. DoD did not build or operate any facilities on the tracts of land designated as farmland. However, ditches carrying effluent from the plant traversed through the farmland (USACE, 1981).

The remaining 2,100 acres was classified as industrial property (USACE, 1981). In 1948 and 1950, 500 acres of the industrial property was sold to Fosham Corp., a merger of a used rail company (L.B. Foster) and Hamilton of Cincinnati. Part of their purchase (1,600 acres) was identified in the deed as contaminated; the deed required the purchaser to decontaminate the property and to provide proof of decontamination to the government. Fosham Corporation notified the General Services Administration (GSA) on 17 October 1950 by letter that “all decontamination work necessary under the terms of this agreement has been performed by this company and, in particular, the drying houses and the lower portion of the ramps in each A.P. line have been burned.” A letter dated 14 December 1950 from the New York Regional Office of GSA noted that the premises of the NYOW were examined by a representative of the Ordnance Ammunition Center, US Army Joliet, Illinois on 24 November 1950 and “no evidence of contamination was found” (USACE, 1981). By 1969, this acreage was under the ownership of the New York State Urban Development Corporation (NYSUDC); this area is now known as the Radisson Community.

Source: Bluestone Environmental Group 2018 Technical Memorandum



Photographic Analysis Bunker Area



- Former New York Ordnance Works Boundary
- Area of Interest

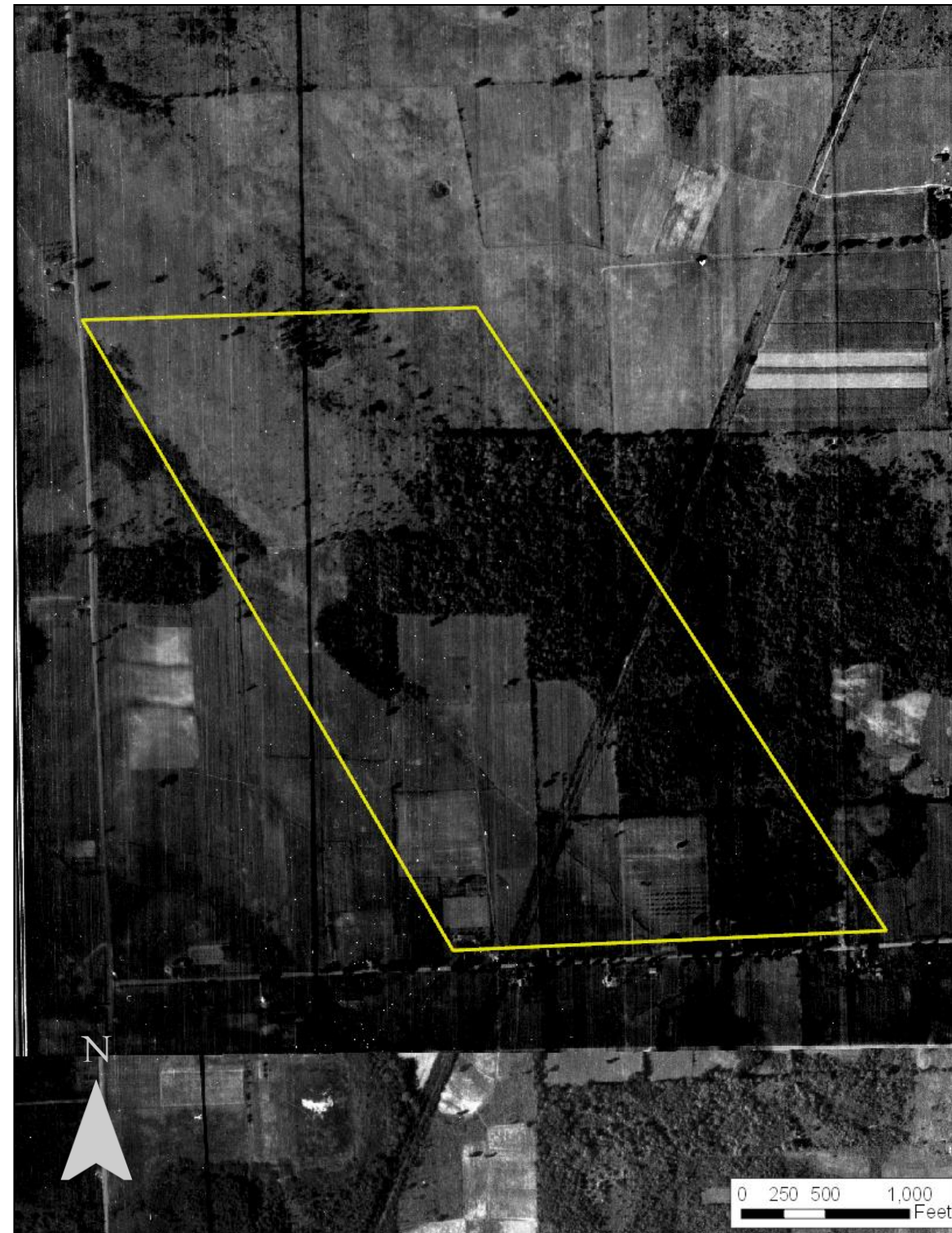
Source: Library of Congress

1948



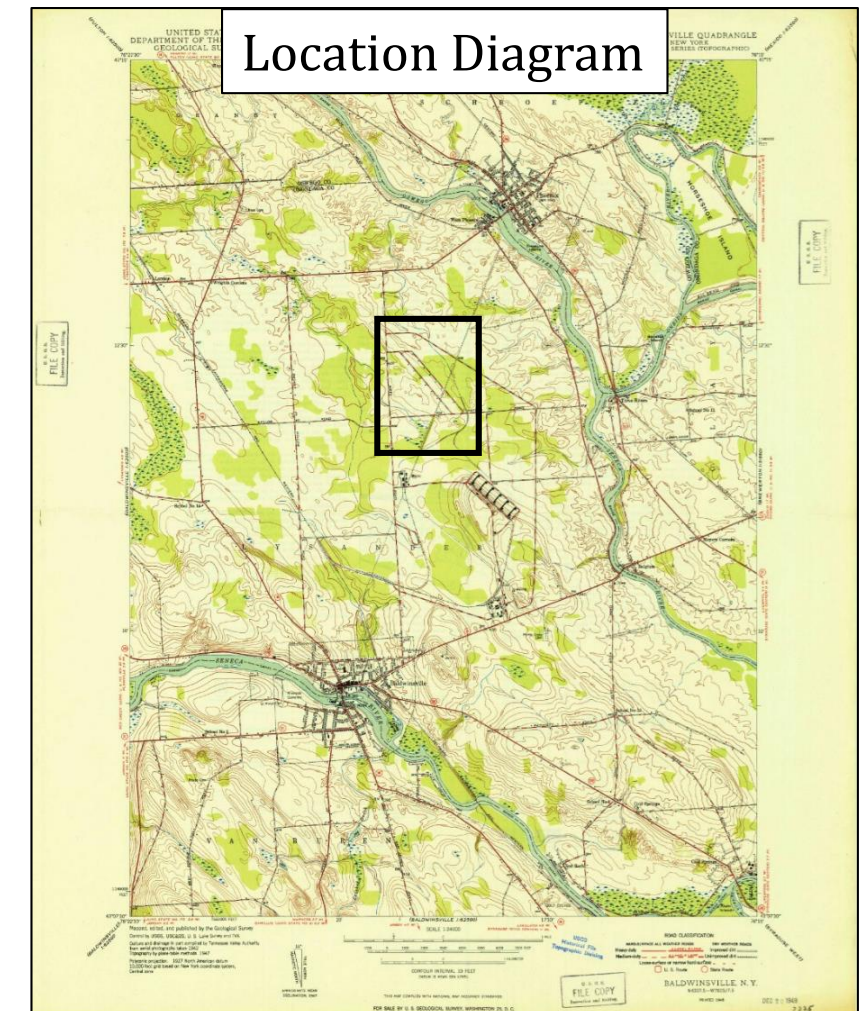
1938 Photographic Analysis: Bunker Area

The landscape prior to the construction of the bunker area, was primarily agricultural and forested.



Source: National Archives at College Park

September 05, 1938



Source: Library of Congress

 Area of Interest

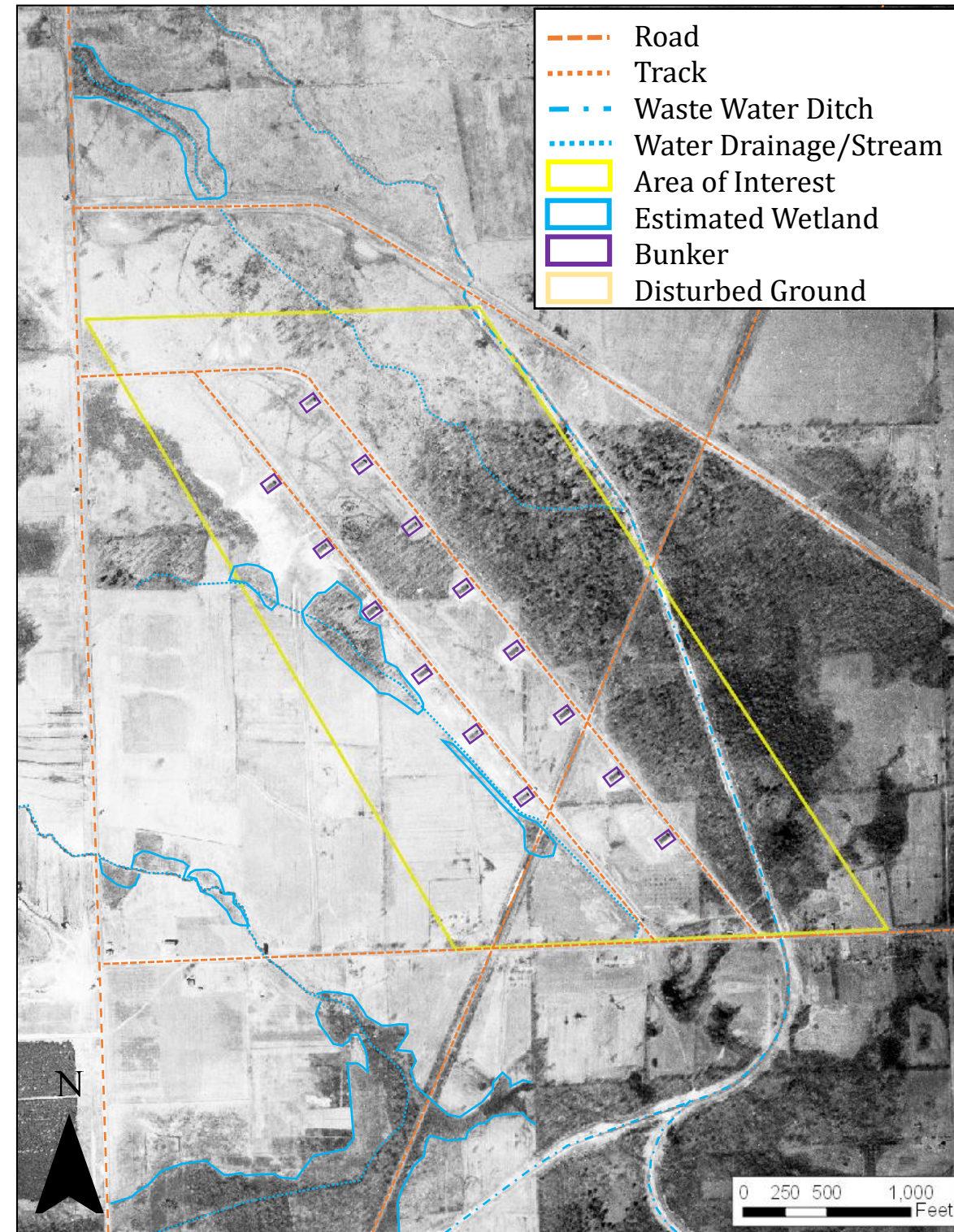


1943 Photographic Analysis: Bunker Area



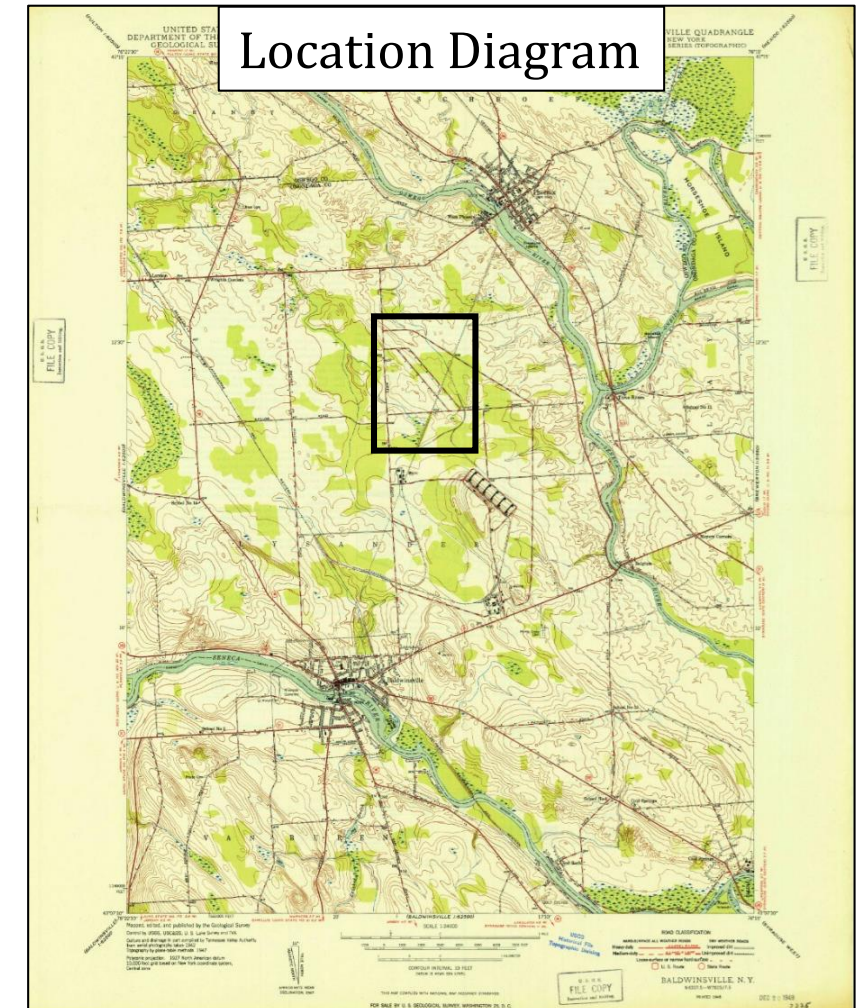
April 18, 1943 Oblique Photograph of Bunker Area
Source: National Archives at College Park

By 1943, 14 bunkers were constructed, along with access roads. Disturbed ground associated with the construction of the bunkers and roads is observed. A small area of forest was removed, enough for the construction of the bunkers and roads, however much of the forest remains.



Source: National Archives at College Park

April 11, 1943



Source: Library of Congress



August 27, 1942 - Bunker Under Construction
Source: National Archives at College Park

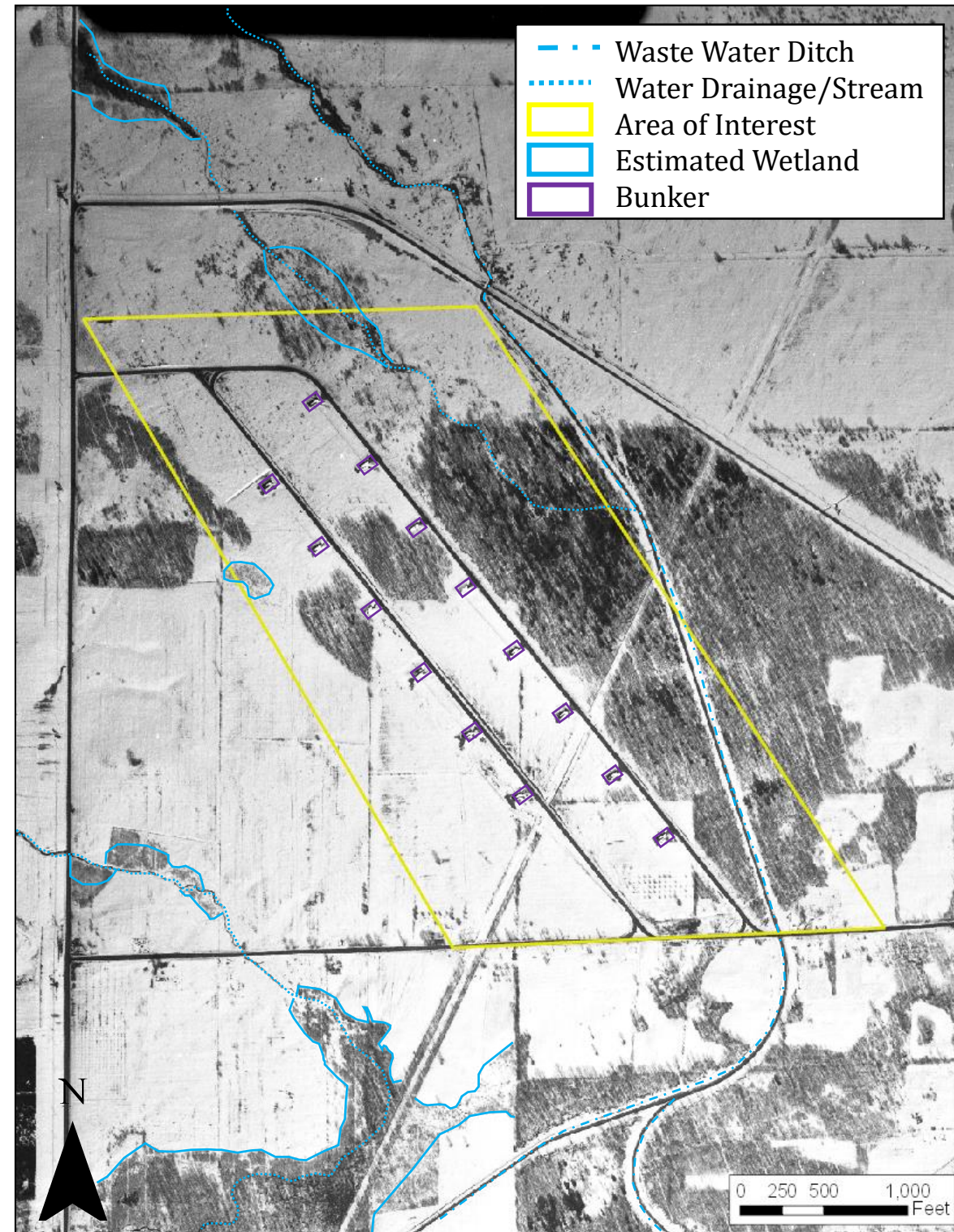


1944 Photographic Analysis: Bunker Area



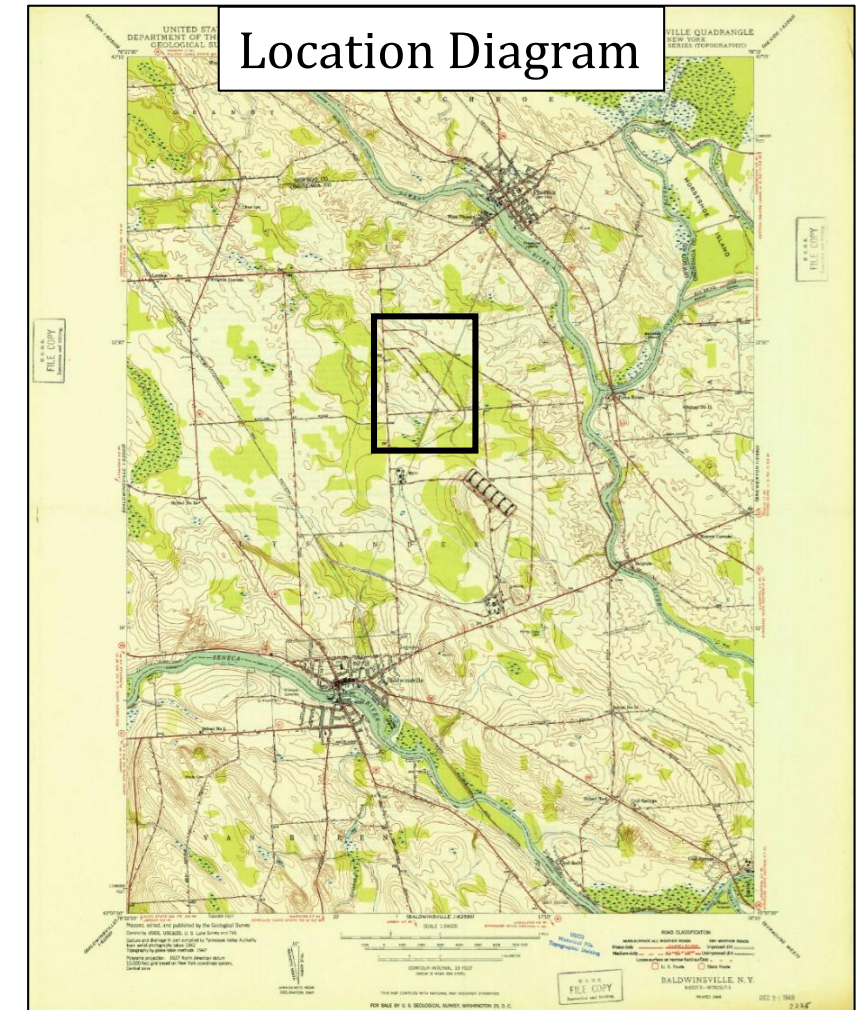
February 25, 1944 Oblique Photograph of Bunker Area
Source: National Archives at College Park

The roads around the bunker area have been cleared of snow, indicating active use. The tracks present between some of the bunkers in 1943 are no longer present, reinforcing that the roads running parallel to the bunkers are being used to access them.

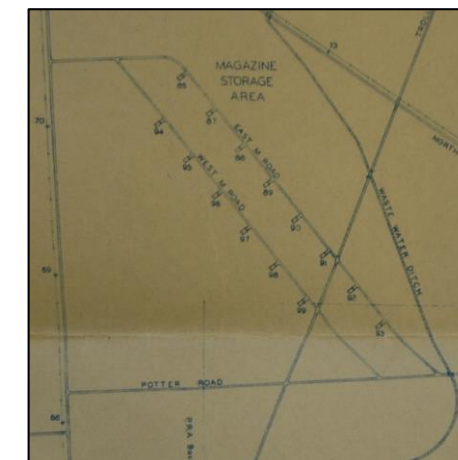


Source: National Archives at College Park

February 25, 1944



Source: Library of Congress

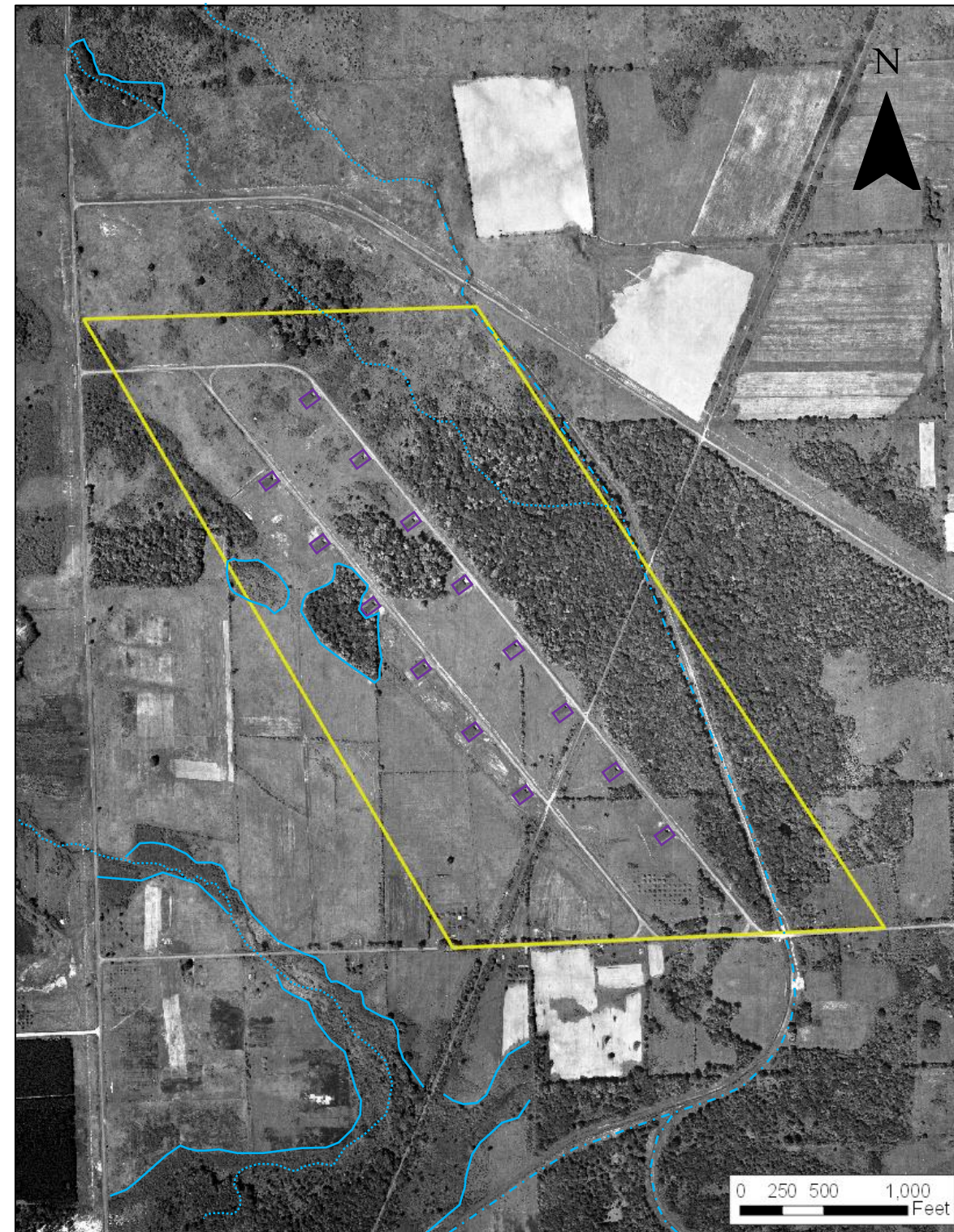


1943 Water Supply System Map
Source: National Archives at College Park



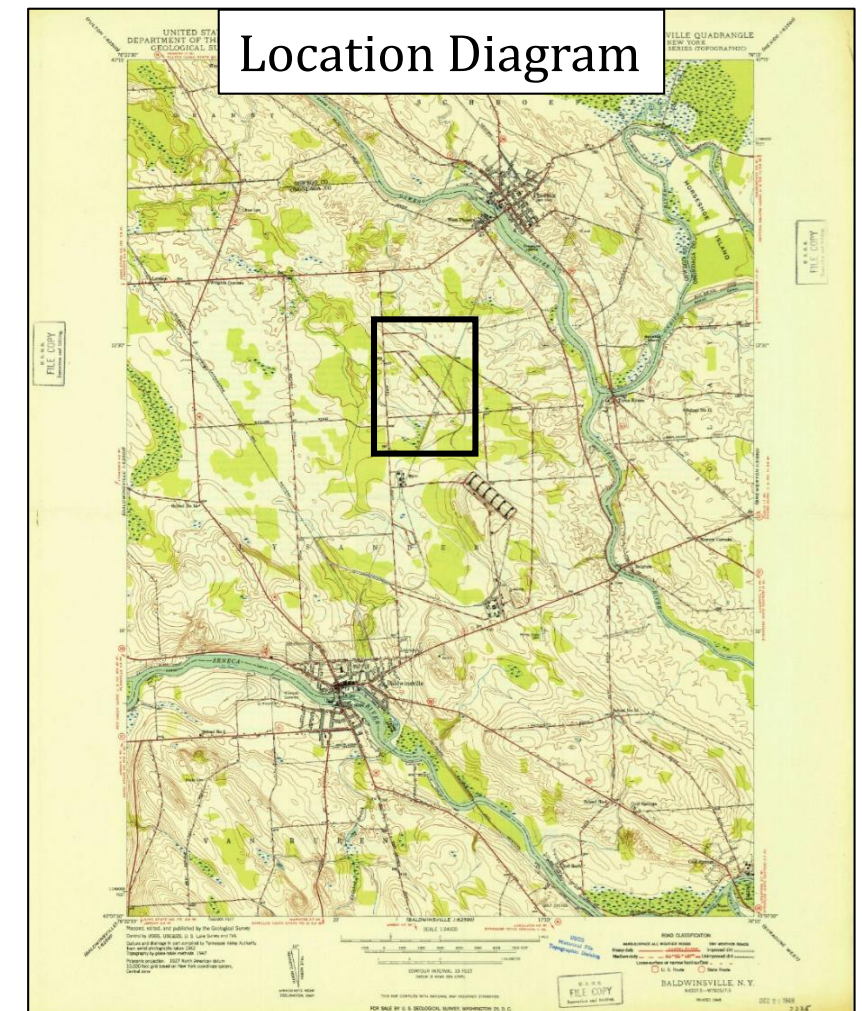
1949 Photographic Analysis: Bunker Area

All of the bunkers are still present. No significant changes are observed.



Source: National Archives at College Park

June 01, 1949

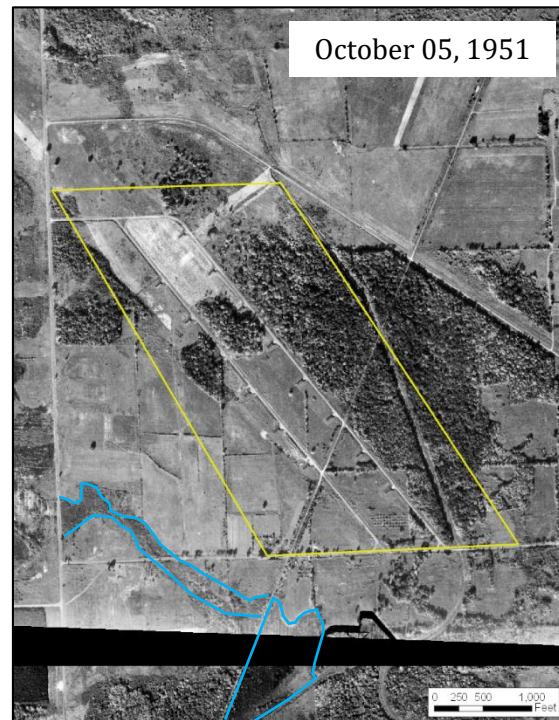


Source: Library of Congress

- Waste Water Ditch
- Water Drainage/Stream
- Area of Interest
- Estimated Wetland
- Bunker



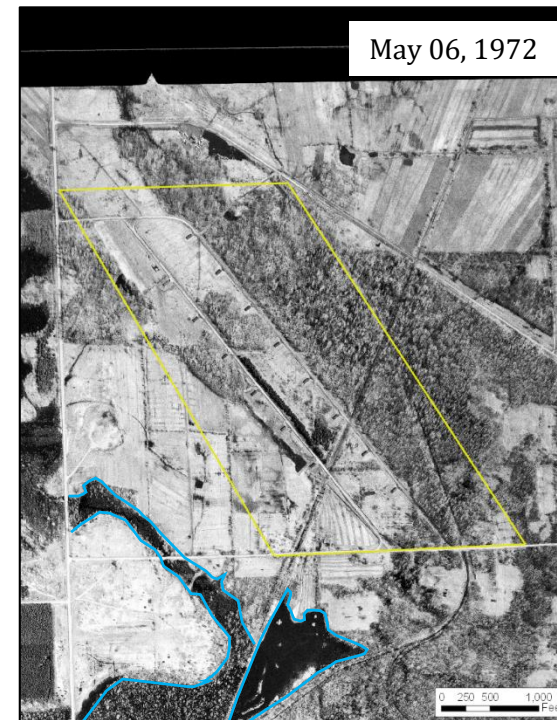
1951-2019 Photographic Analysis: Bunker Area



Source: Cornell University Library



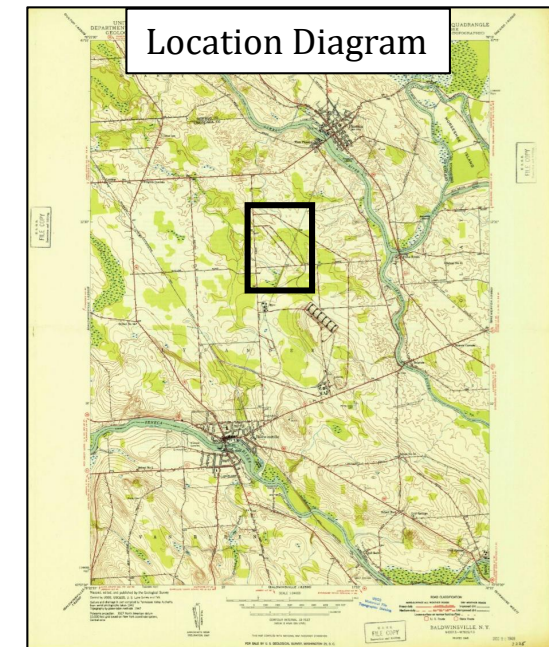
Source: Cornell University Library



Source: U.S. Geological Survey



Source: U.S. Geological Survey



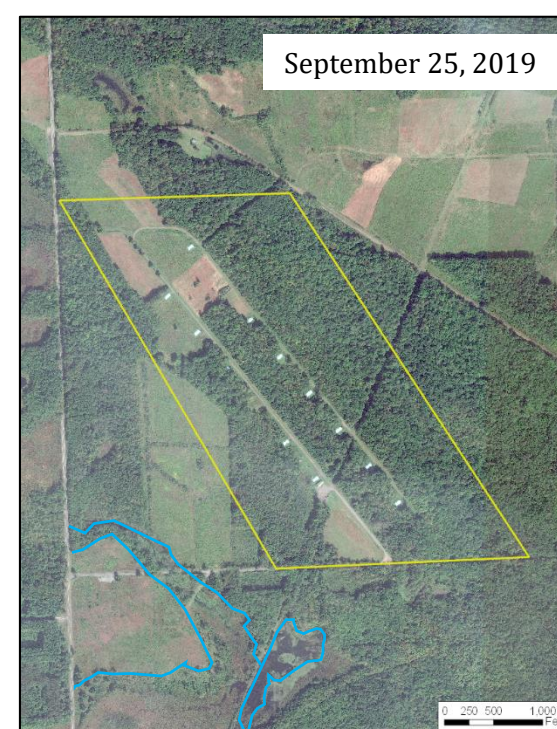
Source: Library of Congress



Source: U.S. Geological Survey





Source: U.S. Geological Survey



Source: Digital Globe

No significant changes are observed within the Bunker Area between 1951 and 2019. Although there has been significant revegetation in this area, the bunkers are still in place in 2019. The area is still surrounded by an agricultural landscape.

