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Naval Facilities Engineering Systems Command Mid-Atlantic Norfolk, Virginia

Final Historic Document Review and Field Investigation Report

Openlands Lakeshore Preserve



Naval Station Great Lakes Great Lakes, Illinois

March 2023

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March 16, 2023

Project Number 112G08005-ML216526

Mr. Brian Conrath Illinois Environmental Protection Agency Bureau of Land 1021 N. Grand Avenue East Springfield, IL 62702

Reference: Contract No. N6247016D9008 (CLEAN) Contract Task Order No. N4008521F6526

Subject: Final Historic Document Review and Field Investigation Report for Openlands Lakeshore Preserve, Naval Station Great Lakes, Great Lakes, Illinois

Dear Mr. Conrath:

Tetra Tech, on behalf of Naval Facilities Engineering Systems Command Mid-Atlantic, is submitting two paper copies and 2 CDs of the subject document.

If you have any questions regarding this submittal, please contact me at 412-921-8208 or by email at jon.aglio@tetratech.com

Sincerely,

Jus M y

Jonathan M. Aglio Project Manager

Enclosure

cc Mr. Bryan Beck, NAVFAC Mid-Atlantic



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Naval Facilities Engineering Systems Command Mid-Atlantic Norfolk, Virginia

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FINAL HISTORIC DOCUMENT REVIEW AND FIELD INVESTIGATION REPORT

OPENLANDS LAKESHORE PRESERVE NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to: Department of the Navy Navał Facilities Engineering Systems Command Mid-Atlantic 9324 Virginia Avenue, Building Z-140 Norfolk, VA 23511-3095

> Submitted by: Tetra Tech 4433 Corporation Lane, Suite 300 Virginia Beach, Virginia 23462

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MAR 1 7 2023

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CONTRACT NUMBER N6247016D9008 CONTRACT TASK ORDER N4008521F6526

MARCH 2023

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Acronyms and Abbreviations

AAA	Anti-Aircraft Artillery
ASR	Archive Search Report
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
CLEAN	Comprehensive Long-Term Environmental Action Navy
CSM	Conceptual site model
СТО	Contract Task Order
DoD	Department of Defense
DQO	Data quality objective
e2M	engineering-environmental Management, Inc.
EOD	Explosive Ordnance Disposal
HFA	Human Factors Applications, Inc.
HRR	Historical Records Review
ISGS	Illinois State Geological Survey
LLC	Limited Liability Company
MEC	Munitions and Explosives of Concern
mm	millimeter
MPPEH	Material Potentially Presenting an Explosive Hazard
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
NAVFAC	Naval Facilities Engineering Systems Command
OE	Ordnance and Explosives
QAPP	Quality Assurance Project Plan

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RI Remedial Investigation

SAIC Science Applications International Corporation

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- U.S. United States
- USACE United States Army Corps of Engineers
- UXO Unexploded Ordnance
- WWI World War I
- WWII World War II

Executive Summary

Tetra Tech prepared this Historic Document Review and Field Investigation Report to summarize the file review and site inspection for the Openlands Lakeshore Preserve located at the former Fort Sheridan in Highland Park and unincorporated Lake County, Illinois. This report was prepared for Naval Facilities Engineering Systems Command (NAVFAC) Mid-Atlantic, as part of Contract Task Order (CTO) N4008521F6526 under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N6247016D9008. The goals of the assessment were to: 1) determine if there is an unacceptable risk to land users due to the presence of munitions and explosives of concern (MEC) or materials potentially presenting an explosive hazard (MPPEH) on the ground surface within the accessible portions of the 77-acre Openlands Lakeshore Preserve; 2) make an assessment as to whether MEC or MPPEH could be potentially present in the subsurface based upon the review of historic documents; and 3) make recommendations for increasing awareness of the hazards potentially present within the Preserve and means to mitigate such concerns. The potential risks identified will be mitigated to an acceptable level so long as visitors adhere to all of the recommendations. Although it is not possible to guarantee that there are no remaining munitions risks, following the 3Rs (Recognize, Retreat and Report) of munitions safety, staying in authorized areas, and no digging nor other intrusive activities in the Openlands Lakeshore Preserve are the best means to enjoy the it. Intrusive activities include construction type activities, driving stakes, digging, burying things, and other similar activities.

In December 2021 and May 2022, Tetra Tech Unexploded Ordnance (UXO) qualified personnel conducted a visual survey of the Openlands Lakeshore Preserve to identify, document, map, and photograph any MEC/MPPEH found on the surface. In December 2021, a visual survey was conducted along the trails including at least a 6-foot buffer next to the trails; and along the entire beach/waterfront area. The investigation area covered approximately 9,500 feet of trails and 12.5 acres of beach/waterfront within the Preserve. The May 2022, visual survey was conducted in all accessible portions of the Openlands Lakeshore Preserve, which encompassed approximately 43 acres of the property. No MEC/MPPEH items were found in the areas inspected during either of the surveys. The conclusions and recommendations in this report are based upon surface inspections and historical document reviews described herein. No new subsurface investigations were conducted, nor were they deemed to be necessary at this time. The Navy considers the investigation complete and sufficient to support the recommendations of this document.

Because no MEC/MPPEH was observed during the visual inspections, and the historical document review indicates that limited MEC/MPPEH was detected at the surface, the probability of encountering MEC/MPPEH on the ground surface is low. Based upon the review of historical documents, there is a residual risk that MEC/MPPEH may be present below the ground surface at the Openlands Lakeshore Preserve. The residual subsurface risk of MEC/MPPEH is reduced by avoiding ground disturbing activities, and requiring on-site UXO support when planned subsurface intrusive activities are conducted within specified MRSs as discussed below in the Path Forward safety measures recommended in Section 5.2.

The geography, soils, weather patterns, climate, visitor use patterns, and Lake Michigan combine to create frequent disturbances at the Openlands Lakeshore Preserve which may expose MEC/MPPEH, if present, through forces including erosion, frost heave, fluctuating lake levels, wave action, visitor digging, and intense storms.

By conducting a historic document review and visual inspections, the Navy achieved the goal of the study as stated above. Based on the results of the study, it is unlikely that an unacceptable risk to land users exists from MEC/MPPEH on the ground surface in the accessible portions of the Openlands Lakeshore Preserve. An unacceptable risk due to subsurface MEC/MPPEH does not exist unless it would become exposed or disturbed.

The Navy has developed recommendations for increasing public awareness of the hazards potentially present. These recommendations include stakeholder training, fact sheet development, the installation of informational signage, inspections, and munitions avoidance/support for intrusive activities. The signs at minimum must have 3Rs information.

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1.0 Introduction

This Historic Document Review and Field Investigation Report summarizes a review of the relevant historical documents as well as the results of the two visual site inspections conducted to evaluate the likelihood of encountering historic munitions use at the Openlands Lakeshore Preserve located at the former Fort Sheridan in Highland Park, Illinois. This report was prepared for Naval Facilities Engineering Systems Command (NAVFAC) Mid-Atlantic, as part of Contract Task Order (CTO) N4008521F6526 under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N6247016D9008.

1.1 Purpose and Scope

The goals of the assessment were to: 1) determine if there is an unacceptable risk to land users due to the presence of munitions and explosives of concern (MEC) or materials potentially presenting an explosive hazard (MPPEH) on the ground surface within the accessible portions of the 77-acre Openlands Lakeshore Preserve; 2) make an assessment as to whether MEC or MPPEH could be potentially present in the subsurface based upon the review of historic documents; and 3) make recommendations for increasing awareness of the hazards potentially present within the Preserve and means to mitigate such concerns. Military Munitions Response Program (MMRP) detection and removal methods are effective, but residual hazards may still remain. Based upon the review of historical documents, there is a residual risk that MEC/MPPEH may be present below the ground surface at the Openlands Lakeshore Preserve as mentioned in the Munition Response Sites (MRS) Summary, Section 2.3.

The scope of the investigation included:

- A review of historical reports by Tetra Tech to summarize previous relevant investigation activities. The review of the historic reports help inform if the presence of MEC/MPPEH is in the surface or subsurface at the Preserve. No new subsurface investigations were conducted, nor were they deemed to be necessary at this time.
- A visual inspection by a Professional Geologist of the bluffs to attempt to determine if the bluffs consist of fill material that may contain MEC/MPPEH.
- A visual inspection by Unexploded Ordnance (UXO) technicians along the walking trails, a buffer next to the trails, and the entire beach/waterfront area to identify MEC/MPPEH on the surface of the ground on approximately 15 acres within the 77-acre property.

• A second visual inspection by UXO technicians of the surface of the ground on 43 acres within the 77-acre site comprised of the above-described areas and the remaining sections of the property that were accessible.

1.2 Report Organization

This Historic Document Review and Field Investigation Report is divided into five sections. Section 1.0, Introduction, presents the purpose and overview of the report. Section 2.0, Site History and Background, provides the site's description and history, and summarizes previous investigations that are applicable to the historic munitions used at former Fort Sheridan. Section 3.0, Site Inspection Summary, summarizes the field activities and results associated with the visual inspections that were conducted in December 2021 and May 2022. Section 4.0, Updated Conceptual Site Model, discusses the physical profile, release profile, and land uses, sources, receptors, and exposure pathways for potential MEC, and Section 5.0, Conclusions and Path Forward, summarizes the information presented in this report and provides a path forward for future risk-management activities.

2.0 Site History and Background

The following sections describe the location and history of the Openlands Lakeshore Preserve and the former Fort Sheridan, as well as the description, history, and investigation history of each individual MRS associated with Fort Sheridan, in what is now the Openlands Lakeshore Preserve.

2.1 Site Location and Ownership

The former Fort Sheridan was located along the southwestern shore of Lake Michigan in the State of Illinois. The parcel encompassed approximately 712 acres and was roughly rectangular in shape, measuring approximately 1.7 miles north to south and 0.7 miles east to west. Fort Sheridan was bordered to the north by the City of Lake Forest, to the west by Sheridan Road and the City of Highwood, to the east by Lake Michigan, and to the south by the City of Highland Park. Figure 2-1 shows the location of the former Fort Sheridan.

In 2007, the Navy transferred approximately 206 acres to Midwest Family Housing, Limited Liability Company (LLC), which is part of Hunt Military Communities Inc. Midwest Family Housing, LLC transferred an initial portion of 77 acres of the land in 2007, and the remainder in 2010 to Openlands, a nonprofit land trust based in Chicago and classified as a tax exempt organization under Section 501(c)(3) of the Internal Revenue Code, for the creation of Openlands Lakeshore Preserve (see Figures 2-2 and 2-3). The deeds restrict the land to be preserved and used solely and exclusively as a public open space conservation area and nature preserve, and for passive, low-impact recreation, available to the public in perpetuity.

The Openlands Lakeshore Preserve is comprised of two non-contiguous units of land that feature wooded areas, ravines, bluffs, beach, and waterfront. Private donations allowed the organization to clear the site of debris, initiate ecological management and environmental education programs, and install artworks, walking paths, staircases, parking, and related infrastructure. The property opened to the public in 2011 for passive recreational use. In 2013, the Illinois Nature Preserves Commission dedicated the site as an Illinois Nature Preserve, bestowing upon it all protections under Illinois law such a designation confers.

2.2 Site History

The site of Fort Sheridan was established as a French trading post around 1670, and is located on an old trail between Green Bay, Wisconsin and the area that was early

Chicago. The trail was used by Native Americans traveling between their hunting grounds and villages in and around Chicago and the trading posts in Wisconsin. As settlers came into the area, they in turn used the trail between trading posts to ship their goods to Chicago.

Between the 1840s and 1860s, before military development of the land, the property historically known as Fort Sheridan was operated as a manufacturing center and lake shipping port. In the mid-1840s, the town of St. Johns was developed with logging, lumbering, quarrying, and shipping among other industries. Much of Fort Sheridan was harvested for oak trees that were in demand for framing houses and barns, building ships and wagons, firewood, and other uses. Bartlett Ravine Road was developed, through what is now the northernmost of the Lakeshore Preserve's three ravines, during this period of industrial development as an access route to an extensive pier on Lake Michigan, that was used to ship products from the area (SAIC, 2002). The town of St. Johns operated until 1865.

Fort Sheridan was established in 1887 and was originally named Camp Highwood. It was redesignated as Fort Sheridan by General Philip Sheridan in 1888 when it was established to serve as an infantry post to help stabilize the City of Chicago following the Great Chicago Fire in 1871 and subsequent rioting associated with labor problems (e2M, 2002; USACE, 1996). The first troops arrived at the installation in November 1887, and the first permanent construction began in 1889.

The first units to arrive at Fort Sheridan were two companies of the 6th Infantry. In 1891, two battalions of the 15th Infantry, a light battery of the 1st Artillery, and two troops of the 7th Cavalry were stationed at this post. In 1900, the 5th and 7th Infantry, 5th Artillery, and 3rd Cavalry had units at Fort Sheridan. Various other Infantry, Artillery, and Cavalry units were stationed there until 1930. The primary units stationed at Fort Sheridan were 1st Battalion, 2nd Infantry, 1st Squadron, 14th Cavalry, 2nd Battalion, and 3rd Field Artillery (Schall, 1944).

Fort Sheridan was operational for 106 years, between 1887 and 1993. Detailed records are not available for many of the activities that took place on the property in the course of its use as a United States (U.S.) Army military base. Records indicate that the installation provided training facilities for U.S. Army troops participating in the Spanish-American War, the Mexican Intervention of 1913, World War I (WWI), and World War II (WWII). In the 1950s, Fort Sheridan was established as a Nike missile launch site (SAIC, 1999). Many gaps exist in the fort's records of activities that occurred during its 106-year history.

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2.2.1 WWI-Era Activities

Training activities in preparation for WWI included extensive construction of mock combat trenches over a large area of the southern portion of the installation. No field artillery ranges have been identified within Fort Sheridan. However, in October 1922, an error in deflection caused some artillery fire to land in the Farwell and McCormick estates in Lake Forest (North of post; see Figure 2-1), instead of in the intended impact areas located on the beach or in the lake (Schall, 1944). The possibility exists that field artillery units may have used Anti-Aircraft firing sites or used the existing rifle range to fire at targets in Lake Michigan (USACE, 1996). If this did occur, it would have resulted in munitions deposited offshore. It is also possible that units fired on reduced-distance ranges in the undeveloped areas in the southern part of the post (possibly in the area marked Artillery Parade on the 1925 Fort Sheridan map, included in Appendix A) (USACE, 1996). Historical maps and drawings referenced in the 1996 Archive Search Report (ASR) (USACE, 1996) are included in Appendix A.

2.2.2 WWII-Era Activities

Before and during World War II, Fort Sheridan served as a recruit reception center and was a center of anti-aircraft and coastal artillery training (SAIC, 2002). In 1930, the 61st Coast Artillery (Anti-Aircraft) was transferred from Fort Monroe to Fort Sheridan. This unit required training facilities within Fort Sheridan both for itself and for Reserve Officers' Training Corps and Reserve training conducted by unit personnel. The 61st Coast Artillery consisted of three battalions: two gun battalions (Semimobile) and an automatic weapons battalion (Semimobile) (Stanton, 1984). In 1931, a Board of Officers was convened to consider the suitability of firing positions for anti-aircraft artillery at Fort Sheridan. Five locations (A through E) were considered and are shown on Map 4 in the ASR Conclusions and Recommendations Maps and Drawings, included in Appendix A. Location A was the original firing point, but because of complaints from local residents, Location B became the primary firing location (USACE, 1996). Historical photographs show 3-inch guns firing from Location B and 37-millimeter (mm) and 40mm guns firing from an unidentified location on a bluff above the lake. These photos, taken from the ASR (USACE, 1996), are included in Appendix A. In the early years of WWII, 3-inch guns were replaced by 90-mm guns and the 37-mm guns by 40mm guns.

Between 1942 and 1944, an Air Defense Artillery school operated at Fort Sheridan. In July of 1943, this school had eight automatic weapons battalions and 2-gun battalions in training. Fort Sheridan was discontinued as an artillery school on November 1, 1944

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Historic Document Review and Field Investigation Report Openlands Lakeshore Preserve N4008521F6526

(Cibula, 1946). Appendix A contains a table presenting the typical types of artillery used by the various battalions during WWII (USACE, 1996).

2.2.3 **Post WWII-Era Activities**

In the mid-1950s, Anti-Aircraft guns were being phased out in favor of guided missiles. From the 1950s to 1974, Fort Sheridan functioned as a Nike missile launch area, as well as, a Nike operations maintenance and service center for several areas in the Midwest. Between 1967 and 1993, operations at Fort Sheridan were primarily administrative, with the post serving alternately as headquarters for the 5th Army, the U.S. Army Recruiting Command, the Fourth Army, and also providing administrative and logistical support to 74 U.S. Army Reserve centers located in Midwestern states from Minnesota to Michigan (SAIC, 1999).

2.2.4 Installation Closure and Current Land Use

In 1988, Fort Sheridan was recommended for closure under Base Realignment and Closure (BRAC). The installation officially closed in May 1993. The southwest quadrant and the northwest corner (approximately 100 acres) were realigned to the U.S. Army Reserve Command. In January 1994, the southeast quadrant and a small area on the central west side of Fort Sheridan (approximately 206 acres) were realigned to the U.S. Navy for housing and administrative offices. The remainder of the property was transferred out of the Department of Defense (DoD) ownership.

In 2006, the Navy, Midwest Family Housing, LLC, and Openlands executed an Agreement in Principle outlining details also incorporated into deeds that transferred ownership to Openlands in 2007 and 2010, totaling approximately 77 acres. The deeds restrict the land to be preserved and used solely and exclusively as a public open space conservation area and nature preserve, and for passive, low-impact recreation, available to the public in perpetuity. Openlands restored the land, installed walking trails and related infrastructure, and opened the property to the public in 2011 for passive recreational use. In 2013, the Illinois Nature Preserves Commission dedicated the site as an Illinois Nature Preserve. Figure 2-1 shows the location of the current Navy housing and the Openlands Lakeshore Preserve.

2.2.5 **Lakeshore Preserve Closure**

The reason the Navy is conducting this investigation is that in April 2021, on two occasions within one week, three MPPEH, which included one grenade and two flares, were found at the bottom of the bluff and along the beach by visitors. The Waukegan Bomb squad responded to the incident and destroyed the items via detonation. A post-

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detonation determination on whether the items were MEC (i.e., contained explosive material that contributed to the detonation) was not made. The site was subsequently closed to the public by Openlands. Figure 2-5 shows the locations of the MPPEH finds.

2.3 Munition Response Sites (MRS) Summary

Overall, five former MRSs (MRSs are sites that are known or suspected to contain unexploded ordnance, discarded military munitions, or munitions constituents) located at Fort Sheridan overlap the Openlands Lakeshore Preserve (Figure 2-4):

- Grenade Course
- Anti-Aircraft Artillery (AAA) Complex
- Trench Warfare Range
- Small Arms Range Complex
- AAA Complex Transferred

The Trench Warfare Range MRS was identified during the U.S. Army's Phase 3 Inventory at Fort Sheridan in 2002. The other four former MRSs were identified during the U.S. Navy MMRP Preliminary Assessment in 2003.

Based on the reported historical site uses and documentation of the military training activities that occurred prior to Navy ownership, the following types of munitions, both practice and high explosive, may have potentially been used at the 5 former MRSs, although others may be present.