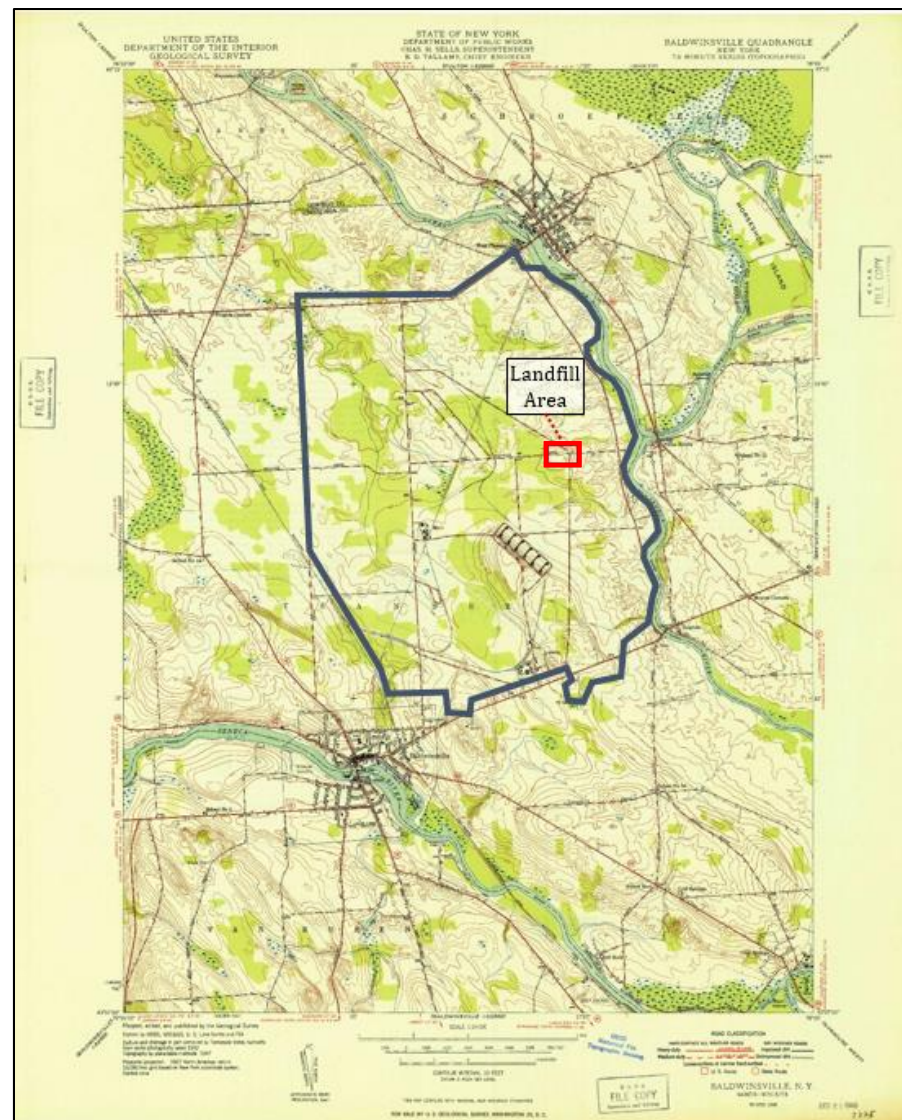
 Area of Interest
 Estimated Wetland

N





Photographic Analysis Former Landfill



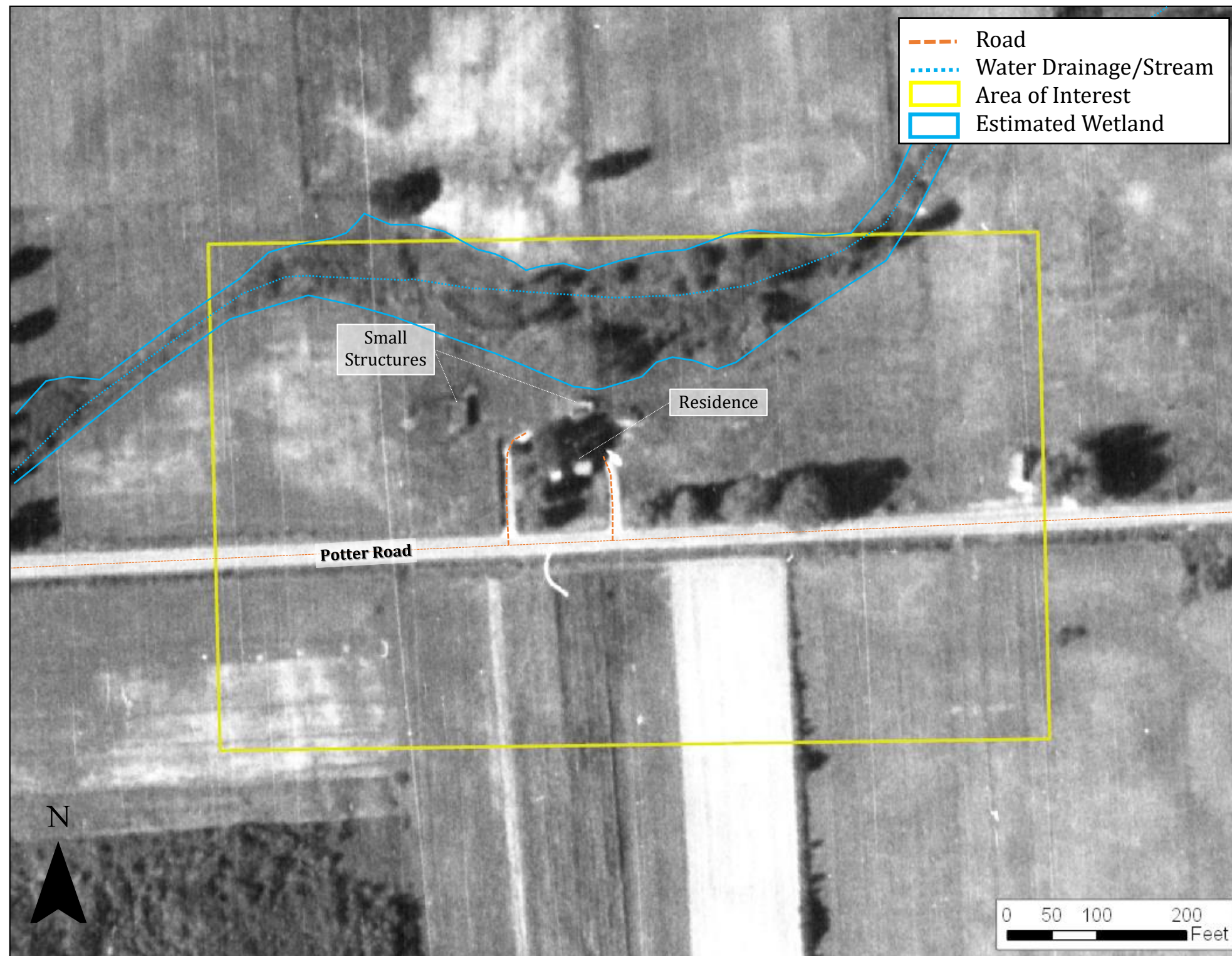
- Former New York Ordnance Works Boundary
- Area of Interest

Source: Library of Congress

1948

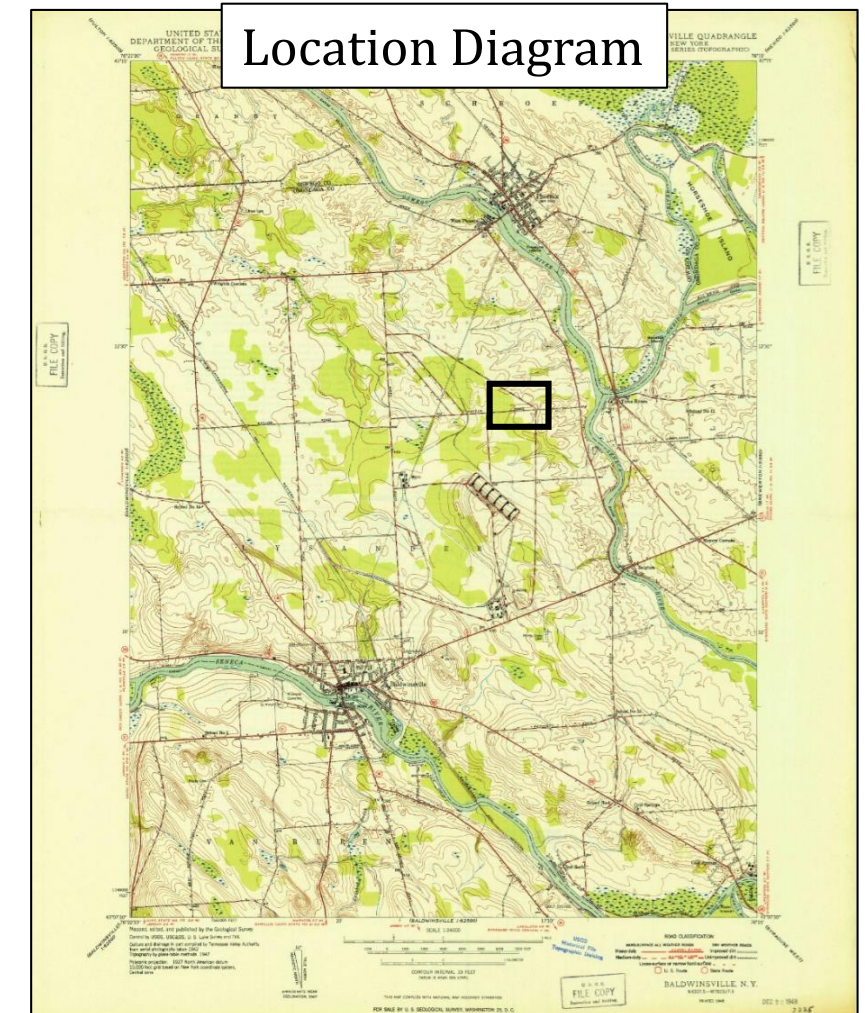


1938 Photographic Analysis: Former Landfill Area



Source: National Archives at College Park

September 05, 1938

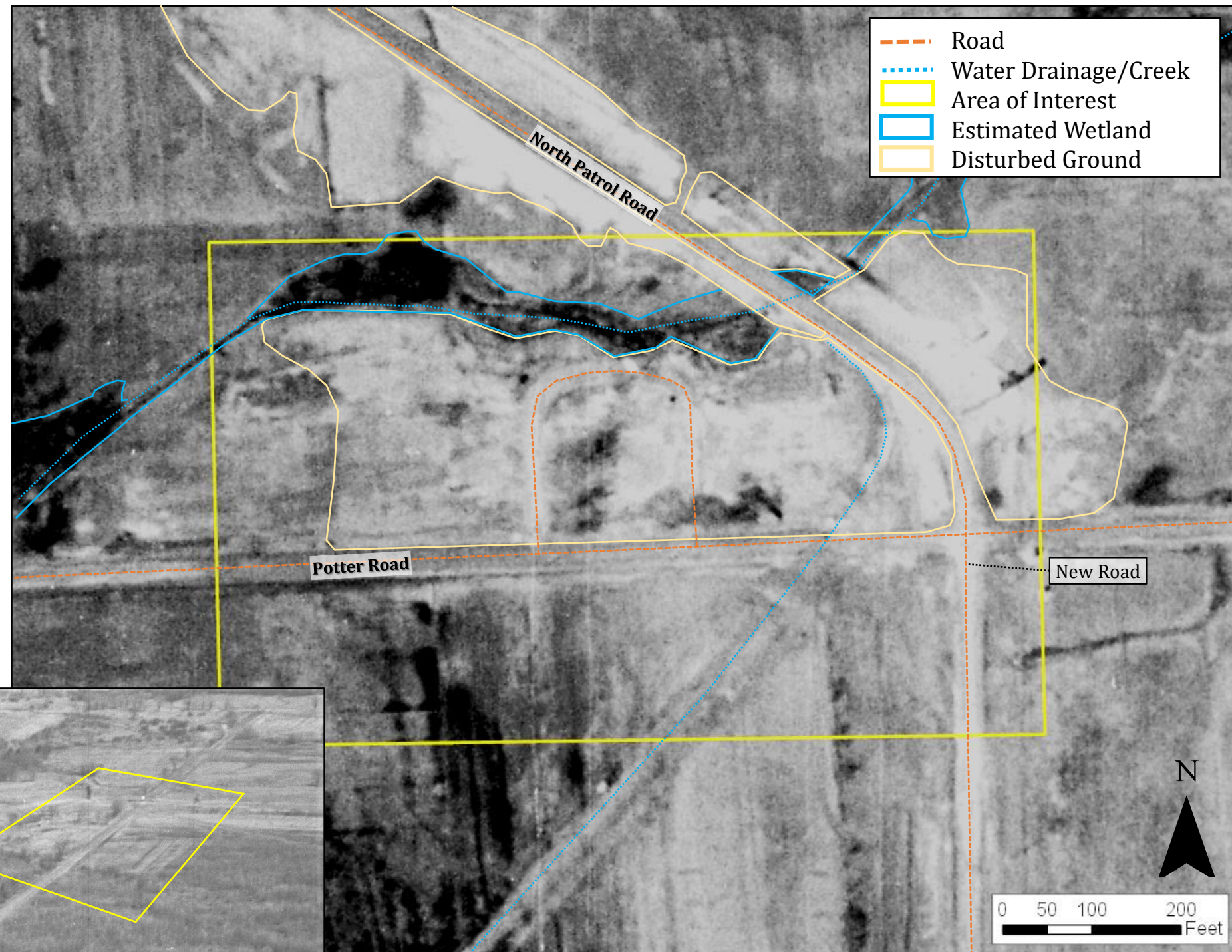


Source: Library of Congress

In 1938, the future “Landfill Area” is the location of a residential home and associated small structures, surrounded by agricultural land. A creek runs west-east to the north of this area.



1943 Photographic Analysis: Former Landfill Area

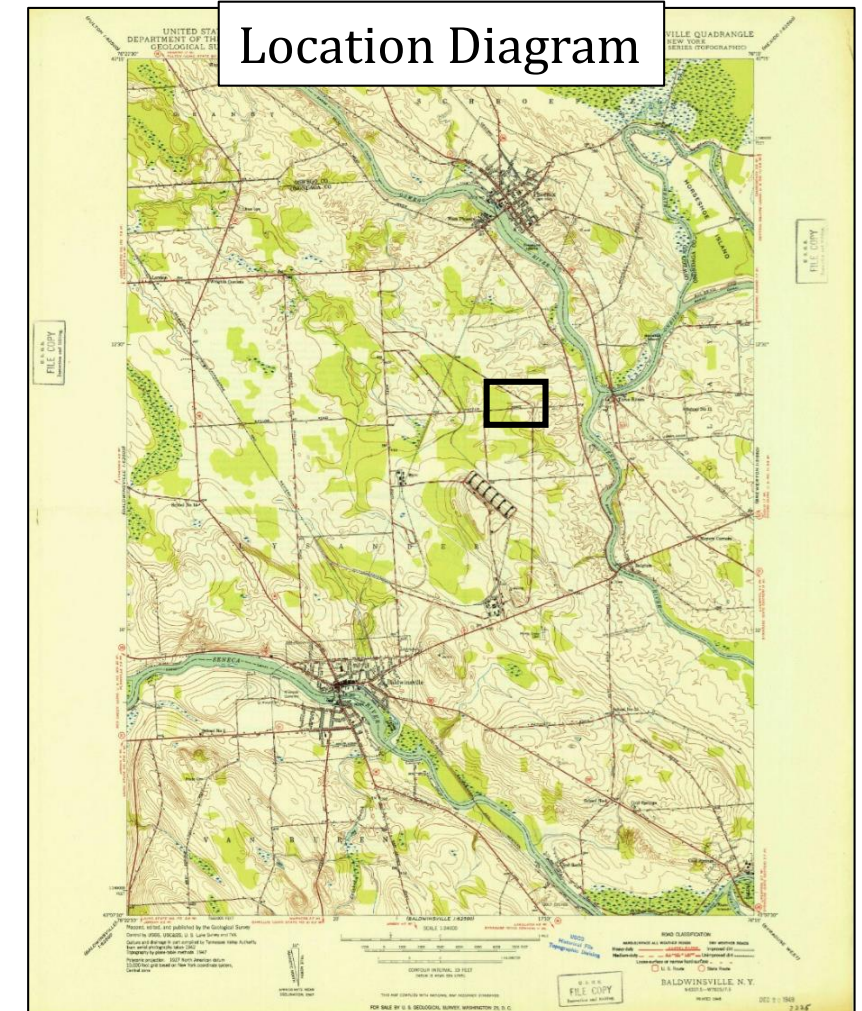


Source: National Archives at College Park

April 11, 1943



April 18, 1943 Oblique Photograph of Landfill Area
Source: National Archives at College Park

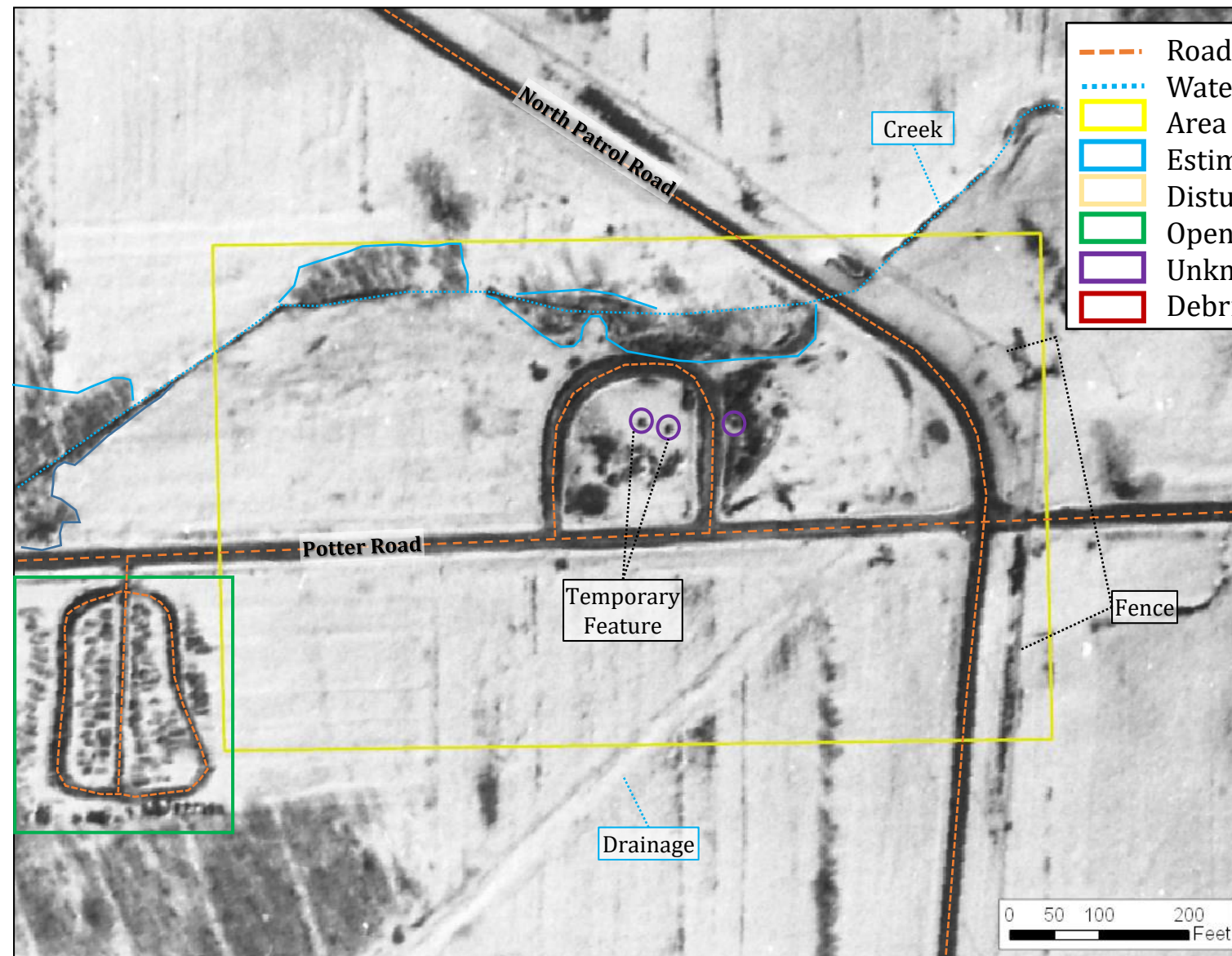


Source: Library of Congress

By 1943 the structures have been cleared. Disturbed ground associated with this clearing as well as the construction of a new road (North Patrol Road) is present. A linear feature running diagonal through the southeastern part of the area appears to be a drainage path.

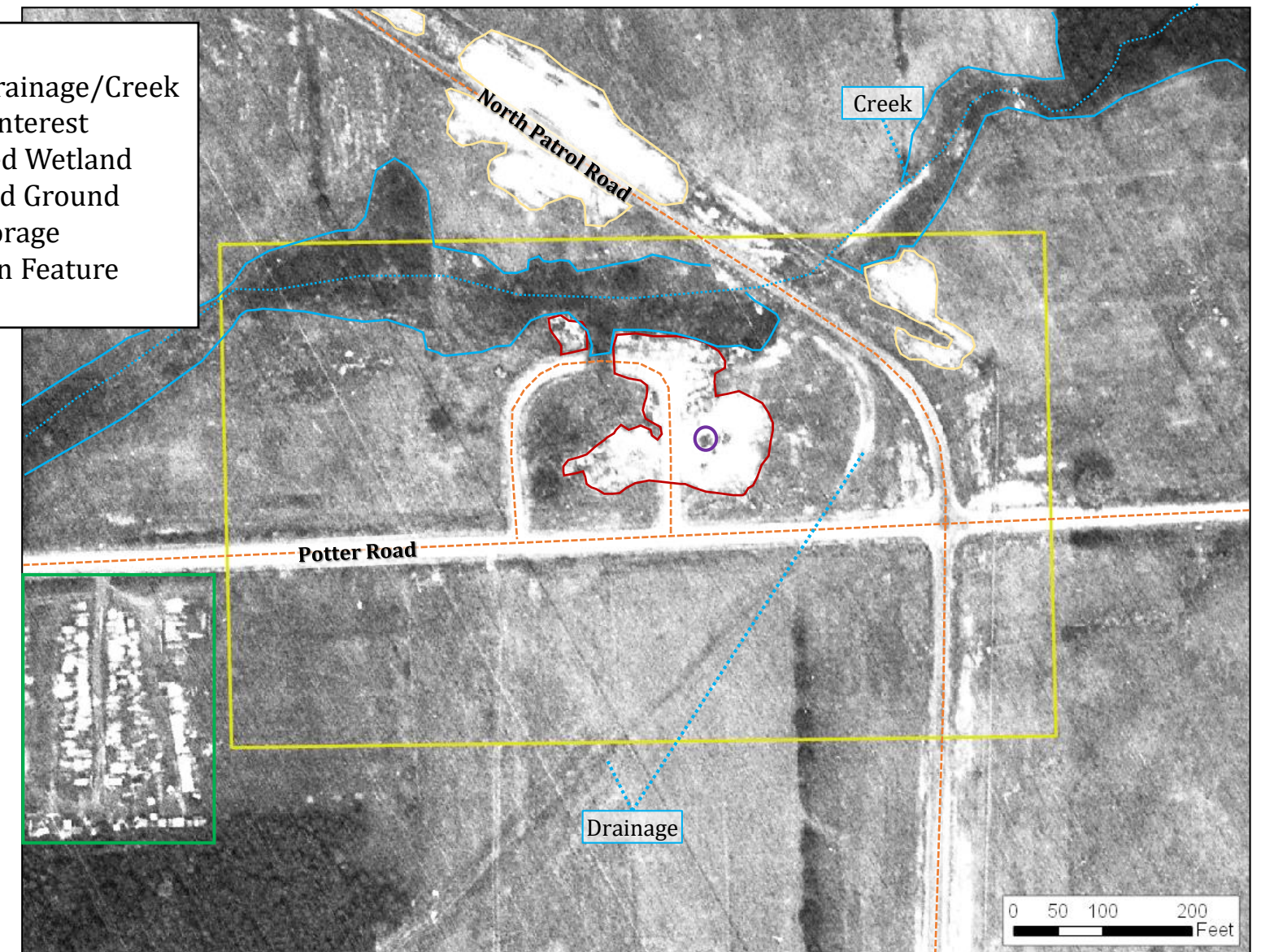


1944 Photographic Analysis: Former Landfill Area



Source: National Archives at College Park

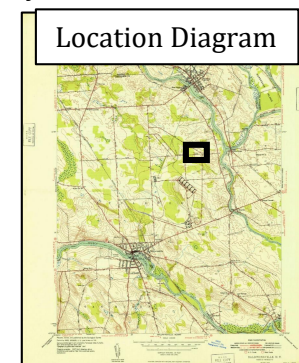
February 25, 1944



Source: National Archives at College Park

August 31, 1944

An area of open storage is observed southwest of the landfill area. There are three small unknown features present within the landfill site – two are temporary and are only seen in February 1944, and the third remains in future photographs. A fence line runs along the eastern side of North Patrol Road.



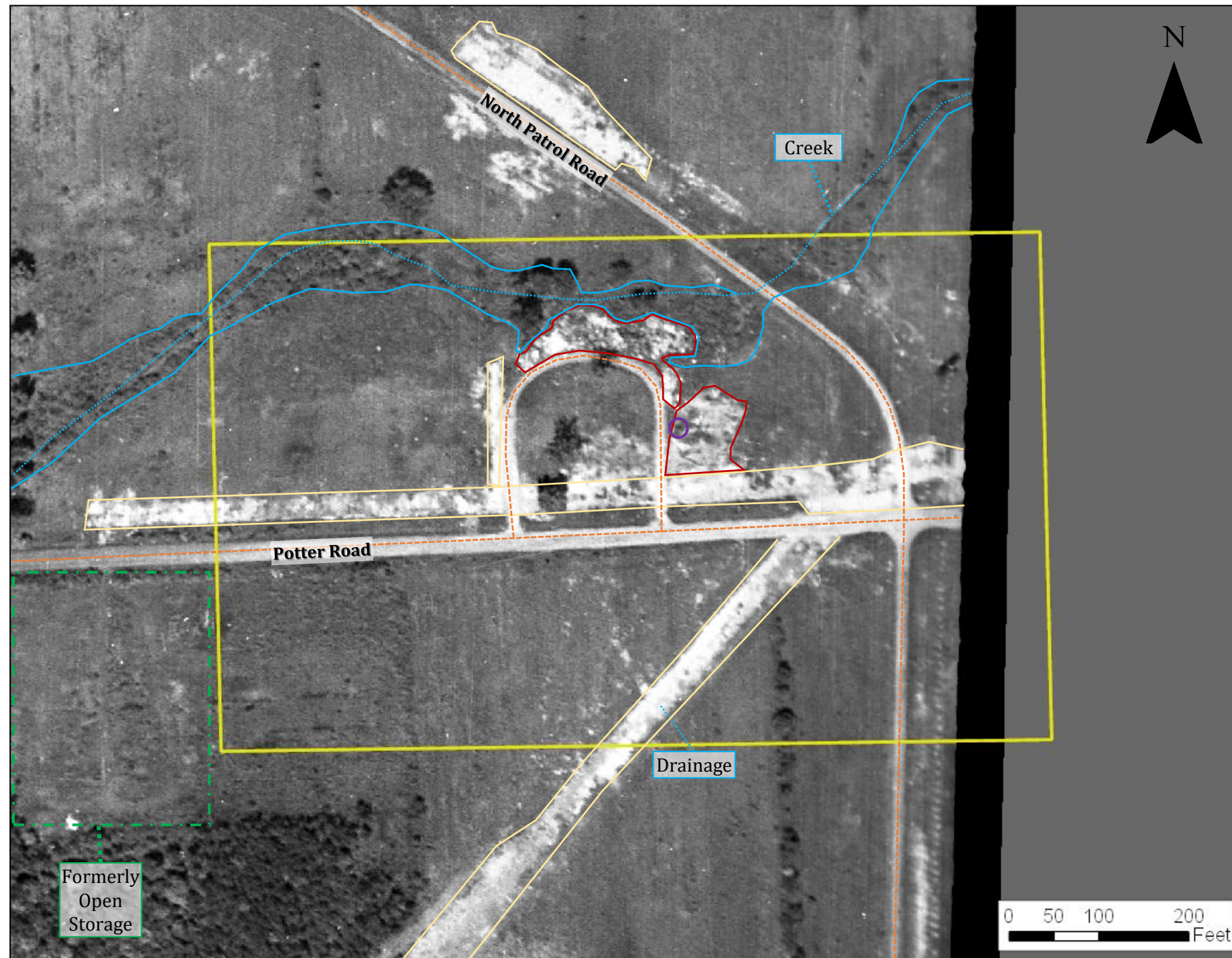
Debris and mounded material is observable by August 1944. Note the location of this dumping activity in relation to the creek running along the northern part of the landfill. Disturbed ground is present to the north along North Patrol Road. The open storage area to the southwest continues to be in use.

Source: Library of Congress



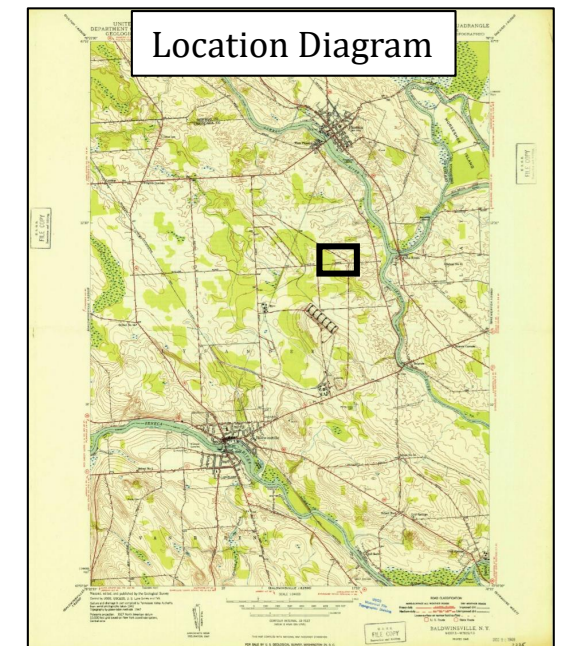
1949 Photographic Analysis: Former Landfill Area

Between 1944 and 1949, the open storage area that was present to the southwest of the landfill ceased activity and while some debris is still present, the area is mostly cleared and vegetation is moving in. A linear swath of disturbed/cleared ground appears parallel to the roadway, and also along the water drainage path running diagonally to the south. This disturbance may indicate the fill of the existing drainage area. Disturbed ground continues to be present to the north on North Patrol Road. Debris and mounds of material are still present and expand alongside the creek.



Source: National Archives at College Park

June 01, 1949



Source: Library of Congress

- Road
- ... Water Drainage/Creek
- Area of Interest
- Estimated Wetland
- Disturbed Ground
- Formerly Open Storage
- Unknown Feature
- Debris



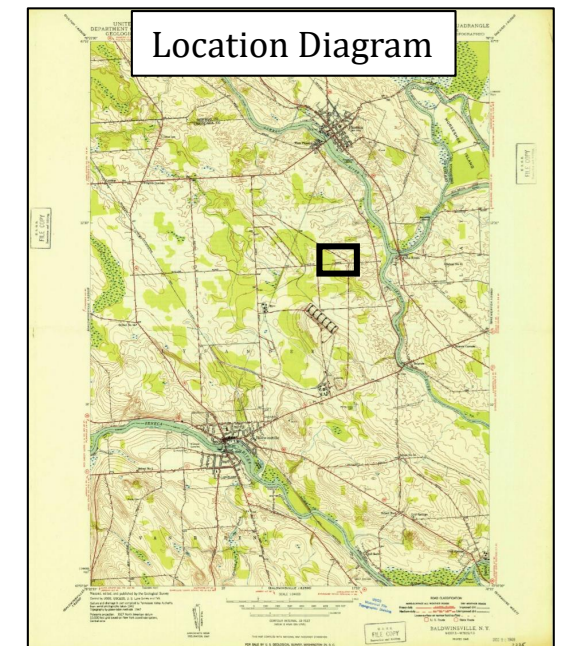
1951 Photographic Analysis: Former Landfill Area

The turnaround (u-shaped) road within the landfill is no longer active and vegetation overgrowth is observed on and around the former road. A ground scar is present to the right of this road. The spatial resolution of this image prevents confirmation of ground scarring and debris extent. A ground scar has taken the place of the diagonal water drainage path, confirming backfill. Two large clearings are present, possibly related to agricultural activities.



Source: Cornell University Library

October 05, 1951



Source: Library of Congress

- Road
- ... Creek
- Area of Interest
- Estimated Wetland
- Disturbed Ground
- Unknown Feature
- Ground Scar



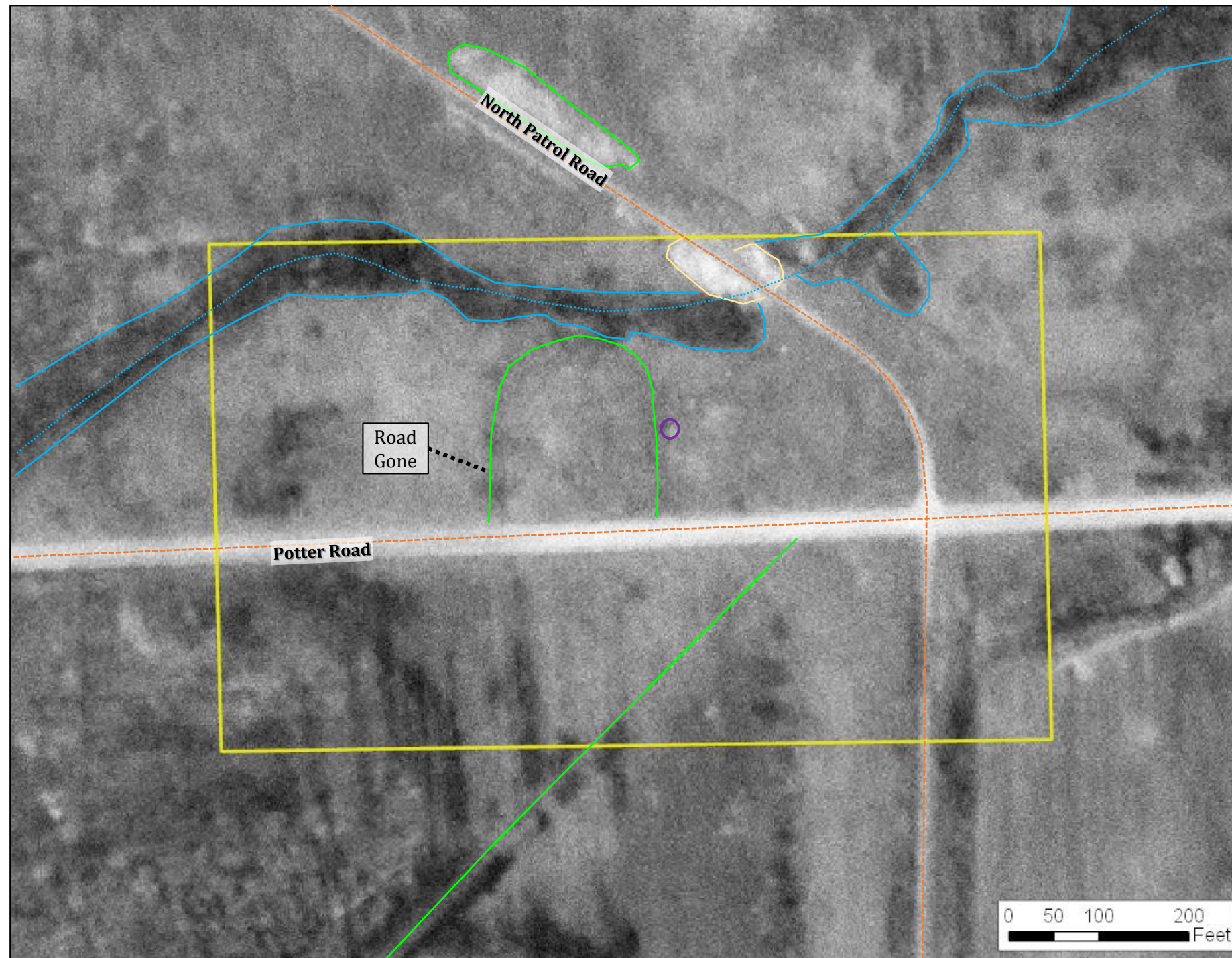


1956 Photographic Analysis: Former Landfill Area

Ground scars are visible where the turnaround (u-shaped) road and the drainage trench previously existed.

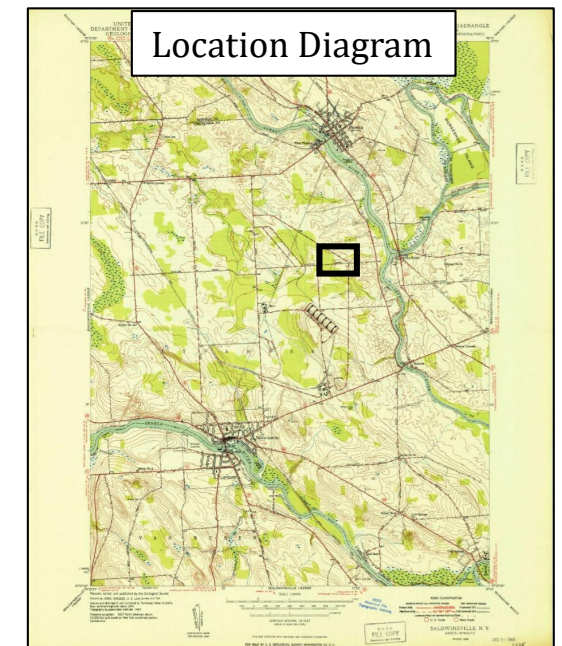
Disturbed ground and possible mounded material are observed at the intersection of the creek and North Patrol Road.

There is no other recent activity observed in or around the landfill area, aside from the use of North Patrol and Potter Roads.



Source: U.S. Geological Survey

May 07, 1956



Source: Library of Congress

- Road
- ... Creek
- Area of Interest
- Estimated Wetland
- Disturbed Ground
- Unknown Feature
- Ground Scar

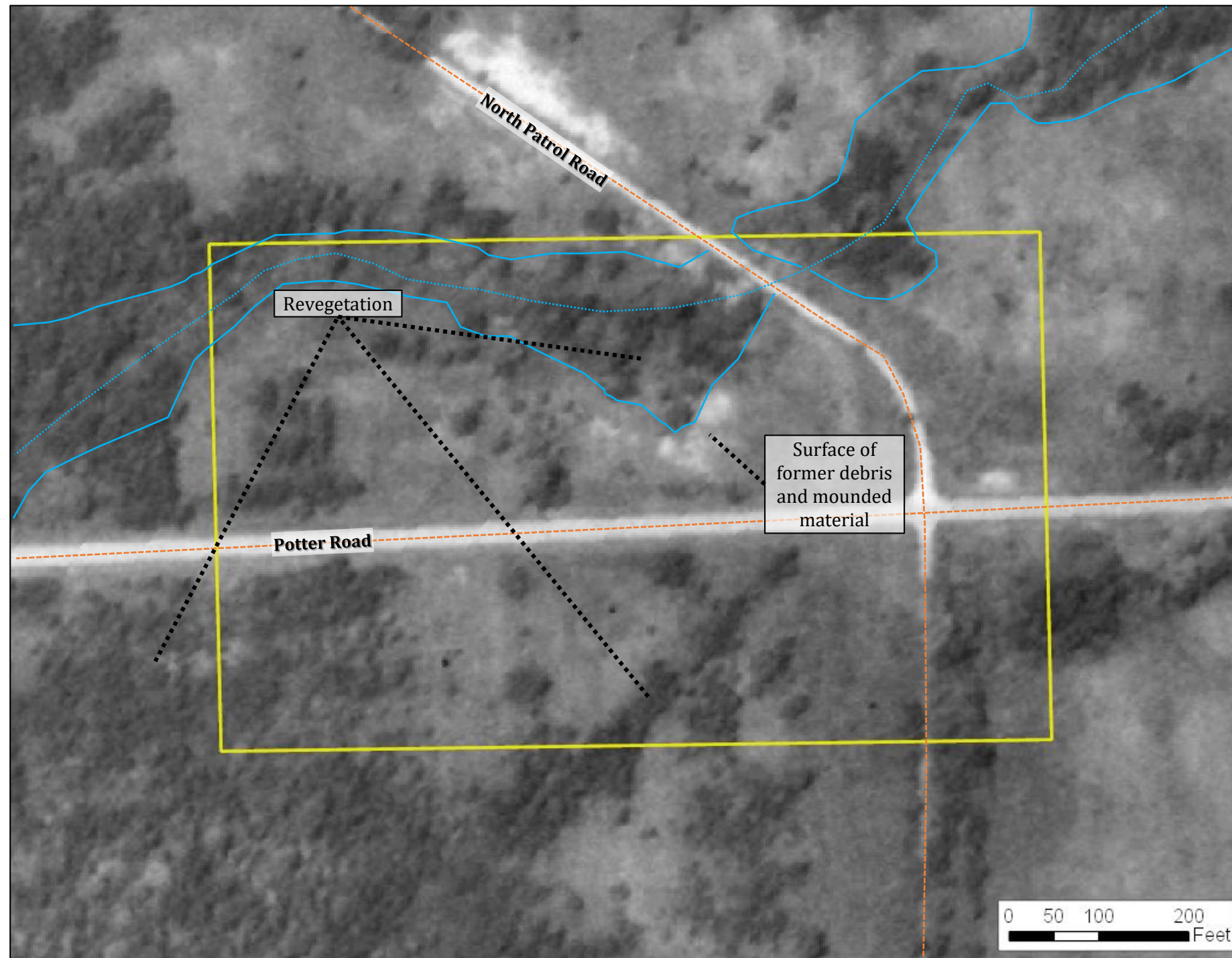




1966 Photographic Analysis: Former Landfill Area

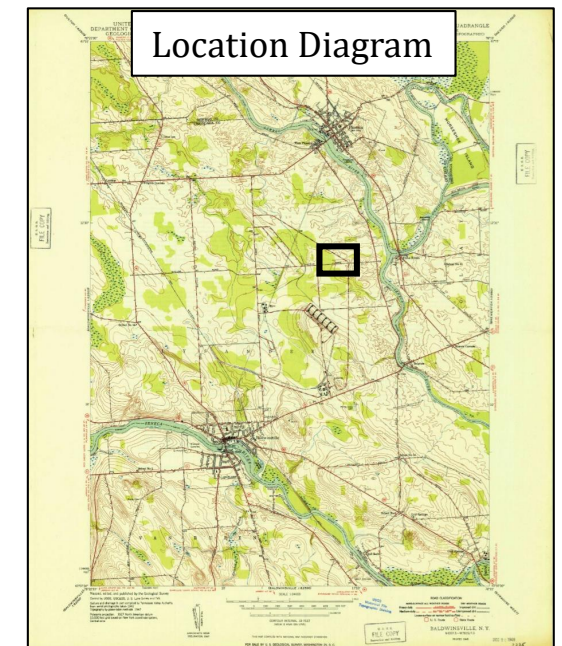
Vegetation is moving into the former areas of use, that include the open storage area (to the southwest), the drainage trench (diagonal from the south), and the area parallel to the creek (north of the landfill).

The area of mounded material last observed in 1951 is visible again. There are no new tracks leading to the area so this is likely due to erosion at the surface.



Source: Cornell University Library

June 22, 1966



Source: Library of Congress

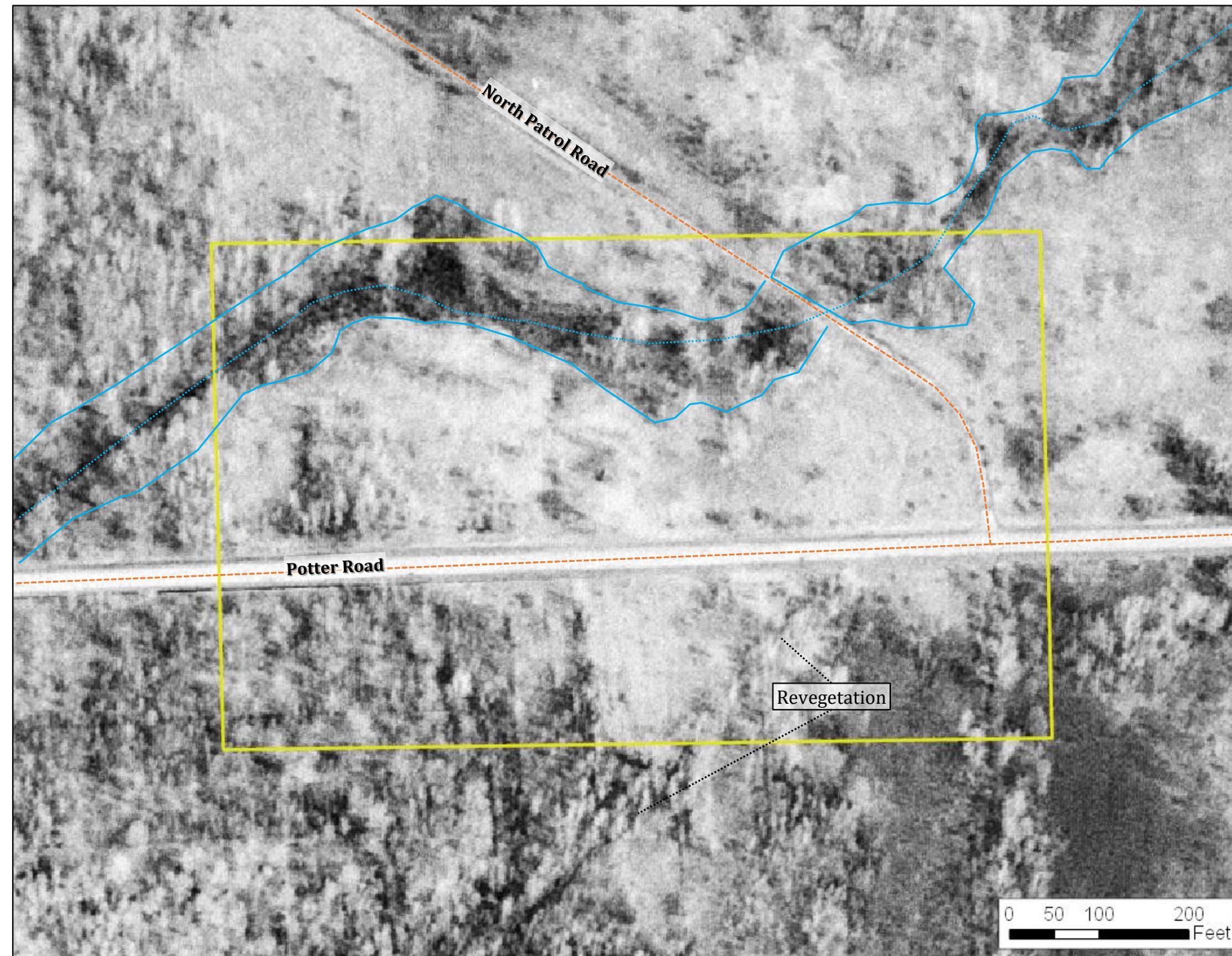
- Road
- Creek
- Area of Interest
- Estimated Wetland





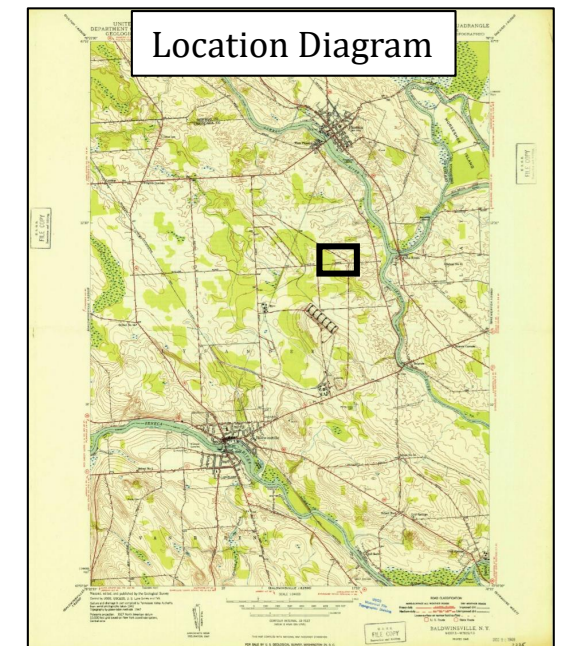
1972 Photographic Analysis: Former Landfill Area

Aside from continuing vegetation regrowth, there is no new activity visible on or around the site, aside from the continued use of North Patrol and Potter Roads.



Source: U.S. Geological Survey

May 06, 1972



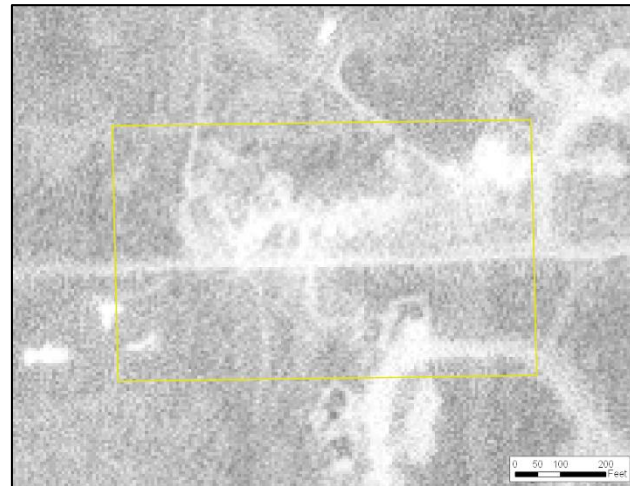
Source: Library of Congress

- Road
- Creek
- Area of Interest
- Estimated Wetland





1982 Photographic Analysis: Former Landfill Area



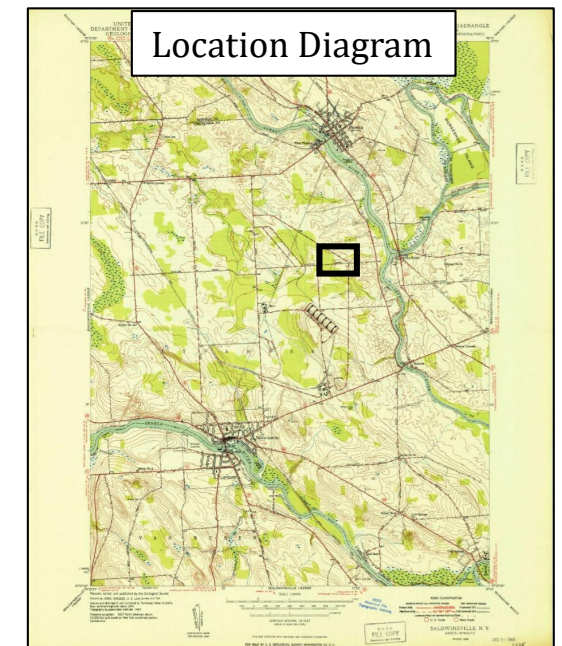
Source: U.S. Geological Survey April 16, 1981

The poor spatial resolution of the 1981 and 1982 aerial photographs prevent confirmation of specific features, but they do reveal construction activities and new housing developments in the area. Development appears to have covered most of North Patrol Road and parts of the creek have been diverted.



Source: U.S. Geological Survey

April 29, 1982



Source: Library of Congress



- Road
- Area of Interest



1995 Photographic Analysis: Former Landfill Area

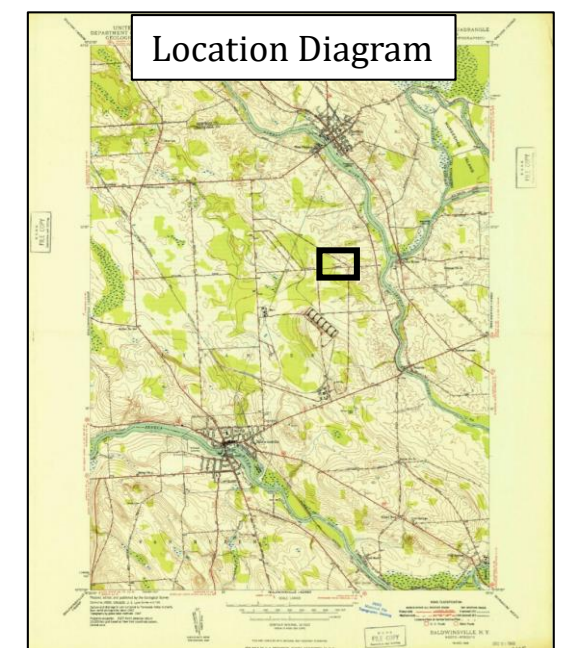
Housing development and the construction of a golf course and associated structures (clubhouse, parking lots, and storage buildings) have replaced the former landfill area.

An approximated vector of the former turnaround (u-shaped) road is placed on this image for reference.



Source: U.S. Geological Survey

Mar 27, 1995



Source: Library of Congress

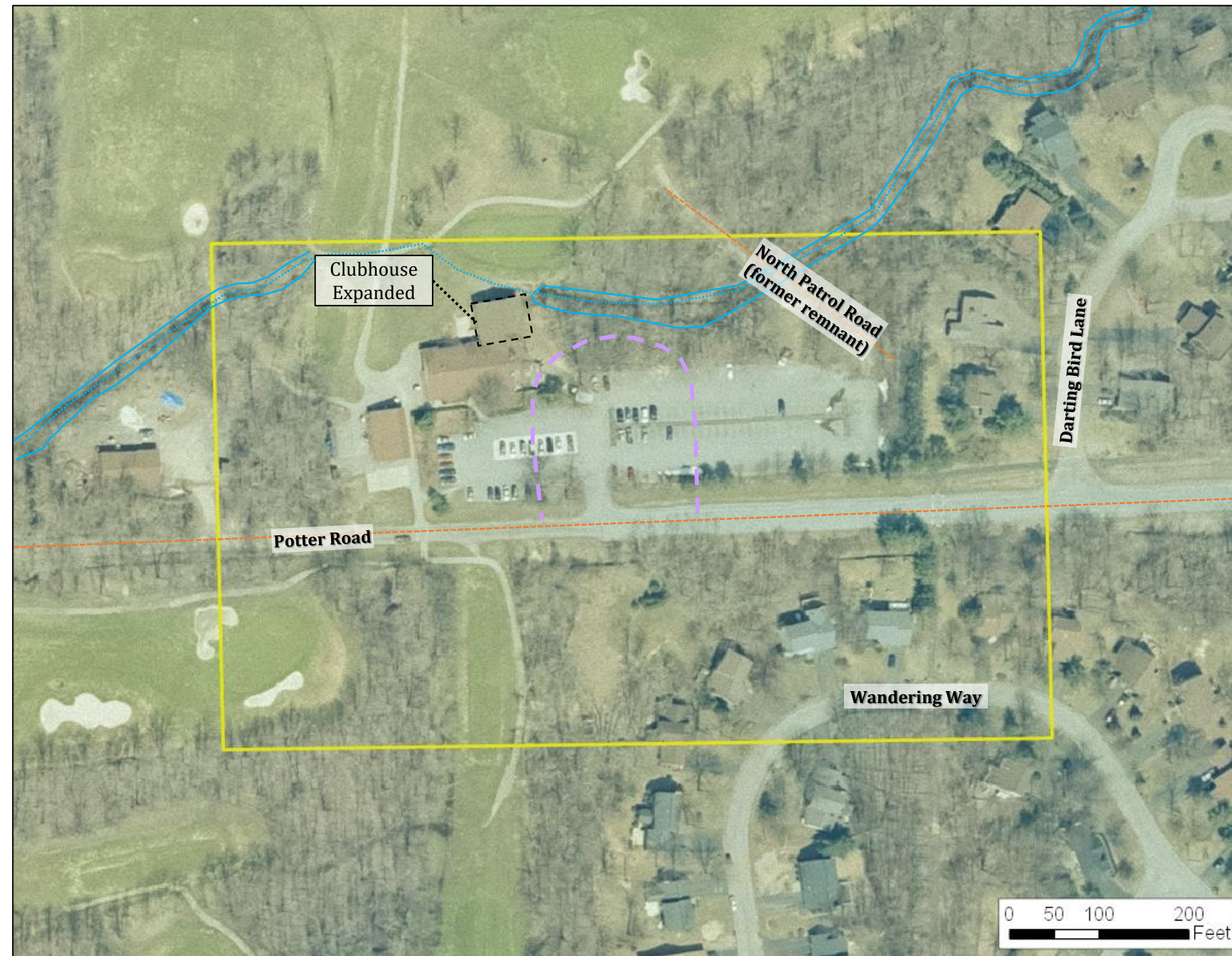
- Road
- ... Creek
- Area of Interest
- Golf Course Clubhouse
- Former U-Road





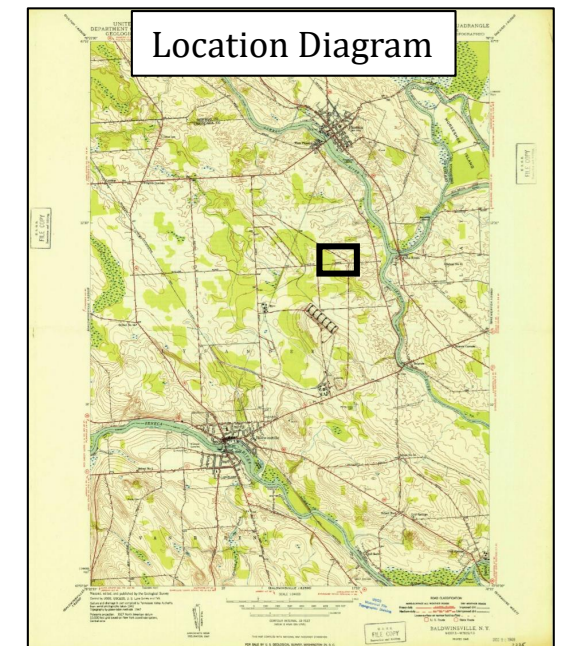
2003 Photographic Analysis: Former Landfill Area

An extension to the golf course clubhouse is observed. The remnant of North Patrol Road appears disused.



Source: U.S. Geological Survey

April 14, 2003



Source: Library of Congress

- Road
- Creek
- Area of Interest
- Estimated Wetland
- Former U-Road





2019 Photographic Analysis: Former Landfill Area

Previous buildings have been removed and one new building is observed in the area of the Clubhouse.

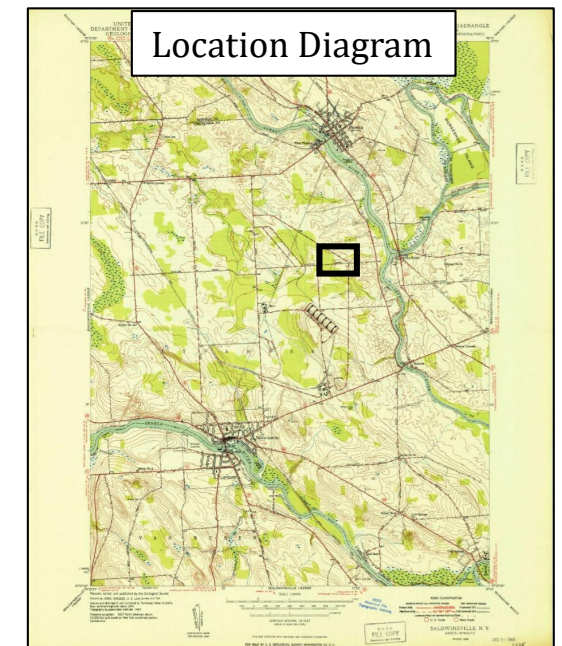
The approximate extent of dumping from the 1944 and 1949 photos have been added to this image, along with the former turnaround (u-road) road.

The extent of observable dumping was located under and north of what is now a parking lot.



Source: Digital Globe

September 25, 2019



Source: Library of Congress

- Road
- ... Creek
- Area of Interest
- August 1944 Dumping Extent
- June 1949 Dumping Extent
- Former U-Road





Photographic Analysis Former Ammonium Picrate Area



Source: Library of Congress

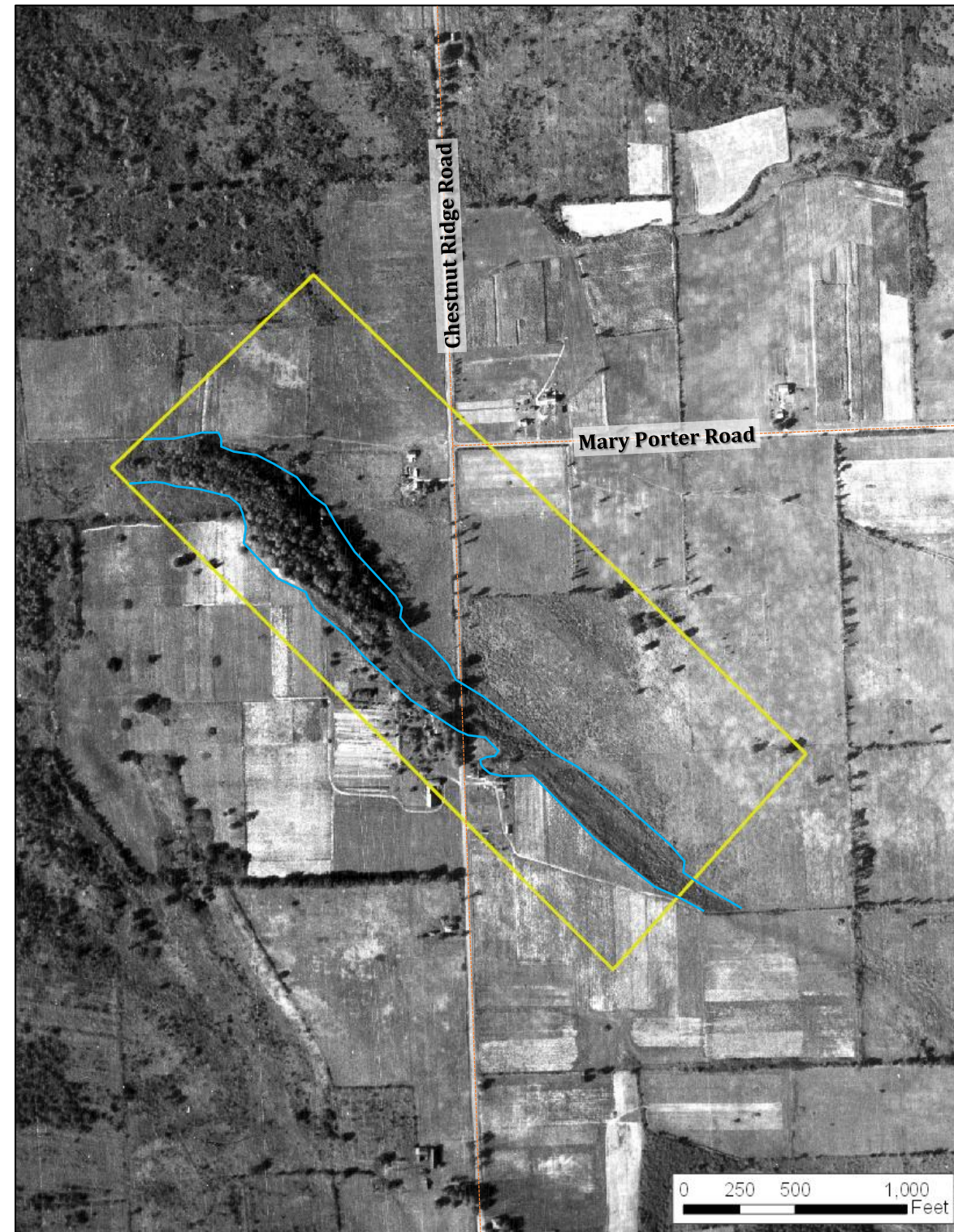
1948

- Former New York Ordnance Works Boundary
- Area of Interest



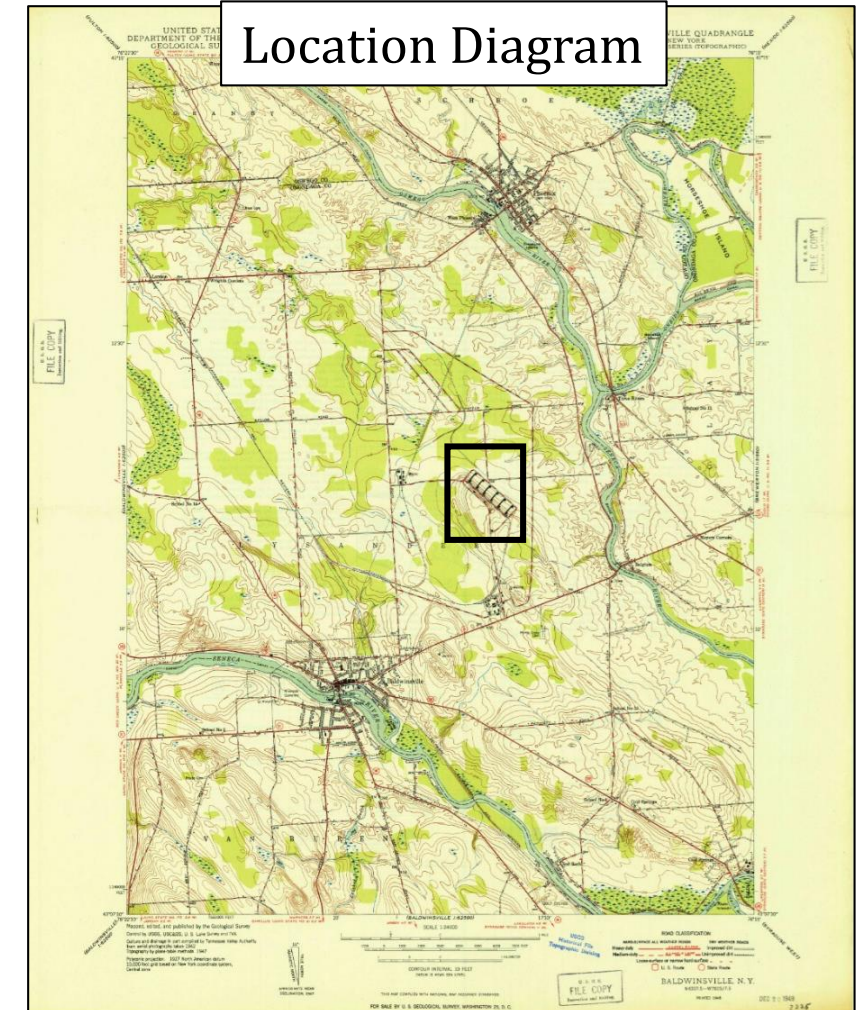
1938 Photographic Analysis: Former Ammonium Picrate Area

The land is primarily agricultural with some forested land cover. A natural ridge runs down near the center of the future Ammonium Picrate area and played a role in the location of this area.



Source: National Archives at College Park

September 05, 1938



Source: Library of Congress

- Road
- Area of Interest
- Estimated Wetland





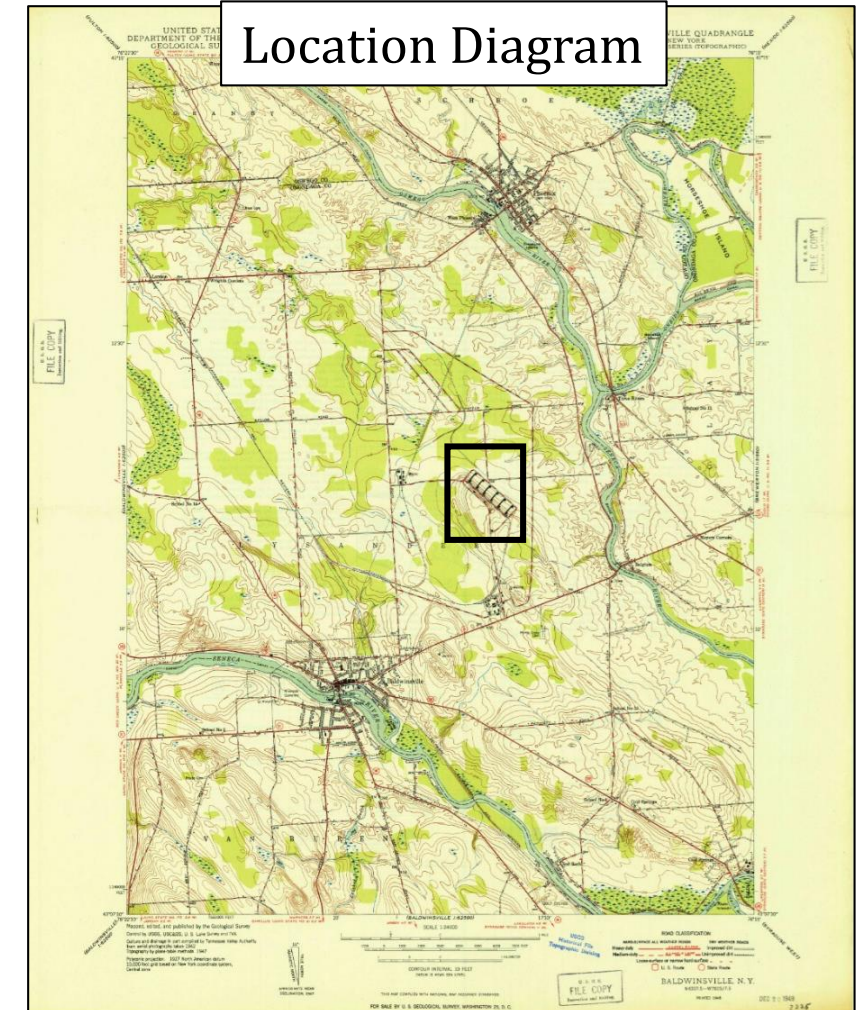
1942 Photographic Analysis: Former Ammonium Picrate Area

By 1942 construction of the Ammonium Picrate area has begun. Disturbed and cleared ground, along with the removal of forested area is visible during this time.



Source: National Archives at College Park

January 15, 1942



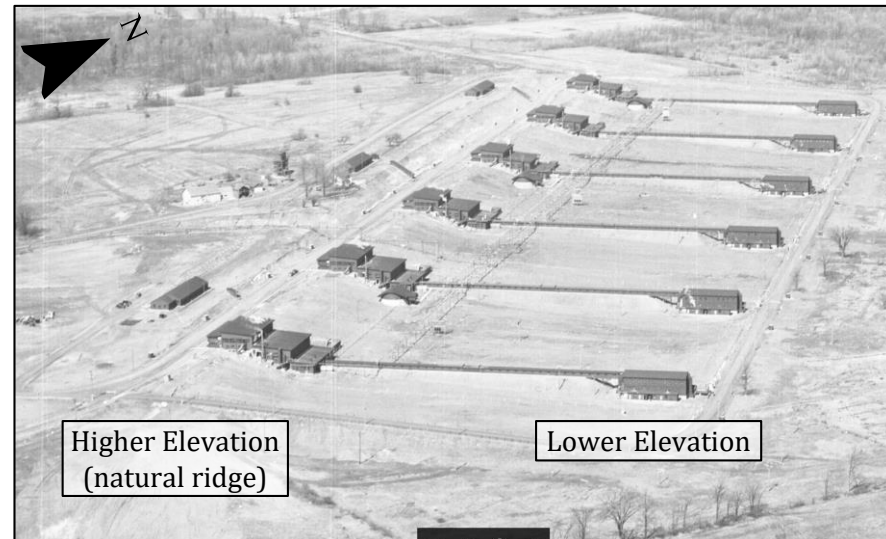
Source: Library of Congress

--- Road
Area of Interest





1943 Photographic Analysis: Former Ammonium Picrate Area

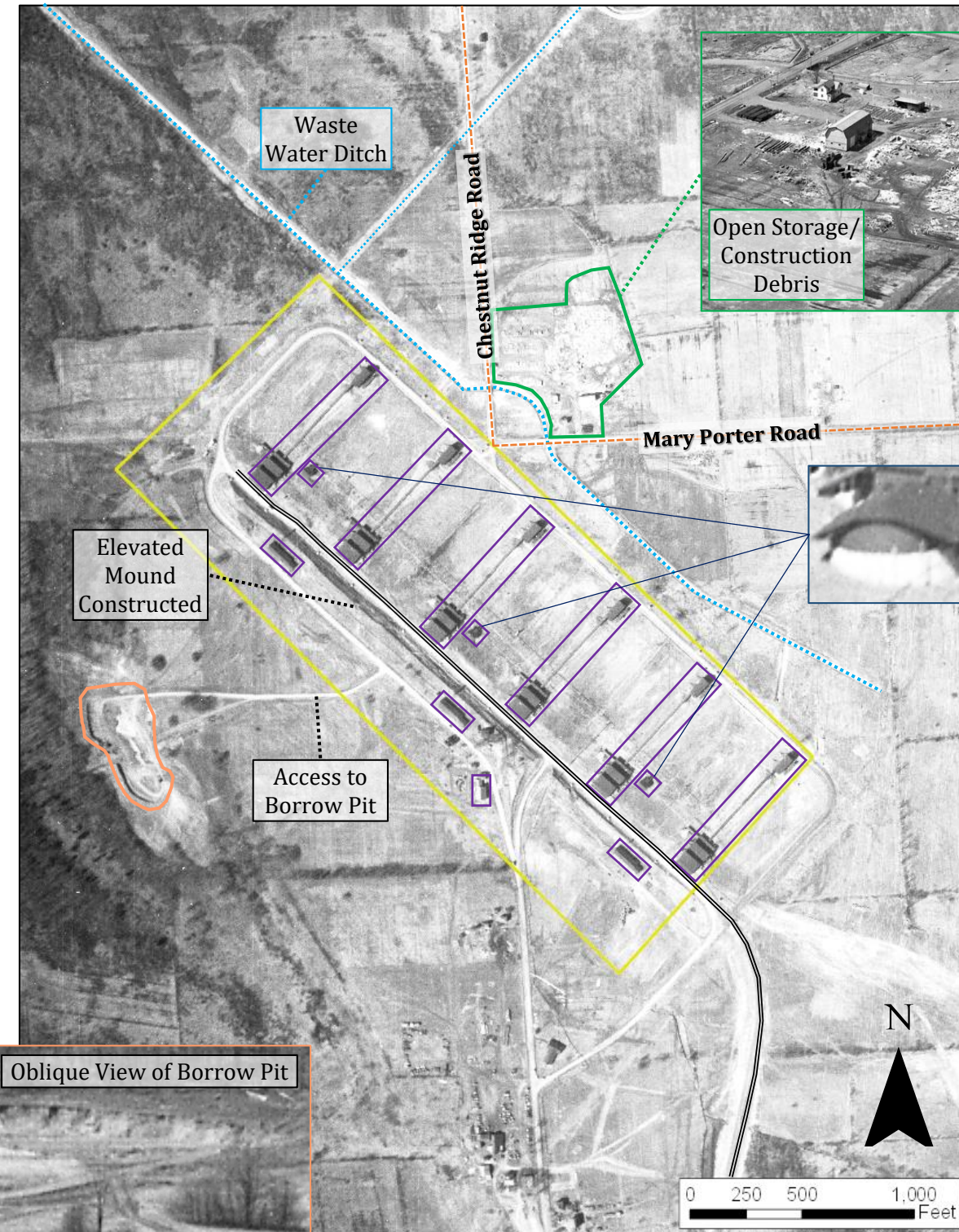


April 18, 1943 Oblique Photographs of Ammonium Picrate Area Showing the Six Ammonium Picrate Production Lines
Source: National Archives at College Park

The construction of six production lines has been completed. A waste water ditch has been constructed running parallel to the Ammonium Picrate area toward the river. An area, southwest of the site, encompassing a former hill appears to be used for fill material (borrow pit). An access road is visible leading to the borrow pit from the Ammonium Picrate area. A dump/storage area is observed northeast of the study area.