- Small arms ammunition
- 37-mm projectiles
- 40-mm projectiles
- 90-mm projectiles
- 105-mm projectiles
- 120-mm projectiles
- Signal flares
- Grenades, Rifle and Hand
- 2.36-inch rockets

Below is a summary of each of the five former MRSs that are located within the Openlands Lakeshore Preserve boundary.

2.3.1 Grenade Course

This section summarizes the site description, operational history, and historical investigations associated with the former Grenade Course MRS.

2.3.1.1 Site Description and Operational History

The former Grenade Course MRS is located in the southeast corner of the former Fort Sheridan. The MRS consists of 26 acres in area and the majority is currently occupied by the Openlands Lakeshore Preserve's southernmost 9 acres, which include the southern entrance and a paved trail, as well as, non-commissioned officer housing (Figure 2-6). Only 9 acres of the former Grenade Course MRS overlaps the Preserve. The former Grenade Course MRS was mentioned in the May to June 1943 issue of the Coast Artillery Journal. At that time, construction was nearing completion. The course was reportedly used for training with rifle and hand grenades against fixed and moving targets. The course was closed in December 1948; therefore, the dates of use are assumed to be from late 1943 to 1948 (USACE, 1996).

2.3.1.2 Historical Investigation Summary

The below table summarizes the key reports that were reviewed to obtain information about historical investigations, as summarized in the Historical Records Review (HRR) (e2M, 2005). In addition to the key reports listed below, other documents were reviewed; however, they are not listed in the table since no new information regarding the former Grenade Course MRS was identified in those documents. The list of other documents that were reviewed is included in Appendix B.

Report Title	Author	Date
U.S. DoD Program BRAC, Ammunition and Explosives ASR Conclusions and Recommendations	USACE	1996
Final Removal Report, Ordnance and Explosives (OE) Removal and Sampling Action	HFA	1997
Final Remedial Investigation (RI)/Baseline Risk Assessment (BRA) DoD Operable Unit	SAIC	1999
MMRP Historical HRR Fort Sheridan	e2M	2005
Final MMRP Site Inspection Report Fort Sheridan	e2M	2007

Per the 1996 ASR, two Explosive Ordnance Disposal (EOD) response incidents occurred in the past regarding grenades in the former Grenade Course MRS area

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(USACE, 1996). According to the ASR, during an interview with Master Sergeant George Foy, who was stationed at Fort Sheridan from 1980 to 1981 and 1984 to 1989 with the 51st EOD, one incident took place on Bullock Drive in the Non-Commissioned Officer Family Housing area. He stated that several live hand grenade fuzes were dug up in the backyard of one of the housing units. He also stated that two live WWII hand grenades were found in the wall of the old barracks on the south end of the post (USACE, 1996).

In 1996, Human Factors Applications, Inc. (HFA) was contracted to conduct an OE (currently referred to as MEC) Investigation at Fort Sheridan. The former Grenade Course MRS was one of several areas identified in the ASR as potentially contaminated with UXO. The removal action included surface surveys conducted within eight non-contiguous, 100 feet by 100 feet grids located in the former Grenade Course MRS. The grids were identified as 6J1 to 6J8. The grids were located in the areas where ordnance contamination was considered most likely and were randomly spaced to provide sufficient documentation to characterize the entire area. A full-coverage magnetometer-aided surface survey was performed in each grid. One MEC, an M9A1 rifle grenade, was found on the surface at grid 6J7. The rifle grenade was detonated in place in April 1997 (HFA, 1997). Maps and Figures from the HFA investigation are included in Appendix C.

The engineering-environmental Management, Inc. (e2M) HRR states that the site reconnaissance of the former Grenade Course MRS conducted during the 2003 Preliminary Assessment by Malcom Pirnie did not observe visible evidence of UXO, discarded military munitions, or munitions related debris (e2M, 2005). The Preliminary Assessment Report was not available for review, so further details of this reconnaissance are not known.

The 2005 HRR reviewed and summarized all historical investigations conducted at the former Grenade Course MRS. Based on all available historical information and investigations, the HRR concluded that MEC are potentially present in the surface and subsurface soils at the former Grenade Course MRS (e2M, 2005). Figures from the HRR are included in Appendix C.

During the 2007 Site Inspection conducted by e2M, it was determined based on results of previous investigations that the presence of MEC and munitions constituents was likely at the former Grenade Course MRS (e2M, 2007).

Approximately 17 acres of the former Grenade Course MRS is Navy non-commissioned officer housing. Based on discussions with Naval Station Great Lakes, during the

construction of this housing in the 2007 and 2008 timeframe, no munitions were discovered.

2.3.1.3 Conclusion

Based on the review of historical documents, we concur with the conclusions of the SI Report that MEC is potentially present at the former Grenade Course MRS. Since only one live grenade was found during 1996 investigation, no MEC was observed during the 2003 site reconnaissance, and no MEC was found during construction of the Navy officer housing, it is unlikely that MEC is present at the surface, but is potentially present in the subsurface.

2.3.2 Anti-Aircraft Artillery Complex

This section summarizes the site description, operational history, and historical investigations associated with former AAA Complex MRS.

2.3.2.1 Site Description and Operational History

The former AAA Complex (consisting of two smaller MRSs: the Southern Small Arms Ranges MRS and AAA Firing Points A and B MRS) is shown in Figure 2-7.

The Southern Small Arms Ranges MRS totaled approximately 1.0 acre and was comprised of the former Small Arms, Pistol, and Machine Gun Ranges. The ranges were used from approximately 1891 to 1950. Only small arms ammunition was reportedly used at the ranges (e2M, 2005).

The AAA Firing Points A and B MRS totaled approximately 13.7 acres and was comprised of Firing Points A and B. Only approximately 5.2 acres overlap the Openlands Lakeshore Preserve. This MRS is located on the bluff and in the ridges of the southeastern portion of the former Fort Sheridan. Photographs of these firing points are included in Appendix D. The firing points were used from approximately 1930 to 1950 by the 61st Coast Artillery to fire projectiles including: 40-mm, 90-mm, .50 caliber small arms ammunition, and 2.36-inch rockets. The target locations were located in Lake Michigan; therefore, the vast majority of the range fans were over water. The range fans over Lake Michigan are identified as a separate MRS, the AAA Complex Transferred MRS. Documentation of historical training practices indicates that a common practice at these types of firing points was to construct a "dud pit" (i.e., burial pit) to dispose of misfired or excess munitions. If present, these burial pits would likely be located near the firing points; however, a centrally located collection pit could also exist. In addition, the ASR stated that according to the Naval Commanding Officer Operations EOD Unit, a 105mm cartridge case was found in the vicinity of AAA Firing

Point B in October 1995. The office reported that the item appeared to have a live primer and was destroyed by the unit. Their information indicated, but did not confirm, that this item was most likely a souvenir brought onto the post rather than being the result of historical operations on the post.

2.3.2.2 Historical Investigation Summary

The below table summarizes the key reports that were reviewed to obtain information about historical investigations conducted at the former AAA Complex MRS, as summarized in the HRR (e2M, 2005). In addition to the key reports listed below, other documents were reviewed; however, they are not listed in the table since no new information regarding the former AAA Complex MRS was identified in those documents. The list of other documents that were reviewed is included in Appendix B.

Report Title	Author	Date
U.S. DoD Program BRAC, Ammunition and Explosives ASR Conclusions and Recommendations	USACE	1996
Final Removal Report, Volume II, OE Removal and Sampling Action	HFA	1997
Final RI/BRA DoD Operable Unit	SAIC	1999
MMRP HRR Fort Sheridan	e2M	2005
Geophysical Investigation Survey Report AAA Firing Point B	Amec and Kemron	2011
Final Site Specific Final Report	Pika- Pirnie	2016

The ASR *Conclusions and Recommendations* indicates that since AAA Firing Point A was used during the 1930s, "the possibility exists that misfired ammunition were disposed of on the site" (USACE, 1996). During the United States Army Corps of Engineers (USACE) site visit in October 1995, no MEC/MPPEH was observed on the surface. At the time the ASR was written (March 1996), Firing Point B was fenced, and the site visit did not include a survey of the area inside the fence. The ASR indicates that "OE [MPPEH] has been found on the surface in the vicinity of the site but outside of the current fence" including a 105-mm cartridge case (USACE, 1996).

In 1996, as part of their Ordnance, Ammunition, and Explosives Investigation at Fort Sheridan, HFA conducted magnetometer-aided surface surveys in two grids established at the AAA Firing Point B (identified as 6G3 and 6G4) and in two grids established at AAA Firing Point A (6F1 and 6F2). Each grid was 100 feet by 100 feet and subject to a full-coverage survey. Appendix D contains figures showing the locations of these grids. MEC/MPPEH was not encountered in any of the surveyed grids (HFA, 1997).

Malcolm Pirnie completed site reconnaissance of the former ranges and firing points as part of their 2003 Preliminary Assessment Site Visit. No MEC was encountered in either MRS (e2M, 2005). The Preliminary Assessment Report was not available for review, so further details of this reconnaissance are not known.

From June through September 2015, Pika-Pirnie Joint Venture, LLC conducted an investigation of potential burial sites adjacent to the former AAA Battery Firing Site B (Pika-Pirnie Joint Venture, LLC, 2016). The areas they investigated were previously identified by digital geophysical mapping conducted in November 2010 and reported in the Geophysical Investigation Survey Report, AAA Firing Point B (AMEC Earth and Environmental and KEMRON Environmental Services, Inc., 2011). This investigation highlighted four areas of concern based on anomaly density. Figures showing the size and location of these areas are included in Appendix D. Pika-Pirnie performed their work to assess whether the detected subsurface anomalies within each area represented buried MEC/MPPEH. They investigated the anomalies by excavating soil in 6- or 12-inch lifts using an armored backhoe. Each lift was spread onto the ground surface where a UXO team scanned the soil with handheld magnetometers to identify and remove all ferrous metal. The excavations continued in lifts until a four feet depth was reached. Once all metallic items were removed from the trench, the excavation was checked using a hand-held magnetometer to ensure no additional anomalies were present. The trench was then backfilled. No MEC/MPPEH was encountered during this investigation. All recovered material was either non-munitions related construction debris or abandoned utilities. Upon completion of the investigation activities, the debris was removed from the site for disposal. Figures and photographs from this investigation are included in Appendix D.

2.3.2.3 Conclusion

Based on the review of historical documents and investigations, it is unlikely that MEC is present on the surface or in the subsurface of the former AAA Complex MRS, since no MEC has been found in previous investigations. Based on the type of activities conducted at the Southern Small Arms Range MRS reported as being limited to small arms training and no MPPEH being observed during the site visits, it is unlikely that MEC is present in the surface or subsurface of this MRS.

2.3.3 Trench Warfare Range

This section summarizes the site description, operational history, and historical investigations associated with former Trench Warfare Range MRS.

2.3.3.1 Site Description and Operational History

The former Trench Warfare Range MRS is located in the southern half of the former Fort Sheridan, south of the road that runs east-west through the Openlands Lakeshore Preserve's northern ravine, Bartlett Ravine, and surrounds the Openlands Lakeshore Preserve's middle of three ravines, Van Horne Ravine (Figure 2-8). The former Trench Warfare Range MRS is approximately 58 acres in size and 10.5 acres overlap the Openland Lakeshore Preserve. The former Trench Warfare Range was used between 1917 and 1919 to train military personnel for trench warfare during WWI. The trenches were dug in and around Van Horne Ravine; however, all of the former trenches have since been backfilled. The trenches were backfilled sometime after WWI, but the exact date is unknown (USACE, 1996).

The trench system was used extensively by the Officers Training Camps held at Fort Sheridan. Historian Robert Schall's history of Fort Sheridan identified one exercise as, "All commands were given by rockets and signal flares. Thirteen trench mortars firing aerial bombs simulated exploding shells over the trenches and No Man's Land. Star Shells, flares, rockets and rifles in the hands of 2,000 fighting men made the work the most realistic yet attempted." (Schall, 1944). This type of training indicates that a potential exists for the types of rockets, mortars, and various pyrotechnics used during training to be located in the areas around the former trench system (USACE, 1996).

2.3.3.2 Historical Investigation Summary

The below table summarizes the key reports that were reviewed to obtain information about historical investigations conducted at the former Trench Warfare Range MRS, as summarized in the HRR (e2M, 2005). In addition to the key reports listed below, other documents were reviewed; however, they are not listed in the table since no new information regarding the former Trench Warfare Range MRS was identified in those documents. The list of other documents that were reviewed is included in Appendix B.

Report Title	Author	Date
U.S. DoD Program BRAC, Ammunition and Explosives ASR Conclusions and Recommendations	USACE	1996
Final Removal Report, Volume II, OE Removal and Sampling Action	HFA	1997

Site History and Background

Report Title	Author	Date
Phase III Technical Plan Addendum	SAIC	2000
Final Fort Sheridan Feasibility Study DoD Operable Unit	SAIC	2002
MMRP HRR Fort Sheridan	e2M	2005

In the ASR, the USACE concluded that after WWII, when the training trenches were backfilled, they provided an ideal location for disposal of any items needing disposal from the post. This may have included unserviceable ammunition and weapons related trash. Because gas warfare is associated with trench warfare during WWI, USACE assumed that some form of chemical warfare training must have been conducted in the trench area (USACE, 1996).

From May through June 1997, four 100 feet by 100 feet grids were subject to a fullcoverage magnetometer-aided surface survey in the former Trench Warfare Range MRS (HFA, 1997). The four grids were identified as 6E1, 6E2, 6E5, and 6E6. Appendix E contains figures showing the locations of these grids. One inert 3-inch Stokes mortar (munitions debris) was found in survey grid 6E1; one inert 3-inch Stokes mortar and one inert Stokes fuze were found in survey grid 6E5; and two inert 3-inch Stokes mortars and one live 37-mm projectile fuze were found in survey grid 6E6. All MEC items were blown in place in April 1997.

During the RI/BRA in 1999 and the Feasibility Study in 2002, Science Applications International Corporation (SAIC) conducted extensive environmental sampling within the former Trench Warfare Range MRS to detect chemicals of concern and munitions constituents. Various metals and explosives were detected in samples across the site, but no OE (MEC/MPPEH) were encountered during their investigations.

A small portion of Navy housing overlaps the former Trench Warfare MRS. Based on discussions with Naval Station Great Lakes, during the construction of this housing, no munitions were discovered.

2.3.3.3 Conclusion

Based on the review of historical documents, it is unlikely that MEC is present on the surface; however, MEC is potentially present in the subsurface, based on the type of training conducted in the trench systems and the possibility of buried military waste exists.

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2.3.4 Small Arms Range Complex

This section summarizes the site description, operational history, and historical investigations associated with former Small Arms Range Complex MRS.

2.3.4.1 Site Description and Operational History

The former Small Arms Range Complex MRS is approximately 1.4 acres and is located along the beach of Lake Michigan, including the base of the Openlands Lakeshore Preserve's staircase and the sections of trail and beach that lie north and south of the Navy's decommissioned pump station (Figure 2-9). The former Small Arms Range Complex MRS is comprised of a former Pistol Range and a former Machine Gun Range. The ranges were non-contiguous but were classified as a single MRS by Malcolm Pirnie and the Navy during the Preliminary Assessment (e2M, 2007). The ranges were used from approximately 1891 to 1950. Only small arms ammunition, .50 caliber or less, were reportedly used at the ranges (e2M, 2005). One of the munition items found by visitors in April 2021 was located in this former Small Arms Range Complex MRS, and another was located adjacent to it.

2.3.4.2 Historical Investigation Summary

Limited documentation was available regarding the former Small Arms Range Complex MRS. In addition to the key reports referenced below, other documents were reviewed; however, they are not listed in the table since no new information regarding the former Small Arms Range MRS was identified in those documents. The list of other documents that were reviewed is included in Appendix B.

Report Title	Author	Date
U.S. DoD Program BRAC, Ammunition and Explosives ASR Conclusions and Recommendations	USACE	1996
Final RI/BRA DoD Operable Unit	SAIC	1999
Preliminary Assessment, Site Visit Data/Collection Summary Report	Malcom Pirnie	2003
MMRP HRR Fort Sheridan	e2M	2005

The 1996 ASR suggests that MEC and munitions debris are not normally generated at these types of ranges (USACE, 1996). Site walks conducted in the former Small Arms Range Complex MRS during the ASR did not reveal the presence of any MEC/MPPEH. Based on the ranges' reported usages as being limited to only small arms² ammunition,

the ASR *Conclusions and Recommendations* concluded that there are no MEC concerns associated with these ranges (USACE, 1996).

The HRR also states that site reconnaissance during the 2003 Preliminary Assessment by Malcom Pirnie did not reveal any MEC/MPPEH at these MRSs (e2M, 2005). The Preliminary Assessment Report is not available for review, so further details of this reconnaissance are not known. Figures from the HRR showing the former Small Arms Range are included in Appendix F.

2.3.4.3 Conclusion

Based on the review of historical documents, it is unlikely that MEC is present on the surface or in the subsurface, due to the fact that these ranges were reportedly used only for small arms ammunition training and no MEC has been encountered during any investigation.

2.3.5 AAA Complex Transferred

This section summarizes the site description, operational history, and historical investigations associated with former AAA Complex Transferred MRS.

2.3.5.1 Site Description and Operational History

The former AAA Complex Transferred MRS is the approximately 100,000-acre range fan area over Lake Michigan, associated with the AAA Complex MRS (Figure 2-10). The former AAA Complex Transferred MRS was used by the 61st Coast Artillery as a fly-over target range for projectiles including: 37-mm, 40-mm, 90-mm, 120-mm, and 2.36-inch rockets. Targets were typically towed over Lake Michigan and may have ranged in distances up to 15 miles from the shore (USACE, 1996).

2.3.5.2 Historical Investigation Summary

The below table summarizes the key reports that were reviewed to obtain information about historical investigations conducted at the former AAA Complex Transferred, as summarized in the HRR (e2M, 2005). In addition to the key reports listed below, other documents were reviewed; however, they are not listed in the table since no new information regarding the former AAA Complex Transferred MRS was identified in those documents. The list of other documents that were reviewed is included in Appendix B.

Report Title	Author	Date
Enhanced Preliminary Assessment Report	ERD, Argonne Natl. Lab	1989
U.S. DoD Program BRAC, Ammunition and Explosives ASR Conclusions and Recommendations	USACE	1996
Final AAA Ranges Site Investigation Report, Surplus Operable Unit	Harding ESE	2001
MMRP HRR Fort Sheridan	e2M	2005

In September 1999 and August 2000, Harding ESE collected environmental samples to assess whether chemical constituents in artillery fired at the former AAA Complex Transferred MRS ranges had potentially impacted Lake Michigan. As a safety precaution, Harding ESE contracted with UXB International to provide UXO diving support for their investigative work. UXO-qualified divers performed visual sweeps of the lakebed at specific sample locations, before any sediment or surface water sampling took place. No evidence of MEC/MPPEH was discovered during the diving investigation (Harding ESE, 2001). Figures from this investigation are included in Appendix G.

According to the Enhanced Preliminary Assessment Report prepared by the Environmental Research Division of Argonne National Laboratory in 1989, many artillery shells were deposited into Lake Michigan because of all the training activity along the beach (Argonne National Laboratory, 1989). The 1996 ASR included an "Analysis of Ammunition Contamination in Lake Michigan due to Anti-Aircraft Artillery Fire from Fort Sheridan". This analysis concluded that "the majority of unexploded rounds would be from 3.7 to 10.6 miles from shore with a decreasing potential of rounds out to 15.4 miles... It must be assumed that a potential exists for unexploded ordnance to extend from the shoreline out to the maximum range because of the potential for short rounds and the possibility of firing against a surface target floated on Lake Michigan" (USACE, 1996).