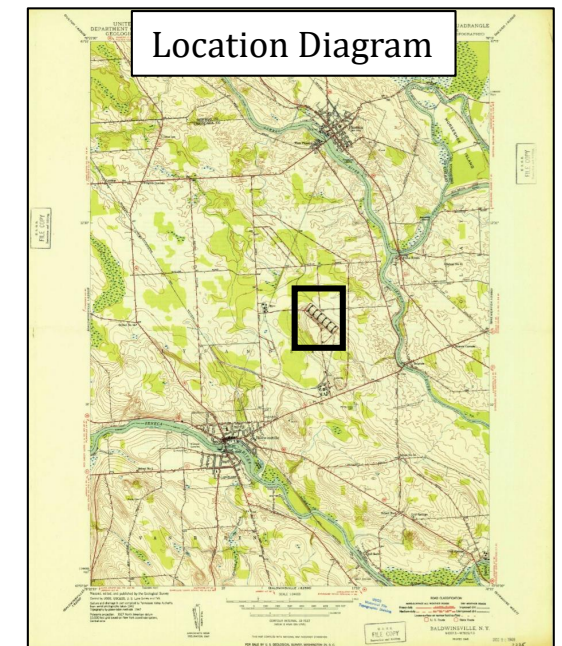


Oblique View of Borrow Pit



Source: National Archives at College Park

April 11, 1943



Source: Library of Congress

NYOW Vol 1. History Thru Dec. 1942

Due to a natural ridge located approximately in the middle of the plant area, the terrain, on which the operating units are located, lends itself advantageously to gravity for the transfer of corrosive materials. Further ad

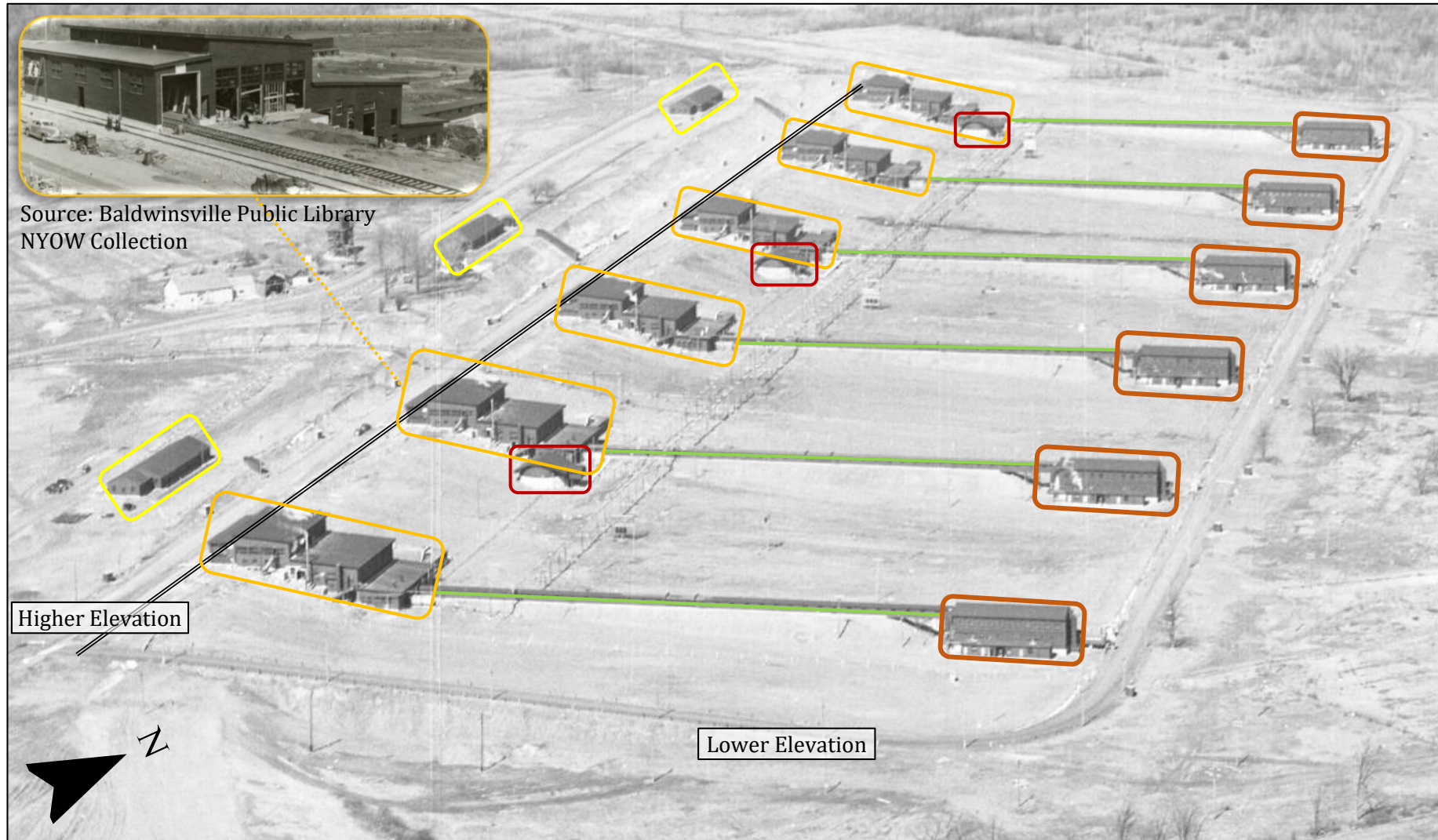
DECLASSIFIED
Authority DDD 735001

Source: National Archives at College Park

- Road
- Waste Water Ditch
- == Rail Tracks
- Area of Interest
- Borrow Pit
- New Structure
- Open Storage/Debris



Former Ammonium Picrate Area: Building Use



Source: Baldwinsville Public Library
NYOW Collection

Higher Elevation

Lower Elevation

April 18, 1943 Oblique Photograph of Ammonium Picrate Area
Showing the Six Ammonium Picrate Production Lines
Source: National Archives at College Park

DECLASSIFIED
Authority: NND 735001

The manufacturing lines are composed primarily of an operating building and a drying or packing building, the two being connected by a covered wooden ramp in the middle section of which is a concrete fire stop. Due to the possibility of

Source: National Archives at College Park

- Ramp
- Rail Tracks
- Change House
- Ammonium Picrate Building
- Dryer House Building
- Spent Acid Tank

IV. PRODUCTION AREA

As mentioned earlier in this history, the Picrate Area is located on the north slope of a natural ridge, running approximately East and West. Raw materials are brought into the area by means of a railroad on a spur running along the top of the ridge.

The process goes through five levels, and is then moved down a ramp approximately 500 feet to the dryer house. The exit from the ramp is at the second floor of the dryer house. The material is here dried, and then dropped to the ground level, where it is packed and made ready for shipment, by motor vehicle, to the storage magazine or shipping dock, as required.

DECLASSIFIED
Authority: NND 735001

Source: National Archives at College Park

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Building Materials:

The buildings are of "temporary construction" type, in which only wooden members have been utilized throughout, with the exception of the foundations and footings, which are of re-enforced concrete, built into the slope of the hill, thereby taking advantage of the natural contours to build up four levels behind bulk heads. These buildings have a minimum of interior supports, advantage being taken of overhead truss work, supported by side walls in order to obtain a maximum of free floor space.

DECLASSIFIED
Authority: NND 735001

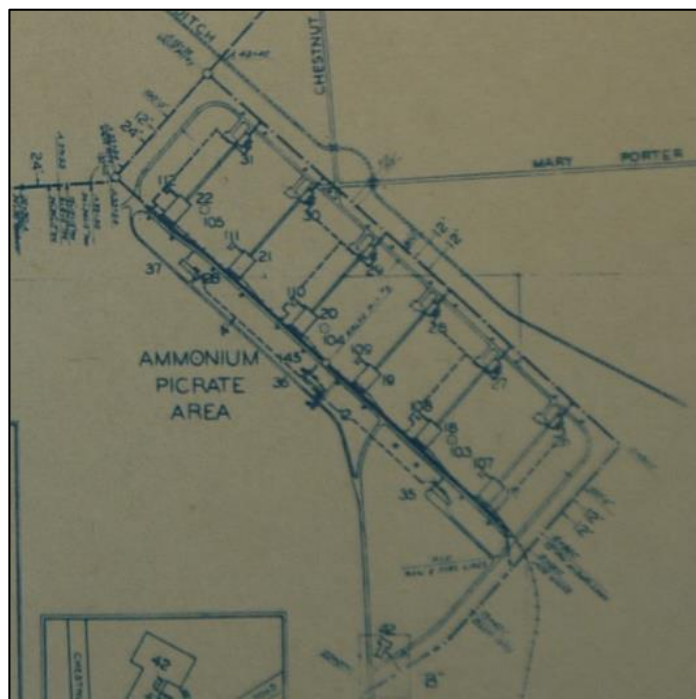
Source: National Archives at College Park



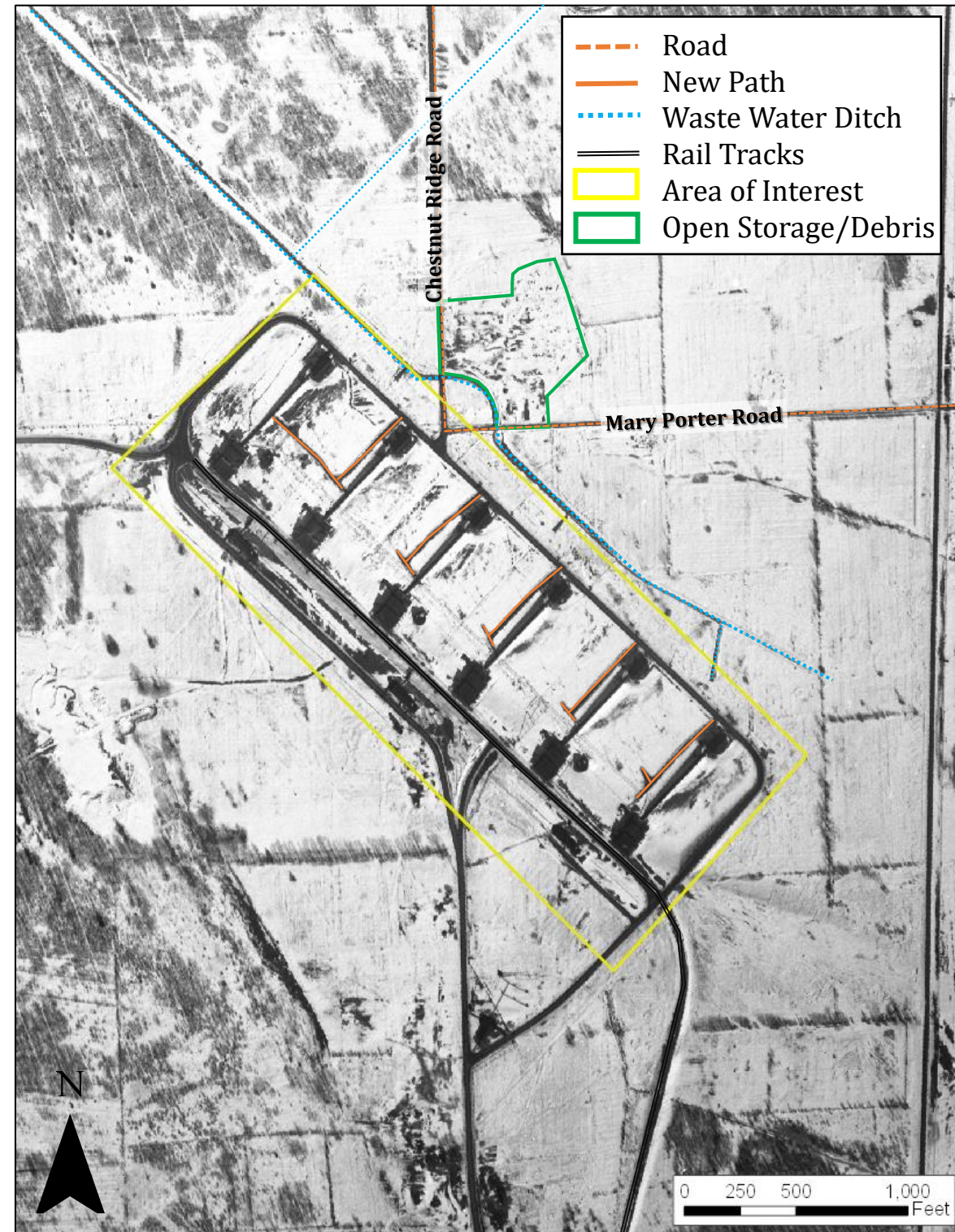
1944 Photographic Analysis: Former Ammonium Picrate Area



February 25, 1944 Oblique Photograph of Ammonium Picrate Area
Source: National Archives at College Park

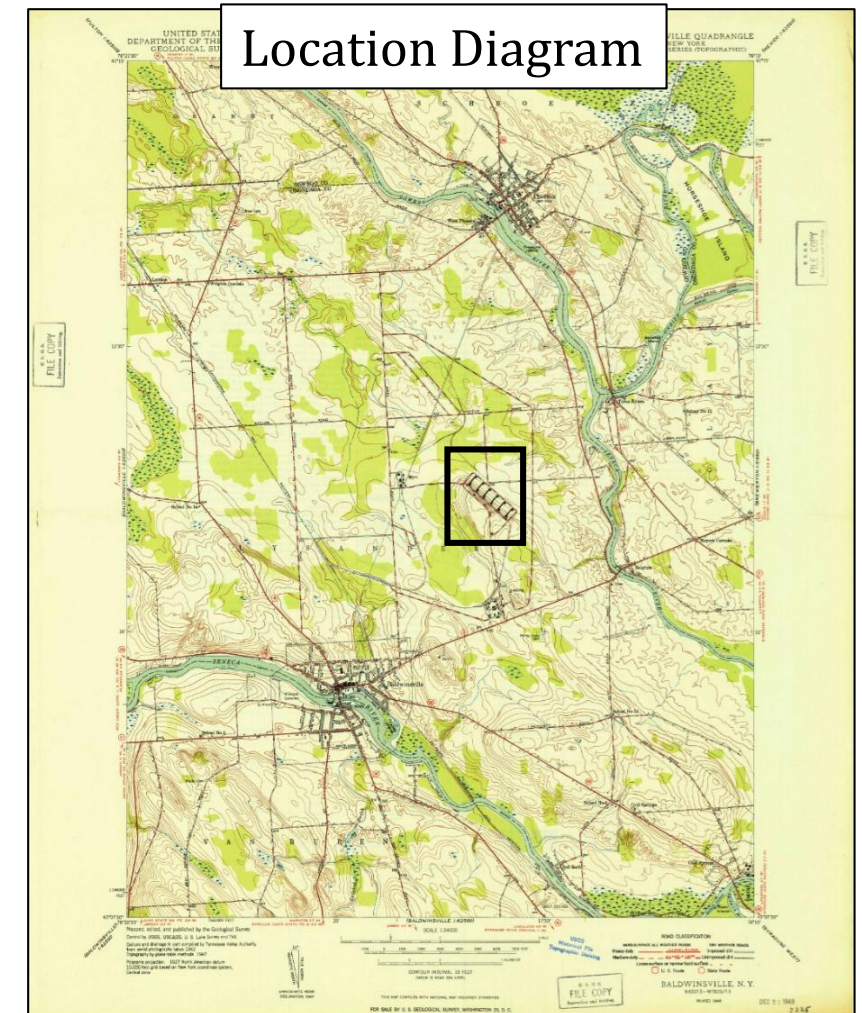


1943 Water Supply System Map
Source: National Archives at College Park



Source: National Archives at College Park

February 25, 1944



Source: Library of Congress

Roads around the Ammonium Picrate area are kept clear, to include the road to the borrow pit. Drainage trenches appear alongside the production lines. The open storage/dump area, while covered in snow, is still present.



1949 Photographic Analysis: Former Ammonium Picrate Area

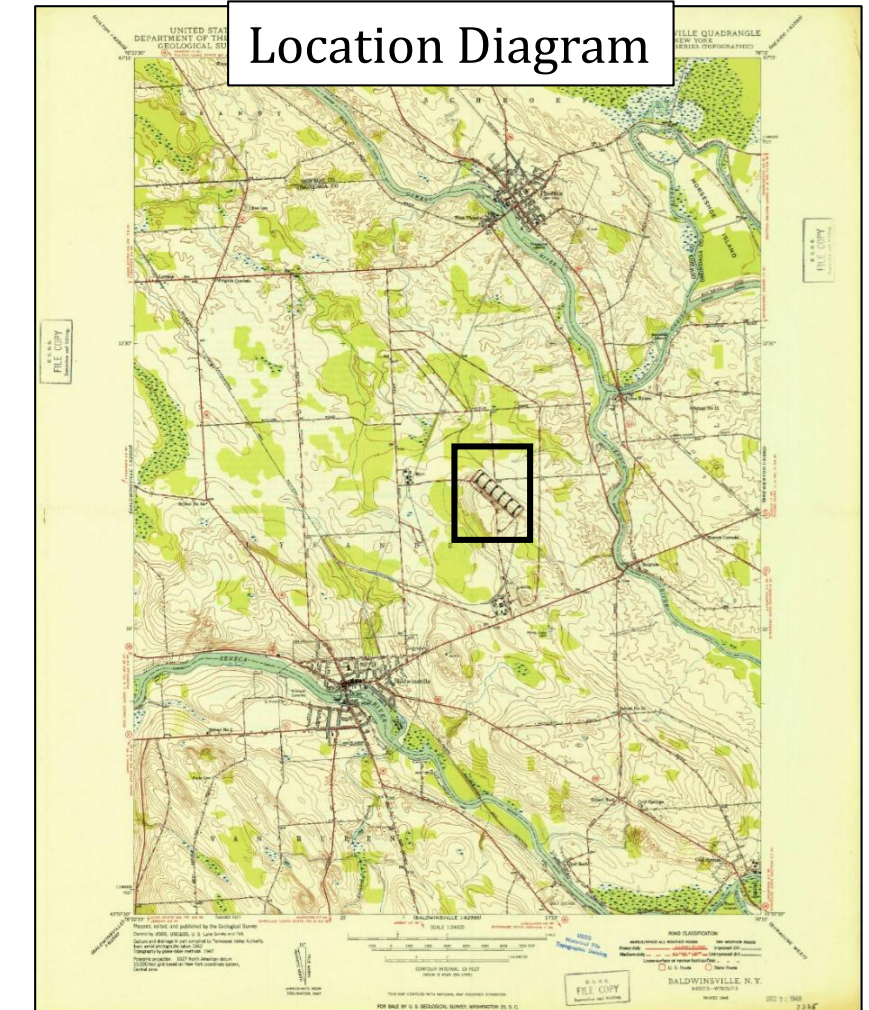
By 1949, tracks and trenches between the ammonium picrate production lines are visible and may be associated with the deconstruction of the buildings.

Some of the buildings have been removed, with just foundations remaining. The road to the borrow pit remains active and possible dumping is observed. The open storage/dump area northeast of the site has been cleared of debris and storage. The area is active.



Source: National Archives at College Park

June 01, 1949



Source: Library of Congress

- Road
- New Path
- Waste Water Ditch
- Rail Tracks
- Area of Interest
- Disturbed Ground
- Structure Removed
- Open Storage/Debris Removed

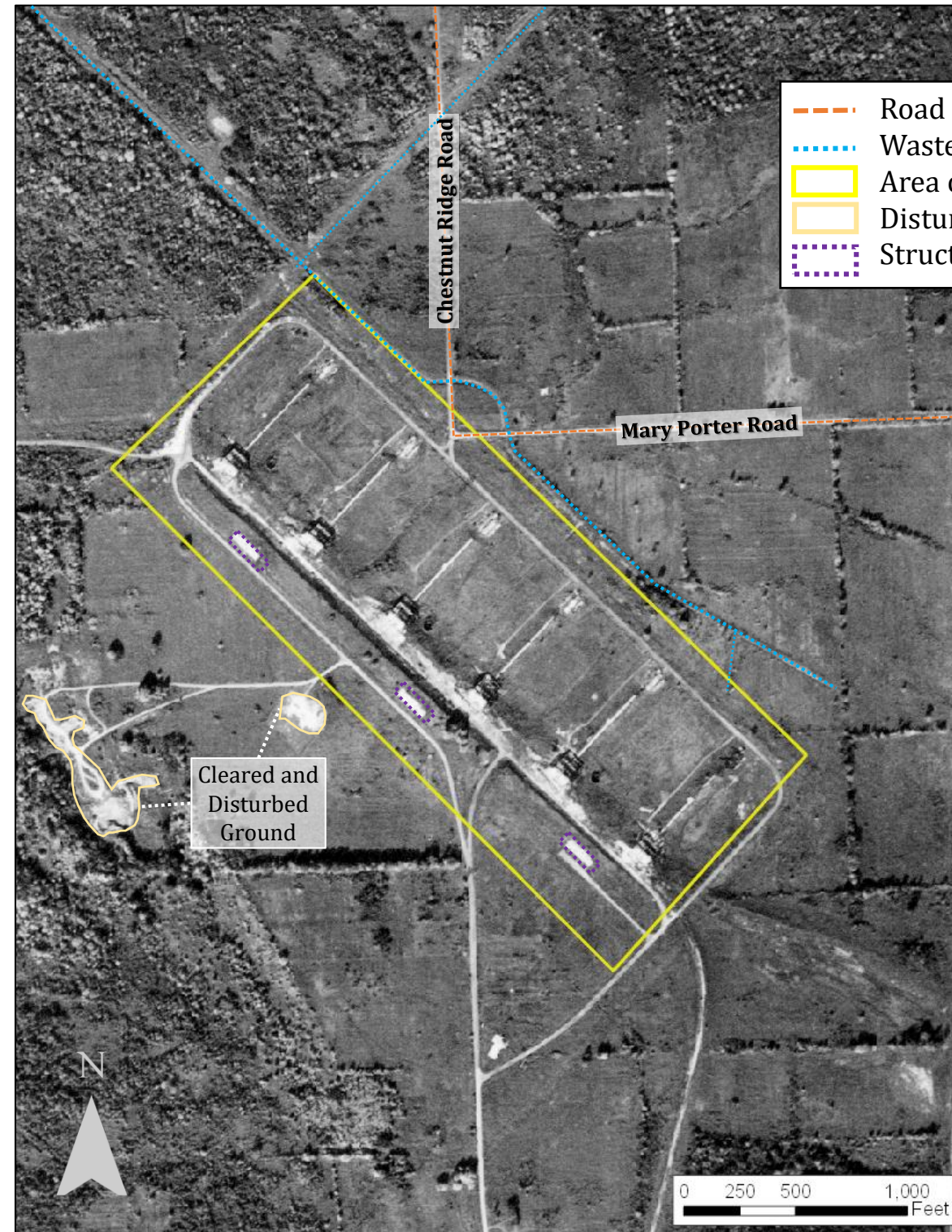




1951 Photographic Analysis: Former Ammonium Picrate Area

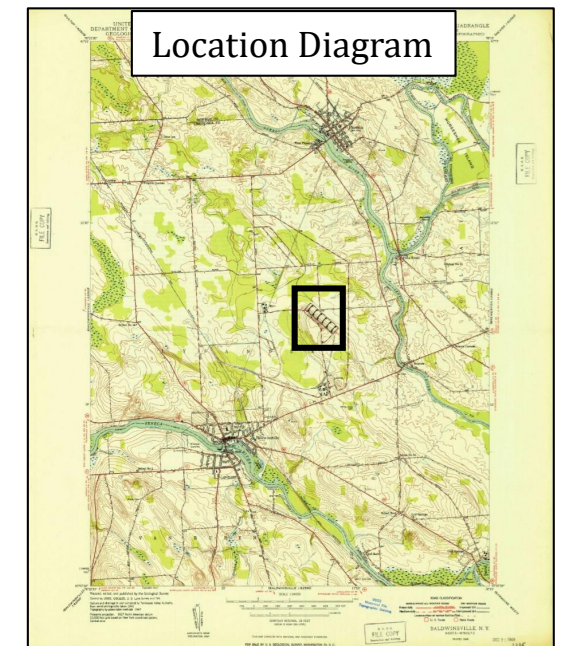


May 25, 1951 Photograph of Ammonium Picrate Area
Source: National Archives at College Park



Source: Cornell University Library

October 05, 1951



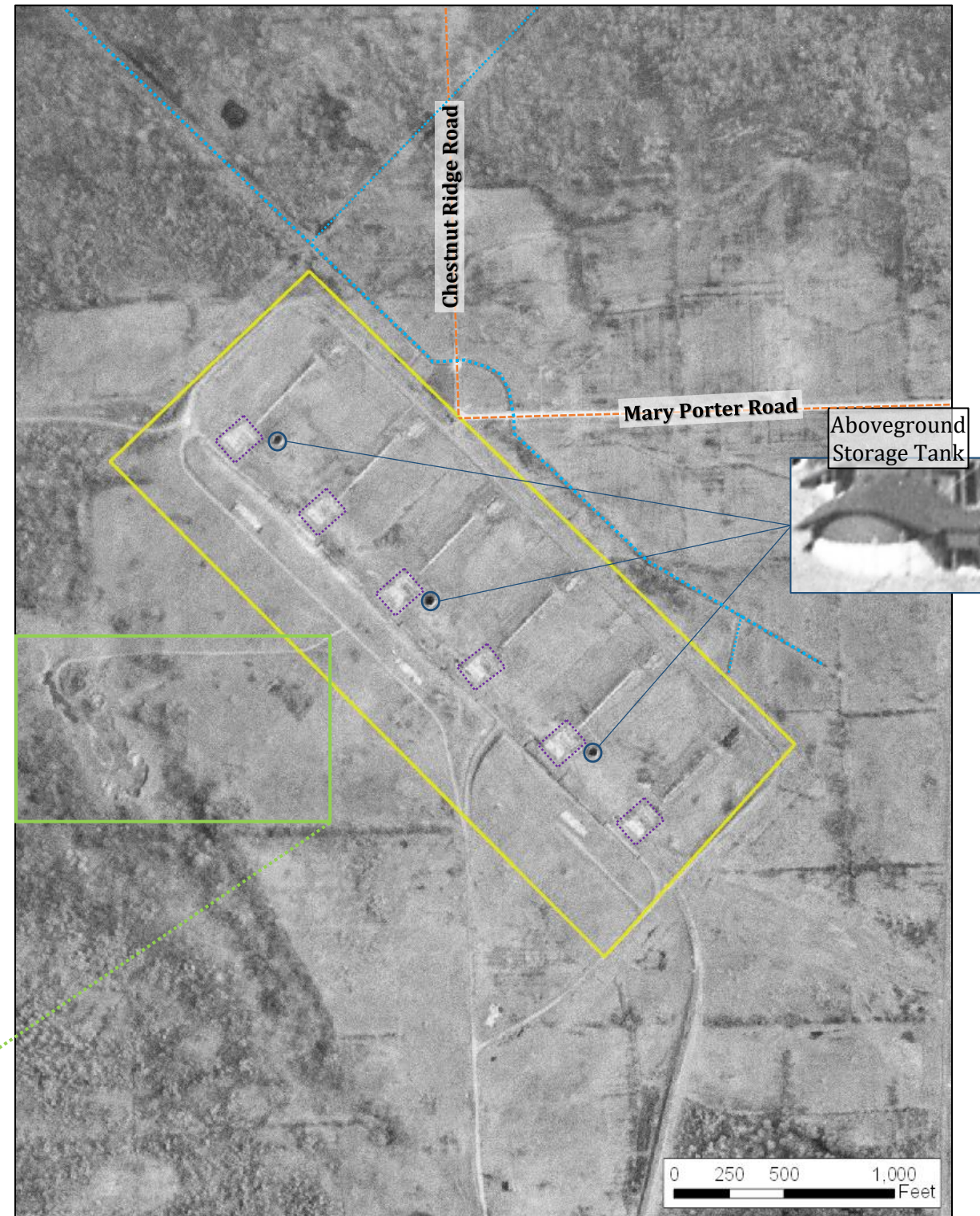
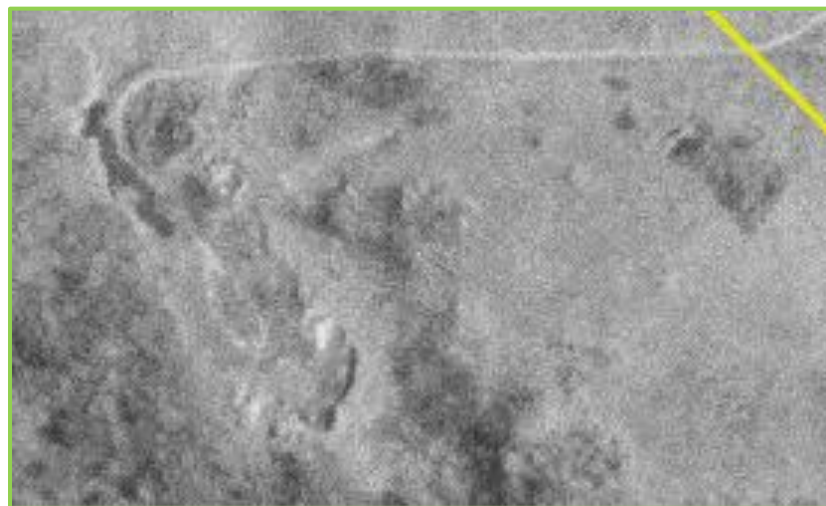
Source: Library of Congress

Continued use of the borrow pit area is visible. It is unclear from these photographs if the use includes dumping because mounds of material are visible within the borrow pit area. An additional area of cleared ground is visible along the road to the borrow pit. Three of the ammonium picrate buildings have been removed since 1949.



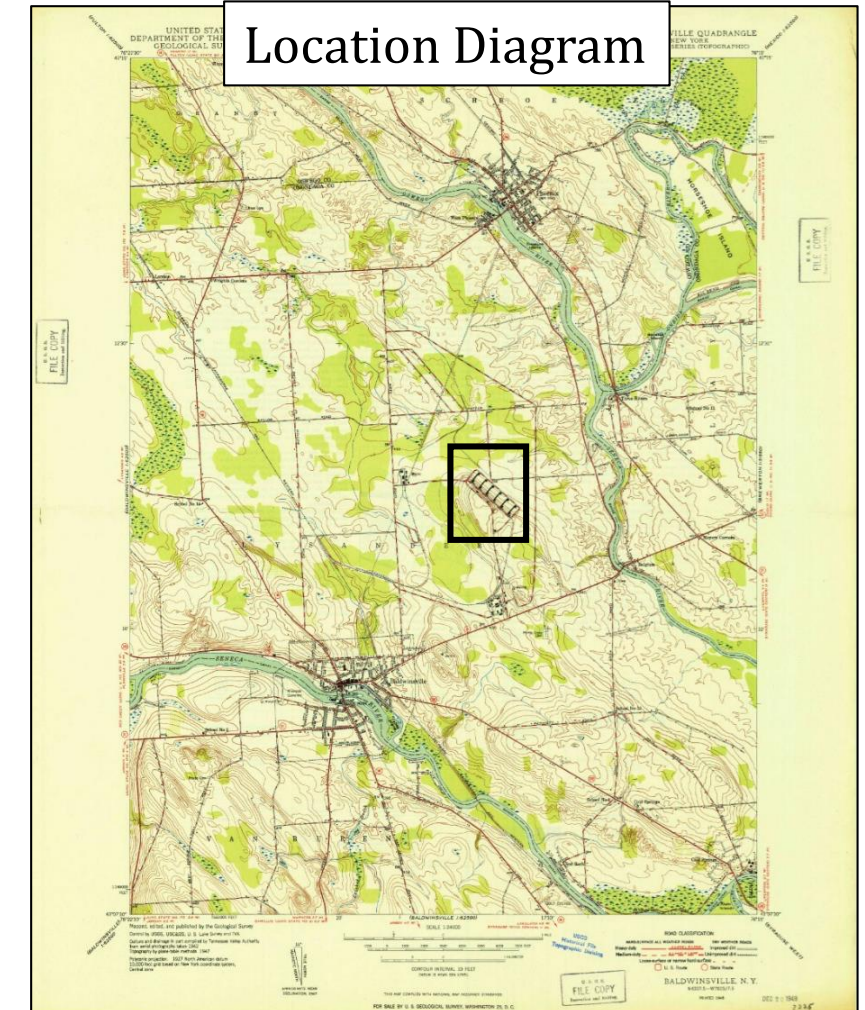
1956 Photographic Analysis: Former Ammonium Picrate Area

By 1956, more Ammonium Picrate buildings have been removed, although their foundations remain. The housing structures have been removed from the three above ground storage tanks within the Ammonium Picrate Area, exposing their cylindrical structures. An enlargement of the borrow pit area shows a varied landscape that could include a mix of borrowing and dumping activity.



Source: U.S. Geological Survey

May 07, 1956



Source: Library of Congress

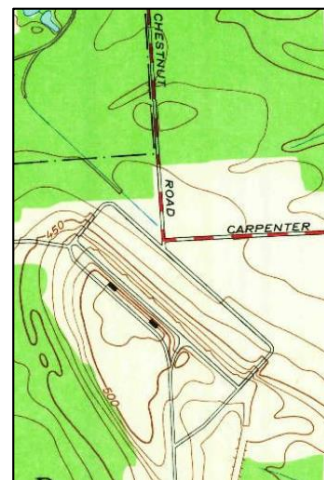
- Road
- Waste Water Ditch
- Area of Interest
- Structure Removed





1966 Photographic Analysis: Former Ammonium Picrate Area

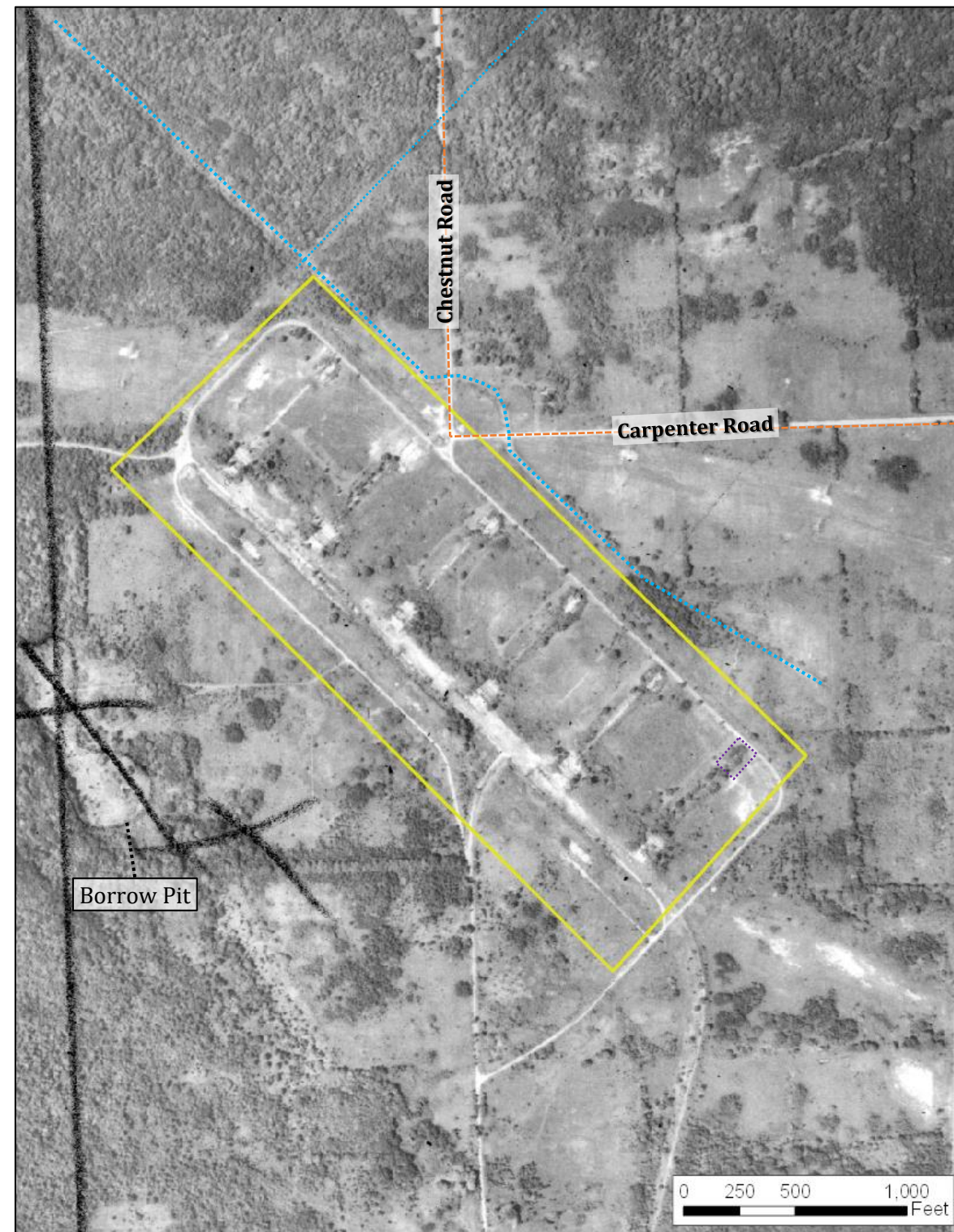
The last Ammonium Picrate building has been removed; however some building foundations remain. Some of the roads within the Ammonium Picrate area are still active. Vegetation is visible within the area as well. A 1957 map shows Chestnut Ridge Road was renamed to Chestnut Road and Mary Porter Road was renamed to Carpenter Road (see below). The road to the borrow pit is still active.



1957 Map Showing Road Names
Source: Library of Congress

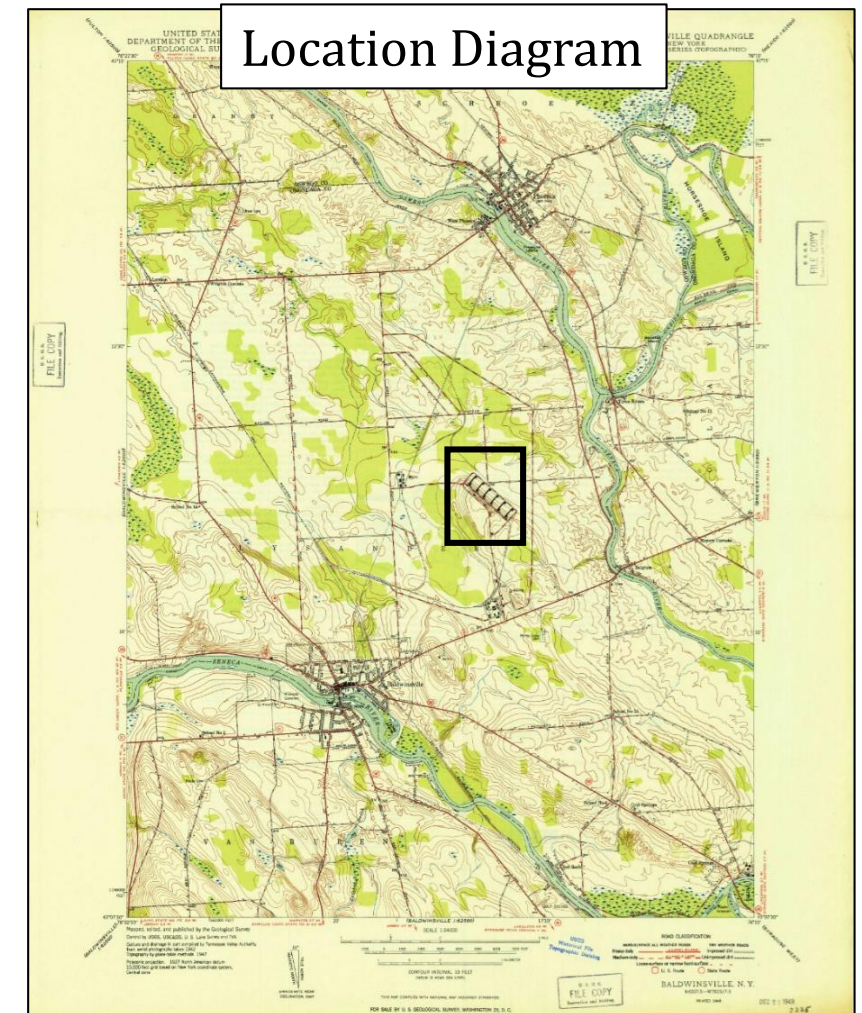


Note: There are penciled annotations on the aerial print. These markings include an outline around the borrow pit.



Source: Cornell University Library

June 22, 1966



Source: Library of Congress

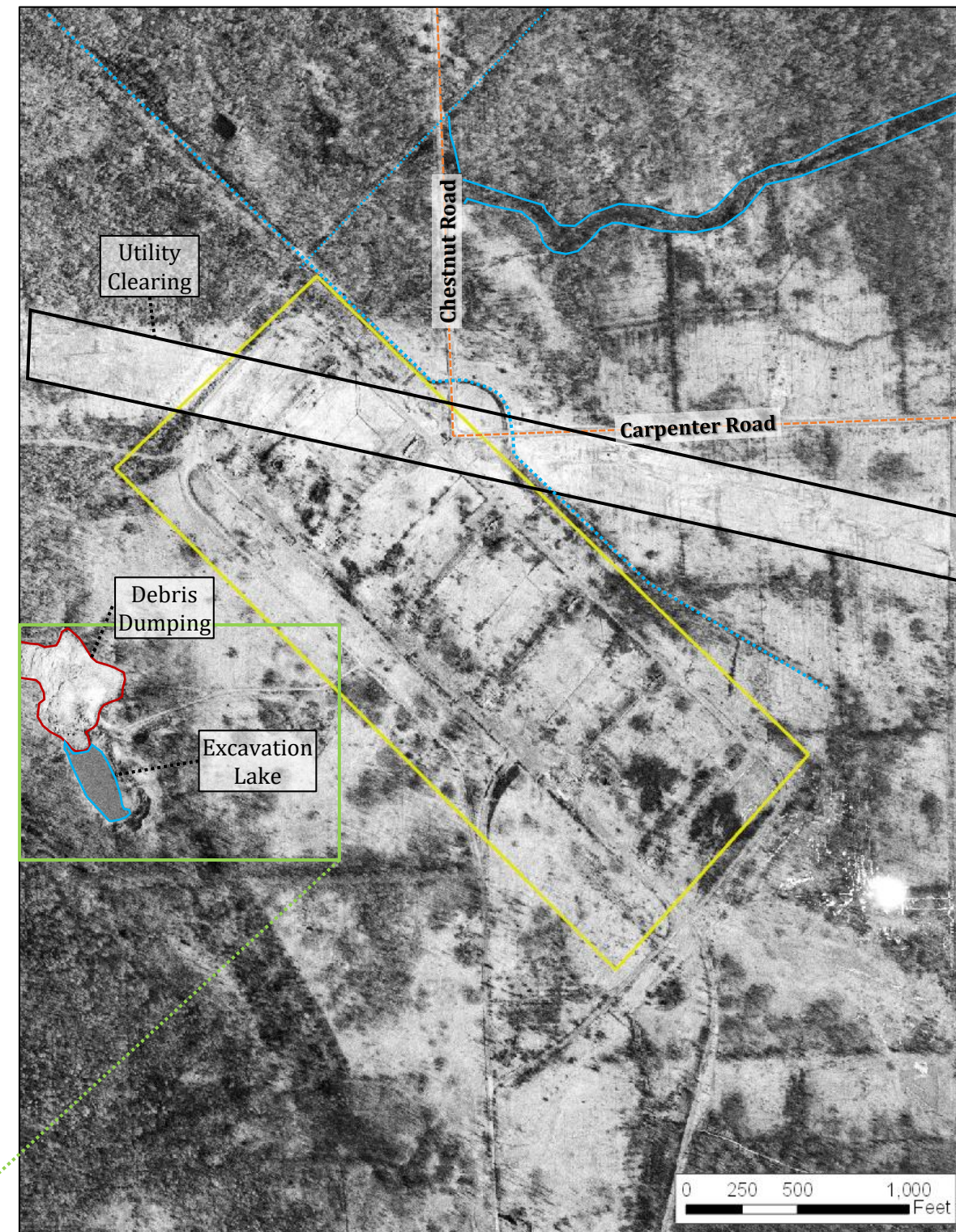
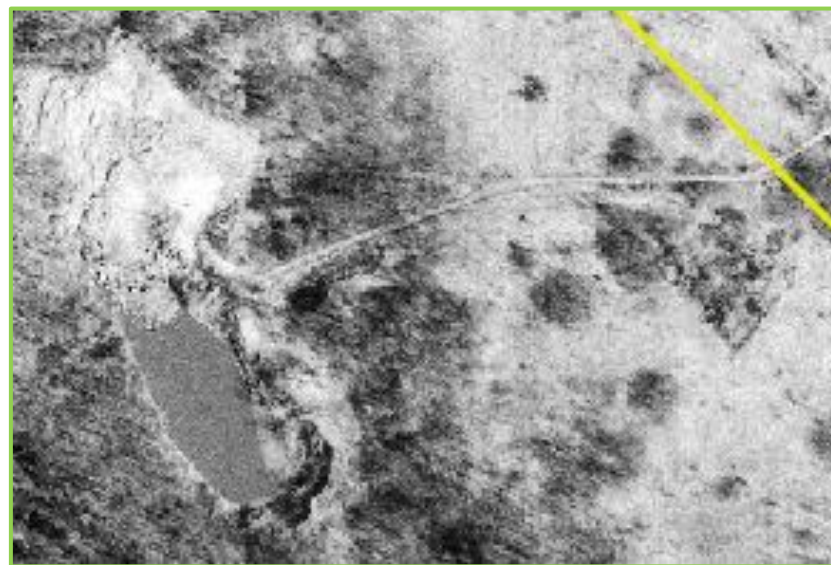
- Road
- Waste Water Ditch
- Area of Interest
- Structure Removed



1972 Photographic Analysis: Former Ammonium Picrate Area

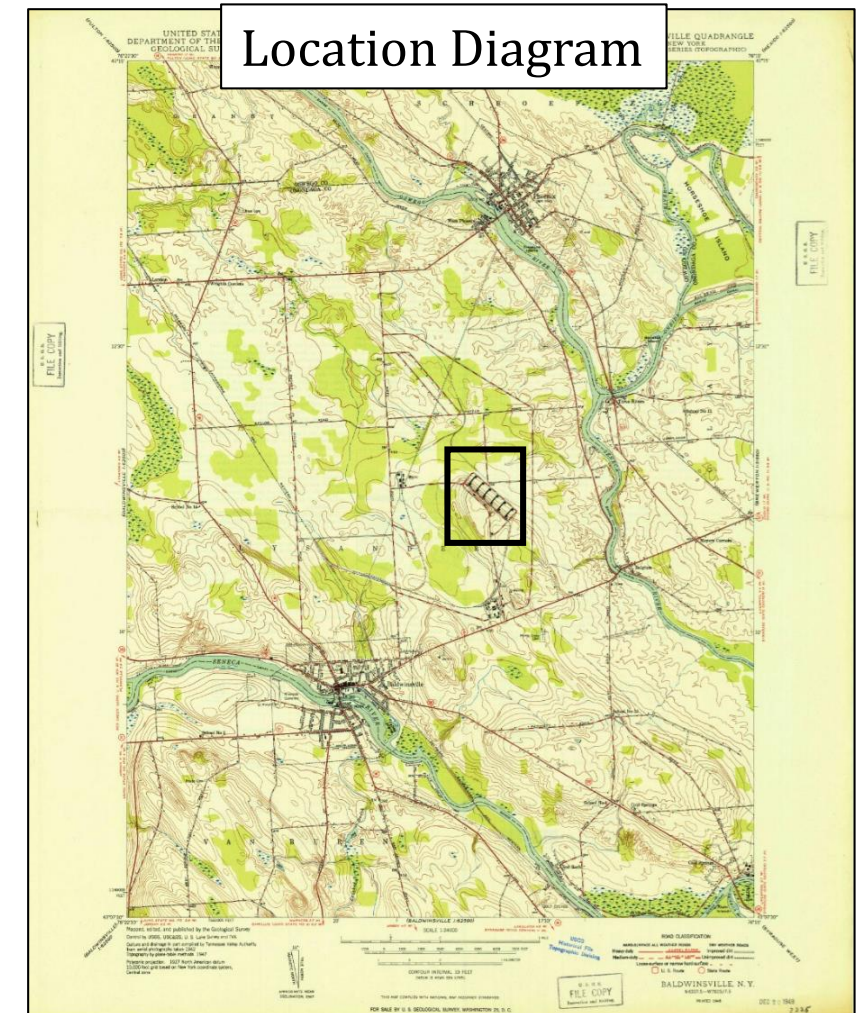
Water has filled part of the borrow pit, forming an excavation lake. To the north of this lake, large mounds of material are observed that were not visible in previous years.

A utility clearing is visible crossing northwest to southeast through the northern section of the former Ammonium Picrate area.



Source: U.S. Geological Survey

May 06, 1972



Source: Library of Congress

- Road
- ... Waste Water Ditch
- Area of Interest
- Estimated Wetland
- Area of Debris

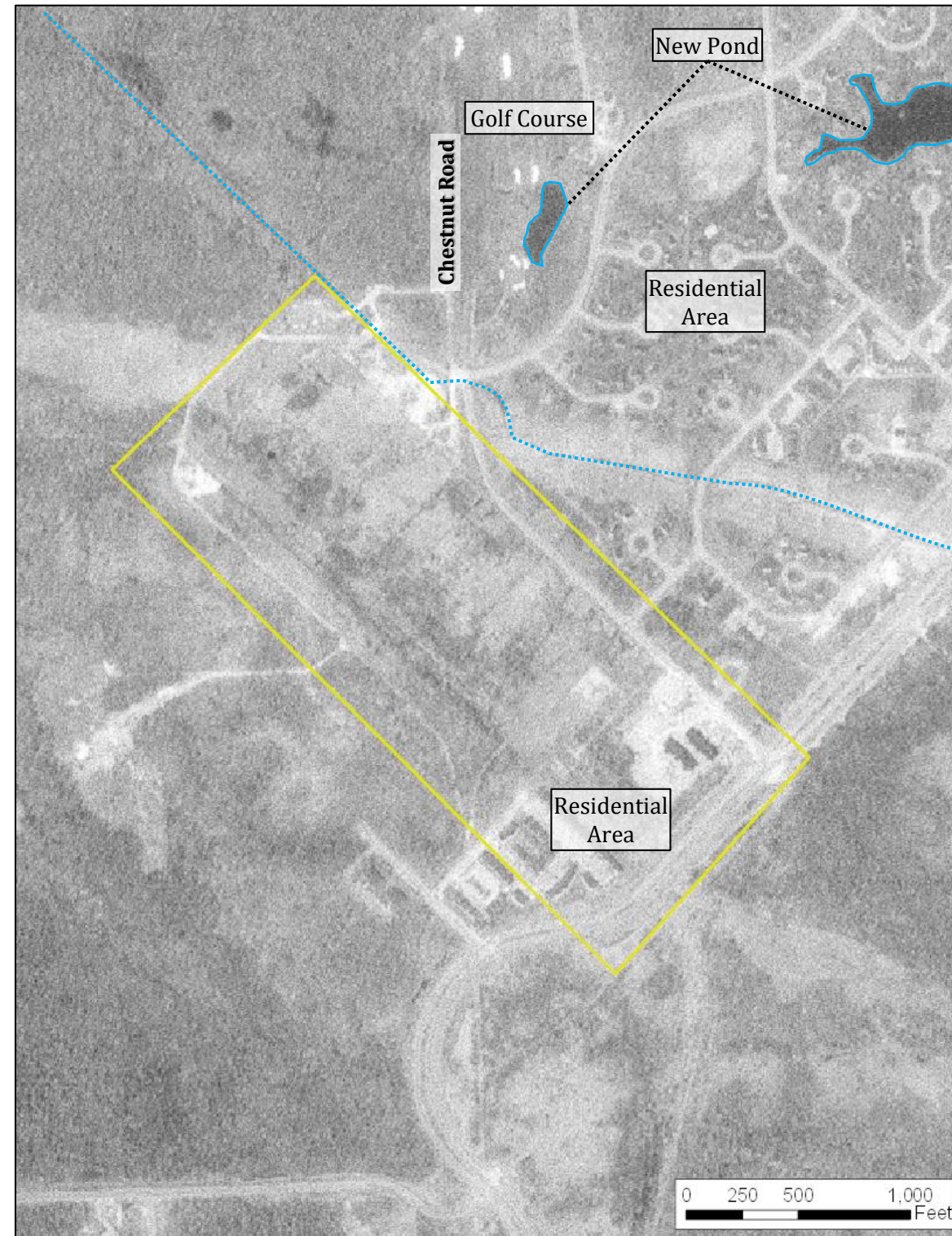




1981 Photographic Analysis: Former Ammonium Picrate Area

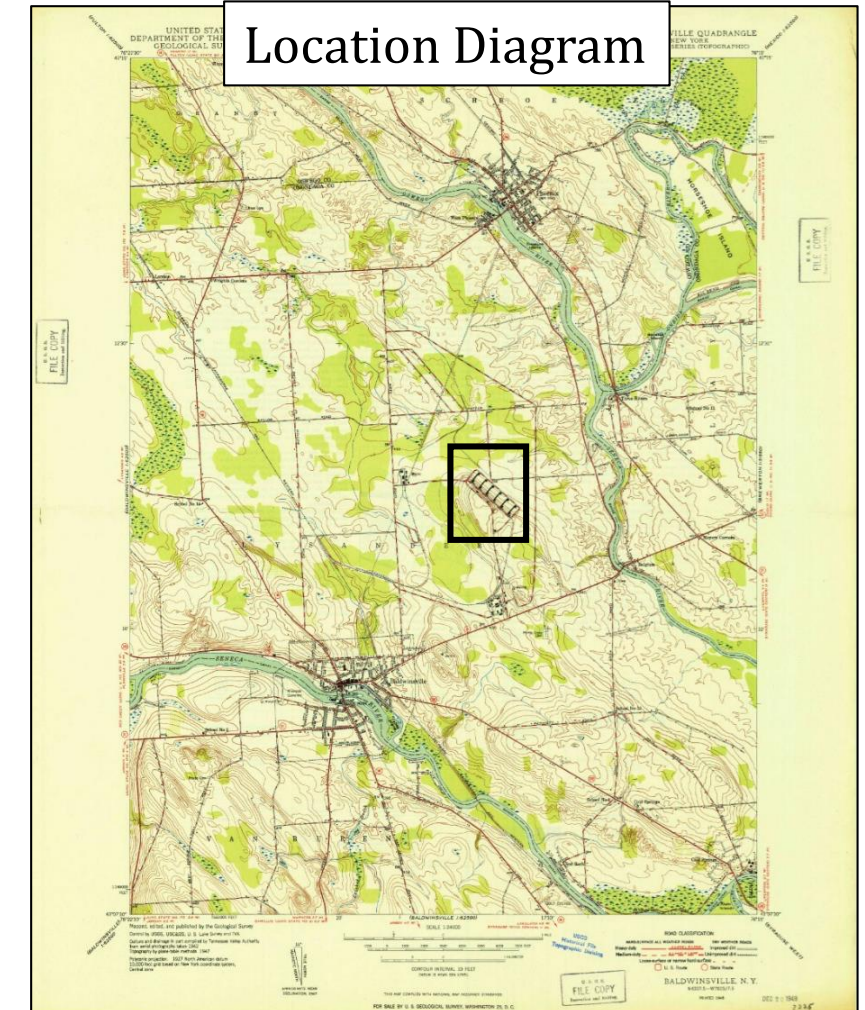
The remnants of the ammonium picrate area structures have been removed. Construction of residential roads and homes are observed. The southernmost section of the golf course is visible north of the former Ammonium Picrate area boundary. Carpenter Road no longer exists and has been built over.

Despite the poor spatial resolution of the aerial photography, it is clear that the access road and borrow pit area continue to be utilized. The drainage path to the north of the Area of Interest has been altered with the residential housing development.



Source: U.S. Geological Survey

April 16, 1981



Source: Library of Congress

- Waste Water Ditch
- Area of Interest
- Estimated Wetland





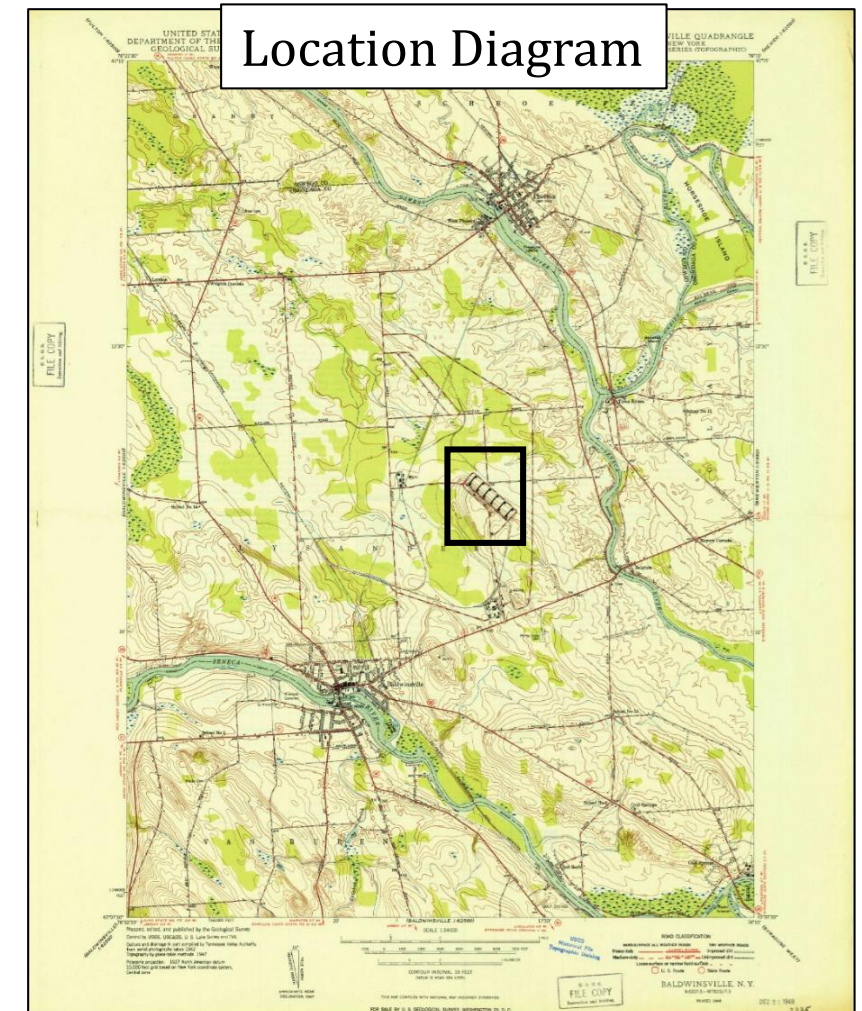
1982 Photographic Analysis: Former Ammonium Picrate Area

New residential housing areas have been constructed within the former Ammonium Picrate area. The access road and borrow pit area continue to be utilized. The excavation lake observed earlier has been filled in, possibly with construction debris.



Source: U.S. Geological Survey

April 29, 1982



Source: Library of Congress

- Waste Water Ditch
- Area of Interest
- Estimated Wetland





1995 Photographic Analysis: Former Ammonium Picrate Area

Continued development of residential housing is observed southeast of the former Ammonium Picrate area.

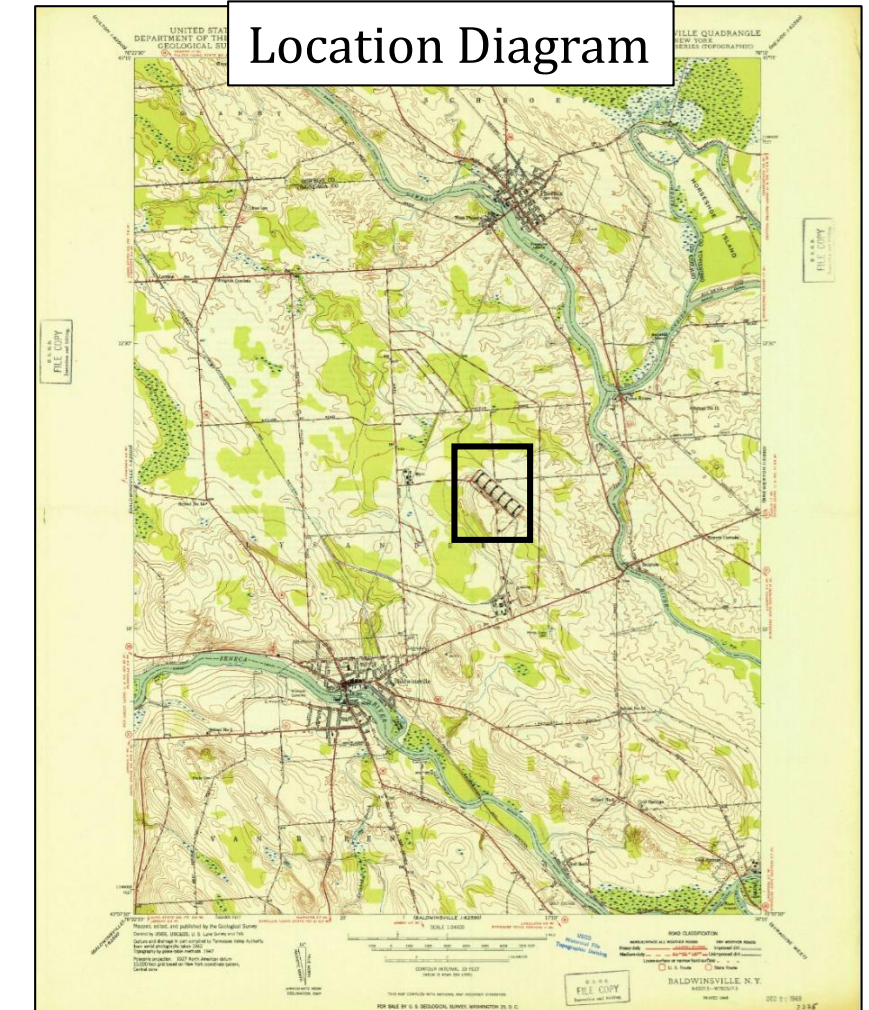
A former parking lot has been expanded and turned into long-term storage for large vehicles such as boats and RVs.

The access road to the former borrow pit is still active and large area of material is visible.



Source: U.S. Geological Survey

March 27, 1995



Source: Library of Congress

- Waste Water Ditch
- Area of Interest
- Estimated Wetland





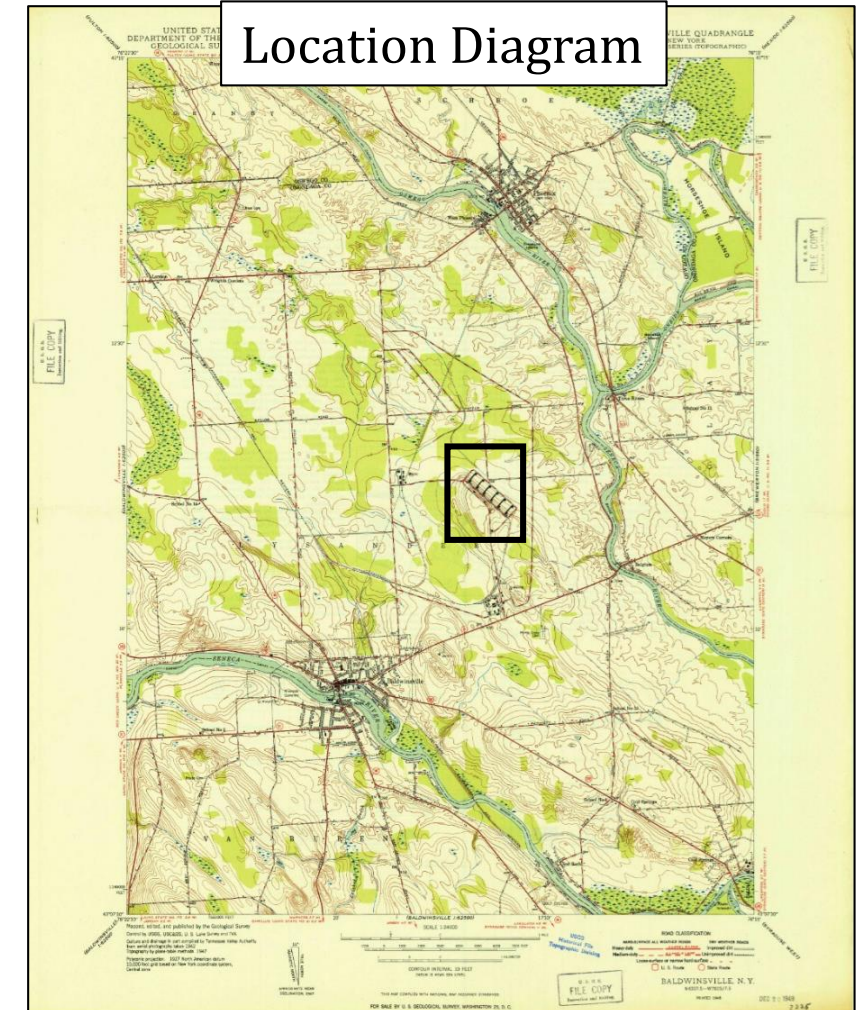
2003 Photographic Analysis: Former Ammonium Picrate Area

By 2003 a new residential housing area is being constructed west of the former Ammonium Picrate area. This new housing area is adjacent to the former borrow pit area. A new access road from the north connects to the former borrow pit area. The long-term open storage area has been expanded upon. An area of disturbed ground can be seen in the northwestern corner of the former Ammonium Picrate area boundary.



Source: U.S. Geological Survey

April 14, 2003



Source: Library of Congress

- Waste Water Ditch
- Area of Interest
- Estimated Wetland
- Disturbed Ground



2019 Photographic Analysis: Former Ammonium Picrate Area

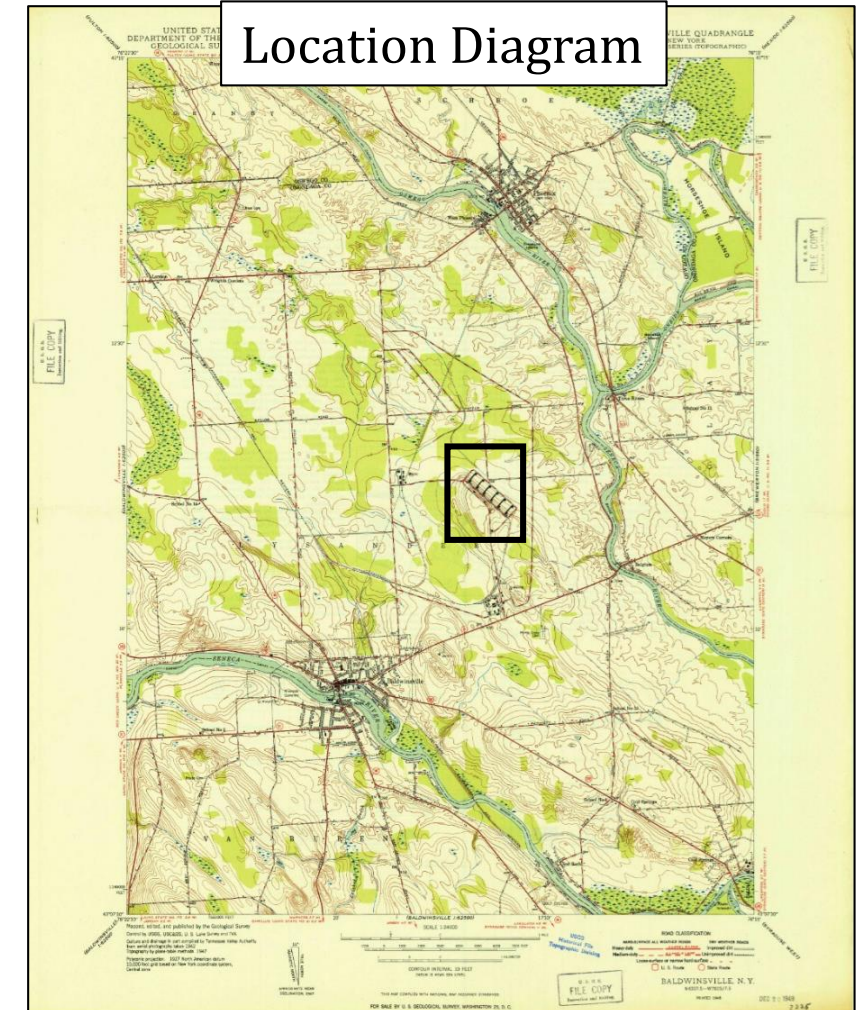
The 1943 former Ammonium Picrate area structures, including the borrow pit extent, are overlaying this 2019 image.

The land in and around the former Ammonium Picrate area is mostly residential and forest. The former borrow pit site (and subsequent dumping site) has largely revegetated, however there is still evidence of active use. The long-term open storage area has again been expanded.



Source: Digital Globe

September 25, 2019



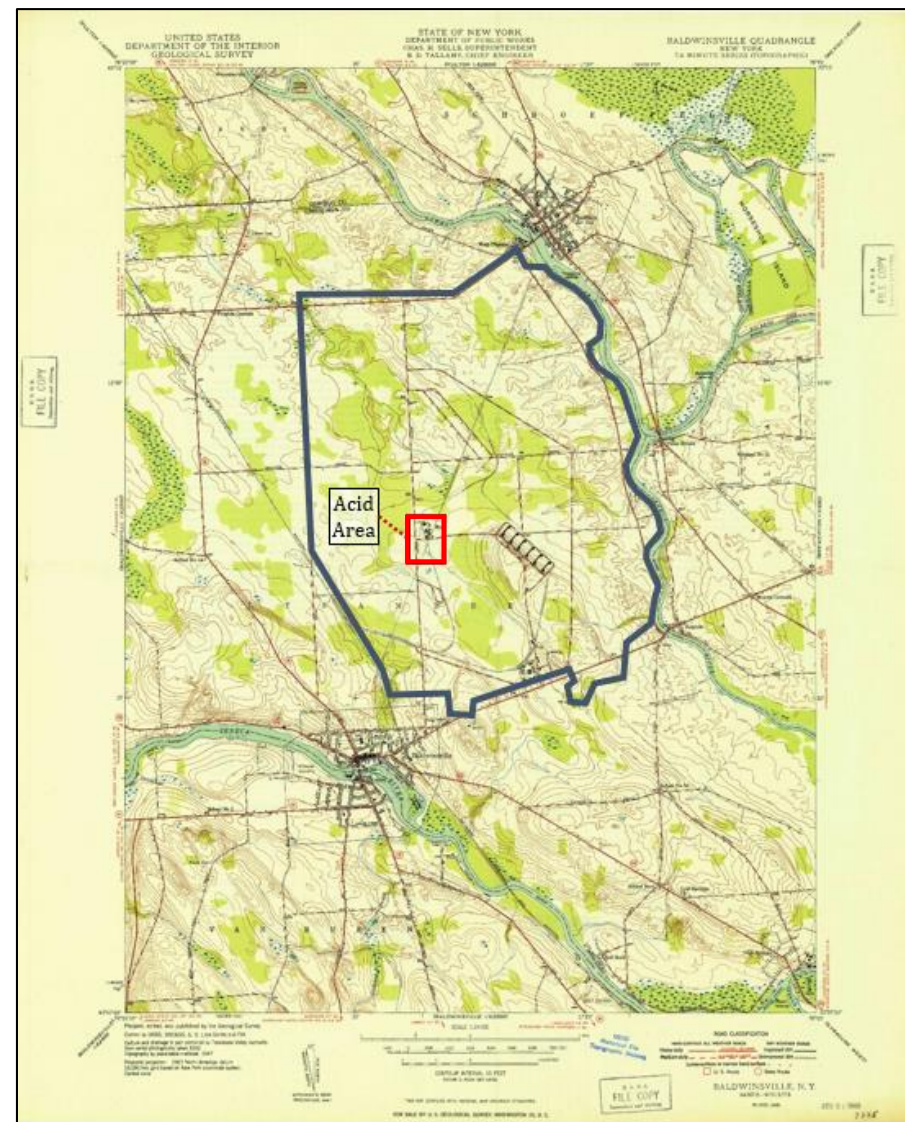
Source: Library of Congress

- Waste Water Ditch
 - Area of Interest
 - Estimated Wetland
 - Location* of Former Ammonium Picrate Line Infrastructure
 - Location* of former Borrow Pit
- *Estimated from 1943





Photographic Analysis Former Acid Area



Source: Library of Congress

1948

- Former New York Ordnance Works Boundary
- Area of Interest



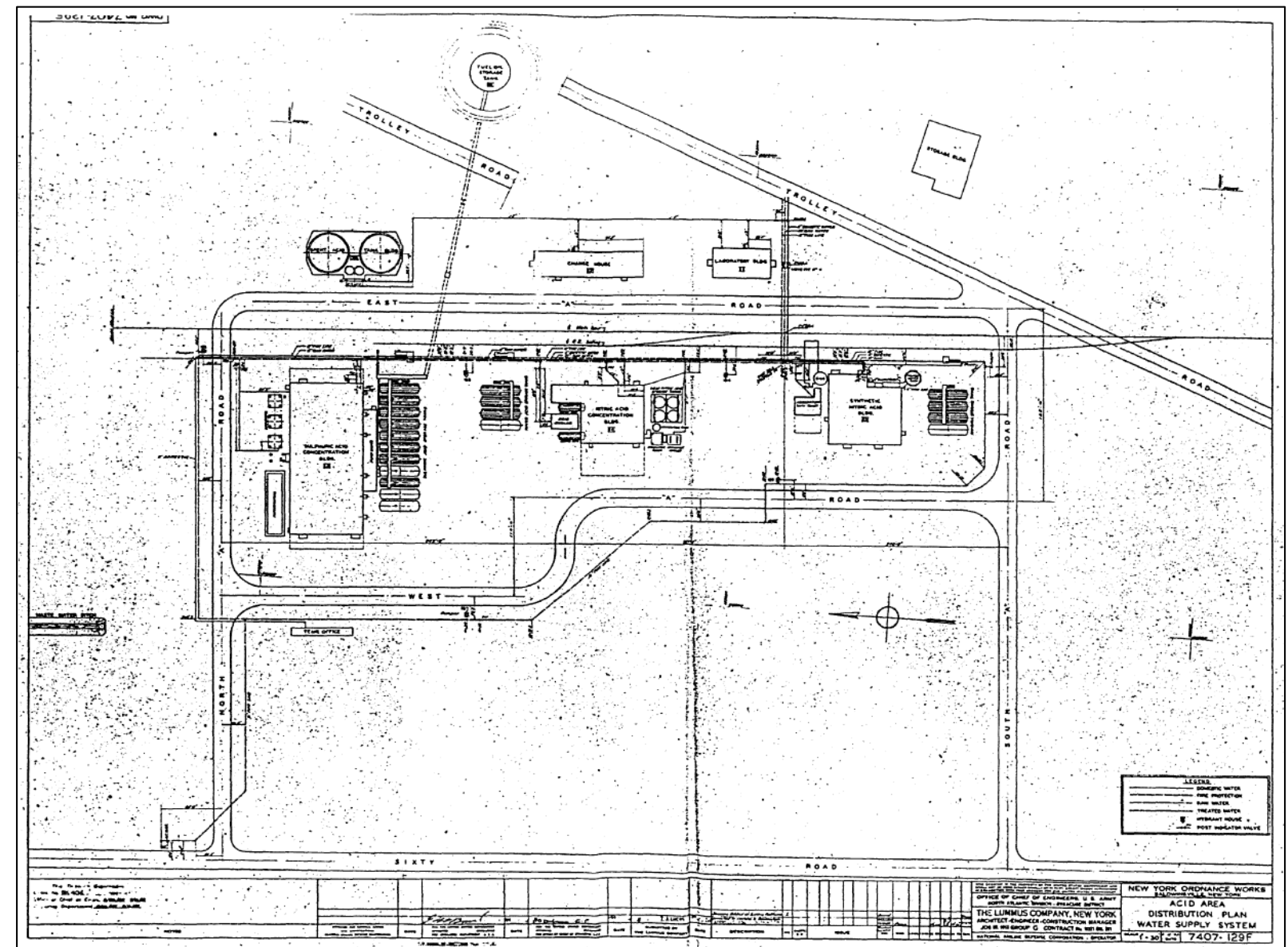
Former Acid Area: Background

The Acid Plant is the low-pressure Chemical Construction Corp. type ammonium oxidation plant, supplemented by a nitric acid concentrating plant, and a spent sulfuric acid concentrating plant. The Acid Works is located on the far western road of the "critical" area, midway between the north and south boundaries of the Plant. The location of this acid unit is such, that it is on the west "Y" of the main discharge ditch of the Plant. Additional consideration in its location, is a gravity forward line running from the spent acid storage of the picrate acid, to the sulfuric acid concentrating plant.