2.3.5.3 Conclusion

Based on the review of historical documents, MEC is likely present offshore, up to the distances identified by the ASR. This offshore MEC most likely does not pose a risk to

the Openlands Lakeshore Preserve. Typically, munitions when offshore tend to selfbury and have limited movement.

At Atlantic Fleet Weapons Training Area – Vieques, Puerto Rico, the Navy conducted a study where munition surrogates were placed offshore and the movement was tracked. The conclusion of the study was that the munition surrogates had little movement and self-bury (CH2M, 2018).

The Navy also reviewed, the Environmental Security Technology Certification Program Vortex Lattice UXO Mobility Model for a munitions site in Lake Erie. The Mobility Model was used to predict initial impact location, burial, and orientation of UXO, and subsequent burial and migration over a 28-year period in Lake Erie Impact Areas off Camp Perry, Ohio. The UXO that were used at the site were 60-mm M49A2, 81-mm M43A1, and 106-mm M344 rounds:

The overall conclusion from the March 2015 report is that for those sites containing UXO, is that the UXO presently underwater will remain underwater and, therefore, will not pose a threat to future land-based activities. In addition, the UXO presently buried in unconsolidated bottom sediments will remain buried in many cases (ESTCP, 2015).

3.0 Site Inspection Summary

This section summarizes the activities completed during the site inspections that occurred in December 2021 and May 2022.

3.1 Professional Geologist Inspection

The purpose of the Professional Geologist inspection was to identify and confirm the surficial geology and potential presence of fill material in the bluffs overlooking the beachfront along Lake Michigan at the Openlands Lakeshore Preserve. Prior to the site visit, a Professional Geologist, licensed in the State of Illinois, reviewed background information concerning regional and surficial geologic conditions. The documents that were reviewed included:

- Illinois State Geological Survey (ISGS), 2011. Surficial geology of the Highland Park Quadrangle, Illinois.
- ISGS, 1973. Geology for Planning in Lake County, Illinois. Circular 481.
- USACE, 2014. Fort Sheridan Ravine and Coastal Restoration, Section 506 Great Lakes Fishery and Ecosystem Restoration. November.

Based on the reviewed documents, the Openlands Lakeshore Preserve is underlain by a thick layer of glacial deposits, in particular glacial tills of the Wisconsin Age Wedron Formation. The Wedron Formation deposits include silty clay diamictons that include silt, clay, trace sand and boulders. Where exposed, the upper zone is observed to be tan above the oxidization zone and grey below the oxidation zone. These deposits are sometimes overlain by fine aeolian silts. The silts, where exposed, are unstable and often are easily eroded, resulting in almost vertical scarp like features. The underlying till is more stable and erosional features are less abrupt.

The Professional Geologist conducted a site walk and visual geological assessment of the Openlands beachfront on December 7, 2021. The Professional Geologist walked the entire beachfront of the Openlands Lakeshore Preserve area, starting at the north end (Openlands Marker 10) and proceeding south to Openlands Marker 1. All observations were made from the beach and were subject to the limitation of not being able to inspect the upper portions of the slopes. The following observations were made:

• Many areas were observed to have relatively old growth tree cover and to be naturally sloped; where old growth trees are present; it is unlikely that there is extensive filling.

- Evidence of silt capping the bluffs was noted, as there are several vertically eroded areas near the bluff tops.
- Markers 1 to 3: these areas were observed to be naturally sloped with exposed till in most areas with no evidence of fill.
- Marker 3 to 4: this area had no walkable beach, so inspection traversed the lower grassy slope. The area appeared to be naturally sloped except for a drainage channel located at the border of Marker 3 and 4.
- Marker 4 to 5: this area was naturally sloped with exposed native till at the base.
- Marker 5 to 6: this area is a landfill from former Fort Sheridan and is fenced with warning signs and also contains perimeter monitoring wells. This area appears to be filled and to have an engineered slope and cover.
- Marker 6 to 7: this area has some old growth vegetation with some limited evidence of fill (bricks and concrete).
- Marker 7 to 8: there is notable fill in this area, but it appears to be related to the construction of a protective sheet piling wall and some surficial drainage features, and exposed piping.
- Markers 8 to 10: this area has an abundance of old growth trees suggesting limited fill, if any. Some constructed features are in this area, including the access road and an inactive lift station and stairs.

In general, most areas were observed to have natural features that include naturally sloped erosional features along the base and mid portions of the bluffs, with some steeper slopes in forested areas and sheer erosional features near the tops of the bluffs, in some areas. It is unlikely that native soils would have MEC/MPPEH deeper than several feet below the ground surface.

3.2 UXO Visual Survey

On December 6 through 8, 2021, a UXO Team consisting of a UXO Technician III Team Leader and a second UXO-qualified team member conducted a visual survey of the Openlands Lakeshore Preserve. No subsurface investigation was conducted. The purpose of the December 2021 survey was to identify, document, map, and photograph any MEC/MPPEH found on the ground surface of the Openlands Lakeshore Preserve in areas that the public is authorized to use: the asphalt trails and beach. The December 2021 visual survey was conducted along 9,500 feet of the trails including at least a 6-

foot buffer next to the trails and the entire 12.5 acres of the beach/waterfront area, totaling approximately 15 acres.

After discussions with the Openlands, the Navy performed an additional visual survey of the Openlands Lakeshore Preserve in all areas that could be accessed by the field crew, approximately 43 acres. The visual survey was completed from May 9 to 13, 2022.

During both visual surveys, the UXO Team used an all-metals detector to assist with the visual identification of any metal objects that could have been on the ground surface in areas where taller vegetation or leaf matter limited the UXO Team's ability to observe the ground surface. Each morning before survey activities began, the UXO Team conducted a function test of the detectors to ensure they were working properly. During the visual inspection survey, a biologist accompanied the UXO Team to help avoid impacts to any protected or sensitive areas at the Openlands Lakeshore Preserve.

When surveying the beach area in 2021 and all accessible areas in 2022, the UXO Team members walked alongside each other spaced at approximately 5 feet apart. Each UXO Team member inspected an approximate 10-foot wide transect. When the UXO Team had progressed to the end of the inspection boundary, the team proceeded back in the adjacent area in the same manner with each team member inspecting a 10-foot transect. This process was repeated until the entire survey area was inspected by the UXO Team.

When visually surveying the trails in 2021, the UXO Team generally used the same procedures used for the beach area. The UXO Team inspected 10-foot wide transects along one side of the trail being visually surveyed. When the UXO Team reached the end of the trail, the UXO Team inspected 10-foot transects along the other side of the trail. The only exception to these procedures was on the trail along Bartlett Ravine. Due to the steep slopes on the sides of this section of trail, the UXO Team could not achieve 10-foot wide transects. Instead, the UXO Team members worked independently on both sides of the trail, each inspecting approximately 5 feet wide transects along the steep ravine banks. The paths traveled by the UXO Team were recorded with a handheld GPS unit.

The area of the December 2021 visual survey is shown on Figure 3-1 and Figure 3-2 shows the area of the May 2022 visual survey.

The original project plan (Tetra Tech, 2021) included vegetation trimming. After discussions with the Navy and Openlands management personnel, it was decided not to disturb any vegetation due to the potential presence of protected or sensitive areas

within the preserve. The instrument aided visual inspection was completed successfully. During the visual survey, no MEC or MPPEH were discovered. Documentation of the UXO visual survey, including daily health and safety logs and daily UXO fieldwork logs, which are included in Appendix H, along with photographs from the visual survey.

3.3 Data Usability Assessment and Verification of DQOs

The data usability assessment is an evaluation based on the results of data verification and validation in the context of the overall project decisions or objectives. The assessment determines whether the project execution and resulting data meet the project data quality objectives (DQOs). The data is considered with the goal of assessing whether the final, qualified results support the decisions to be made with the data.

In accordance with Worksheet #37 of the Quality Assurance Project Plan (QAPP), the data usability assessment for the MEC investigation involves the following process (Tetra Tech, 2021):

- Review the project's objectives and sampling design.
- Review the verification/validation outputs.
- Document data usability, update conceptual site model (CSM), apply decision rules, and draw conclusions.
- Document lessons learned and make recommendations.

<u>Review the Project's Objectives and Sampling Design</u>: Based on the objective of the study, the sampling design was sufficient to meet the DQOs. The only deviation from the sampling plan, not trimming vegetation, did not result in data gaps or limitations that affected the ability to achieve the DQOs.

<u>Review the Verification/Validation Outputs</u>: No data gaps nor non-conformances were identified. The measurement performance criteria for data accuracy, completeness, and sensitivity listed in Worksheet #12 of the QAPP (Tetra Tech, 2021) were met.

Document Data Usability, Update CSM, Apply Decisions Rules, and Draw Conclusions: Sufficient data was collected to update the CSM (see Section 4.0), to apply the decision rules (see Section 5.1), and draw conclusions (see Section 5.1). <u>Document Lessons Learned and Make Recommendations</u>: Based on the review of the DQOs, sampling design, and data collected, no changes to the DQOs are recommended.

Site Inspection Summary

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4.0 Updated Conceptual Site Model

Below is the updated CSM based on information gathered from the site visit and historic record review.

4.1 Physical Profile

The following sections describe the natural factors that may affect the release, fate and transport, and access to the potential MEC at the site.

4.1.1 Topography

Except for three ravines (Bartlett, Van Horne, and Shenck) oriented perpendicular to the Lake Michigan shoreline, the ground surface slopes relatively gently from west to east across the Openlands Lakeshore Preserve toward a bluff line that runs along the lakeshore. The ground surface then slopes abruptly from the bluff line to Lake Michigan, with a relief ranging from approximately 40 to 70 feet. The site's topography is shown on Figure 2-2.

4.1.2 Geologic and Hydrogeologic Setting

The site is underlain by a thick layer of glacial deposits, in particular glacial tills of the Wisconsin Age Wedron Formation. The Wedron Formation deposits include silty clay diamictons that include silt, clay, trace sand, and boulders. Where exposed, the upper zone is observed to be tan above the oxidization zone and grey below the oxidation zone. These deposits are sometimes overlain by fine aeolian silts. The silts, where exposed, are unstable and often are easily eroded, resulting in almost vertical scarp like features. The underlying till is more stable and erosional features are less abrupt. Other than the beach, the site's soils are Ozaukee silt loam. The soils are highly erodible and have a moderate potential for frost action. On the bluffs, these soils also have a high susceptibility to water erosion.

Previous investigations at former Fort Sheridan have indicated the overall direction of groundwater movement is to the east, toward Lake Michigan. Groundwater at former Fort Sheridan was previously determined to be Class II to a depth of 49 feet. The surficial deposits at former Fort Sheridan do not yield appreciable amounts of groundwater and have been designated as a non-potable groundwater resource. The underlying dolomite bedrock represents a major regional aquifer. A localized sand and gravel aquifer is also present at the former Fort Sheridan at a depth between the overlying surficial clay deposits and the underlying dolomite bedrock aquifer. Neither of

these aquifers is used as a groundwater resource in the vicinity of former Fort Sheridan because water is obtained from nearby Lake Michigan.

4.1.3 Climate

The climate of the site is classified as hot-summer humid continental, with all four seasons distinctly represented. Winters are cold and consist of frequent snow and near 0 degree Fahrenheit windchill temperatures, while summers are warm and humid with temperatures being hotter inland. Spring and fall bring bouts of both cool and warm weather and fairly sunny skies. Annual precipitation is moderate with the driest months being January and February and the wettest being July and August. Rainstorms have increased in frequency and intensity. Rain and snowfall in Illinois increased by 11 percent over the past century, with Lake County receiving 20 to 45 percent higher rainfall amounts in 2017, compared to 1983. The site's weather is influenced during all four seasons by the nearby presence of Lake Michigan.

Compared to historical records, Lake Michigan is currently exhibiting greater extremes in water levels, wind strength, stormwater events, and ice cover, leading to greater erosion, as well as, greater disturbance of the lake bottom.

In this climate, silty soils such as those found throughout the Openlands Lakeshore Preserve exhibit frost heave, that could allow for the upward displacement of objects embedded in the soil.

4.2 Release Profile

The following sections describe the movement and suspected extent of potential MEC/MPPEH at the site.

4.2.1 Description of Potential MEC/MPPEH Release

Based on the history of former Fort Sheridan, previous investigations, and the MEC/MPPEH items discovered along the beach in the spring of 2021, the Openlands Lakeshore Preserve could be impacted by MEC/MPPEH from activities conducted at the previous MRSs at former Fort Sheridan.

4.2.2 Previous Land-Disturbing Activities

The area has been disturbed in the past with numerous construction activities, such as construction of the Navy housing and potential fill brought onto the property. Also Openlands has stated that one-third of the site each year is burned in rotational units, so that every portion of the site is burned within every three years.

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4.2.3 Location and Distribution of Potential MEC/MPPEH

Based on historical documents, MEC/MPPEH that may remain on the surface and in the subsurface at Openlands Lakeshore Preserve could be 37-mm, 40-mm, 90-mm, 105-mm, and 120-mm projectiles; signal flares; grenades; and 2.36-inch rockets, but the presence of other munition items is possible. Precise locations of potential munitions, if present, are unknown. The results of the previous investigations, ground maintenance conducted, and prescribed burns that have occurred, suggest that the presence of MEC/MPPEH on the ground surface is unlikely. Also, based upon the review of historical documents, there is a residual risk that MEC/MPPEH may be present below the ground surface at the Openlands Lakeshore Preserve, as previously discussed in the Munition Response Sites (MRS) Summary, Section 2.3. No MEC/MPPEH items were found on the surface during the UXO visual surveys, in portions of the Openlands Lakeshore Preserve that can be reasonably accessed.

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4.3 Land Use and Exposure Profile

The following sections provide information used to identify and evaluate applicable exposure scenarios for people who might be impacted by the site, including visitors, contractors, emergency responders, security personnel, staff and trespassers, collectively known as receptors, and receptor locations for the site.

4.3.1 Current and Reasonably Anticipated Future Land Use

Currently, the site is operated as a public nature preserve that includes paved walking trails and a beach where signs prohibit visitors from wading, swimming, launching watercraft of any type, and fishing. It is anticipated that, due to the property's designation as an Illinois Nature Preserve and the mission of the nonprofit landowner, the usage of the site will remain the same in the perpetuity per the deed.

4.3.2 Neighboring Land Uses

The area around the Openlands Lakeshore Preserve is a mix of residential, commercial, and military use. A special education school for students ages 10 to 21 and the City of Highland Park's water intake plant are adjacent to the Openlands Lakeshore Preserve's southern boundary. The DoD owns several adjacent parcels, including residential neighborhoods and the landfill, which lies within the Openlands Lakeshore Preserve but is managed by the U.S. Army.

4.3.3 Current and Reasonably Anticipated Future Receptors and Exposure Pathways

Potential current receptors for MEC include visitors, contractors, emergency responders, security personnel, staff, and trespassers. If surficial MEC does exist at the site, a person could contact it through handling, stepping on, or other inadvertent contact. If present in the subsurface, the only way for a person to encounter subsurface MEC would be through soil disturbing activities, such as construction activities or digging on the beach or in other areas.

Munition items, if present, may be exposed at the surface by erosion, waves, frost heave, land disturbance, such as construction activities, or persons digging up an item (e.g., Children/souvenir hunters/collectors).

4.3.4 Access Conditions and Frequency of Use

Access to the Openlands Lakeshore Preserve is typically uncontrolled, with unlimited access to the public. Due to the unrestricted access of the Openlands Lakeshore Preserve, its scenic features, and its close proximity to residences, train stations, and regional bike paths, the site is characterized as being frequently used.

4.4 Pathway Analysis

Information from the previous sections was used to identify whether the pathways for both current and reasonably anticipated future land uses for the site are complete, potentially complete, or incomplete. For MEC, each pathway must include a source, access, activity, and receptor. Graphical depictions of the pathway analyses for the site are provided as Figure 4-1.

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5.0 Conclusions and Path Forward

This section provides the conclusions and recommended path forward based on the results of the visual inspections and historical document review.

5.1 Conclusions

The goals of this assessment, as stated in Section 1.1, were completed through visual inspections and review of the historic record. The Decision Rules from the QAPP (Tetra Tech, 2021) were:

- **Decision Rule #1**: If munitions and explosives of concern or material potentially presenting an explosive hazard are not encountered, then a threat to human receptors is unlikely.
- **Decision Rule #2**: If munitions and explosives of concern are encountered, then a threat to human receptors is likely.
- **Decision Rule #3**: If material potentially presenting an explosive hazard are encountered, then a threat to human receptors is possible pending final determination of the item's explosive safety status.

Based on the results of visual inspection, historical document review, and the implementation of the below recommendations, the probability of encountering MEC/MPPEH on the ground surface is low. Based upon the review of historical documents, there is a residual risk that MEC/MPPEH may be present below the ground surface at the Openlands Lakeshore Preserve as noted in discussion of Munition Response Sites (MRS) Summary, Section 2.3. The probability of encountering MEC/MPPEH at the Openlands Lakeshore Preserve is low based on review of the historical documents, the two site inspections completed, and implementation of the recommendations in this report. The potential risks identified will be mitigated to an acceptable level so long as persons entering the Openlands Lakeshore Preserve adhere to all of the recommendations. Although it is not possible to guarantee that there are no remaining munitions risks, following the 3Rs (Recognize, Retreat and Report) of munitions safety, staying in authorized areas, and no digging nor other intrusive activities in the Openlands Lakeshore Preserve are the best means to enjoy the Openlands Lakeshore Preserve. Intrusive activities include construction type activities, driving stakes, digging, burying things, and other similar activities. The residual subsurface risk of MEC/MPPEH is reduced by avoiding ground disturbing activities, and requiring on-site UXO support when planned subsurface intrusive

activities are conducted within specified MRSs, as discussed below in the Path Forward safety measures.

5.2 Path Forward

The Navy recommends the below measures to serve as a path forward to increase community awareness and mitigation measures that are consistent with established DoD policies and procedures for MRSs:

- Conduct a presentation/training with landowner and other key stakeholders.
- Create a fact sheet in English and Spanish for public distribution.
- Create a 3R (recognize, retreat, and report) training video in English and Spanish for current and future property owners, to make available to the public at large through multiple Online websites and other venues.
- Install and maintain informational signs at the Openlands Lakeshore Preserve in English and Spanish to alert the public that MEC/MPPEH may be present. The signs at minimum must have 3Rs (Recognize, Retreat and Report) information. See Figure 5-1 for the proposed location of signs.
- If the ground is visible (i.e., no heavy snow cover) and the property is safe to access, perform visual inspections as soon as possible after events as listed:
 - Annual inspection at the end of snowmelt each spring of the safely accessible areas.
 - Inspect the beach area after each: 100 year storm; after events in which sustained onshore winds exceed 40 knots for at least six hours; and after events in which onshore waves exceed 13 feet (as measured by nearby National Oceanic and Atmospheric Administration wave buoys typically deployed from April through October).
 - Safe access, visibility, and event occurrence will be determined by the Navy in consultation with subject matter experts.
 - Every year, the Navy will reassess the inspection criteria and frequency.
- Suspend controlled burns until an Explosives Safety Submission Determination Request (ESS DR) is submitted and approved by the Naval Ordnance Safety and Security Activity.
- For any subsurface intrusive activities on the Openlands Lakeshore Preserve, within any of the following former MRSs (Grenade Course, AAA Complex,

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Trench Warfare Range, and AAA Complex Transferred) either conduct UXO avoidance or have on-site UXO support. See Figure 5-2 for the area of recommended support.

 For any subsurface intrusive activities outside a former MRS range boundary and including within the small arms range complex MRS, perform 3R training and have on-call UXO support.

Recommendations are to be conducted by the Navy, except for on-call UXO support, which will be conducted by the Waukegan Bomb Squad and is the responsibility of the current property owner to arrange. 3R training for subsurface intrusive activities outside of a former MRS range boundary and including within the former Small Arms Range Complex MRS will also be the OLP's responsibility to arrange.

After finalization of this report, the Navy will submit an ESS DR to the Naval Ordnance Safety and Security Activity to identify any recommended mitigation for controlled burns on the Openlands Lakeshore Preserve.

Although it is not possible to guarantee that no additional items will be discovered in the future, the Navy believes adhering to the recommended mitigation measures will reduce and manage risk in a manner that makes it possible for persons entering the Openlands Lakeshore Preserve to once again enjoy it.

Once the Openlands Lakeshore Preserve is added to the Navy's, MMRP inventory, all relevant documents will be turned over to the associated Navy Environmental Restoration partnering team. At that time, there will be an opportunity to consider additional environmental studies. Once the recommendations are implemented, managers of the Openlands Lakeshore Preserve will decide when visitors may return.

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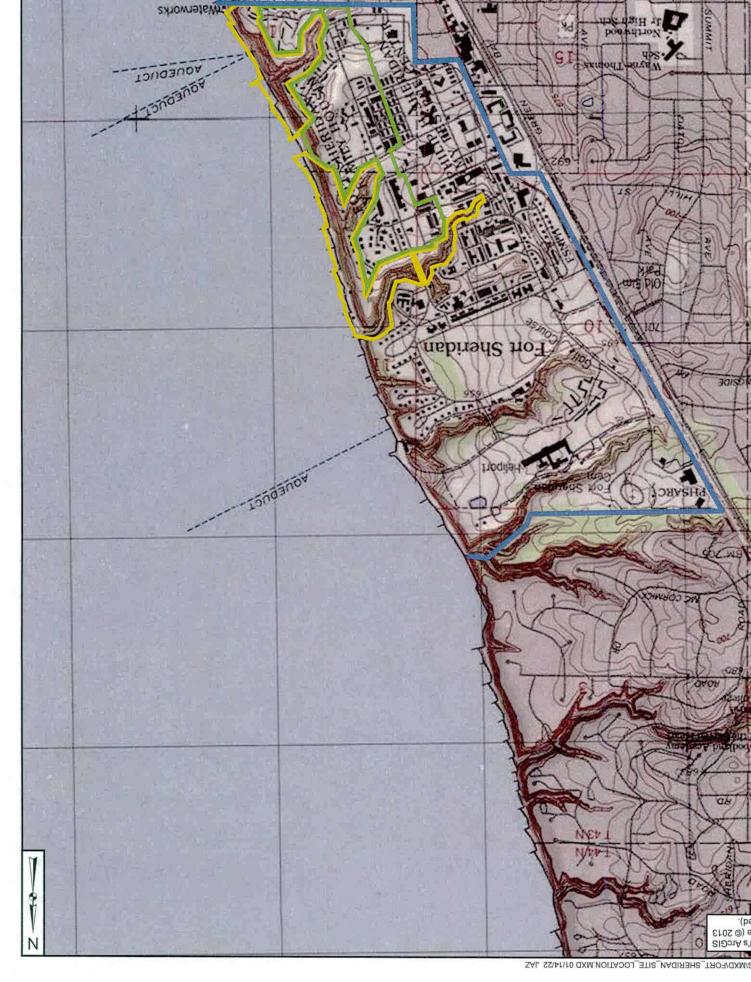
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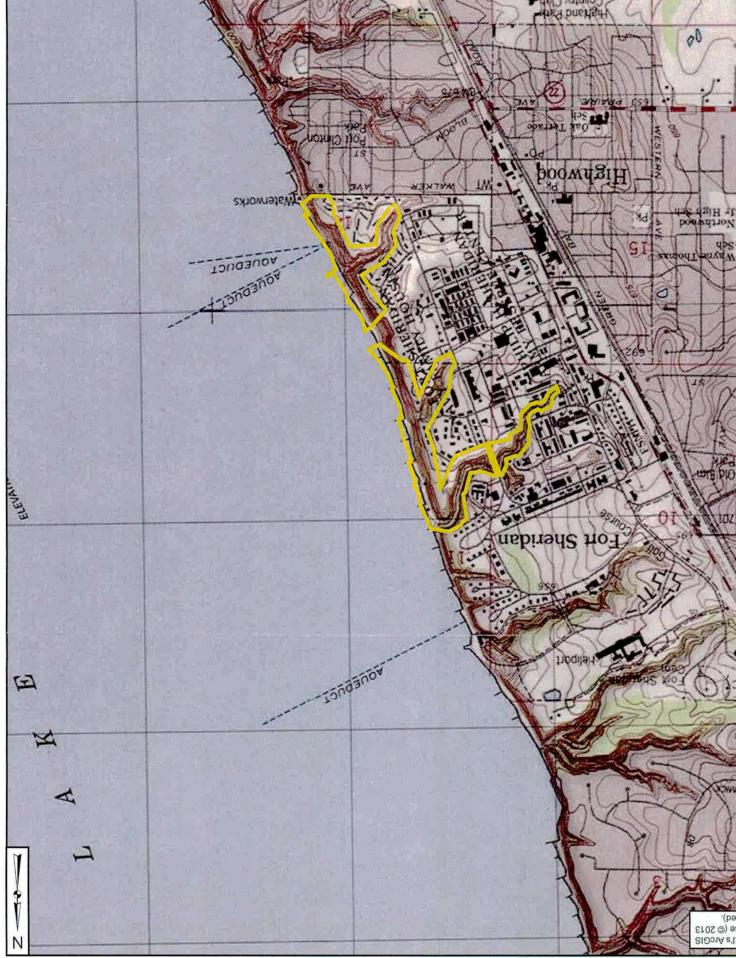
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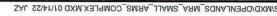






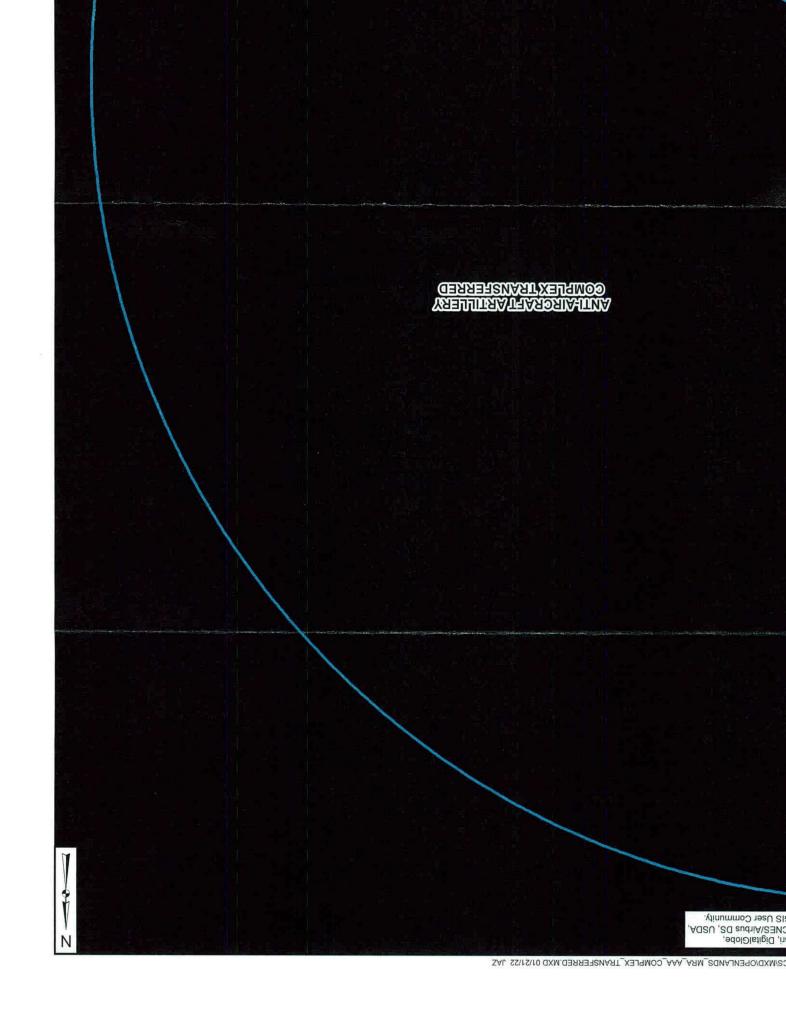
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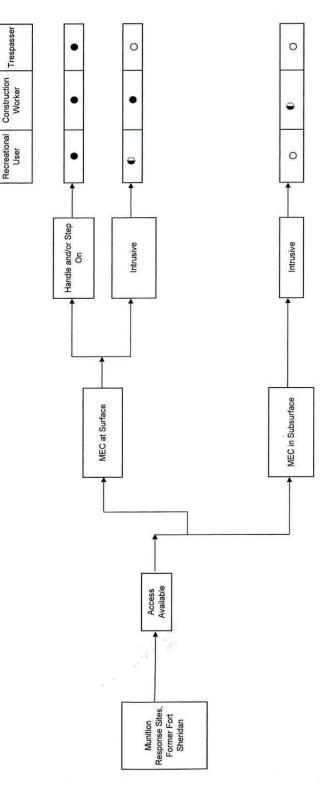


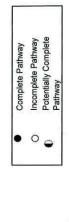


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FIGURE 4-1 MEC/MPPEH EXPOSURE PATHWAY ANALYSIS OPENLANDS LAKESHORE PRESERVE NAVAL STATION GREAT LAKES HIGHLAND PARK, ILLINOIS

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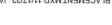


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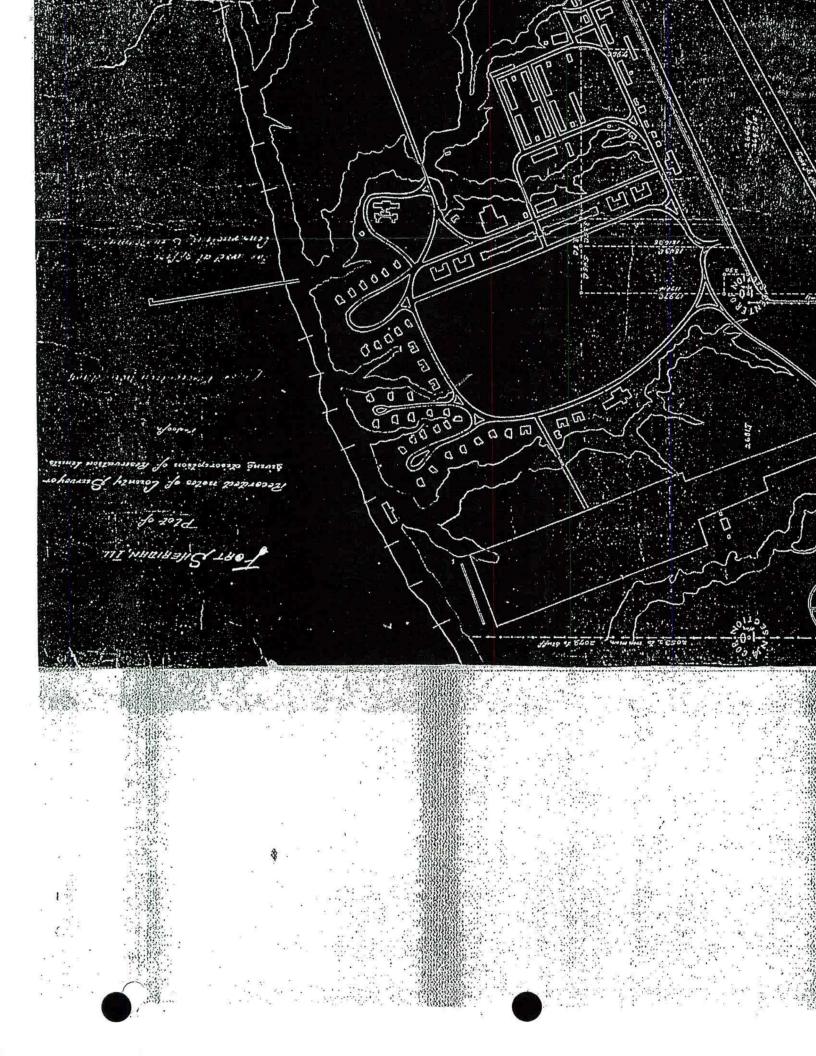
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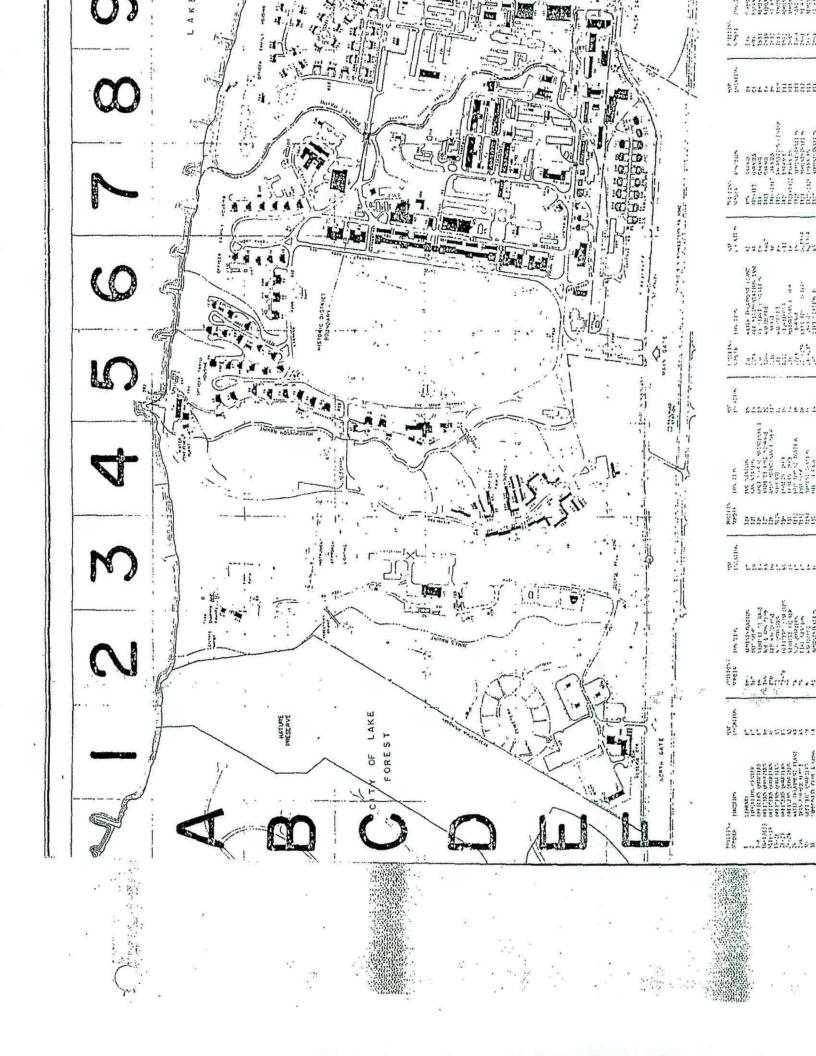
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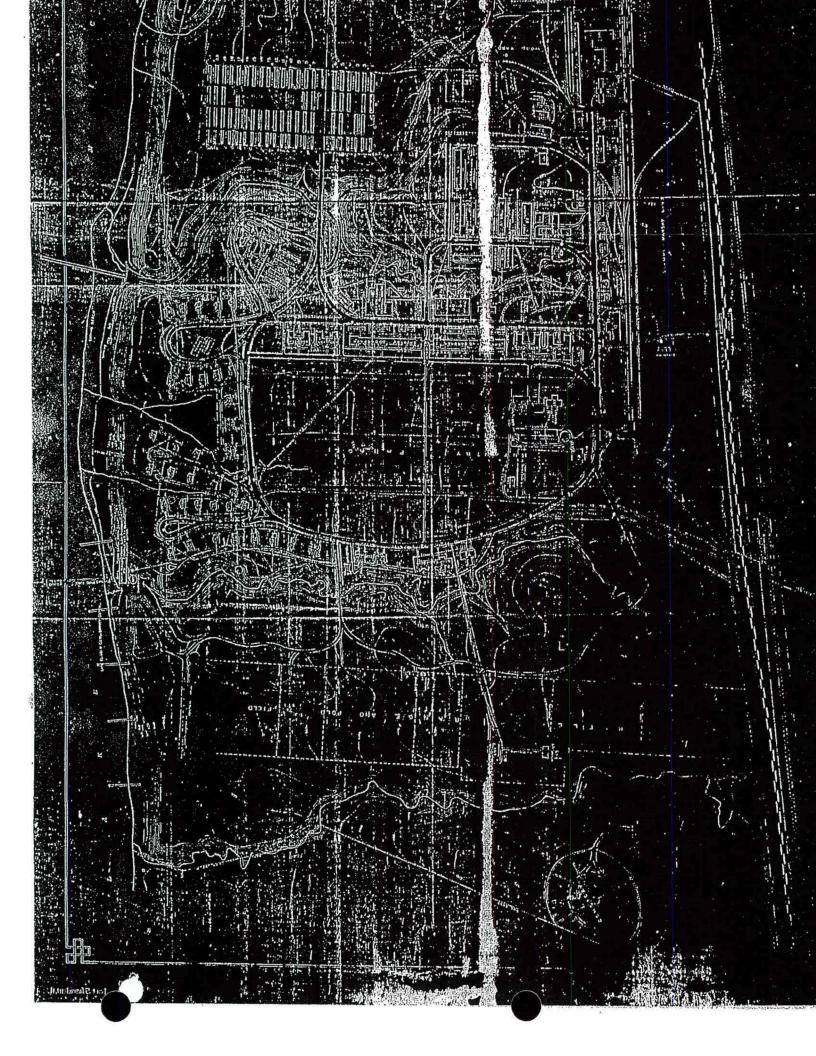
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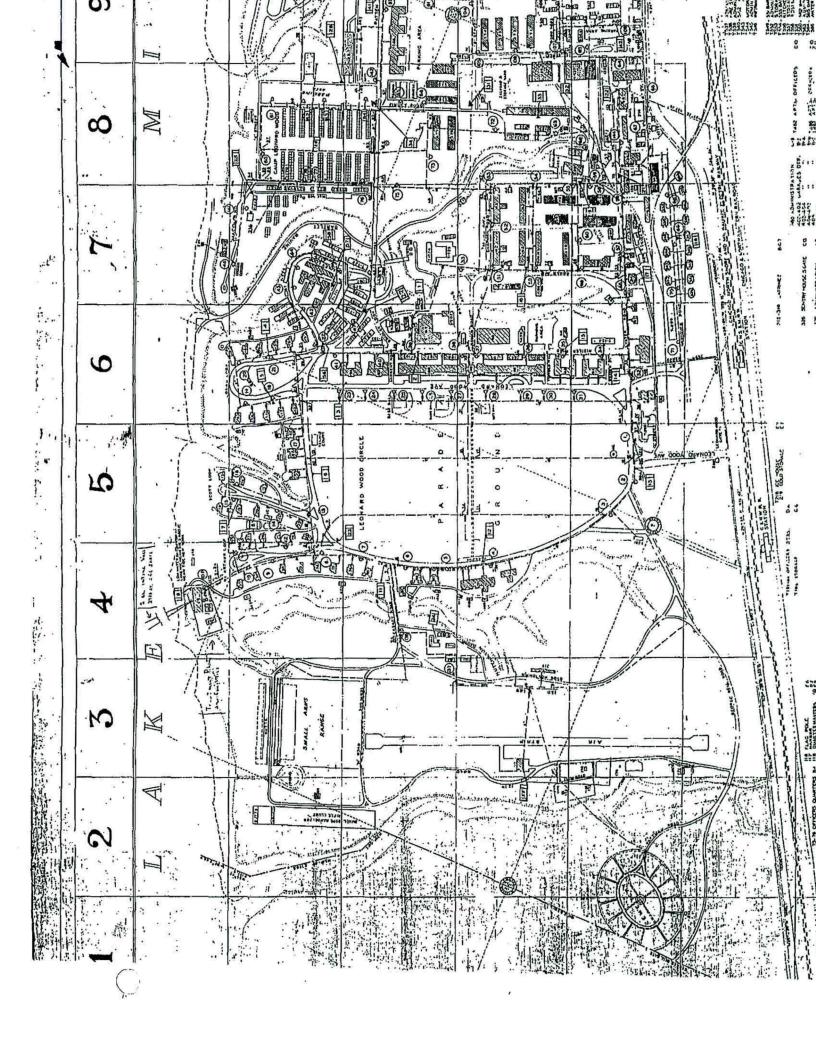