The Acid Plant consists of two 30-ton ammonia oxidation units, 6 concentrated nitric acid units, and 5 sulfuric acid concentrators, 2 being of the low-stage type, and 2 of the high-stage type concentrators. The low-stage concentrators are equipped with a water scrubbing system, while the high-stage concentrators are equipped with "Cottrell" mist precipitators, for fume removal.

NYOW Vol 1. History Thru Dec. 1942

DECLASSIFIED
Authority DND 735001



Source: U.S. Army Corps of Engineers FUDS Portal || 1999 Archive Search Report Findings for NYOW || C02NY029003_01.02_0001_a

Source: National Archives at College Park



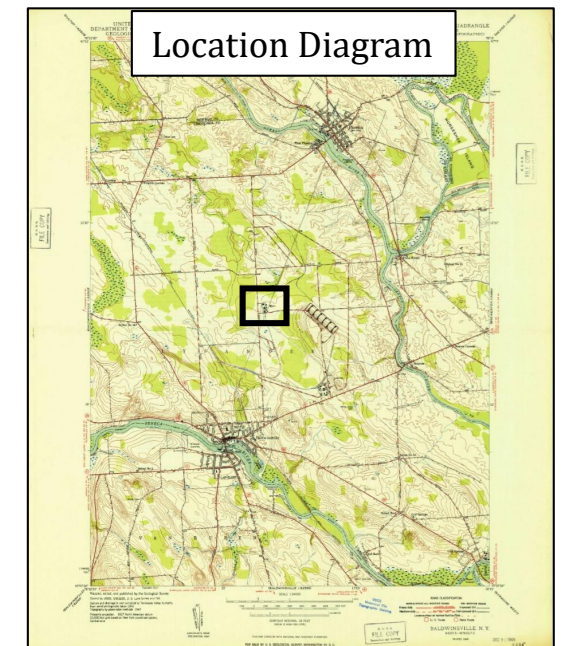
1938 Photographic Analysis: Former Acid Area

The land is primarily agricultural with some farming and residential structures visible.



Source: National Archives at College Park

September 05, 1938



Source: Library of Congress

- Road
- ... Water Drainage/Stream
- Area of Interest
- Estimated Wetland





1943 Photographic Analysis: Former Acid Area



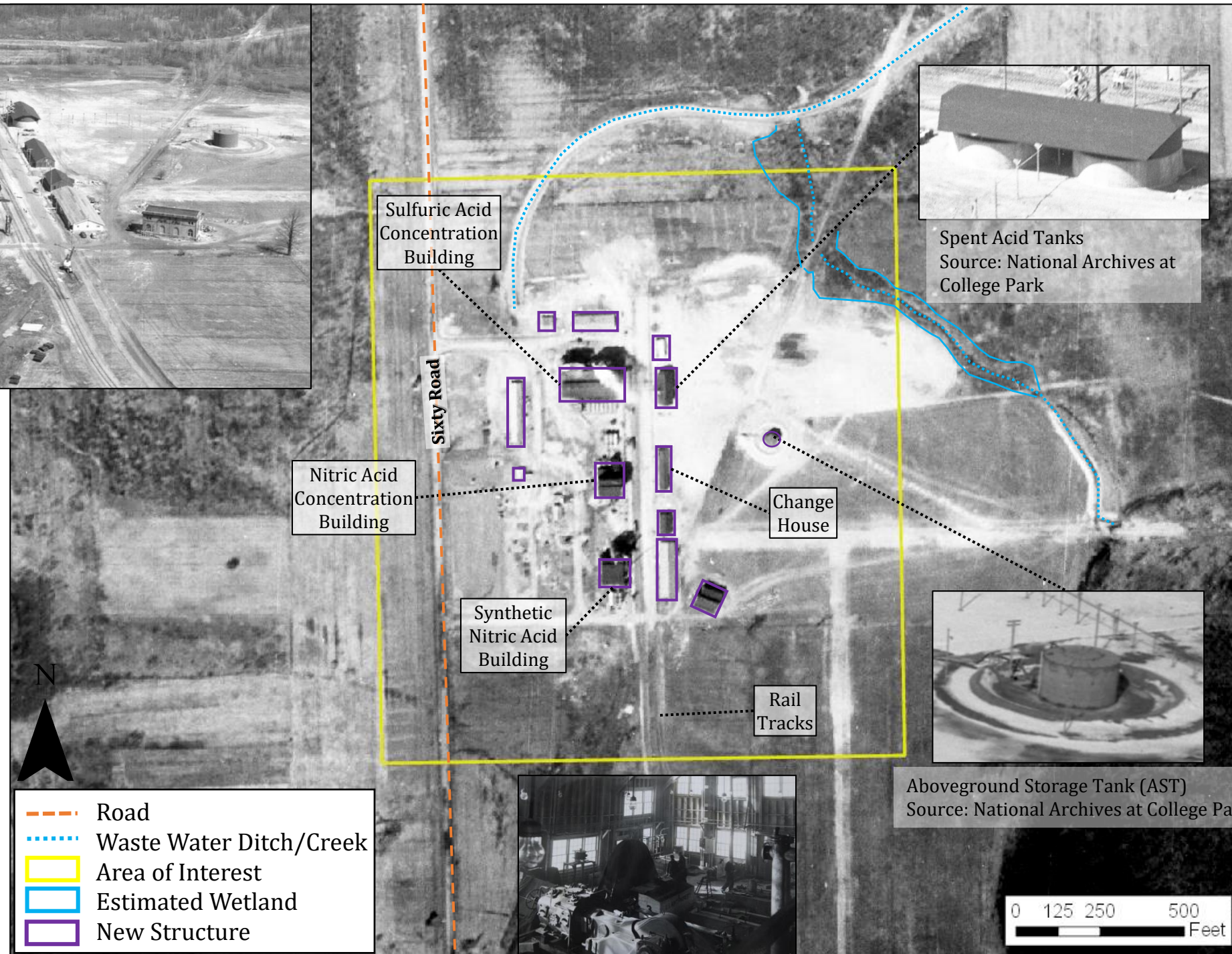
April 18, 1943 Oblique Photograph of Acid Area
Source: National Archives at College Park



December 08, 1942 Sulfuric Acid Building and Tank
Source: National Archives at College Park



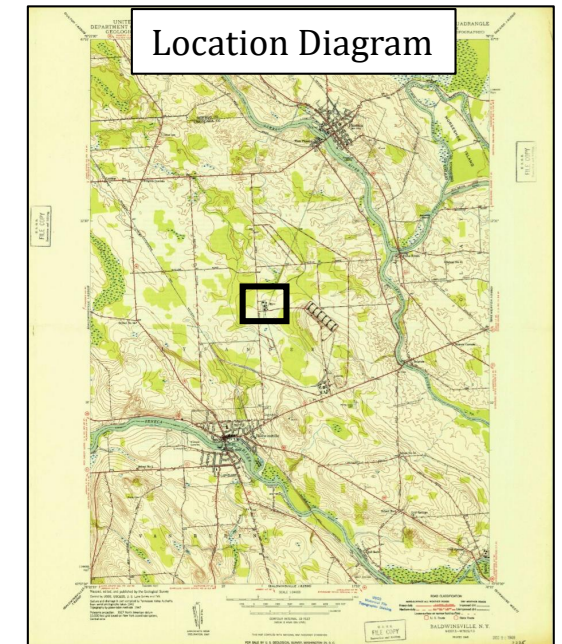
April 18, 1943 Oblique Photograph of Acid Area
Source: National Archives at College Park



Source: National Archives at College Park

January 06, 1943 Synthetic Nitric Acid Building: View of Main Floor
Source: National Archives at College Park

April 11, 1943



Source: Library of Congress

By 1943 the buildings and infrastructure making up the Acid Area are visible.

Known structures/buildings have been labeled.

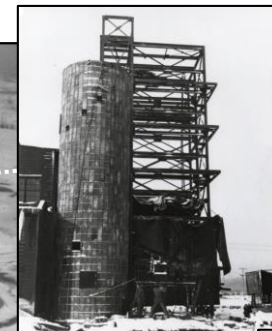
Usage of the AST is discussed on the next page.



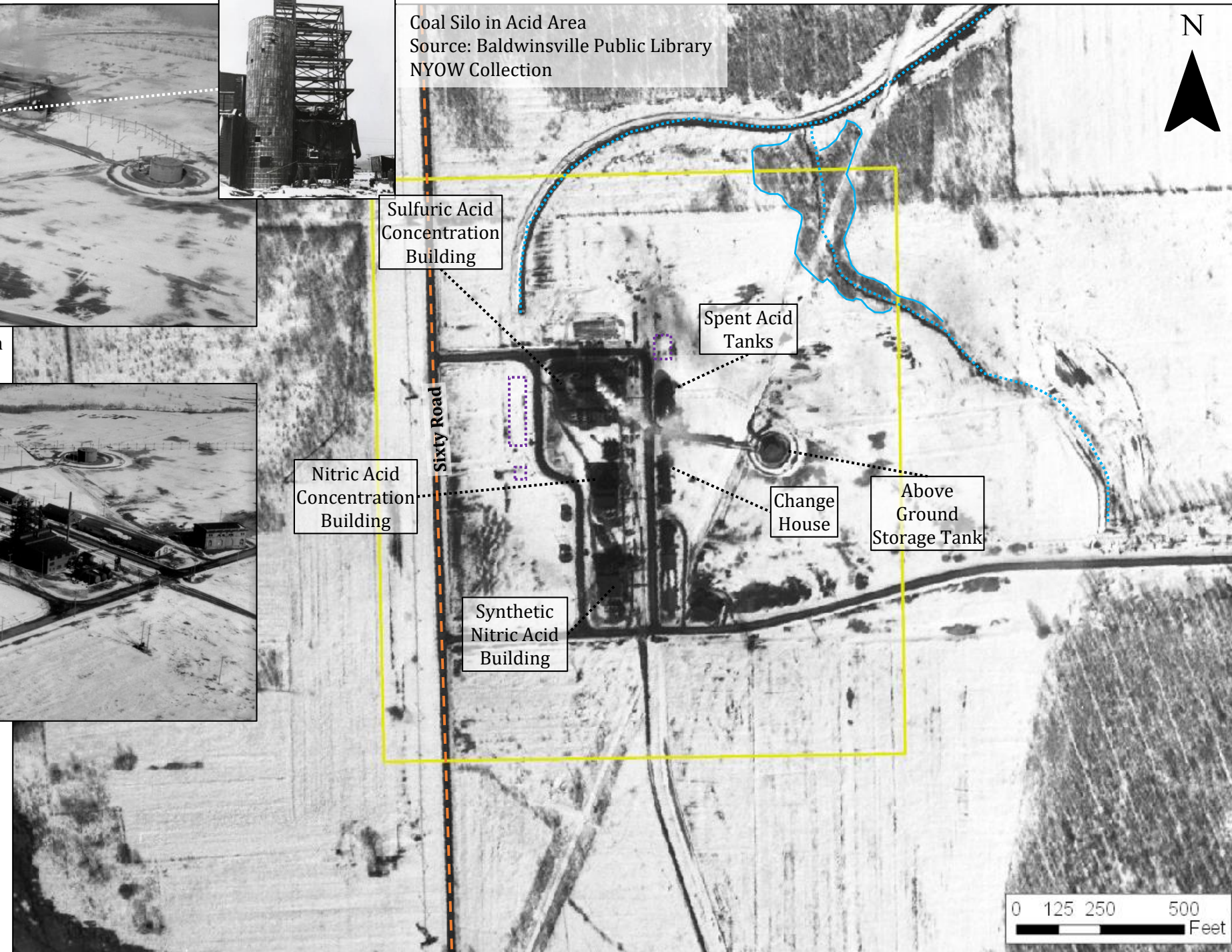
1944 Photographic Analysis: Former Acid Area



February 25, 1944 Oblique Photographs of Acid Area
Source: National Archives at College Park



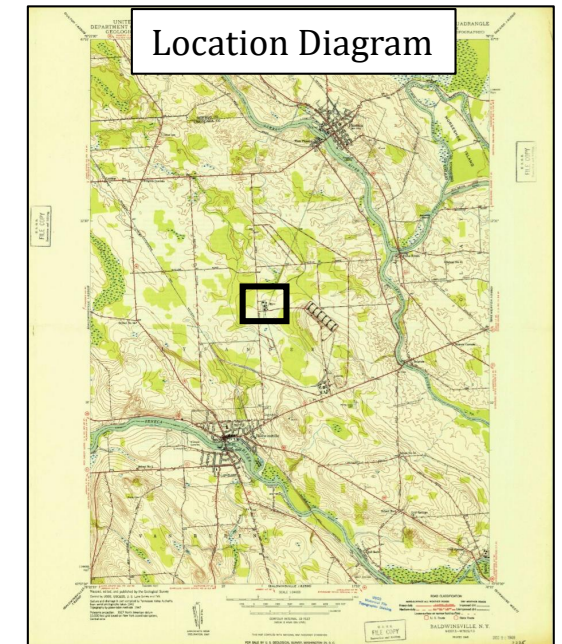
Coal Silo in Acid Area
Source: Baldwinsville Public Library
NYOW Collection



Source: National Archives at College Park

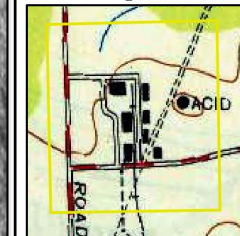
February 25, 1944

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed

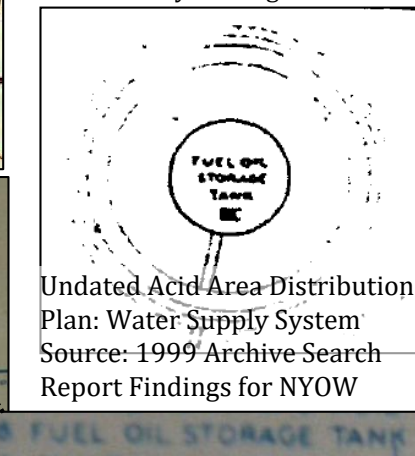
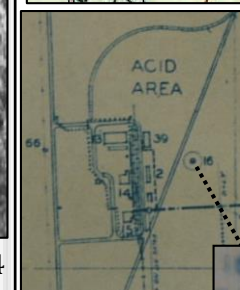


Source: Library of Congress

Aboveground Storage Tank (AST)
The AST in the Former Acid Area has been identified on historical maps (below) as both an Acid Tank and a Fuel Oil Storage Tank. See Appendix for full maps.



«1948 USGS Topo Map
Source: Library of Congress

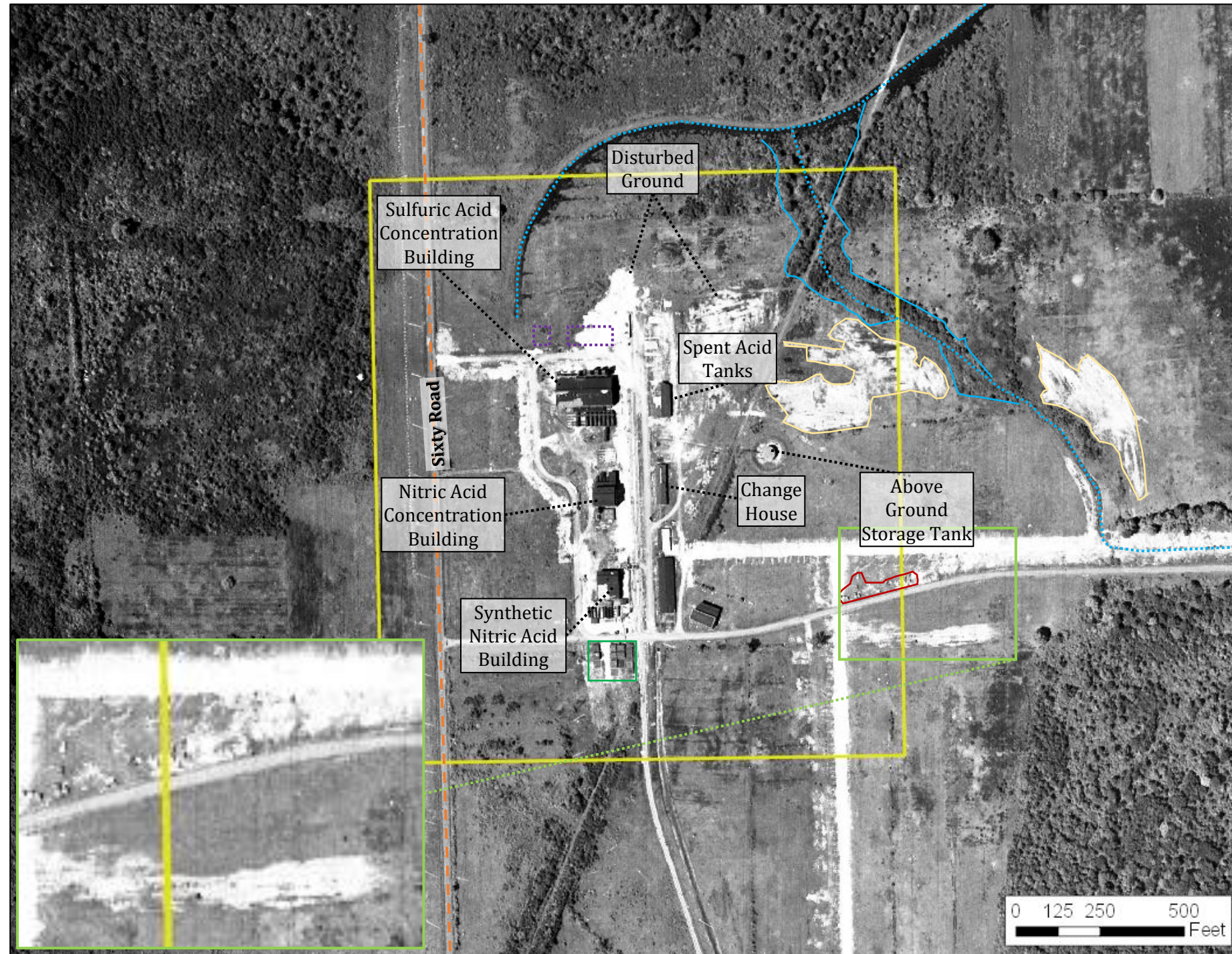


1943 Water Supply System Map
Source: National Archives at College Park



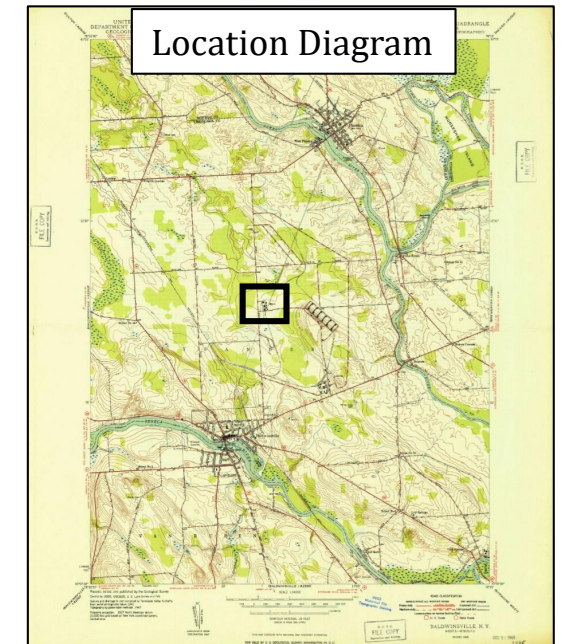
1949 Photographic Analysis: Former Acid Area

Some structures have been removed between 1944 and 1949. A small area of debris is near the intersection of newly disturbed ground (see enlargement below). Much of the linear shaped disturbed ground in this photograph aligns with known locations of pipeline, therefore this could be the product of removing existing pipeline.



Source: National Archives at College Park

June 01, 1949



Source: Library of Congress

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed
- Disturbed Ground
- Debris





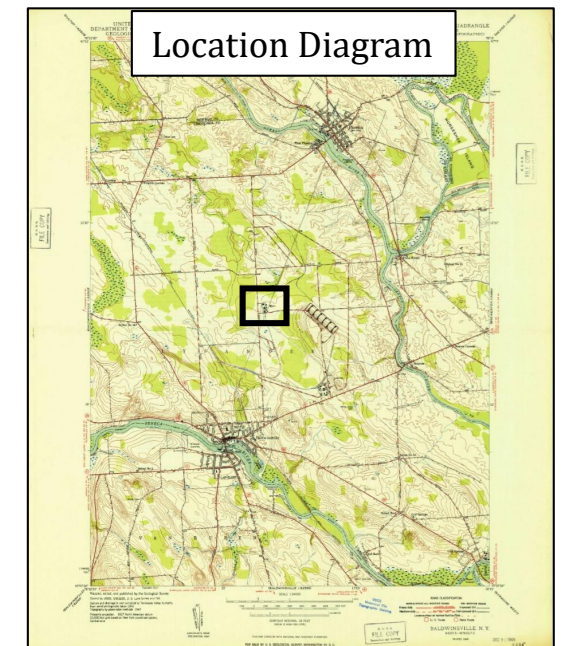
1951 Photographic Analysis: Former Acid Area

Numerous structures have been removed by 1951. The foundations remain for some of these features. The roof over the spent acid tanks has been removed, however the tanks remain.



Source: Cornell University Library

October 05, 1951



Source: Library of Congress

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed





1966 Photographic Analysis: Former Acid Area

Most of the Sulfuric Acid Concentration Building in the northern part of the former Acid Area has been removed, however some structures associated with the building remain in place.

A utility clearing has been created cutting across the northern part of the former Acid Area. A new circular feature (first visible in 1956) has been built within this clearing.

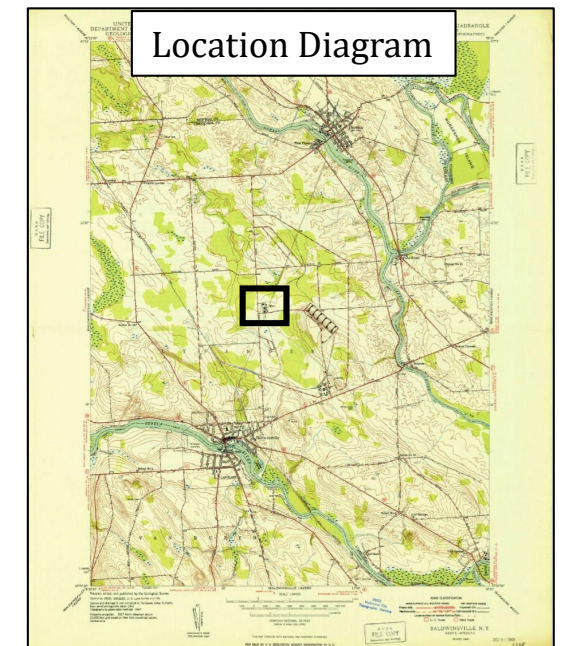
The roads are visibly clear, but vegetation is moving into the surrounding areas.

N



Source: Cornell University Library

June 22, 1966



Source: Library of Congress

- Road
- ... Waste Water Ditch
- Area of Interest
- Estimated Wetland
- Disturbed Ground

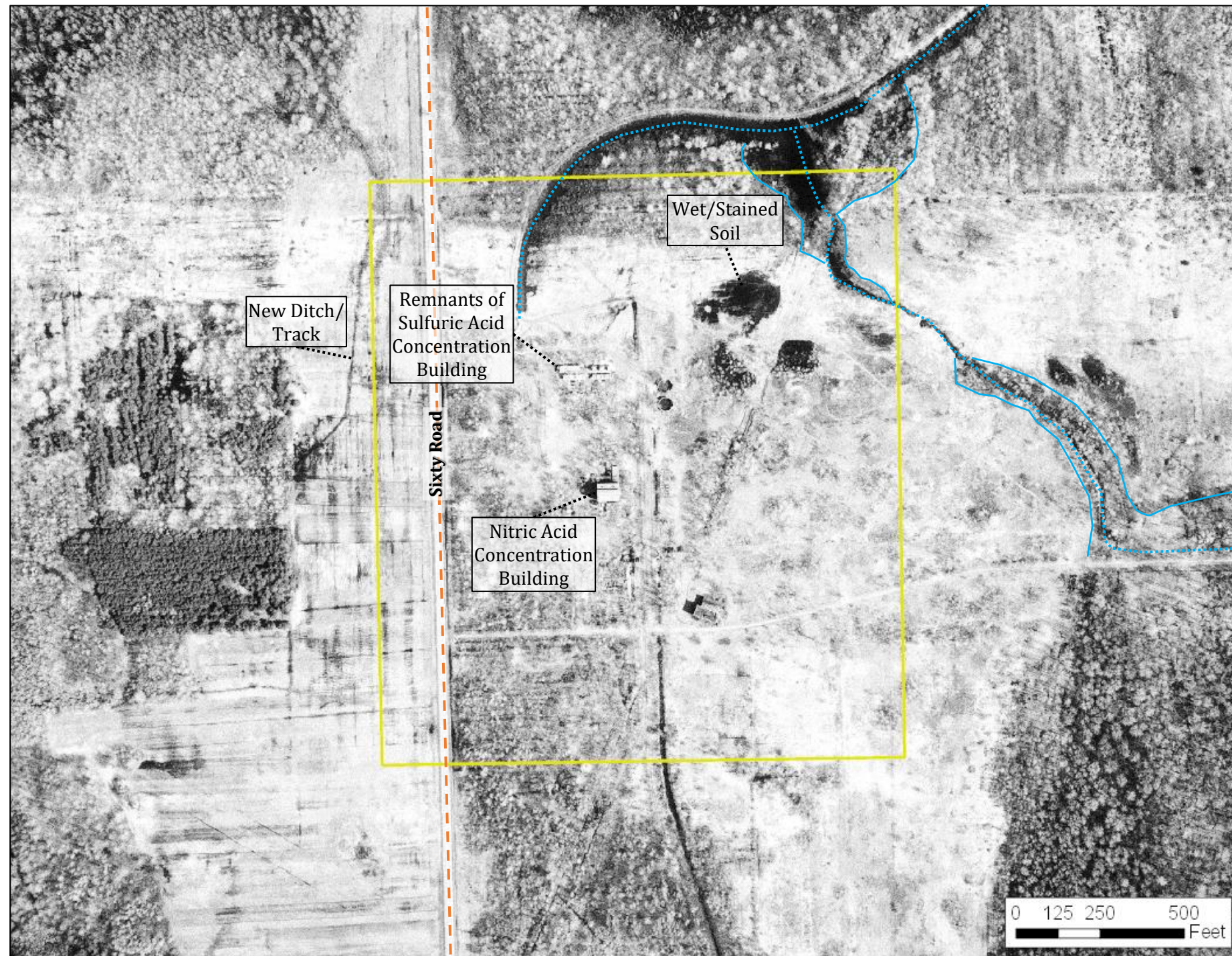


1972 Photographic Analysis: Former Acid Area

This image shows the remnants of and remaining former Acid Area structures.

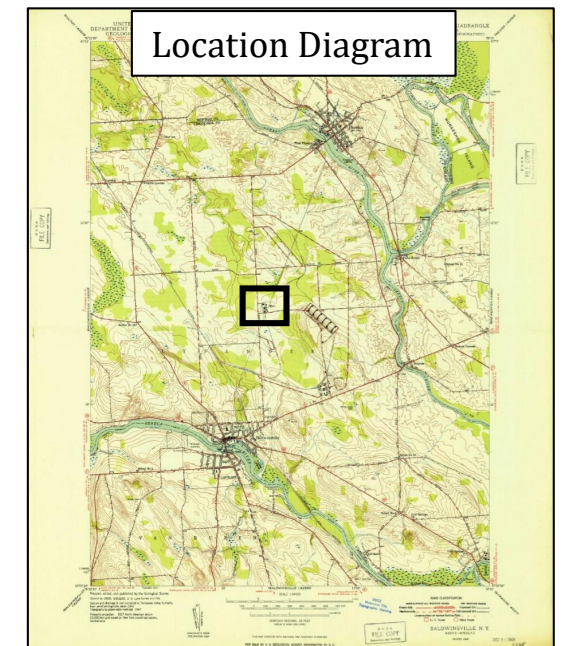
A new ditch or track is visible leading from the north to an area adjacent to the former Acid Area study boundary.

The area around the circular feature within the utility clearing is dark and indicative of persistent wet or stained soil that exists through present day.



Source: U.S. Geological Survey

May 06, 1972



Source: Library of Congress

- Road
- Waste Water Ditch
- Area of Interest
- Estimated Wetland

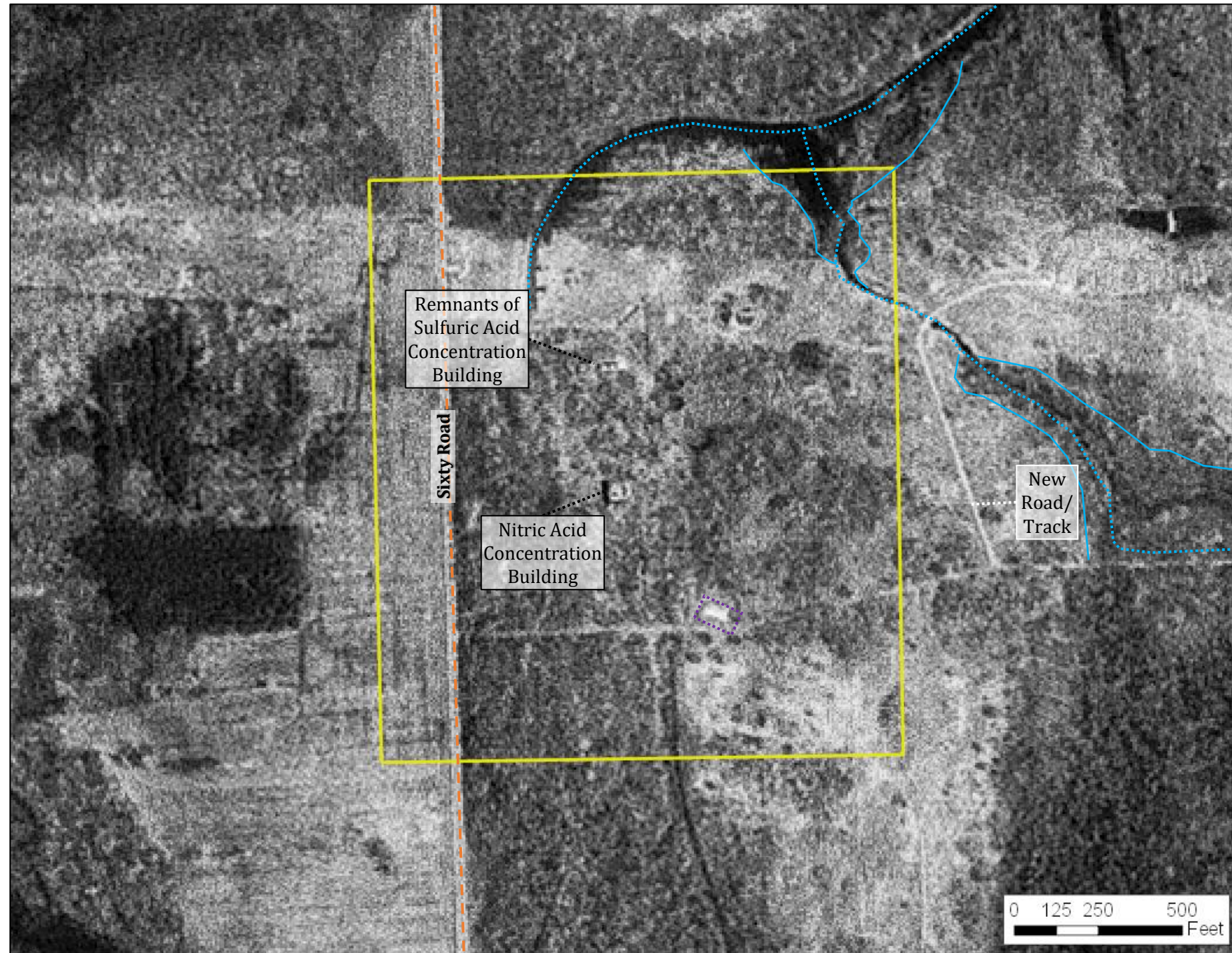




1982 Photographic Analysis: Former Acid Area

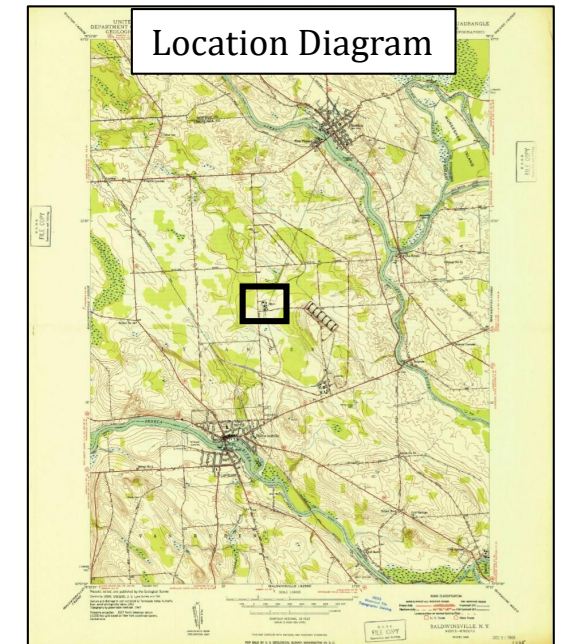
This image has poor spatial resolution, but one more building appears to have been removed (the foundation remains), and the remnants of the remaining former Acid Area structures are still visible. Continued regrowth of vegetation is observed.

A new road/track is visible from the east and leading alongside the former Acid Area boundary to the road running east-west through the former Acid Area.