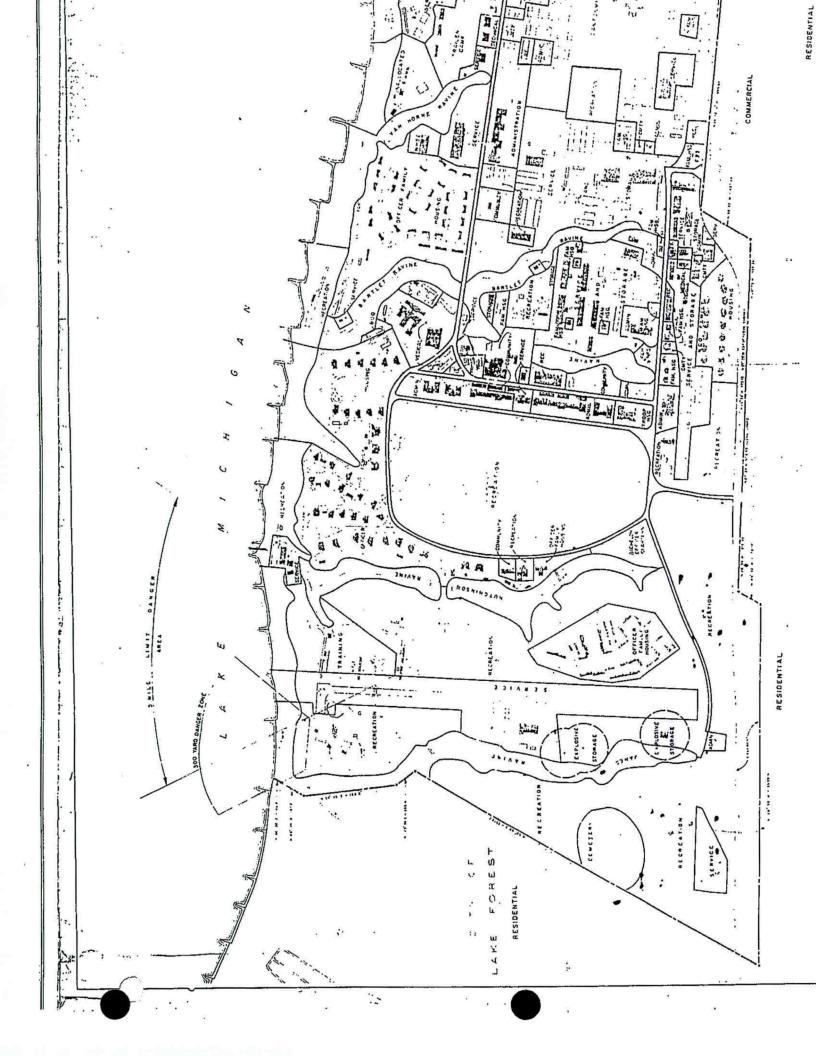


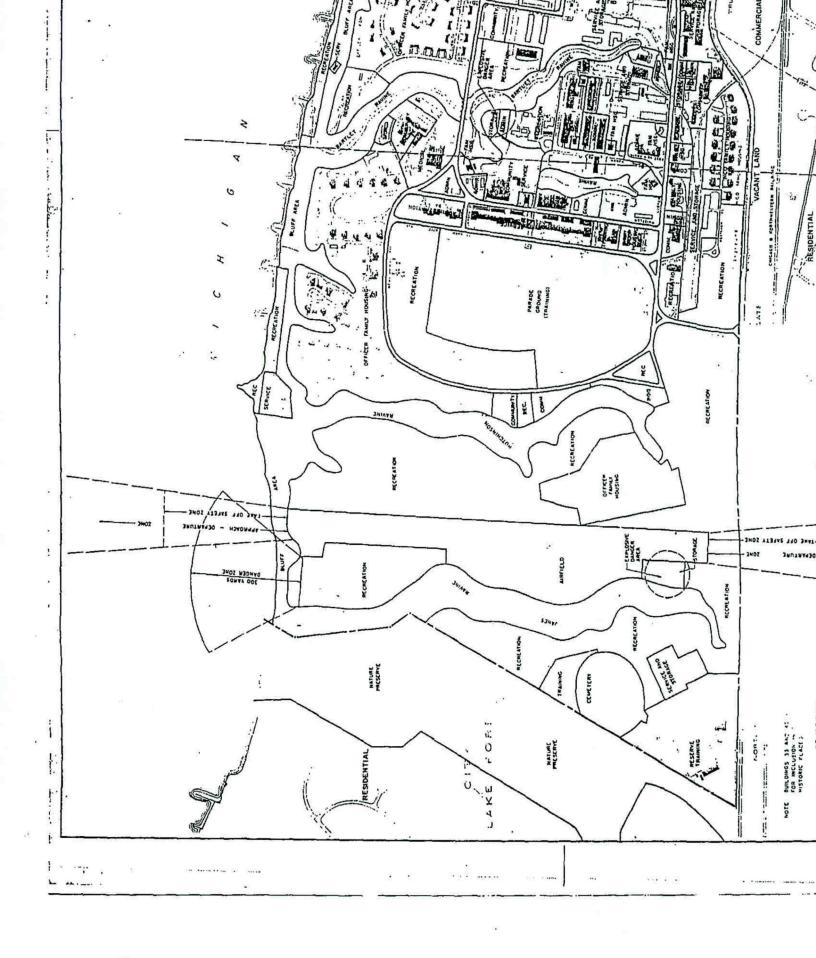






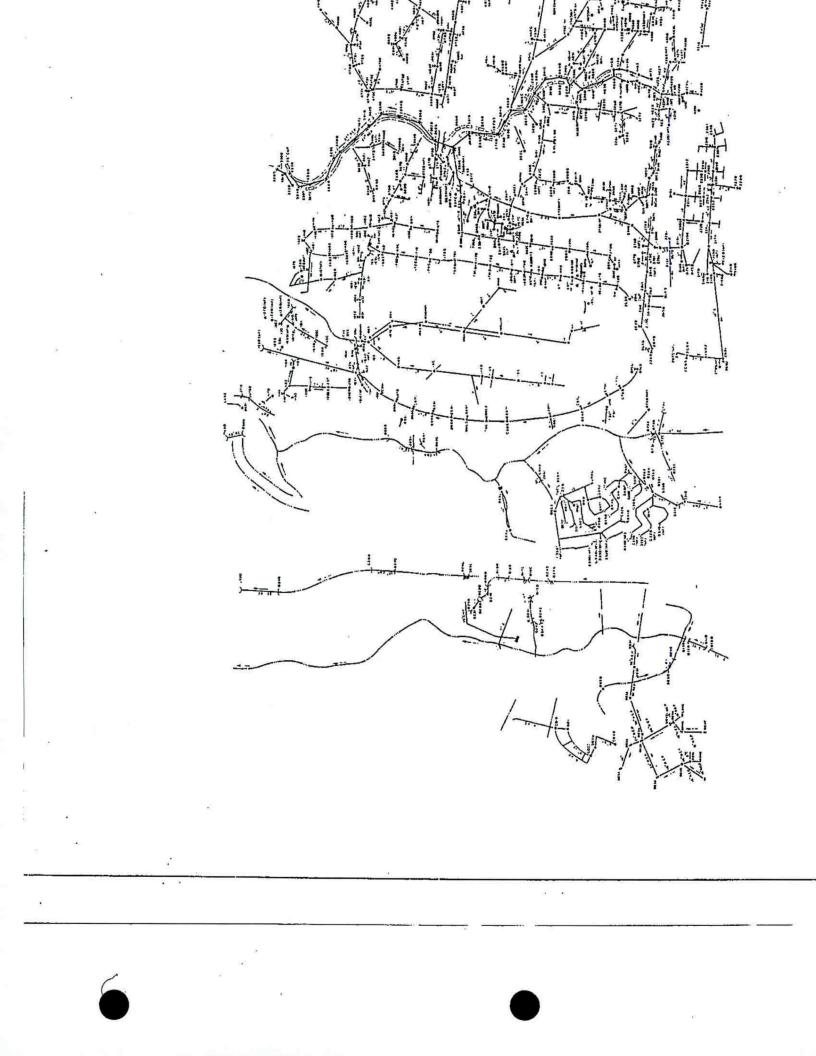


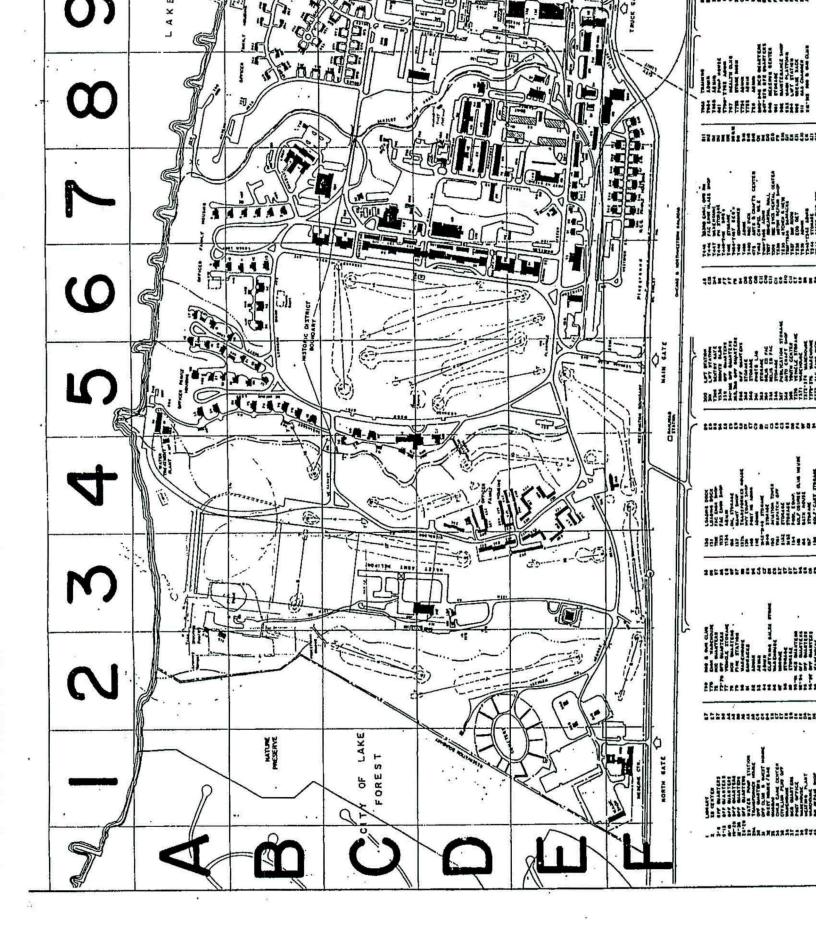




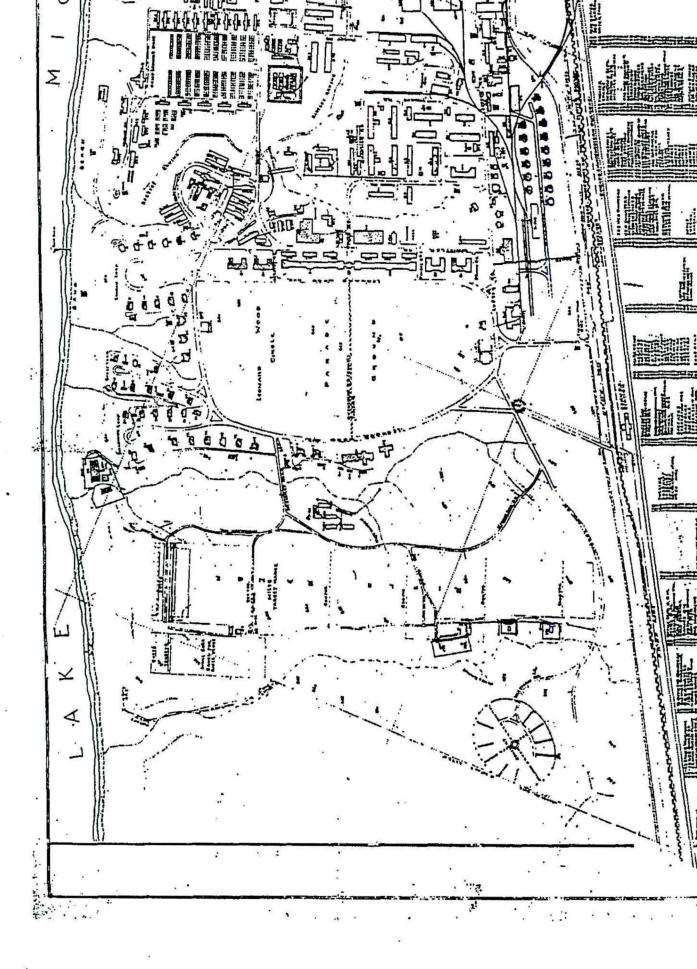
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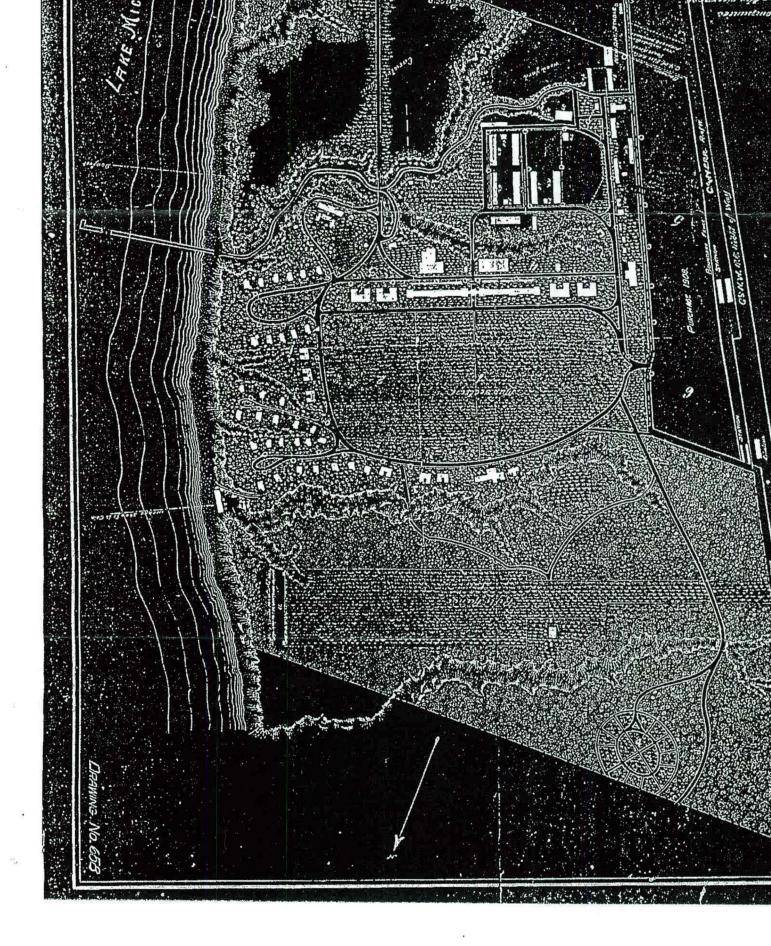




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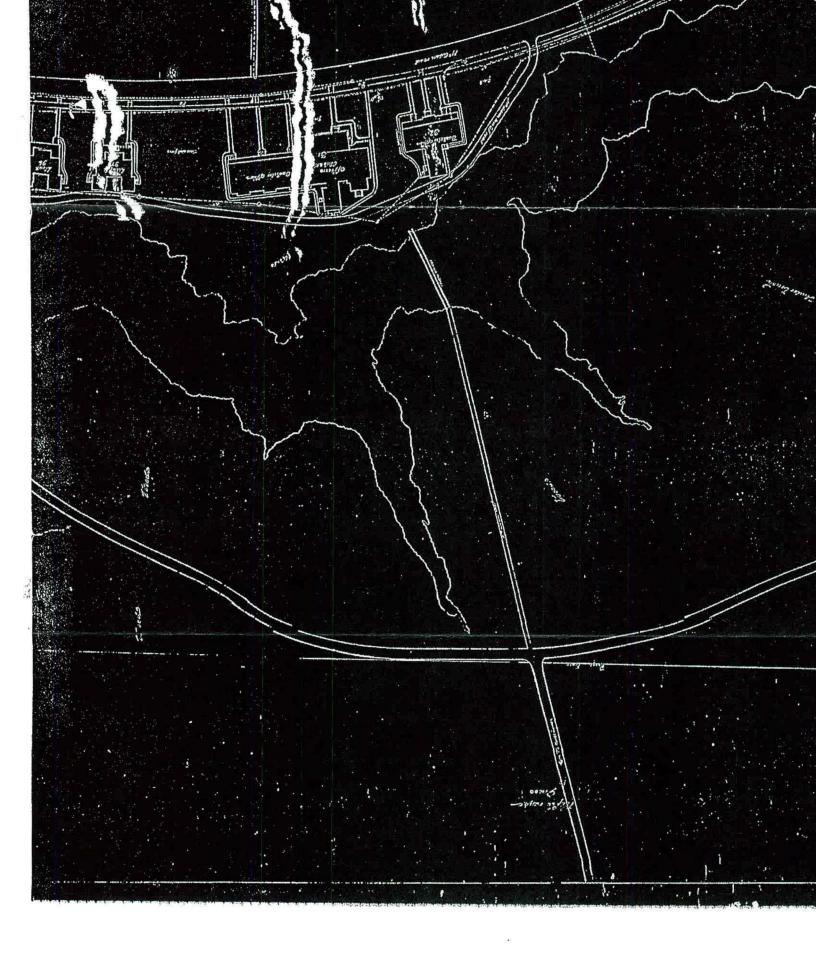


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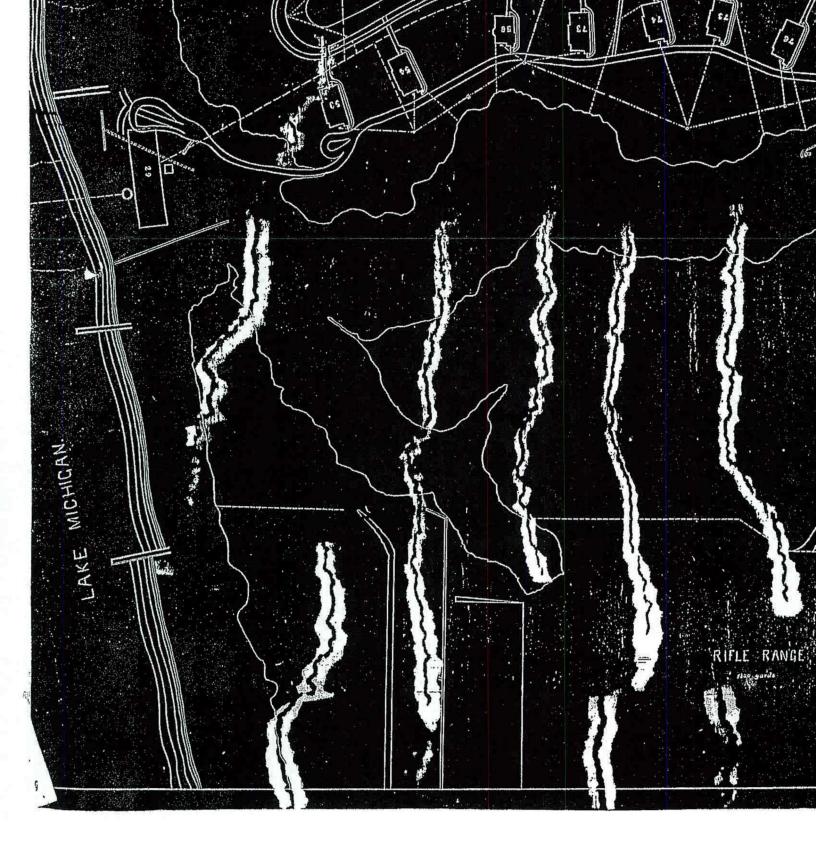


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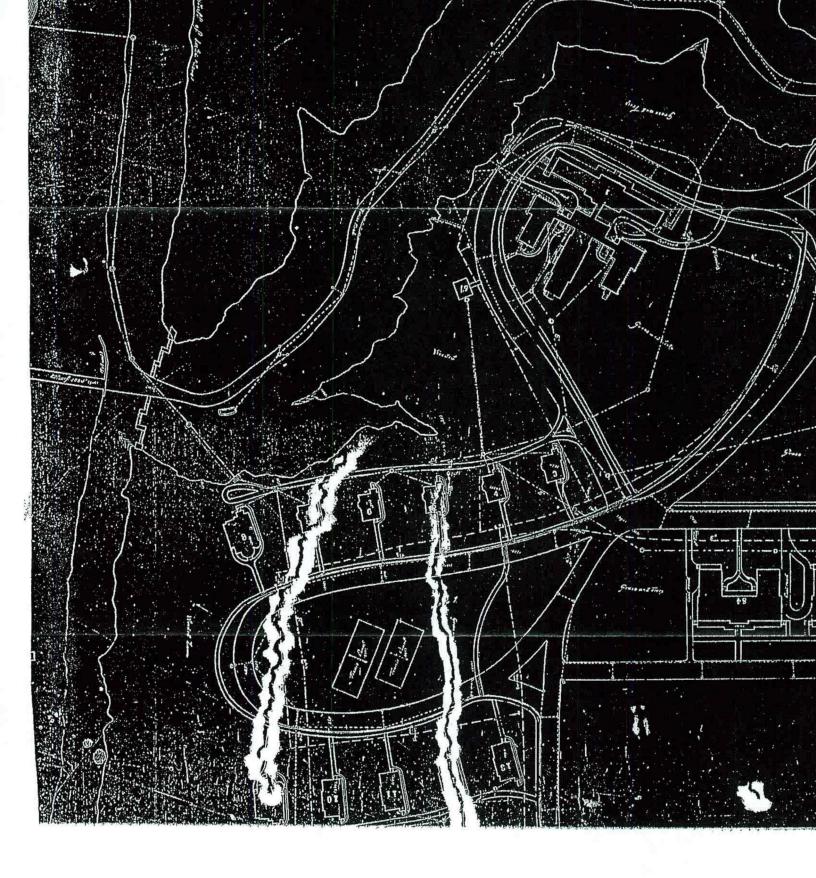


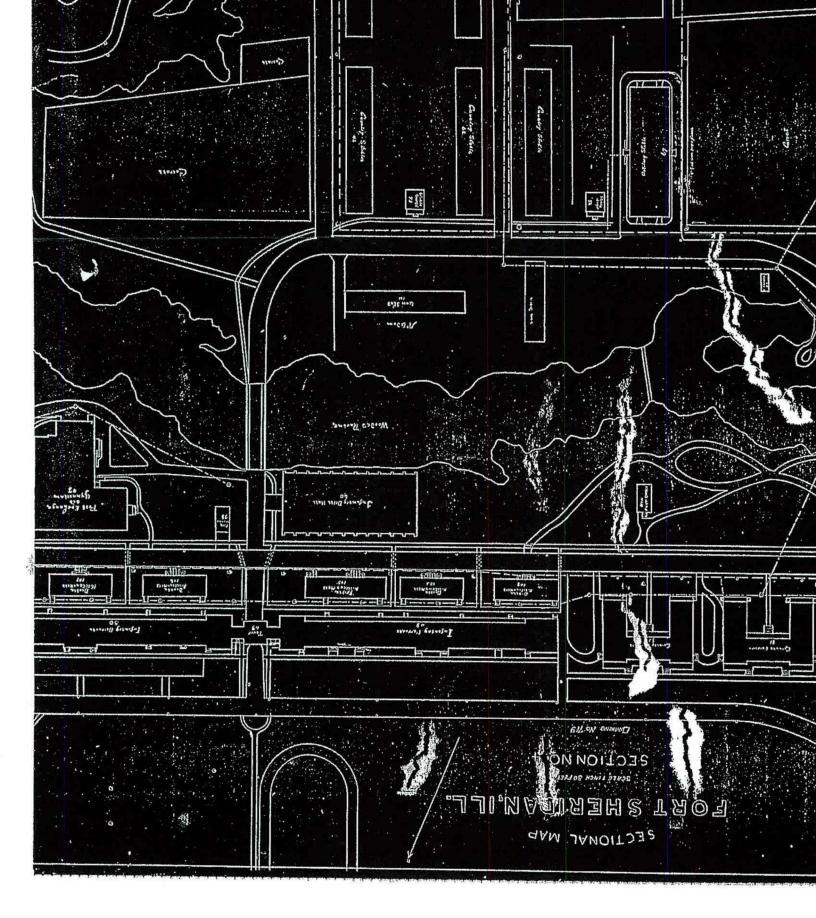


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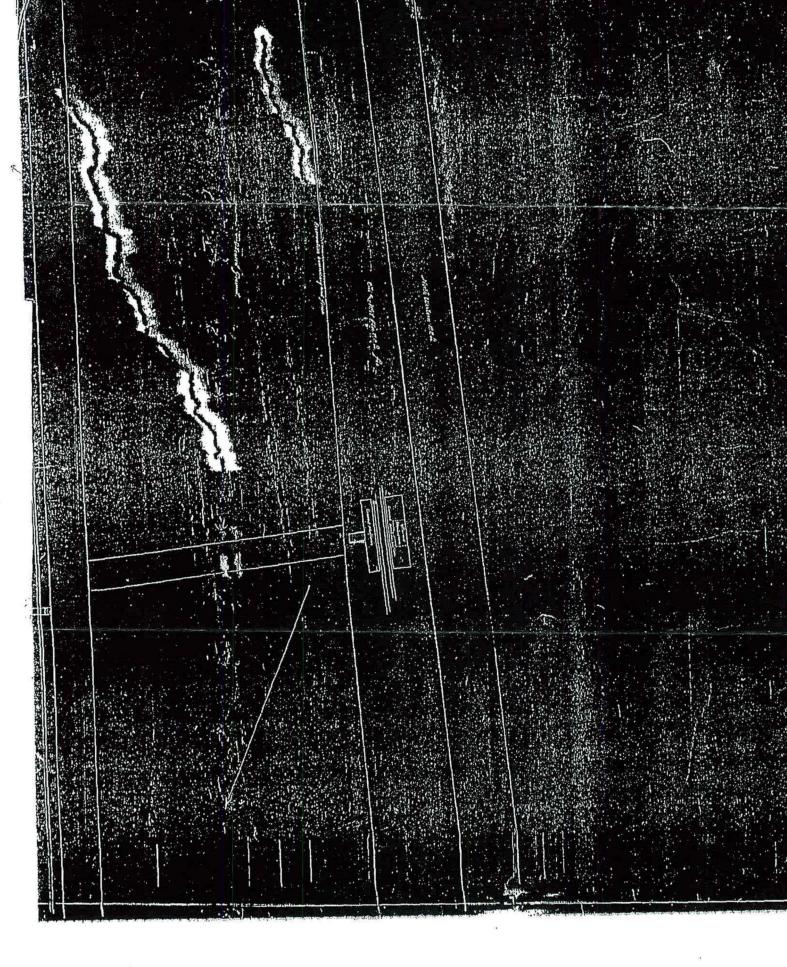










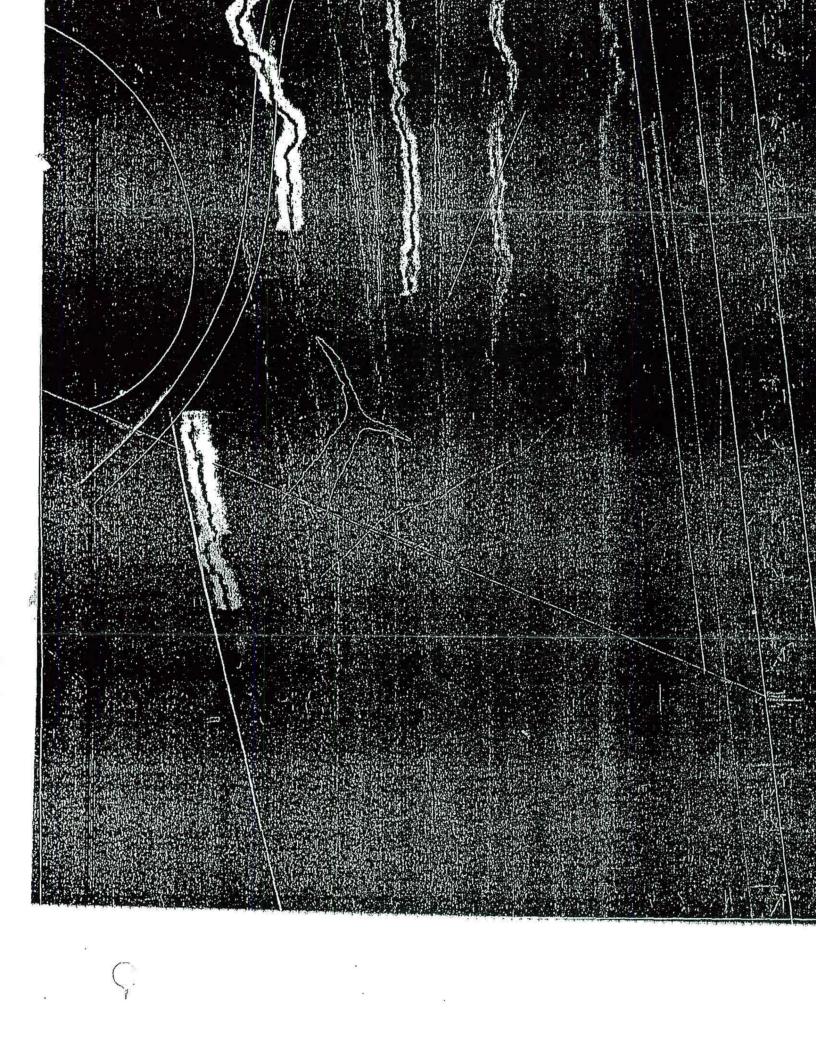


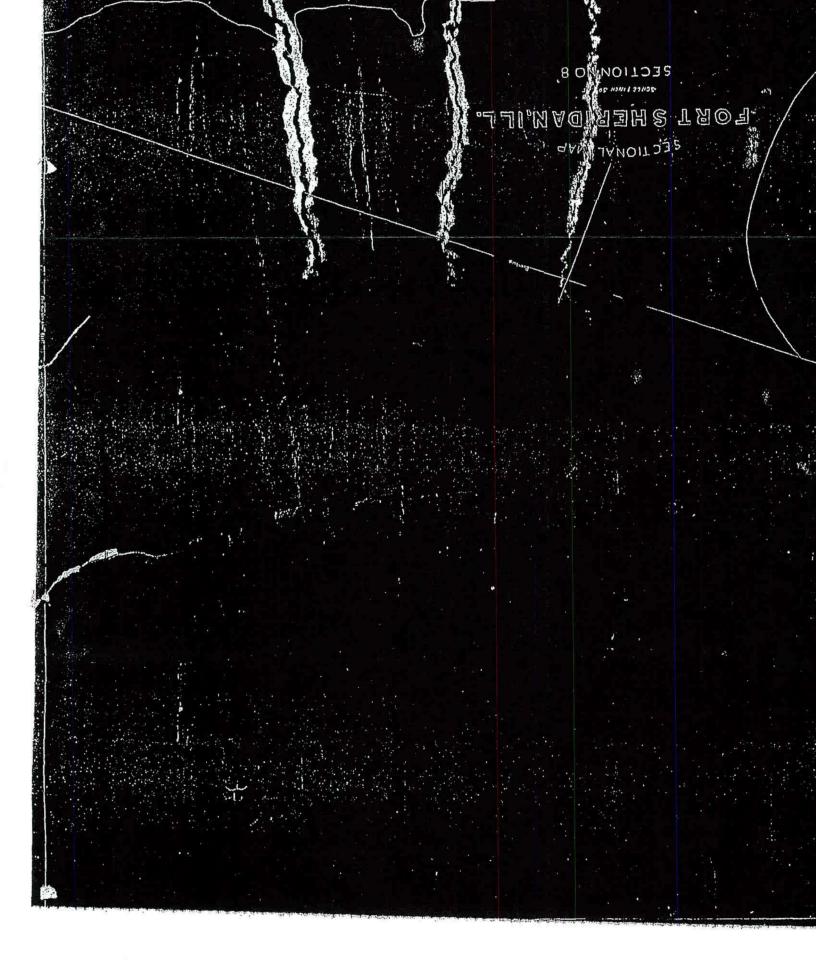
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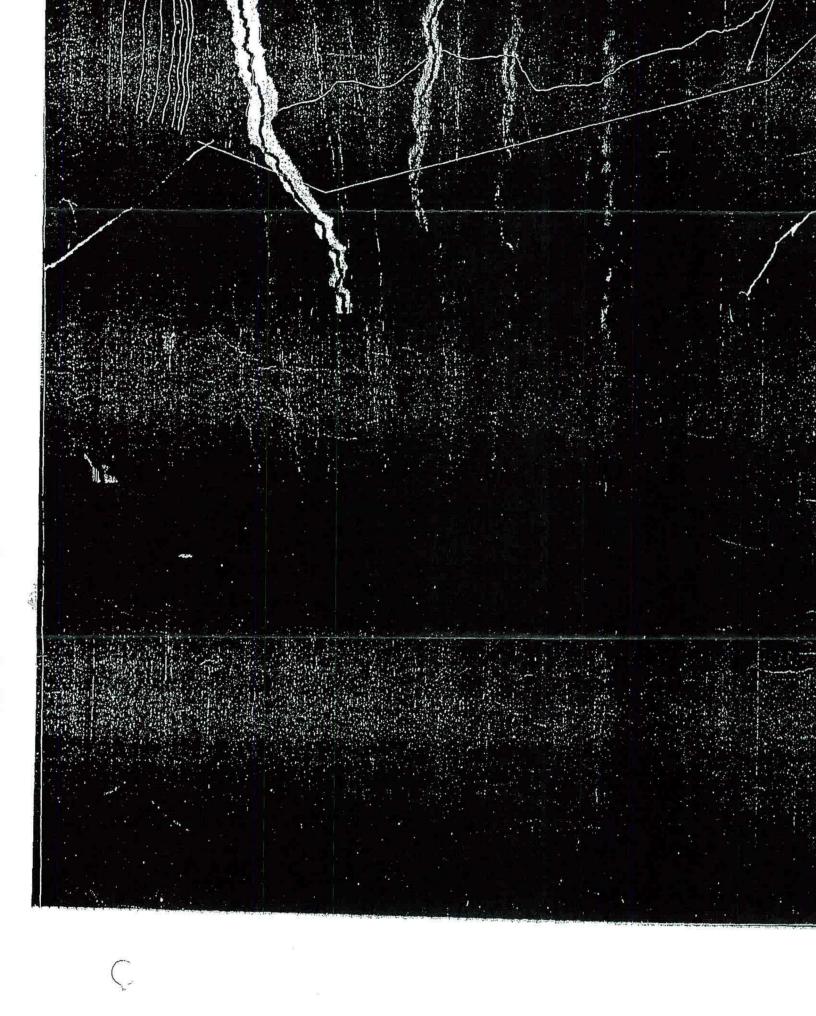