Source: U.S. Geological Survey

April 29, 1982



Source: Library of Congress

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed

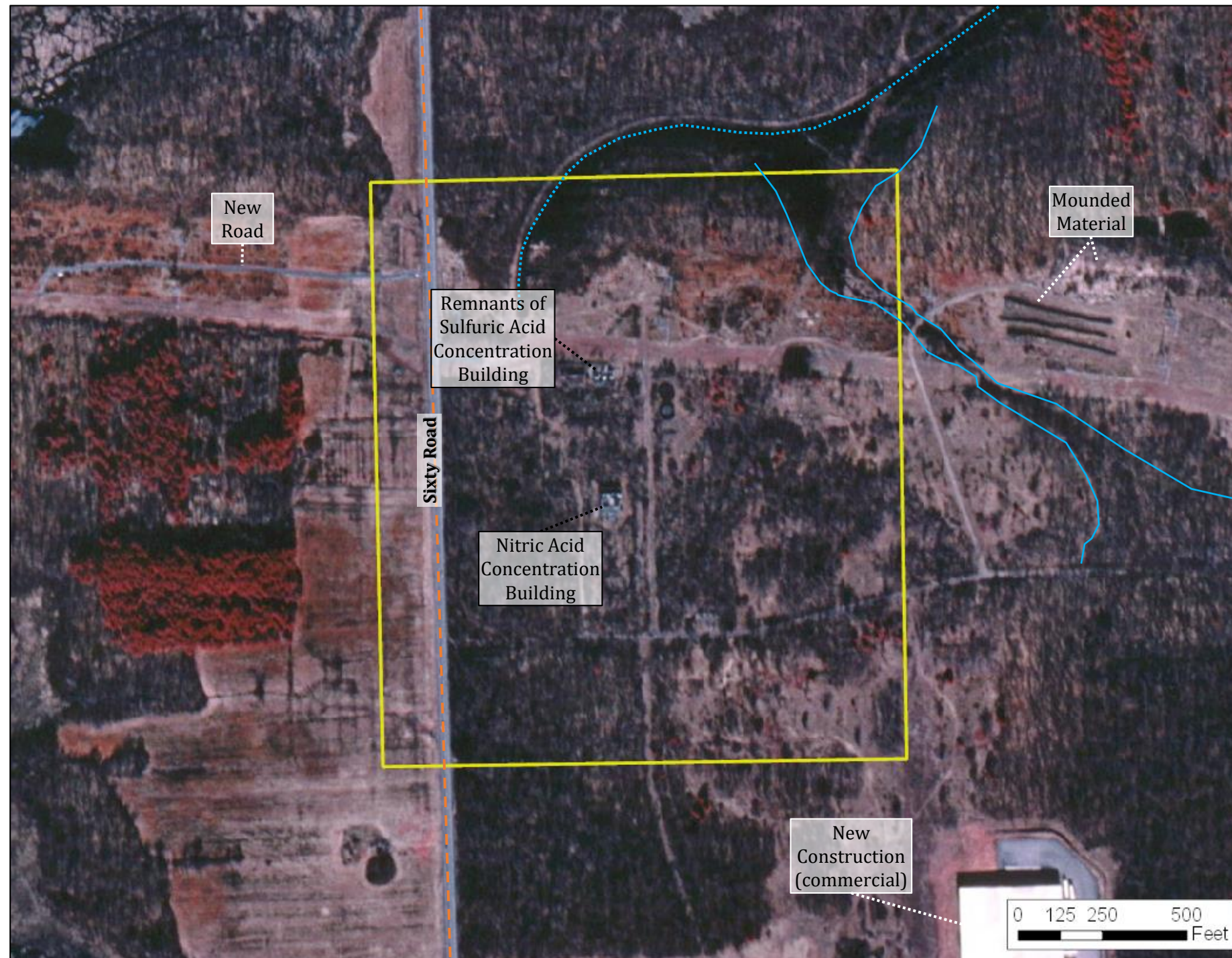




1995 Photographic Analysis: Former Acid Area

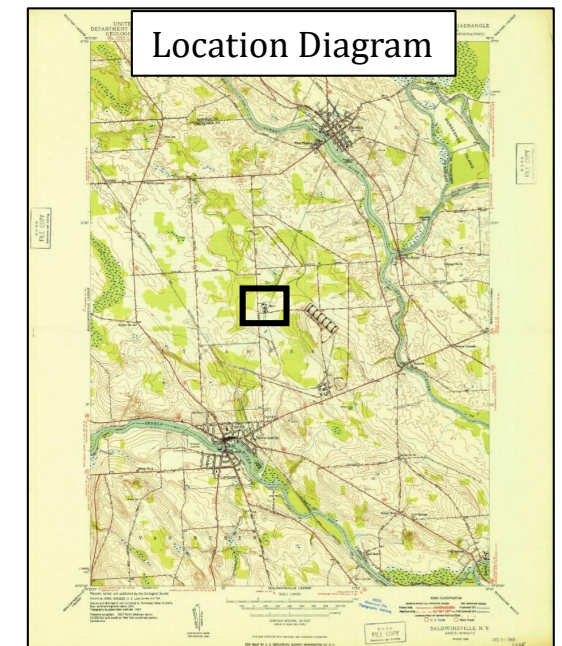
Development is visible around the former Acid Area. A new road leading away from Sixty Road to the west has been built. New commercial development to the southeast has been constructed. Mounded material to the northeast are visible. A short access road toward the Acid Area exists, but is likely used for the activity observed within the utility clearing just north of the Acid Area.

No change is observed within the immediate former Acid Area, other than continued regrowth of vegetation.



Source: U.S. Geological Survey

Mar 28, 1995



Source: Library of Congress





2003 Photographic Analysis: Former Acid Area

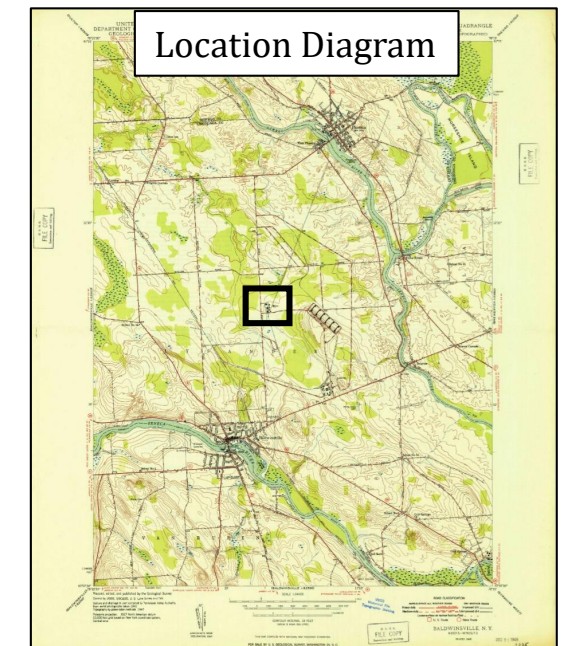
The commercial building to the southeast has been expanded. Some paved or graveled area is visible within the northwestern part of the former Acid Area.

The spent acid tanks were removed between 1995 and 2003. Other related structures remain within the Acid Area.



Source: U.S. Geological Survey

April 14, 2003



Source: Library of Congress

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed

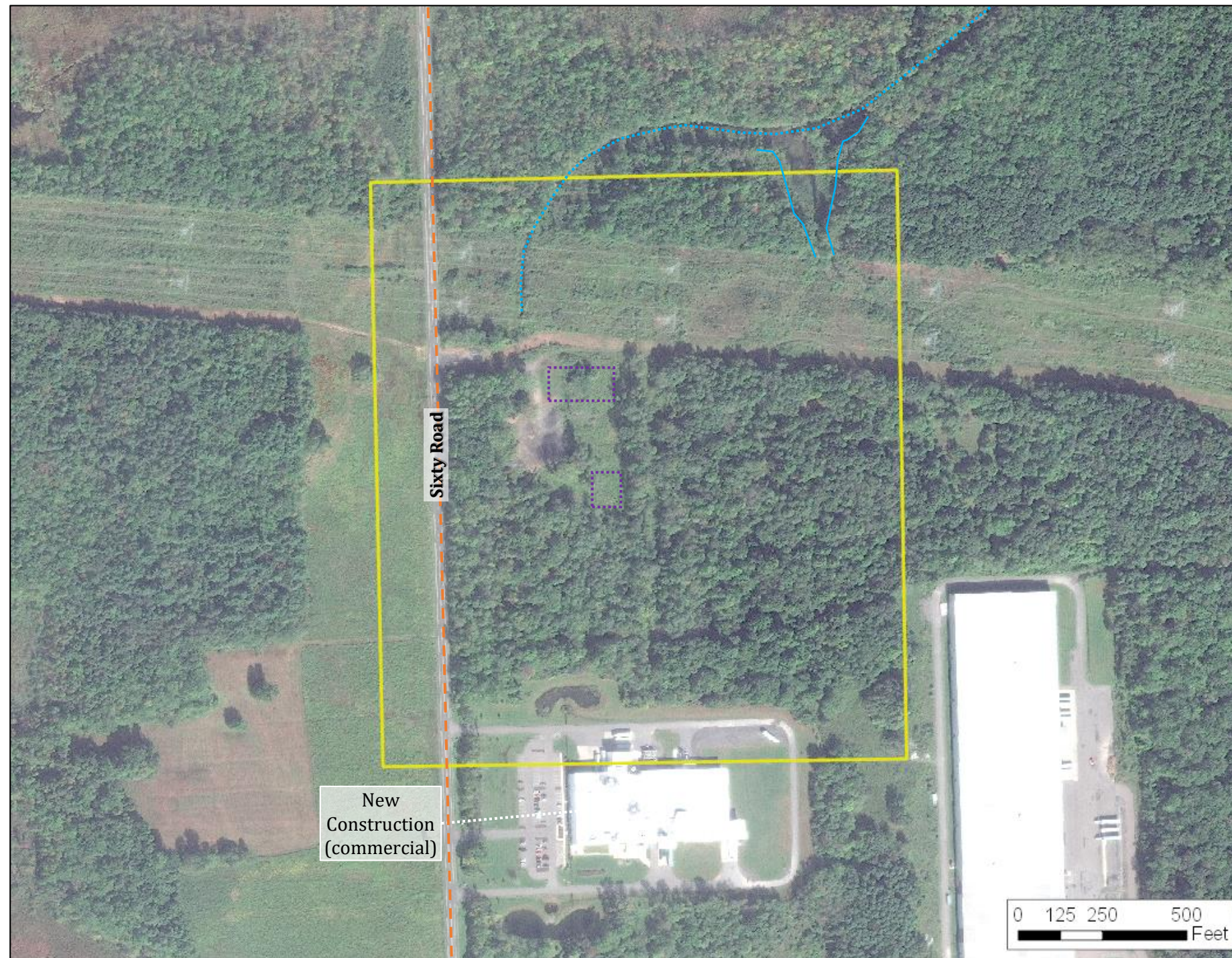




2019 Photographic Analysis: Former Acid Area

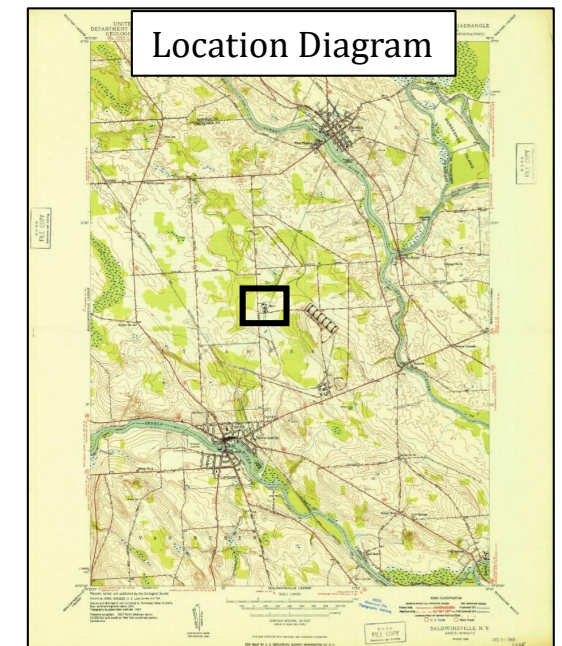
All former Acid Area structures have been removed by 2019. A clearing is visible within the former Acid Area.

Continued commercial development is observed south of the study area.



Source: Digital Globe

September 25, 2019



Source: Library of Congress

- Road
- Waste Water Ditch/Creek
- Area of Interest
- Estimated Wetland
- Structure Removed





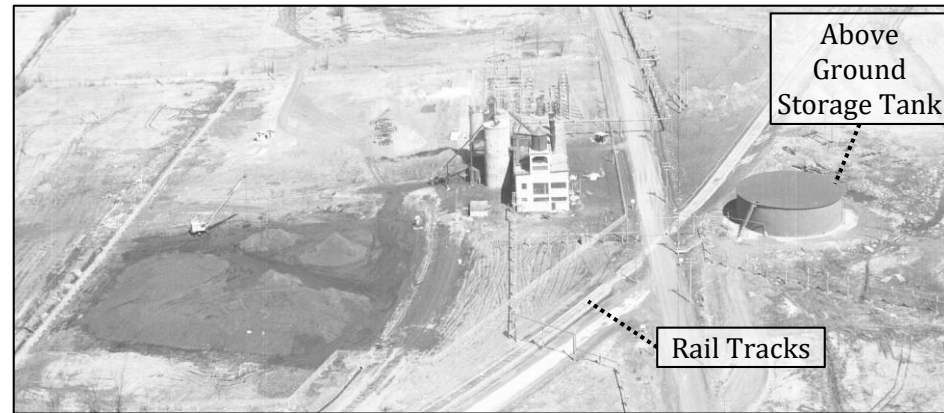
Additional Findings



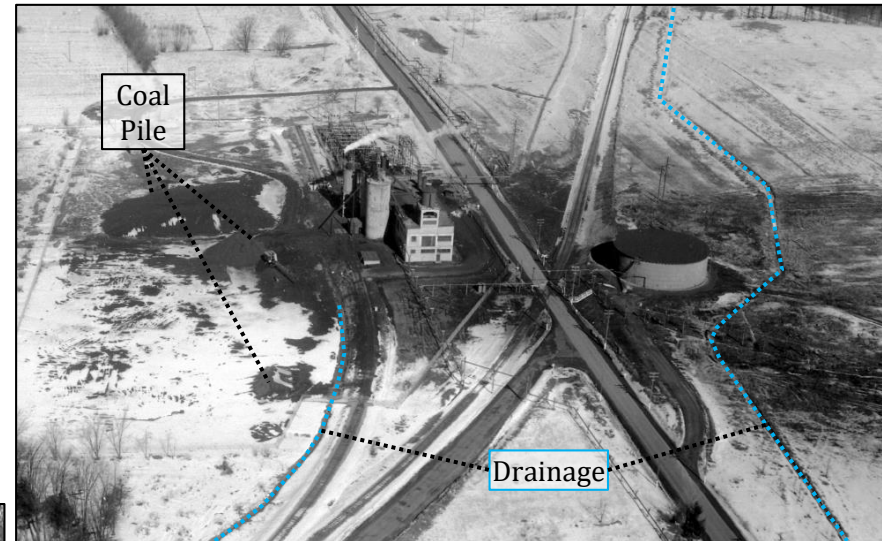
Source: Baldwinsville Public Library NYOW Collection



Power Plant



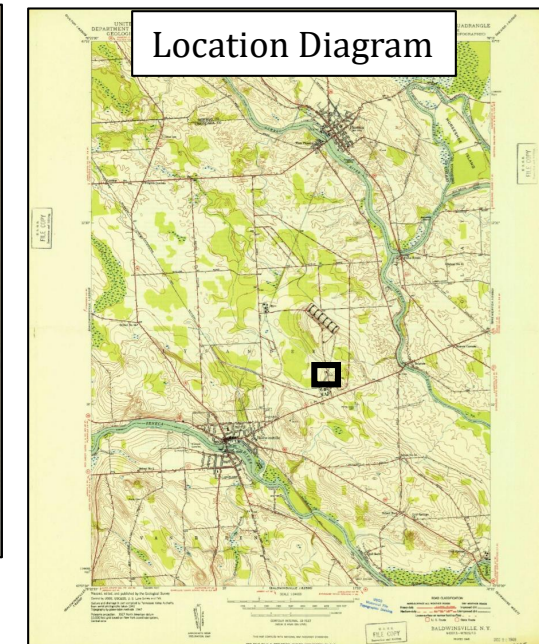
April 18, 1943
Source: National Archives at College Park



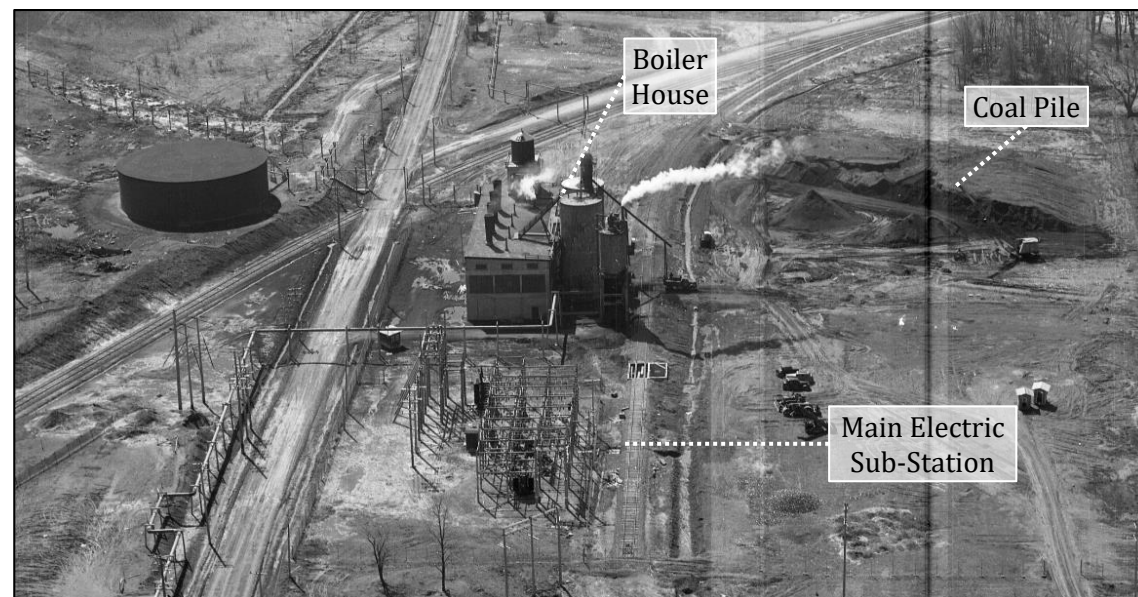
February 25, 1944
Source: National Archives at College Park



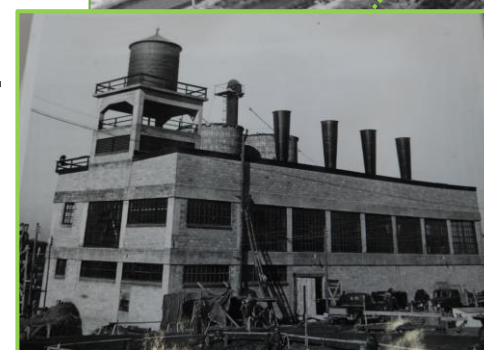
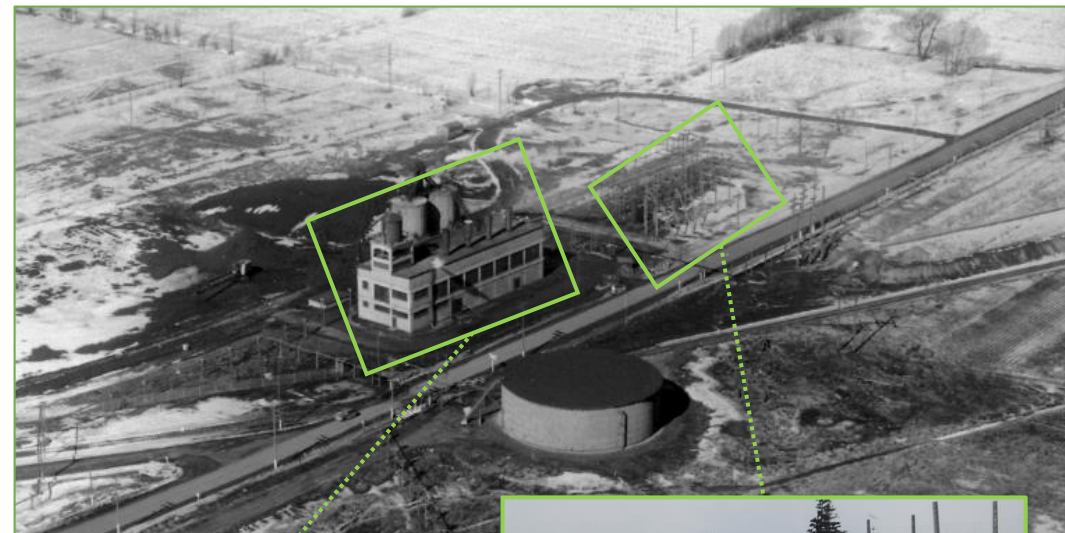
1943 Electrical Distribution System Map
Source: National Archives at College Park



Source: Library of Congress



A power plant located just north of the administration area may be of interest for further investigation. This site contains an above ground storage tank, a boiler house, coal storage, and an electric substation. There are also two drainage ditches that run along this property.



October 30, 1942 Boiler House
Source: National Archives at College Park



October 30, 1942 Transformer Station
Source: National Archives at College Park

NYOW Vol 1. History Thru Dec. 1942

This boiler house contains four automatically coal-stoked boilers. There are about 18,000 feet of steam distribution lines, varying in size from 12" to 3/4" pipe. This system extends from the main boiler house, which is of reinforced concrete with concrete block curtain walls, to all buildings in the Administration area and the Ammonium Picrate area. All lines are of the overhead type, adequately insulated and trapped, and suspended on wood frames. In the design of the main steam loop, particular provisions were made to avoid counter flow of condensate. The steam line profile is raised over the natural contour of the ground with short vertical lifts properly trapped, and long horizontal parallel flows. All loops in the steam lines are of short radius flanged fittings, which were fabricated at this site, in order to eliminate the necessity of endeavoring to obtain pre-fabricated sections which were so difficult to secure in the open market.

Source: National Archives at College Park



Pumping Station



April 18, 1943 Oblique
Source: National Archives at College Park



February 25, 1944
Source: National Archives at College Park

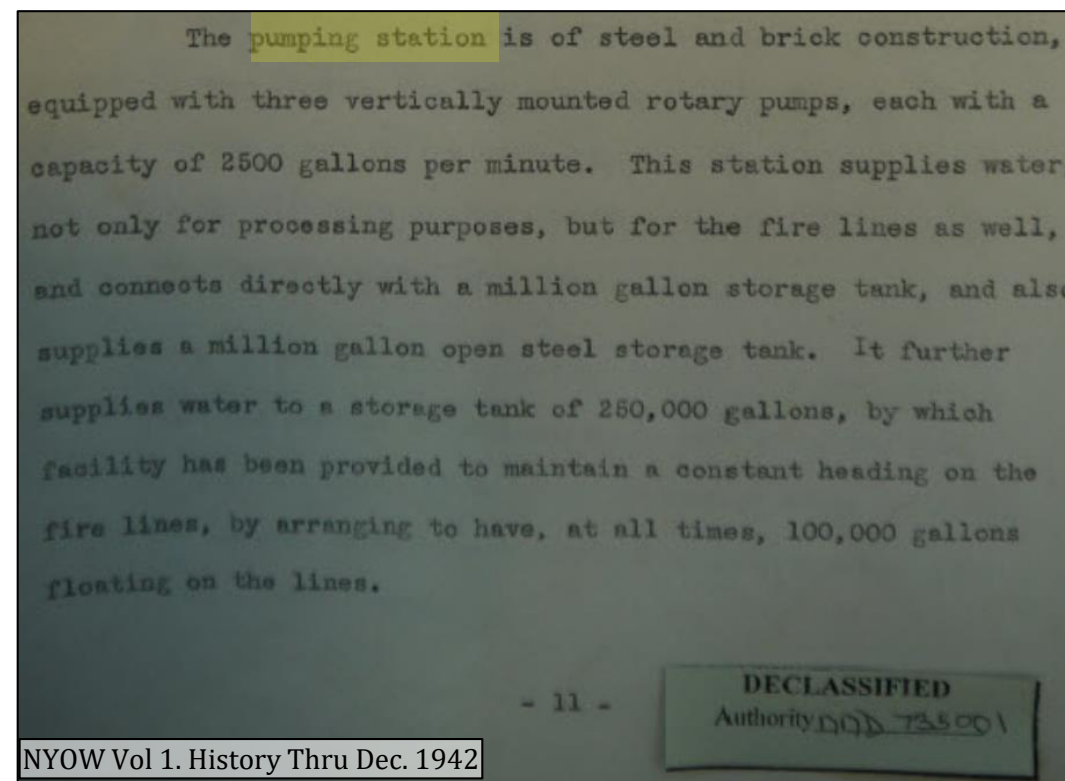


1943 Water Supply System Map
Source: National Archives at College Park

The pumping station, located where the Oswego, Oneida, and Seneca Rivers meet, provided water to the NYOW site.

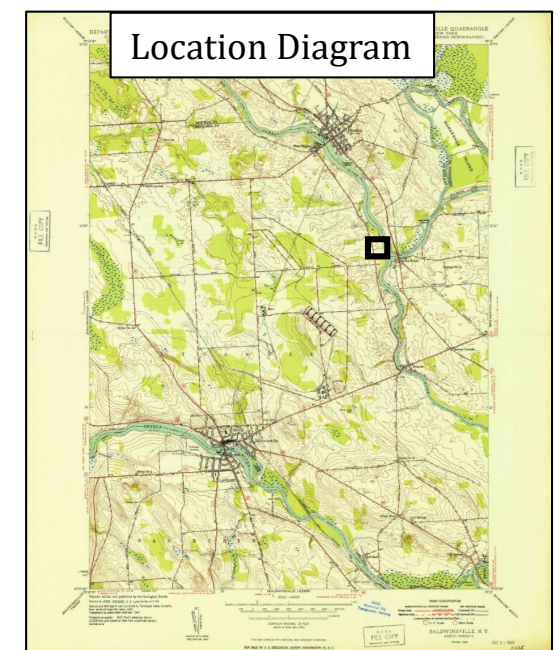


Source: Baldwinsville Public Library
NYOW Collection



NYOW Vol 1. History Thru Dec. 1942

Source: National Archives at College Park



Source: Library of Congress



Glossary



April 18, 1943 Oblique Photograph of Administration Area
Source: National Archives at College Park



Glossary

- **Access Road** A paved or unpaved route of vehicular access.
- **Activity Area** An area depicting various ground disturbances (to include any of: disturbed ground, cleared area, ground scars, etc.) related to military usage including possible waste disposal operations.
- **Bare Area** An unvegetated ground surface; may be areas which have not revegetated at a normal rate.
- **Berm/Dike** A man-made ridge or embankment, constructed of natural or man-made materials, often used to prevent movement of materials, usually liquids.
- **Building** Relatively permanent, usually box-like and roofed, man-made structure.
- **Cleared Area** An area from which man has removed the trees, shrubs or other natural vegetative cover.
- **Container** Something such as a can, box, bucket or barrel; which is used to hold, store and/or transport materials. Drums and tanks are subclasses of container.
- **Containment Area/Structure** An area designed to restrain the movement of, or impound liquid, semi-liquid or dry unconsolidated material. Impoundments are a subclass of containment areas.
- **Debris** The scattered remains of anything broken or destroyed.
- **Depression** A sunken surface area.
- **Disturbed Ground** A rough ground surface which has been cleared, overturned, dug up, filled and/or changed from the immediate environs in some manner for an unknown purpose.
- **Drainage, Surface** The routes by which liquid flows. Surface drainage includes perennial, intermittent, channelized and suspected pathways.
- **Drums** Cylindrical, plastic, metal, or fiber container for storing and/or transporting materials; typically of a 55 gallon capacity, but ranging widely to suit industrial applications. Drums smaller than 55 gallons can be difficult to identify on aerial photography and may be placed in the more general category of container.
- **Dump** A site used to dispose of solid wastes without environmental controls; i.e., not directly associated with a waste generating facility where disposal of waste is regulated.
- **Edge of Slope** A topographic contour which simulates a relatively sharp and distinct downward inclination of the ground surface.
- **Effluent** Substance which flows out of a containing space. Outflow or discharge. Generally refers to water and/or wastes, treated or untreated, flowing out of a treatment plant, impoundment, sewer, storm drain or industrial outfall onto the ground or into surface waters.
- **Excavation** A cavity in the earth formed by digging or scooping out materials.

Commonly Used HPA Feature Definitions



Glossary

- **Extraction** An area where earthen materials, such as minerals, sand and gravel or metals, have been removed for use elsewhere. Examples are quarries, borrow pits, pit and strip mines.
- **Fence** A structure serving as an enclosure, barrier or boundary, usually made of posts, boards, wire and/or rails.
- **Fill Area** Area where material, either earthen and/or non-earthen, has been deposited either for disposal, to level the ground surface, or to eliminate a wet area.
- **Fill Material** Material, earthen and/or non-earthen, that has been deposited in a fill area.
- **Fox Hole** A hole of varying depth (based on the height of the occupant(s), 4–6') and about 3–4' wide (One-Man, Two-Man would be wider) dug into the Earth serving as a defense position. Can be circular or rectangular and connected to other Fox Holes.
- **Graded Area** Area where the ground surface has been shaped; usually leveled to a smooth horizontal or sloping surface.
- **Ground Scar** A ground surface, vegetated or unvegetated, where marks from a previous activity or feature or from a subterranean feature are visible. Ground scars can result from many things and therefore vary greatly in appearance (e.g. septic drain fields, archaeological features, buried waste disposal pits, trench scars, etc.)
- **Historical Boundary** A line on a map or an overlay which delineates the area where a facility or activity was previously located or conducted.
- **Impoundment/Lagoon/Pit** A containment area, man-made or naturally occurring, that appears to be used for waste and/or water storage, disposal, or treatment.
- **Impact Crater** A crater formed on a surface by the impact of an unspecified projectile.
- **Landfill** A land disposal site, usually for solid waste which intermittently employs a cover material. At a regulated sanitary landfill, waste is spread in layers, compacted to the smallest practical volume, with cover material applied at the end of each operating day.
- **Material** A substance (usually a non-liquid, if that distinction can be made) placed, bulldozed, graded, mixed, spread, etc., over an area. Generally refers to raw or waste materials on or in the vicinity of the site.
- **Mounded Material** Material which has been placed in piles or mounds. Frequently extraction materials, construction materials, or industrial raw materials are stored in large mounds in the open. At fill areas and landfills uniformly dump truck size mounds of material are often present.
- **Open Storage** An open-air, outdoor area for storage of materials, supplies, vehicles and/or equipment; may or may not be enclosed by a fence.
- **Outfall** The place where effluent is discharged.

Commonly Used HPA Feature Definitions



Glossary

- **Pill Box** Reinforced, usually concrete, emplacement for a gun.
- **Pit** A relatively deep, steep sided hold in the ground surface.
- **Scrap** Discarded materials that may be suitable for reprocessing
- **Sediment Material** that settles to the bottom of a liquid. Material suspended in water or in the air.
- **Site Boundary** A line on a map or an overlay which delineates the area where any facility or activity is located or conducted. This area is determined from the aerial photography supplemented with information provided by the client, and does not necessarily denote legal property lines.
- **Sludge** A semi-solid residue from any number of air or water treatment processes.
- **Stain** An area that is soiled or discolored and distinct from the surrounding area.
- **Standing Liquid** A temporary collection of liquid on a surface.
- **Structure** A man-made feature which cannot be classified as a building or a shed. Something made up of a number of parts that are held or put together in a particular way.
- **Tones, Light/Medium/Dark** A general, and somewhat subjective, classification of the wide range of tones/shades visible on panchromatic photography/imagery.
- **Trailer** A transport vehicle designed to be hauled; a van drawn by a truck or automobile and used as a house or an office. Both semi and house trailers are often used for storage or office space on a site. Specific trailer types are annotated if the spatial resolution permits and if the feature is deemed significant.
- **Treatment/Storage/Disposal Facility** Site where a hazardous substance is treated, stored and/or disposed of.
- **Trench** A long, narrow excavation.
- **Vat** A large vessel, such as a tub, cistern or barrel, used to store or hold liquids.
- **Vegetation Stress** A condition wherein vegetation has been weakened and exhibits physiologic stress due to any number of changes in the environment; such as, exposure to toxic substances or weather extremes, lack of nourishment, inundation, parasites, or disease.
- **Vehicle** A device for carrying passengers, goods or equipment, such as a car or a truck. Specific types of motor vehicles are annotated as such if the imagery permits their positive identification and if they are deemed significant.
- **Vertical Tank** A usually metallic receptacle, container, or structure for holding liquid, gaseous, or granular materials that has a greater vertical extent than horizontal.
- **Waste Disposal Area** An area directly associated with a waste generating facility (as opposed to a dump site), where waste materials are discarded.