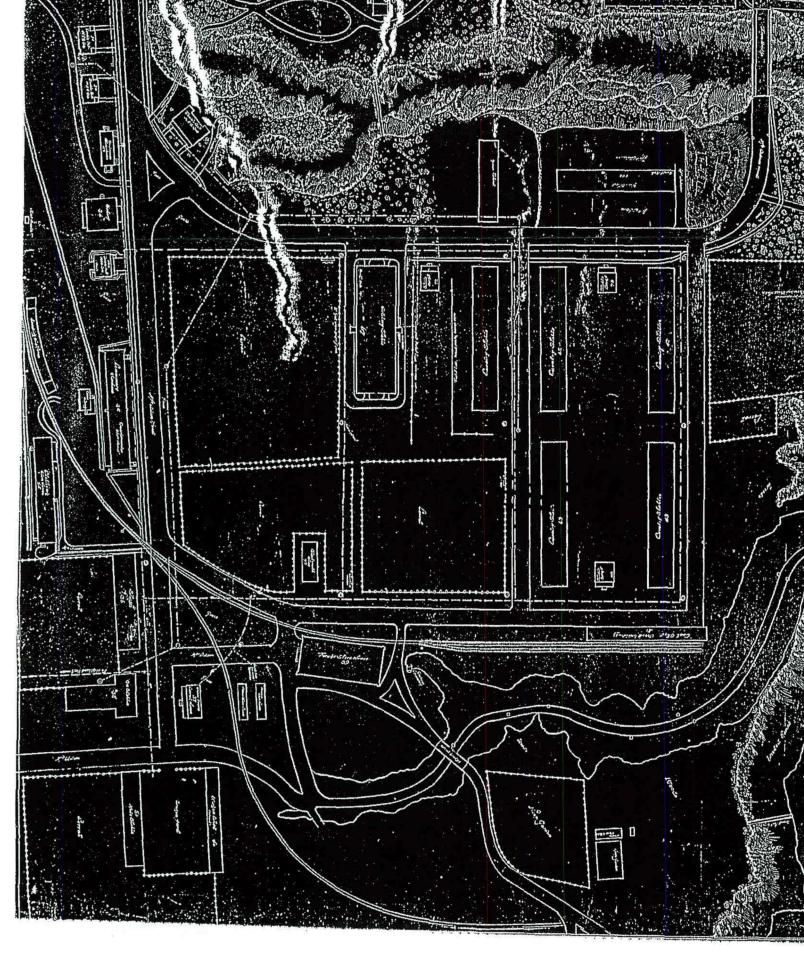






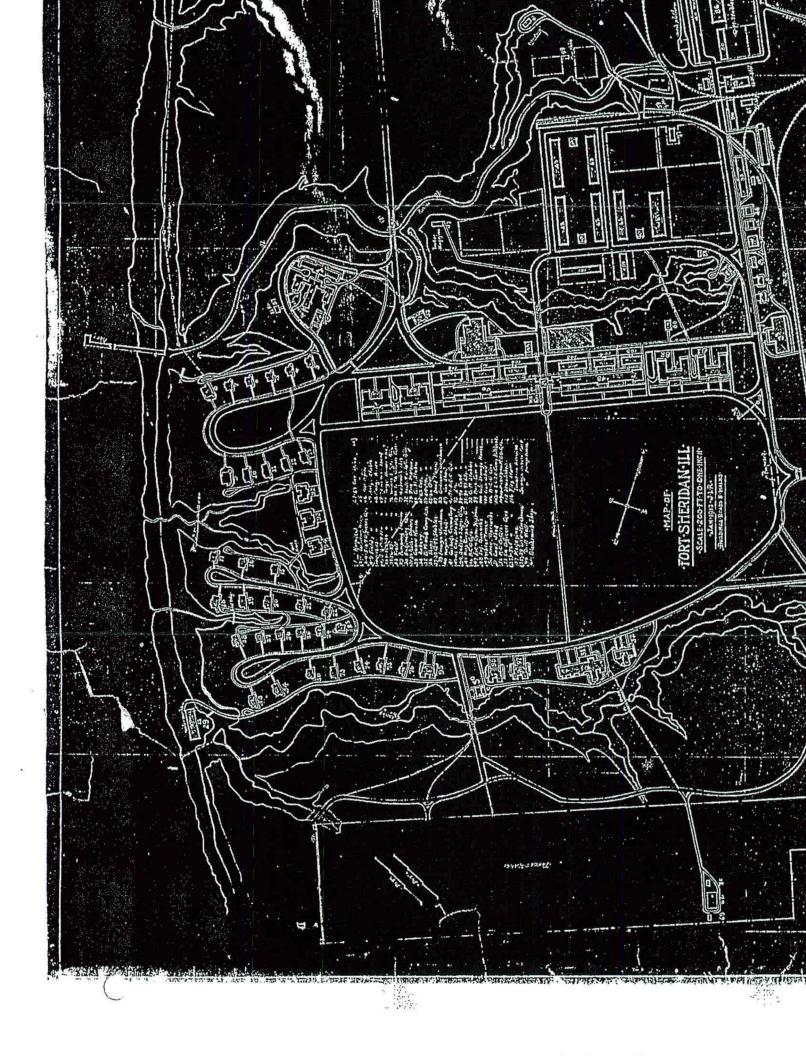


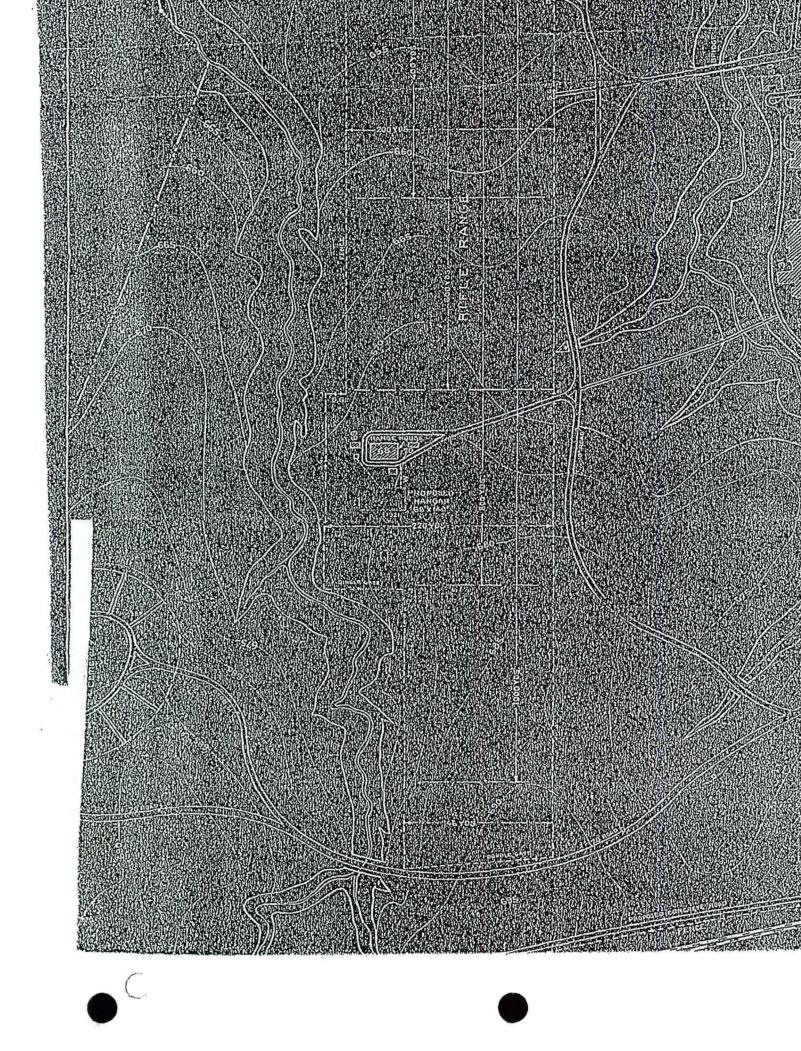


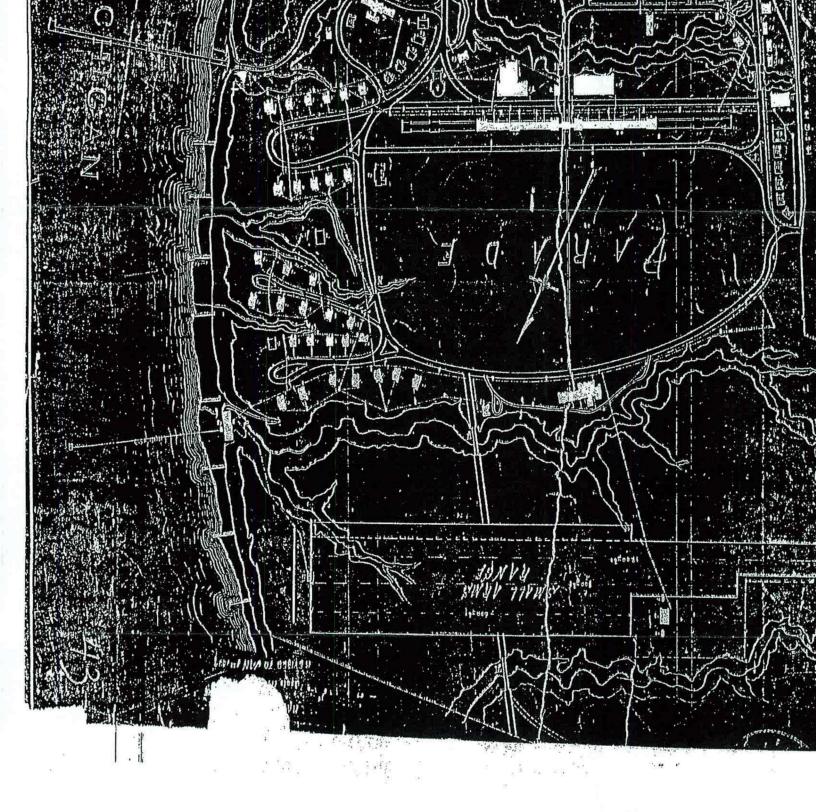




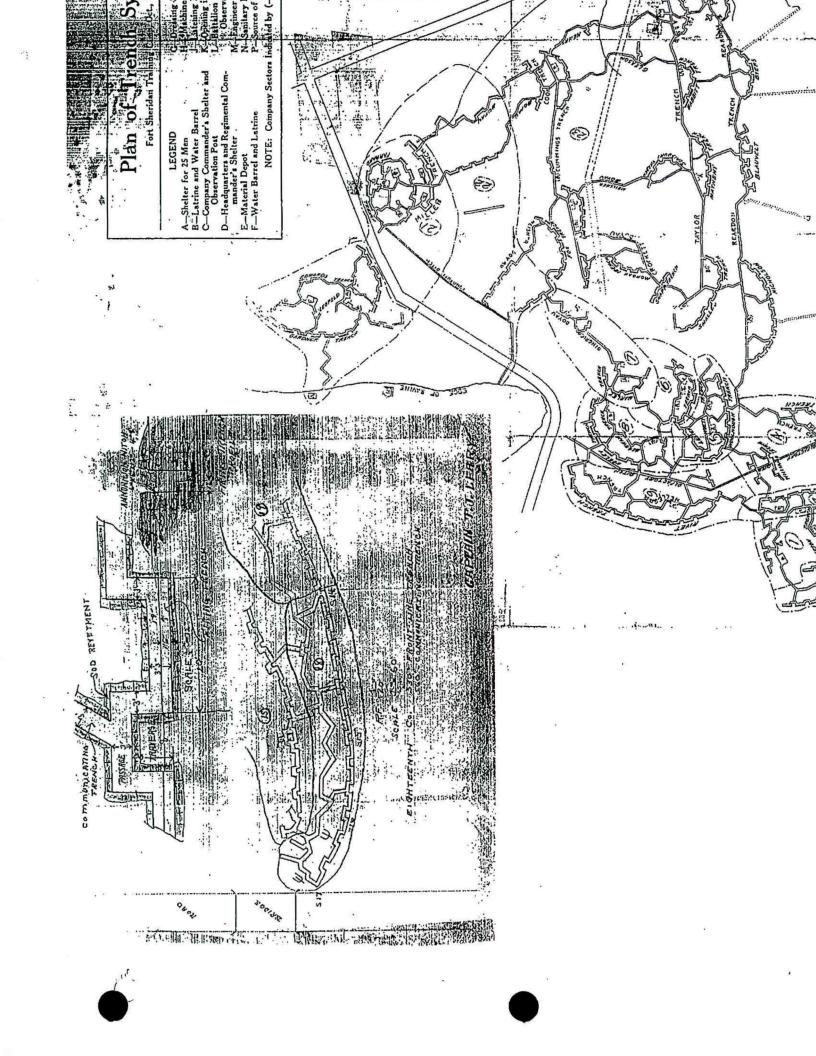


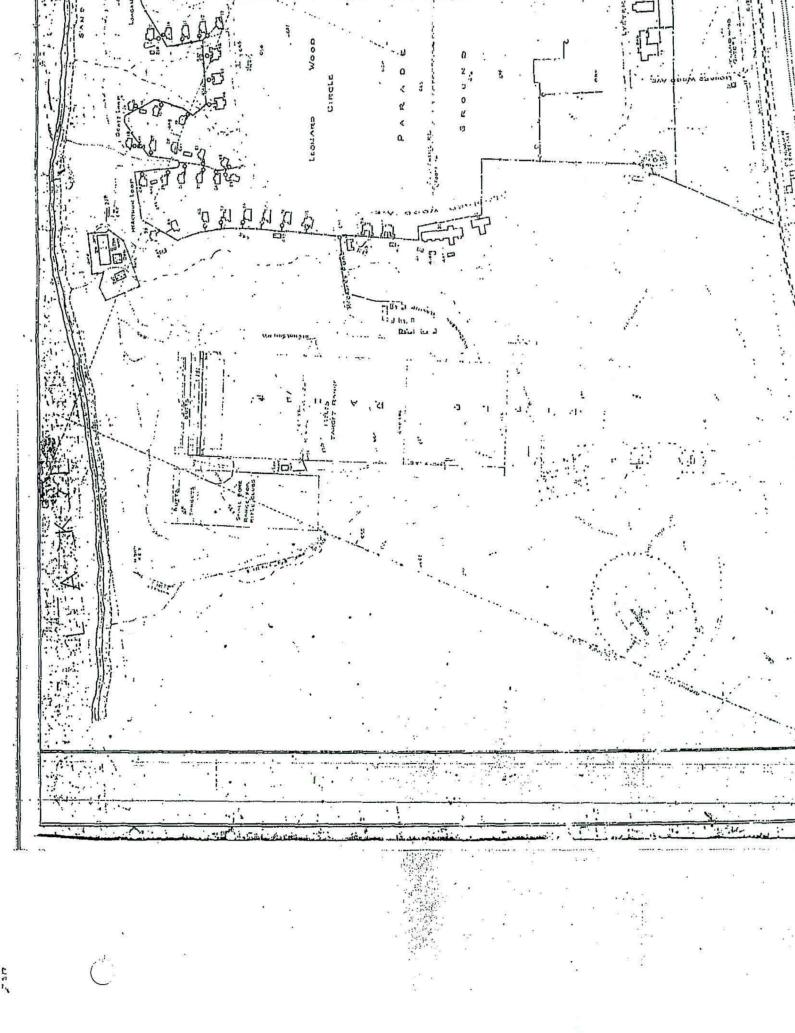






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3.0 SITE DESCRIPTION

3.1 Location

Fort Sheridan is located in the northern portion of the Chicago metropolitan area in Lake County, Illinois. It is situated along Lake Michigan with Highland Park to the south and Lake Forest to the north.

3.2 Past Uses

Established in 1887, Fort Sheridan has served the military in a variety of ways. It originally housed infantry soldiers used to stabilize labor unrest in Chicago. During the First World War, the fort possessed a large training camp for enlisted men, and it also had two officers' training camps. It was used as a hospital for wounded soldiers after the war. It served as a processing center for inducting and separating GI's during World War II, and the U.S. Army's Air Defense Artillery School existed at Sheridan between 1942 and 1944. The fort housed a Nike Missile site in the 1950's and the 1960's. Throughout its history, Fort Sheridan has housed many different technical, infantry, cavalry, and artillery units (Roberts 1988: 269-270)

3.3 Current Uses

Fort Sheridan is to be utilized by the Navy, Army Reserves, and historical buildings will be disposed of by the Reutilization Committee.

3.4 Map Analysis

3.4.1 General Area Map Analysis.

The site was analyzed using the following maps. References to locations are based on May 1987 General Site Map for Fort Sheridan (See APPENDIX H - Historical Maps/Drawings).

USGS 7.5 minute quadrangle maps:

- Highland Park, IL (1993)

Fort Sheridan is located north of Chicago and Highland Park. The site is on the shore of Lake Michigan. Along the shore line of the lake are a series of groins. The area surrounding the site is commercially built up. The site shows numerous buildings throughout the post. The golf course is listed on this map. The airport runway is no longer there, but the pond east of it remains. The cemetery has been constant since the site has been in existence. Terrain at the site is generally flat with approximately six very prominent, short drains flowing toward Lake Michigan. In the past there had been additional ravines. These ravines have



been filled. What the ravines are filled with is unknown. The approximate geographic coordinates are: latitude 42° 12' 40"; longitude 87° 47' 35".

3.4.2 Site Specific Map and Drawing Analysis.

3.4.2.1 Base Layout Plans: (References to locations are based on May 1987 General Site Map for Fort Sheridan - See APPENDIX H)

<u>Reservation Limits (circa 1892) and Map of Fort Sheridan</u>. This site plan shows the boundaries of the base that contain less acreage than the boundaries of the present. The area for the World War II POW camp was not in Fort Sheridan's possession then, neither was the land along the road west of the parade ground and running south. The parade ground and the buildings encircling it are pertinent at this time (C-D, 5-6). The cemetery looks truncated, possibly due to not being able to obtain the land.

The second map portrays the purchase date for reservation additions and the building list. The vegetation symbols on the map make the numbers unreadable. One ordnance shed was located south and east of the parade ground. The artillery drill area is in the southern portion of the site, east of the World War II POW camp area (D-11).

<u>Post Map 1946 (last revision 1953)</u>. The buildings and areas are identified. Descriptions of the areas are used throughout this report to identify where the improvements and changes have taken place.

<u>Official Post Map/General Site Map (circa 1987)</u>. This site plan lists the buildings that are present at this time. There were some buildings that were not named. This site map also shows the sanitary landfill closed and filled near where the waste treatment plant was located (C-11). The map shows all the Officer and NCO family housing, and Bachelor Enlisted Quarters. Also shown are the ordnance warehouses/magazines. The golf course is shown, along with the ball fields and tennis courts. The airport runway is gone and the new area is labeled the Heliport (D-3). The reserve center (F-1) is labeled as is the trap shoot and archery range that are located next to a small lake (A-3).

3.4.2.2 Progressive Years of Topography Maps.

Through the years there has been constant progress in improvement of buildings, including demolition and new construction. The following black and white copies of topographic maps were analyzed. After looking at these maps it is noted that they were consistent with the analysis of the photography for the same years. There were a few features that could not be located. One of these was the trenching constructed to enable the soldiers to familiarize themselves with trench warfare practices of Europe.





<u>1928 (reprint in 1938) Topography Map</u>. The boundary shown for the southern portion of the site is similar to the present day boundary; the northern portion of the site is less. The cemetery and parade grounds are built, along with the majority of the main post buildings. The site has an abundance of trees throughout.

<u>1943 Photo Overlaid On a Topography Map</u>. This map is not the best quality due to poor resolution. This is similar to the 1943 photography analyzed in Section 3.5. Many buildings have been added since the 1938 reprint, which would accommodate the increase needed for WWII. The POW camp and picnic area are built (C-D 12), and most of the buildings in the south center of the site have also been built. The waste treatment plant can be located (C-11).

<u>1951 and 1953 USGS Topography Map</u>. This map looks the same as the 1943 map. Since this is not a photo overlay, the waste treatment plant cannot be located. In the northern portion of the site, the water treatment plant is there with the chimney (A 4-5). The main differences in these maps is the downgrade of some roads and the removal of some buildings.

<u>1963 USGS Topographic Map</u>. In the central portion of the site there were additional buildings constructed (C-9). The picnic ground now has large buildings. The terraced area north of the picnic ground can be seen (C-13). There are fewer buildings in the POW camp area (C-D 12). Also, the airport runway has been built (A-E 3). There is a cluster of buildings west of the cemetery that have been built (E-1). This is consistent with the photo interpretation in Section 3.5. The ravines are consistent with the interpretation report also. Two ravines are completely cut off from Lake Michigan, (D-12) but not completely filled. The ravine in the center of the site has had one of its tributaries filled (D-E 7).

<u>1963 USGS Topo Map (photo revised in 1980)</u>. The southern portion of the site containing the POW camp area has fewer buildings (C-D 12); the picnic area contains more buildings (C-13). There has been a total revamping of the central east portion of the site. The placement of the buildings is almost completely changed. The northern portion of the site looks the same as in the past, except for a pond being built (A-B 3). This was north of the airfield runway. The ravines look the same as in the earlier maps.