Commonly Used HPA Feature Definitions



Glossary

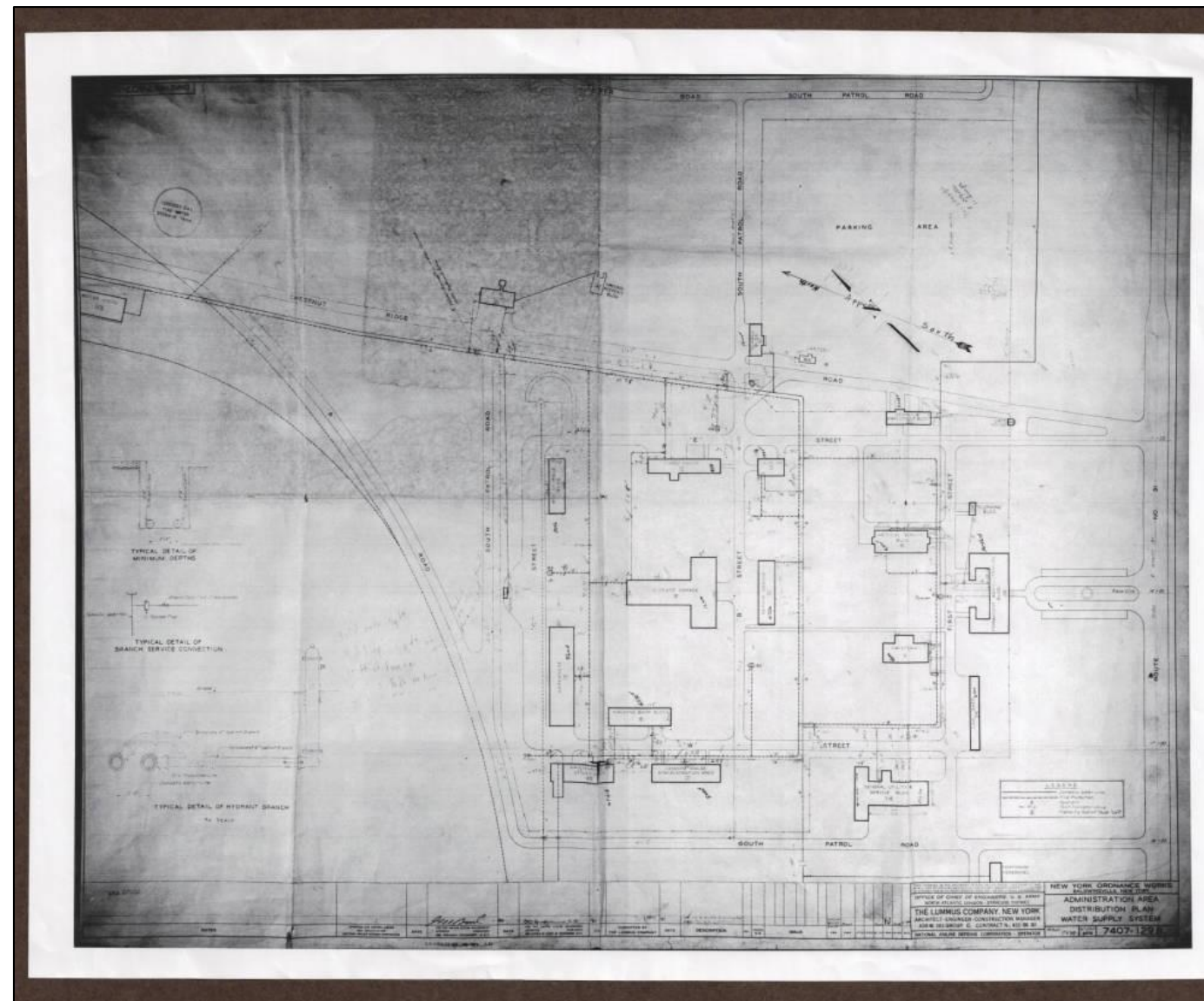


- **Well Head** That portion of a well that is visible above the ground surface of which opens at ground level.
- **Wet Area** Saturated ground which may or may not be an established wetland.
- **Wetland Areas** that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Commonly Used HPA Feature Definitions



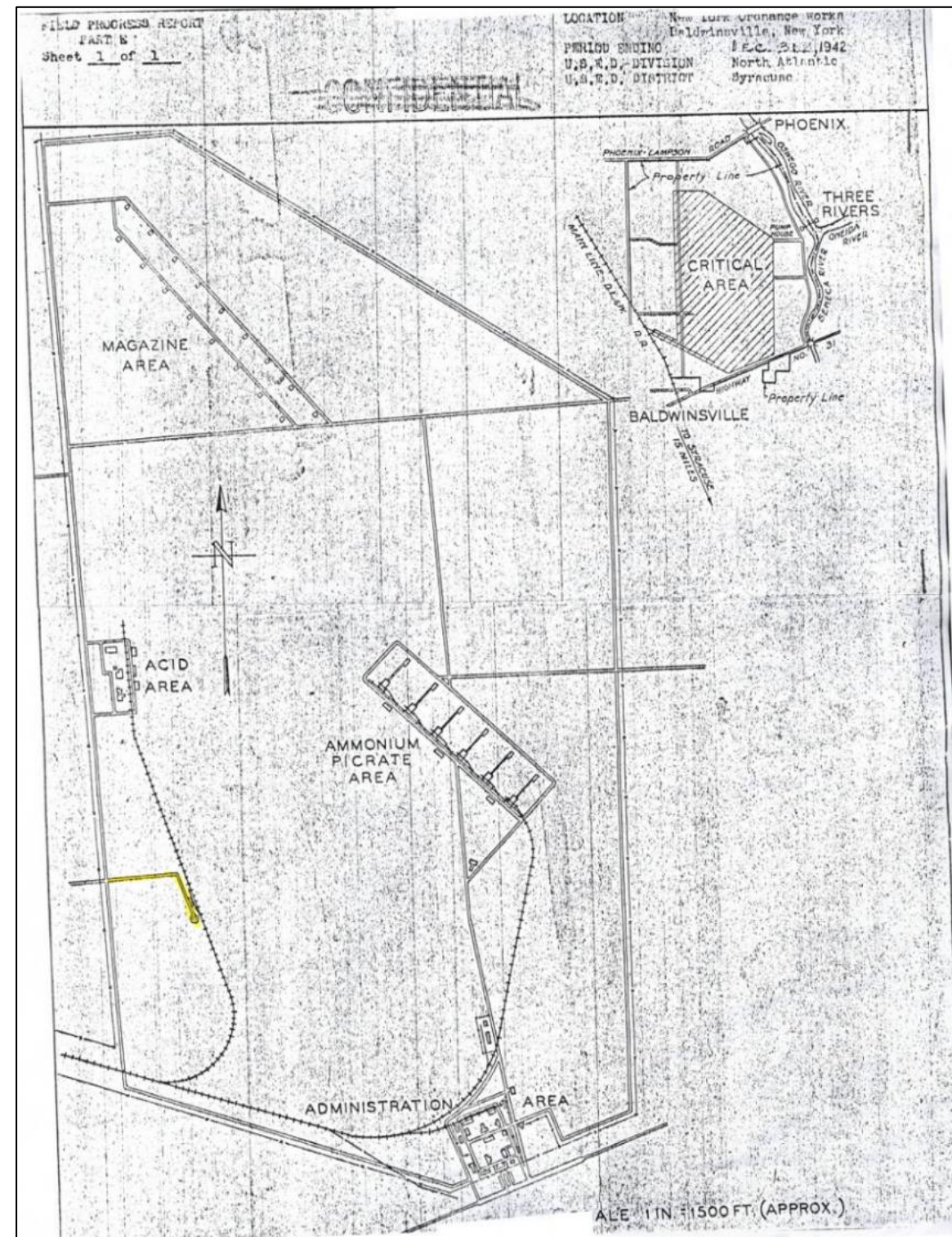
Appendix: Maps



Map of NYOW Administration Area
Source: Baldwinsville Public Library NYOW Collection



1942 New York Ordnance Works Map

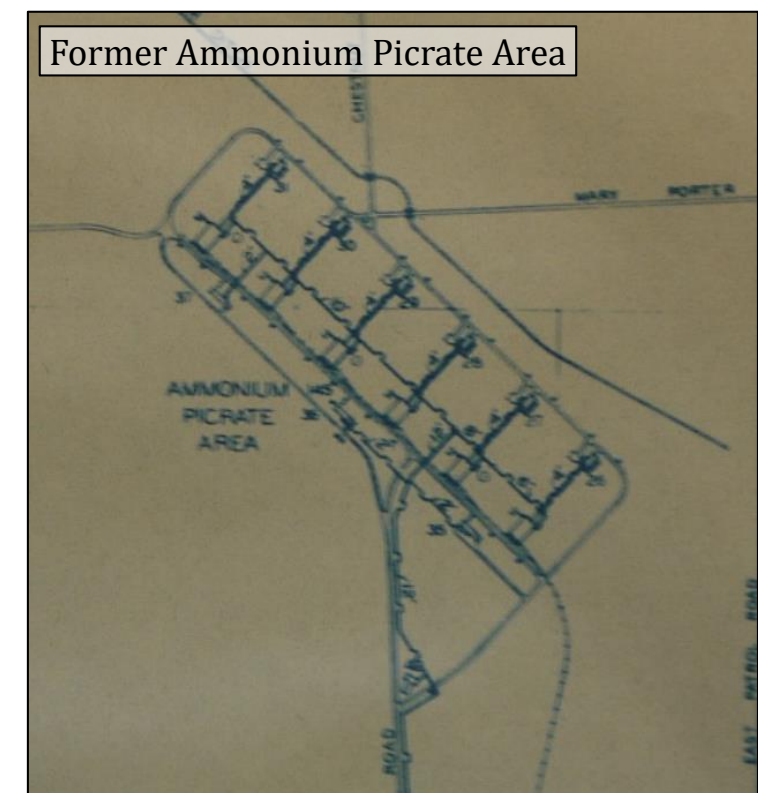
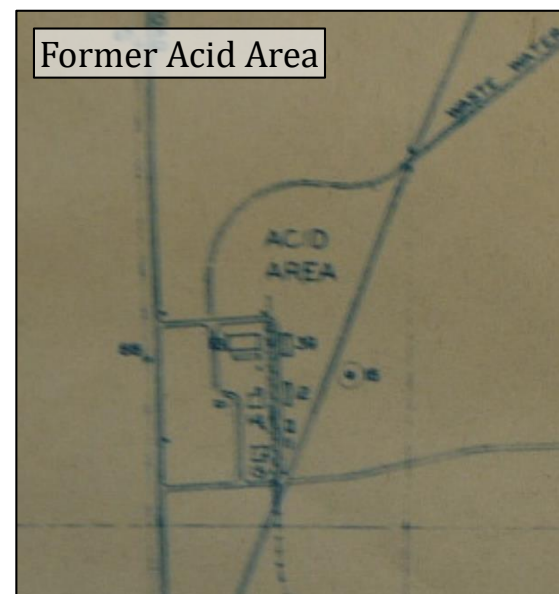
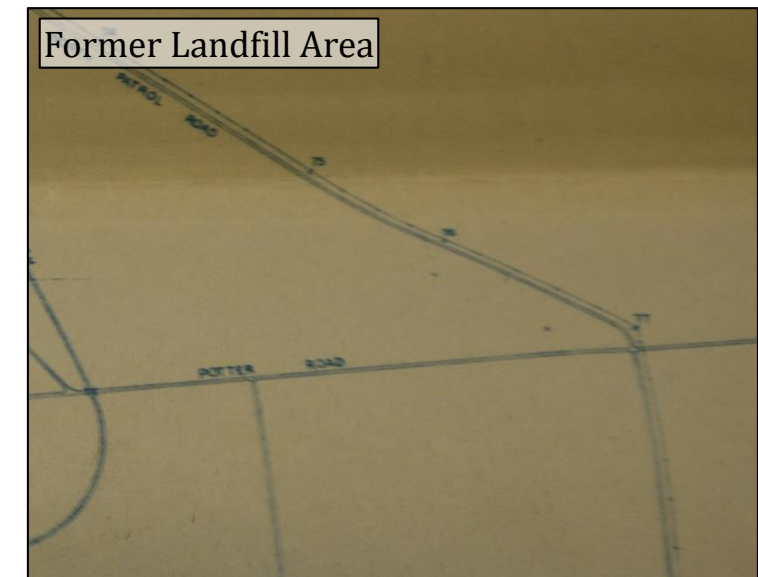
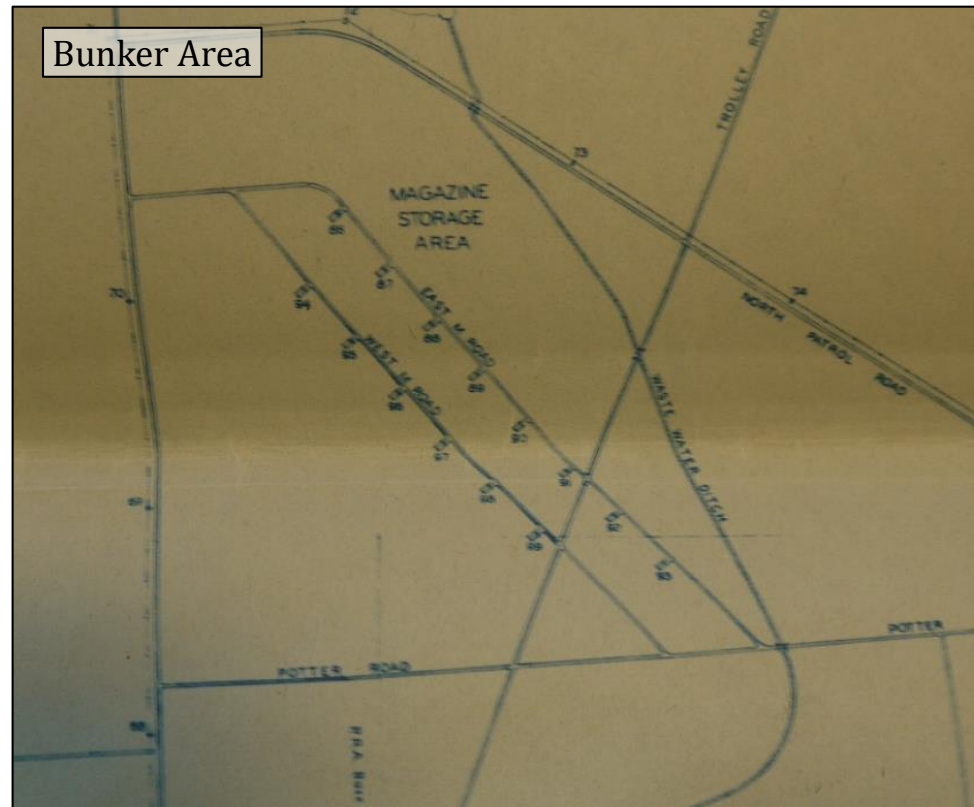


Source: Baldwinsville Public Library NYOW Collection

1942



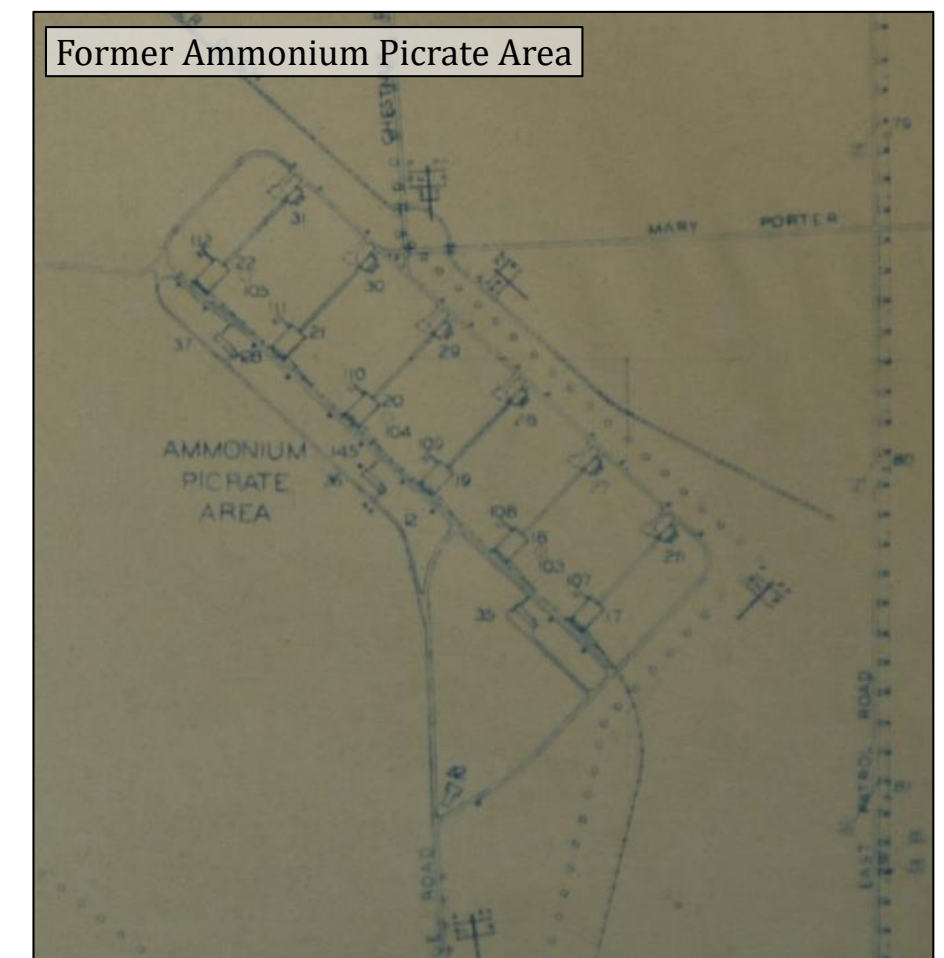
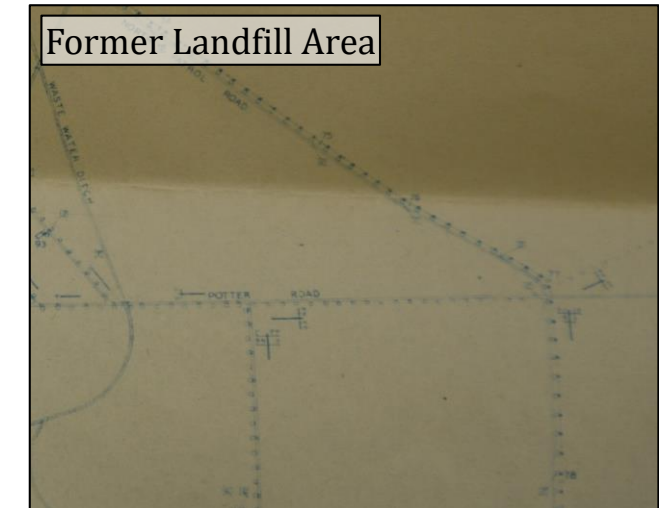
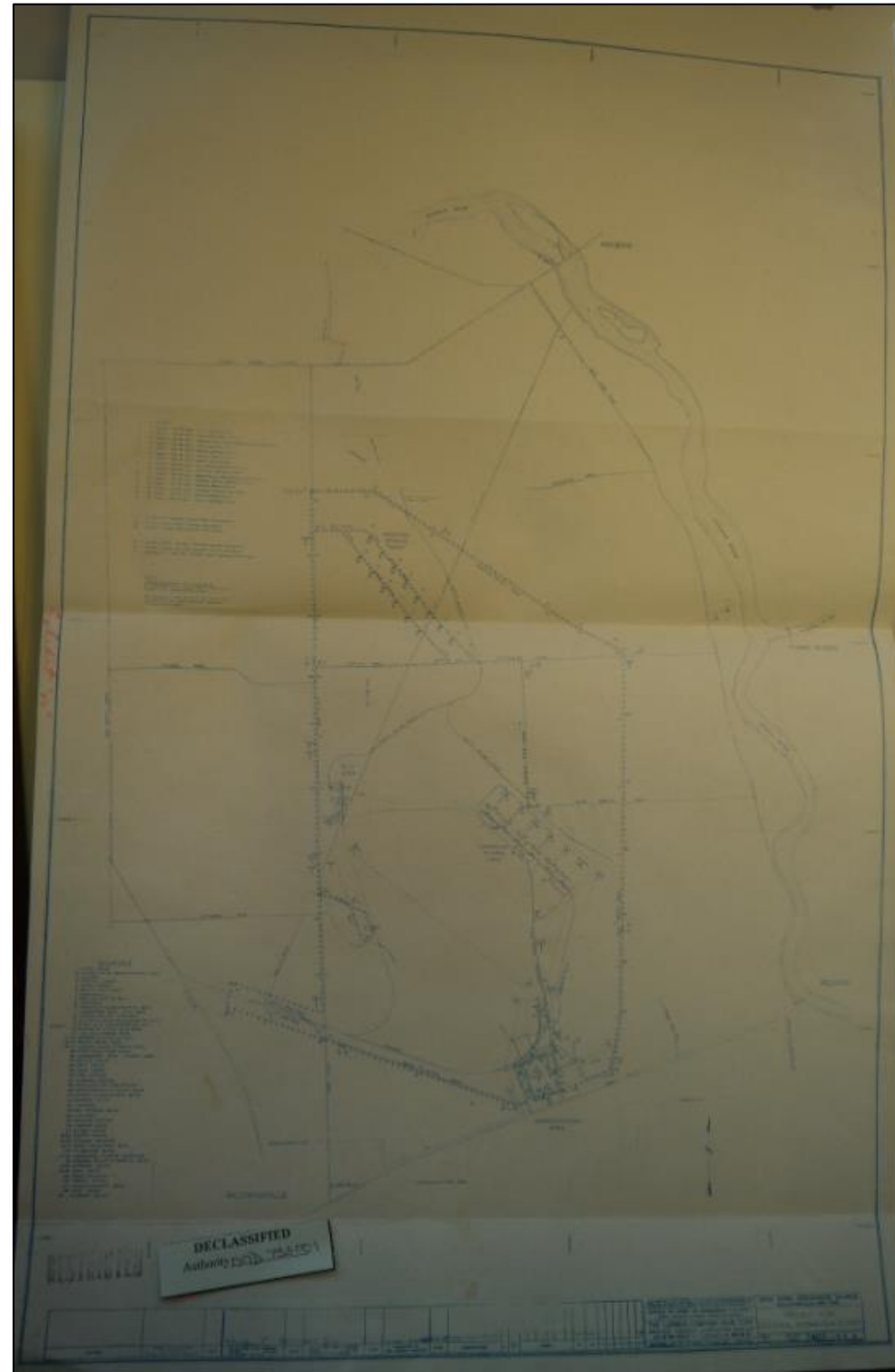
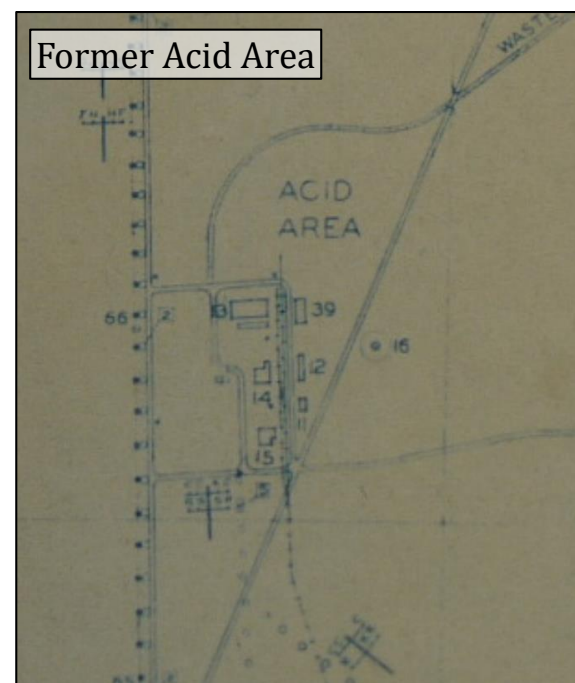
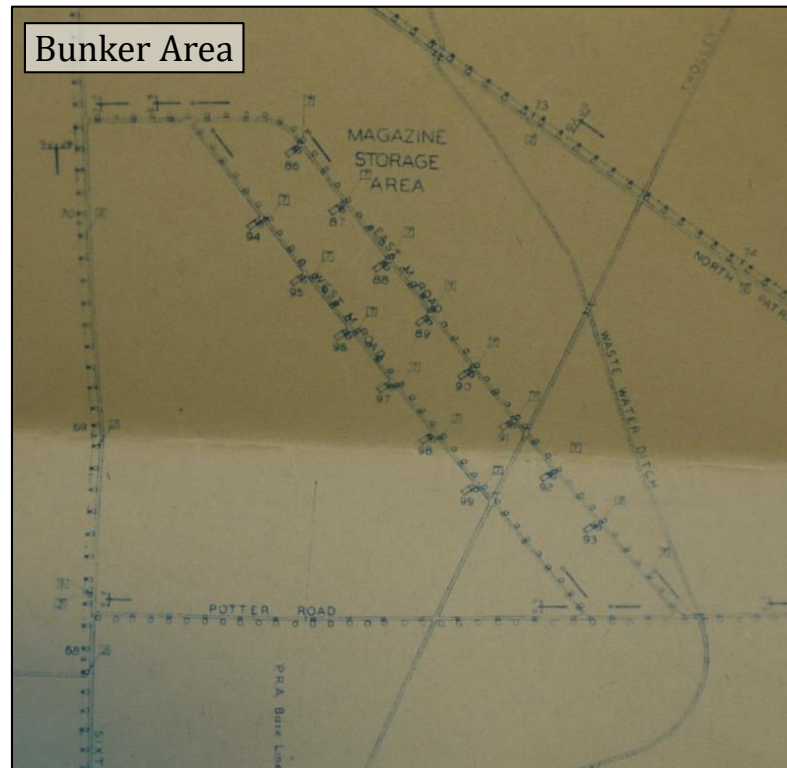
1943 Project Distribution Plan: Steam Distribution System



Source: National Archives at College Park



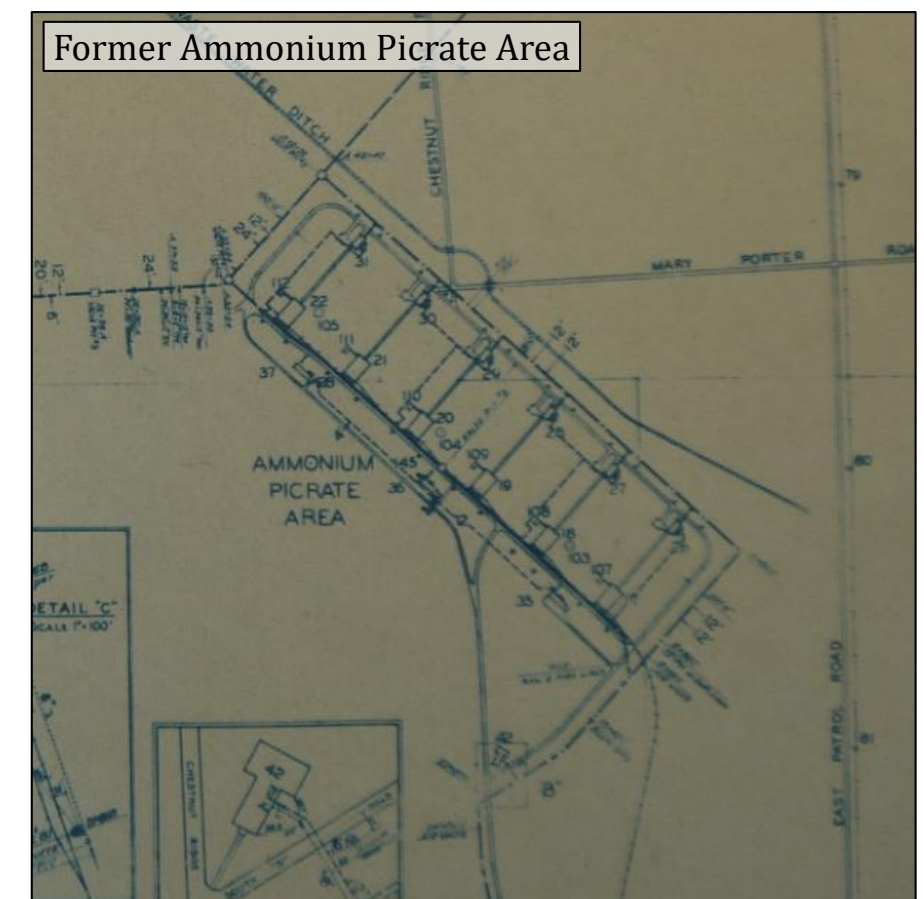
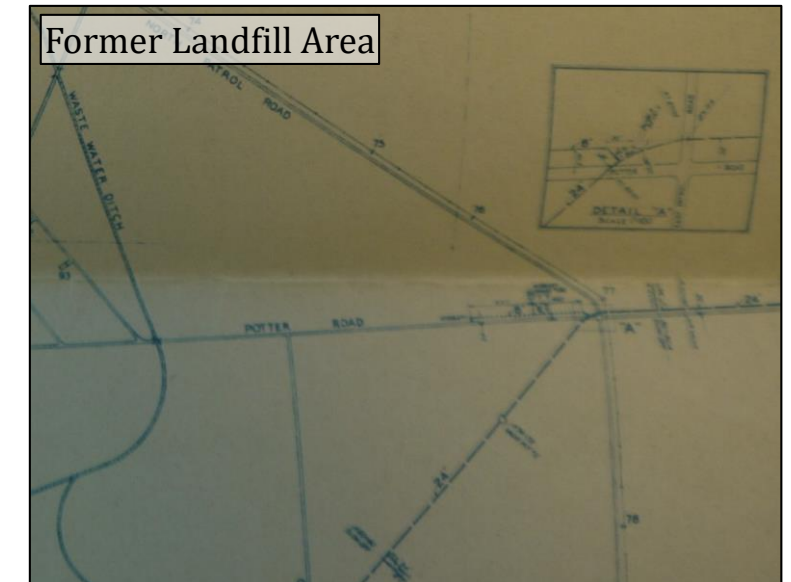
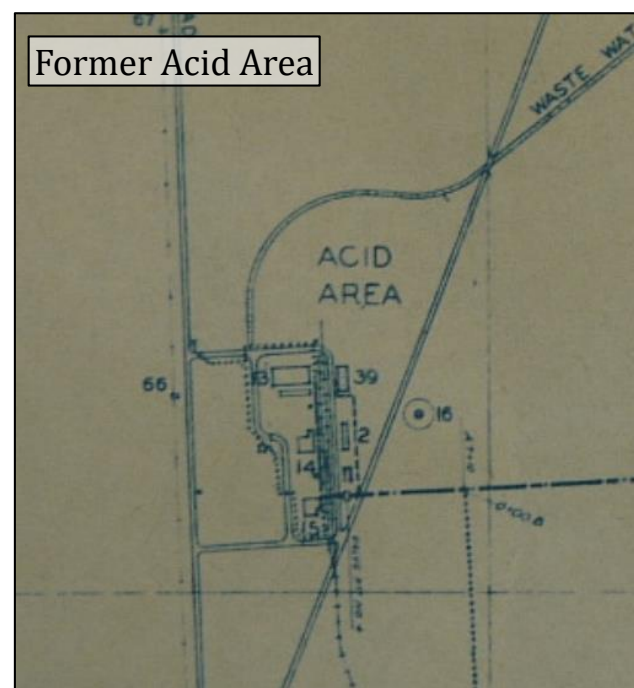
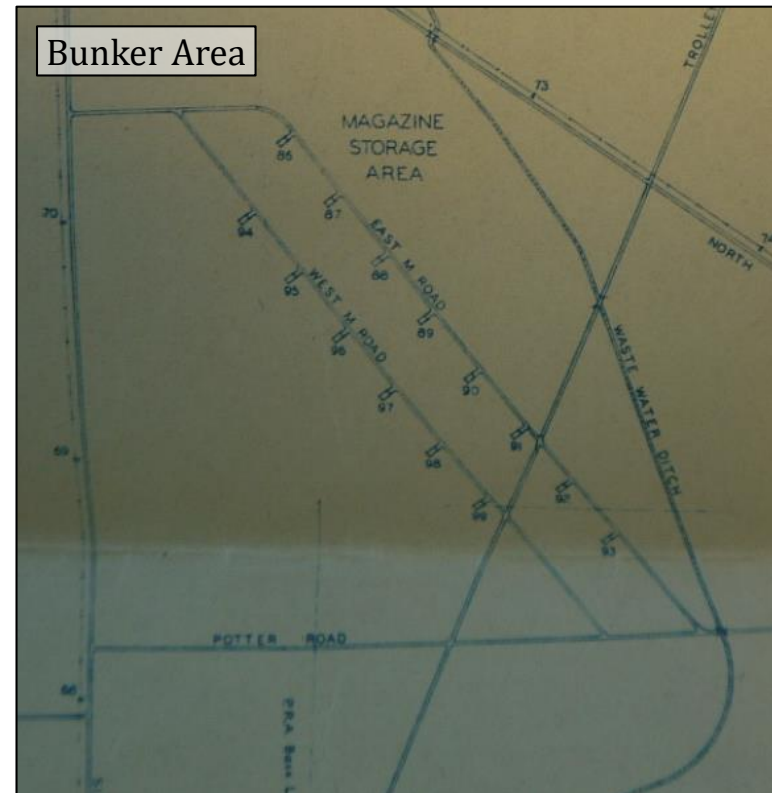
1943 Project Plan: Electrical Distribution System



Source: National Archives at College Park



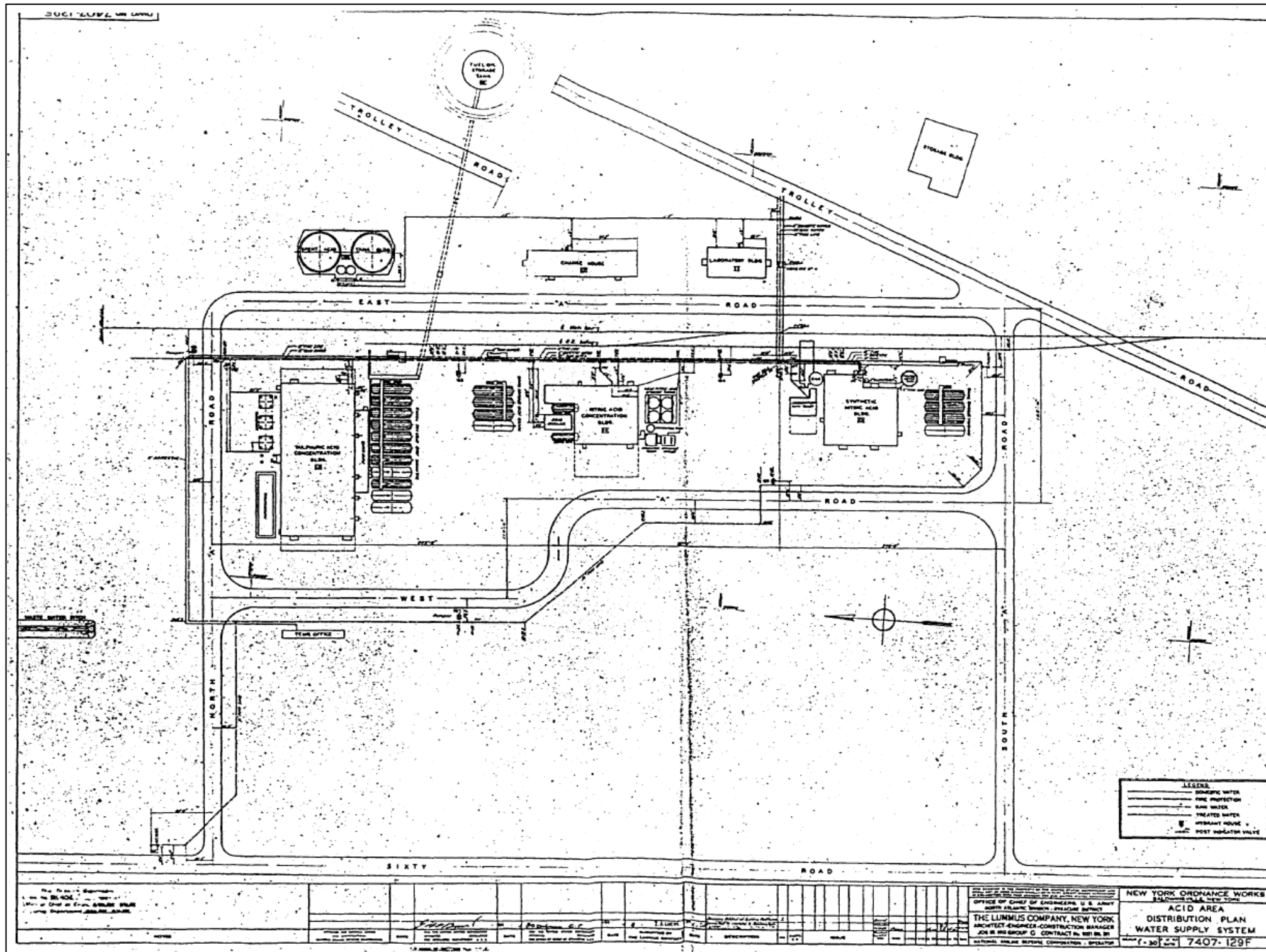
1943 Project Distribution Plan: Water Supply System



Source: National Archives at College Park



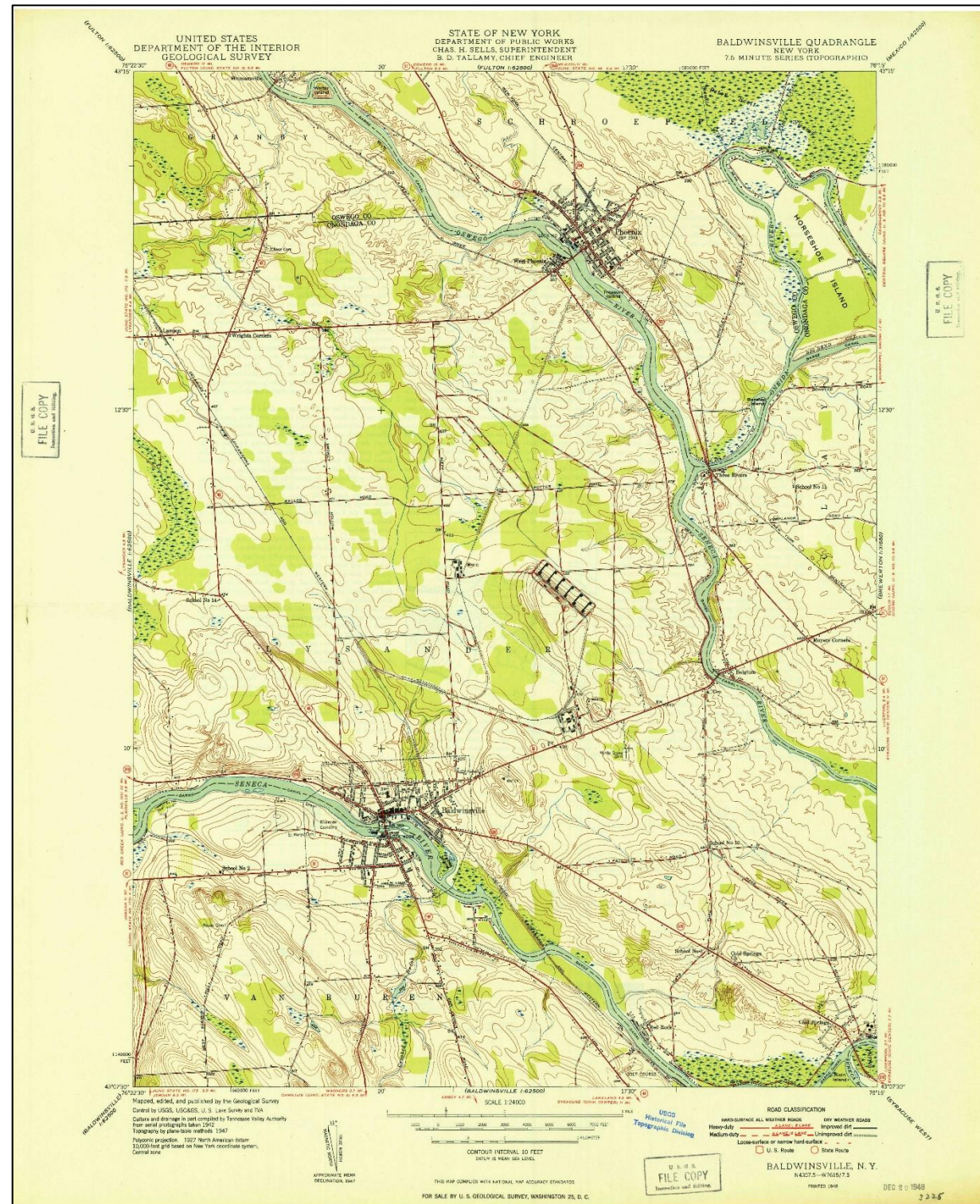
Undated Acid Area Distribution Plan: Water Supply System



Source: U.S. Army Corps of Engineers FUDS Portal || 1999 Archive Search Report Findings for NYOW || C02NY029003_01.02_0001_a



1948 USGS Baldwinsville NY Topographic Map



Source: Library of Congress



Sources of Information

- Baldwinsville Public Library NYOW Collection
 - <https://nyheritage.org/collections/new-york-ordnance-works-collection>
- Cornell University Library
 - <https://digital.library.cornell.edu/collections/aerialny>
- Digital Globe
- Library of Congress
- National Archives at College Park
 - Textual Records Floor
 - Cartographic and Architectural Records Floor
- U.S. Army Corps of Engineers FUDS Portal
- U.S. Geological Survey
- William G. Pomeroy Foundation
 - <https://www.wgpfoundation.org/historic-markers/world-war-ii-4/>