3.4.2.3 Special Maps

<u>Plan of Trench System 1917 (SEE MAP 3)</u>. This map contains an extensive plan for the layout of a trench warfare training system. The trenches were identified by individual names. The location of these trenches were on ridges and plateaus in the central to southern portion of the site, which was where the tents were later erected. They were to the north and south of the ravine that had not been filled. These trenches could not be seen on any of the photographs possibly



because of the year they were taken or the quality of the photographs. The first year of available photographs was 1939, which had poor resolution.

Review of the above-cited map sheets confirms general descriptions found in Section 3.4.2.1. The maps were also useful in locating boundaries and identifying features on the photography.

3.5 Interpretation of Aerial Photography

Photo analysis and land use interpretation were interpreted using the following listed photography:

Photograp	Identifier(s)		
Date	Scale	Source	Frame(s)
31 Aug 39	1:20,000	BWX	24-28
13 Mar 43	1:19,050	Nat Archives	16-98-29
13 Apr 49	1:9,500	Nat Archives	8M 60-62
23 Oct 54	1:20,000	Nat Archives	4N 92, 128
28 Sep 61	1:20,000	Nat Archives	3BB 151, 247
21 Mar 70	1:24,000	Geonex, Inc.	43-A 48
22 Apr 80	1:24,000	Geonex, Inc.	43-A 60
15 Apr 90	1:24,000	Geonex, Inc.	43-B 469
25 Mar 94	1:40,000	EROS	5748 63-65

The maps cited at Section 3.4.1 were used as references for the photography.

Photography listed above covering the Fort Sheridan site was examined. Features visible on the photography and considered significant are shown and described on maps referenced throughout the report. Some features that this report will look at are: The north rifle range, the parade grounds, the land just south of the rifle range, the tent city, the trenching, the gun batteries, and the POW camp. These will be compared for changes through the years. Along with those features there are two gas chambers, a couple landfills and two magazine areas. One gas chamber is on the beach just east of the waste treatment plant and the other is near the cemetery. Both borrow pits are near the north firing ranges. One magazine area is above the parade ground and the other is in the center of the site on the plateau by a fork in the ravine.

This area was active in the early century. The earliest photographs that are available are from 1939. The photographs were not included in the report due to the poor quality/resolution of the originals. Most of the buildings in the middle section were there at this time. The cemetery had been built. The rifle range in the north section was there, as was the parade ground. The tent city did not exist at this time. The POW camp is just trees. The area east of the picnic area looks to be scraped off at this time. The road is already built around the picnic area.







There were World War I trenches that might have shown up on this set of photographs but, because of the quality there is no way to visually confirm this.

By the <u>1943</u> photographs (SEE PHOTO MAP 1), it seemed the whole area was in full operations for World War II. The POW camp was in place, also more of the barracks in the southern section. The trenches (9) cannot be seen on this set of photographs either. Where the trenches would have been, there are roads and buildings at this time. There is an area on the plateau and along the shore about in the center of the site that is now built up with tents (5). A waste treatment plant (8) is located just south of this area. Located between these features is the Coastal Artillery gun batteries (10). This is a rectangular area where 3" and 90mm guns were shot out over the water. South of this ravine, on the next plateau is the Anti-Aircraft Firing point gun batteries (11), consisting of another rectangular area. Both of these rectangular areas are scraped off, there are black dots which represent the actual guns, there are approximately 8 to 10 guns on each battery. On the next plateau south is a scraped off area. This is east of the picnic grounds.

In the northern area both the large (2) and small (1) rifle ranges are still there. At the time of these photographs, the smaller one is listed as a small bore rifle range, it is located north of the large range. The large firing range has the very large berm structures associated with firing ranges. In the mouth of the ravine just south of the large firing range is a building with a smoke stack. This is listed as the water pumping station (3). West of this and north of the parade ground are three magazines (4). These are located directly south of the cemetery. One is earthen covered magazines, the two on the east are buildings. There is supposed to be a gas chamber near the cemetery, but one could not be definitely identified. There was another gas chamber (14) along the shore between the two firing ranges and due east of the waste treatment plant. This is a rectangular building located on the beach. North of the gas chamber, and still on the beach is a pistol range (13). In the center of the site, just south of the parade ground there are three buildings listed as ordnance warehouses/magazines (6). These are clustered on the plateau between two ravines and east of Patten Road. Following the ravine up slope is another ordnance magazine (7). This is a lone building on the edge of the ravine.

The next available year of photography is <u>1949</u> (SEE PHOTO MAP 2). These were at a large scale, about twice the size as the other photographs. The small firing range at the north section of the site still has the feature signatures of a range, but cannot be sure that it is still in operation. Between the two ranges is a borrow pit (15), which has a hummocky texture. Just south of the large firing range, is another borrow pit (16). This one has a lot of ground scaring, therefore is in full operation. The water pumping station is still there. The bayonet training area (17) is visible. There is a another similar feature just north of the parade ground. This is supposedly the same area that the gas chamber is located.



The gas chamber still cannot be confirmed. The magazines that are just south of the cemetery are still in place. The parade ground is being developed into recreational uses, there are two baseball fields and tennis courts. The large area of tents is now replaced with buildings. These are very regularly sized and placed buildings (5). On this photography the ordnance warehouses and magazine are seen very clearly, these are the ones in the center of the site. The gas chamber that is located just south of the (old) tent area and east of the waste treatment plant looks to still be there. In the area of the POW camp there had been a ravine. This ravine seems to have been filled, but cannot be detected as to what it has been filled in with. Most of the buildings that were there for the camp are still there. The scraped off area east of the picnic grounds are eroding away. Nothing has been done with it since it first appeared. The area where the Anti-Aircraft firing point had been located is scraped off presently, therefore not in operation. The Coastal Artillery gun batteries that were located north of the waste treatment plant are no longer there. The roads in that area have been improved.

There is a set of photographs taken in <u>1951 and 1952</u> which looked very similar to the last set of photographs reviewed. These are not included in this report.

The 1954 photographs (SEE PHOTO MAP 3) show some changes. These photographs were taken in October. The leaves were still on the trees, therefore some features were hard to locate because of the canopy. An airfield (18) has been built next to the large firing range in the north section. Even though there is a small plane parked on the apron, it looks as if there is still some construction going on at the end of the runway. About 950 feet of runway appears to being added or repaired. The large firing range is not in operation anymore. In order to put in the airport part, about half, of the large range has been removed. What remains of the small and large berms are still standing, and appear to be in decent condition. The smaller firing range looks like it may still be in operation. The borrow pit south of the large firing range is still there but does not seem to be used as much as it was in the 1949 photographs. There is not as much ground scaring and vegetation appears to be growing. To the east of the cemetery the small oval features are still there; trees are starting to grow in the area. The ovals can still be seen. The course south of this one is no longer there. The magazines south of the cemetery are still there. The baseball diamonds located in the parade grounds are no longer there. The ballfields were still visible although they are grassed over. It looks as if the tennis courts are still there. There is a very clear, straight, white path in the middle of the parade ground, going from one building to another. The path looks like it has been there for a long time but has been improved. Neither the gas chamber nor the pistol range that were on the beach remain. The shore in that area is almost totally washed away. Neither the Coast Artillery Range nor the Anti-aircraft firing points (11) are there. At this time there has been nothing built to replace the two batteries. The ground in the area seems to be taken care of. The land in the area east of the picnic grounds still looks to be eroding, but not at the same rate as before. North of the erosion



is a scraped plateau. The area where the POW camp had been located looks very much the same with the exception of its purpose, it is no longer used as a POW camp. In the center of the site it looks like the magazines are still there, but positive location because of the trees was impossible. The Anti-Aircraft Artillery and Joint Use Test (Armor Research) Area (10) is visible.

By 1961 the southern area has had some transformation (SEE PHOTO MAP 4). The picnic area has buildings on it, these are the NCO family housing. The eroded area east of that looks to be transformed into a viewing area with terracing that resembles bleachers (20), this is near the plateau and eroded areas. The grassed area now looks to be scraped off but flat and with no bleachers. The ravines seem to be filled in more than in the past years. In the northern portion of the site and to the west of the cemetery, there is a Nike Missile site (21). There is a smaller straight berm east of this. There were cars in the parking lot that was adjacent to the structure. South of the cemetery the magazine is still in existence. Around the airport and in the parade ground a golf course (19) has been constructed. The small firing range is no longer there (1), there are buildings in that area. The north borrow pit is a lot smaller than in the past years. The large firing range does not look to be used at this time. Both the large and small berms are still standing and seem to be in relatively good condition. The south borrow pit is almost completely filled and there is some ground scaring again, therefore it has been used in recent time. The airport (18) is in operation because there are small planes parked in the lots. The runway in completely finished. In the center of the site it can not be determined if the ordnance magazine and warehouse are still there, the tree cover is too thick in that area. The waste treatment plant is still in existence. Trees line what is left of the ravines.

In 1970 (SEE PHOTO MAP 5) the northern portion of the site contains a small lake which was previously the northern borrow pit (15). North of the lake is a series of buildings and a trap shoot area (1). Two sets of semi circles can be seen. The airfield runway (18) has improved. Numbers can be see at the end of the runway where the lake is. The large rifle range is no longer there. The berms have been completely plowed down, it looks like the dirt could have been used to fill the rest of the southern borrow pit. There does not seem to be any cratering or ground scars in the area. The borrow pit (16) now looks like a plateau, there is a drop off at the end toward the pumping station. The Nike Missile Site to the west of the cemetery no longer has the "U" shaped berms (21), instead there have been several changes. One change is three rectangular shaped areas with buildings in them, this is a storage area. There are other buildings in the area with parking areas. To the east of the cemetery there is the gas chamber (23). The magazines south of the cemetery are still there. In the center of the site, the ordnance magazine is no longer there, but the other three ordnance warehouse buildings are. In the southern portion of the site, the picnic ground is now NCO family housing (11). NCO family housing has also replaced the anti-aircraft firing point.



Where the tents were located in the early 1940's and the patterned buildings in the late 1940's there is now located officer family housing (5). All the patterned housing has been removed and irregular street patterns and spread apart housing is being built. The waste treatment plant is still in operation.

On the 1980 photographs (SEE PHOTO MAP 6) the building with an associated parking areas in the north portion of the site and west of the cemetery is now a Reserve Center (21). A large building has been built for the reserve center. The storage area is still there and a maintenance area has been built. The possible gas chamber, to the east, is still there. The cemetery looks to be a visitor attraction now. The golf course holes near the cemetery look like there is some terracing done to them, it cannot be determined what was going on. The parade ground fairways look the same, so it may be some improvement to the course. There are no planes parked at the airport (18) and only the middle portion of the runway has been paved. In the paved area there was an emblem added at the intersection of the runway and the taxiway to the building. The pond near the trap shoot range is still there. This area is now the Rod and Gun Club. The magazine is still located north of the airport. In the southern portion of the site the waste treatment plant (8) has been dismantled. The ravine that was next to it has been a landfill and is now filled, the land in that vicinity is all level and still has ground scaring. The bleacher area just looks like a terraced area. Most of the buildings (12) that had been in the POW camp are no longer there. The ones that are left are now designated for the bachelor enlisted quarters (BEQ).

The last set of usable photographs is 1990 (SEE PHOTO MAP 7). In the northern section of the site the Rod and Gun club (1) looks to still be in full operation. The old large rifle range (2) is completely level. The pumping station (3) is still in operation, and a new road has been built to it. The magazines (4) that were north of the runway are still there. In the center of the site the ordnance warehouses (6) are still there. The ordnance magazine (7) is no longer there. The waste treatment plant is no longer in existence. Shown again is the approximate location of the trenching that was done in the 1910's. The NCO family housing were where the coast artillery range and the anti-aircraft firing points were located. The location of the BEQ and storage area are in the location of the old POW camp. The pistol range and gas chamber that were located on the shore are no longer there and are not shown. The small lake was the north borrow pit. The flat area that was the large southern borrow pit is now filled in and looks to be vegetated. The airfield has changed over the years. It was first a rifle range, then the runway was partially removed. The usage at this time is the location of the Haley Army Heliport. The golf course looks to be in full operation. This surrounds the officer family housing in the northern section. There are also a couple of holes north of the heliport and inside the parade grounds. The white path still runs through the middle of the golf course. The bleacher area in the southern portion of the site looks to still be terraced but is considerably smaller and more NCO family housing has been built. The Reserve Center in the north





west is in full swing. The gas chamber east of the cemetery is still visible (23). The landfill looks to be slightly mounded and has a hummocky texture. There is terracing down to the lake.

3.6 Demographics of the Area

3.6.1 Centers of Activity.

The Fort Sheridan site is located near the city of Highland Park, Lake County, Illinois.

INFORMATION SOURCES:

U.S. Census reports as listed below:

- -1990 Census of Population and Housing, Lake County, Illinois
- -1990 Census of Population and Housing Highland Park, Illinois
- -1988 COUNTY AND CITY DATA BOOK, Land Area and Population, Lake County, Illinois
- -1988 COUNTY AND CITY DATA BOOK, Land Area and Population, Highland Park, Illinois

-COUNTY BUSINESS PATTERNS - 1991, Lake County, Illinois

3.6.2 Business and Industry Profile.

The number of business establishments in Lake County can be broken down by type as follows: manufacturing 6.5%; agriculture 2.6%; services 33.5%; trade and financial 41.7%; and other 15.7%. Of the people in the county employed by businesses, about 27.9% are employed by service businesses. Also prominent are retail trade businesses at about 21.7% as well as manufacturing businesses at 25% and finance, wholesale trade at 24%. The remaining 1.4% is a miscellaneous cross section. Foregoing percentages are at mid March 1992.

3.6.3 Population density.

City:	Highland Park	County:	Lake
	N/A sq. mi	Area:	454 sq. mi.
	30,575	Pop:	516,418
PD:	N/A persons/sq. mi.	PD:	1137.5 persons/sq. mi.

3.6.4 Types of Housing.

Housing in Highland Park is composed of both single family and multi-family dwellings.



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PHOTO MAPS

MAPS/DRAWINGS

ORDNANCE, AMMUNITION AND EXPLOSIVES ARCHIVES SEARCH REPORT CONCLUSIONS AND RECOMMENDATIONS FOR FOR FORT SHERIDAN LAKE COUNTY, ILLINOIS

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MAPS/DRAWINGS

MAP DESCRIPTION

- 1 BASE RIFLE RANGE
- 2 CWM TRAINING AREAS
- 3 TRENCH MAP
- 4 ARTILLERY FIRING POINTS
- 5 AMMUNITION STORAGE AREAS
- 6 MISCELLANEOUS ACTIVITIES
- 7 HAZARD AREAS
- 8 PHOTO LOCATIONS
- 9 SITES RECOMMENDED FOR FURTHER ACTION



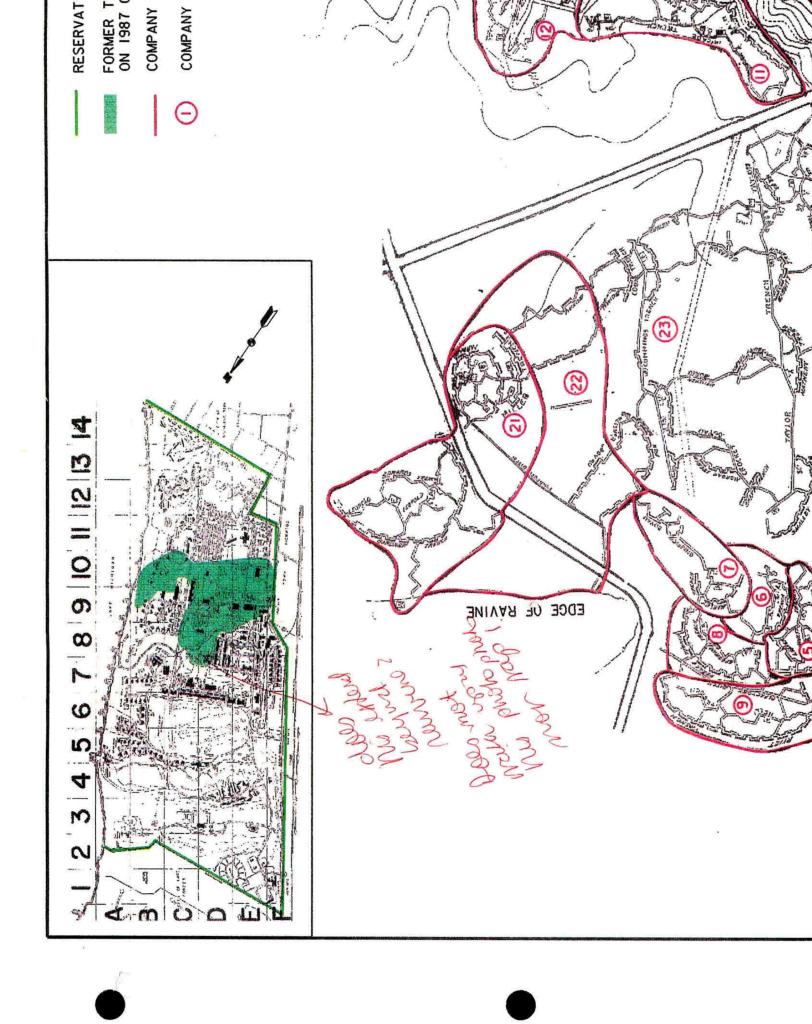


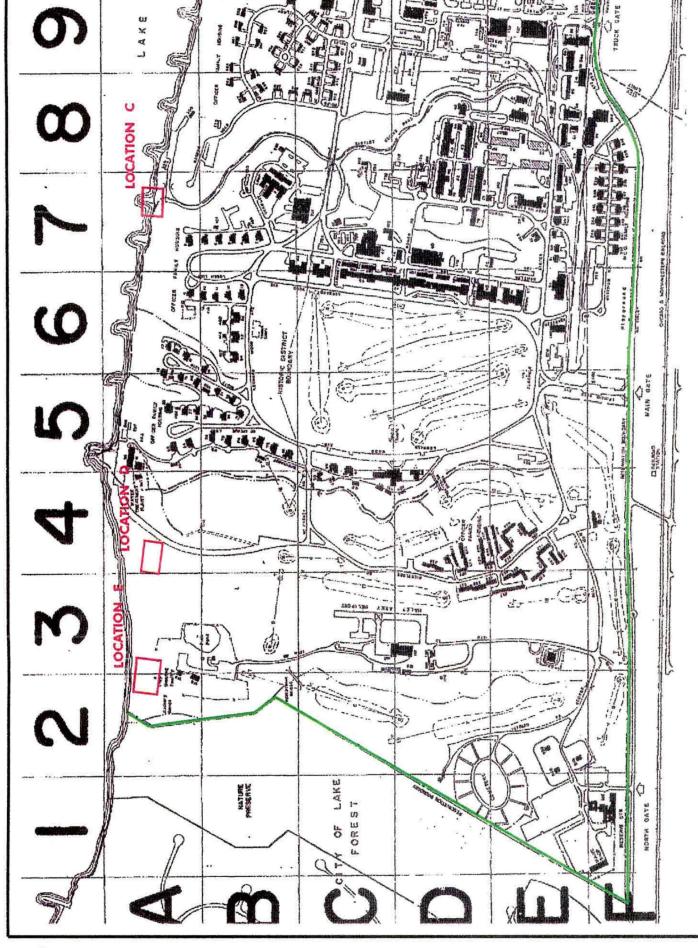


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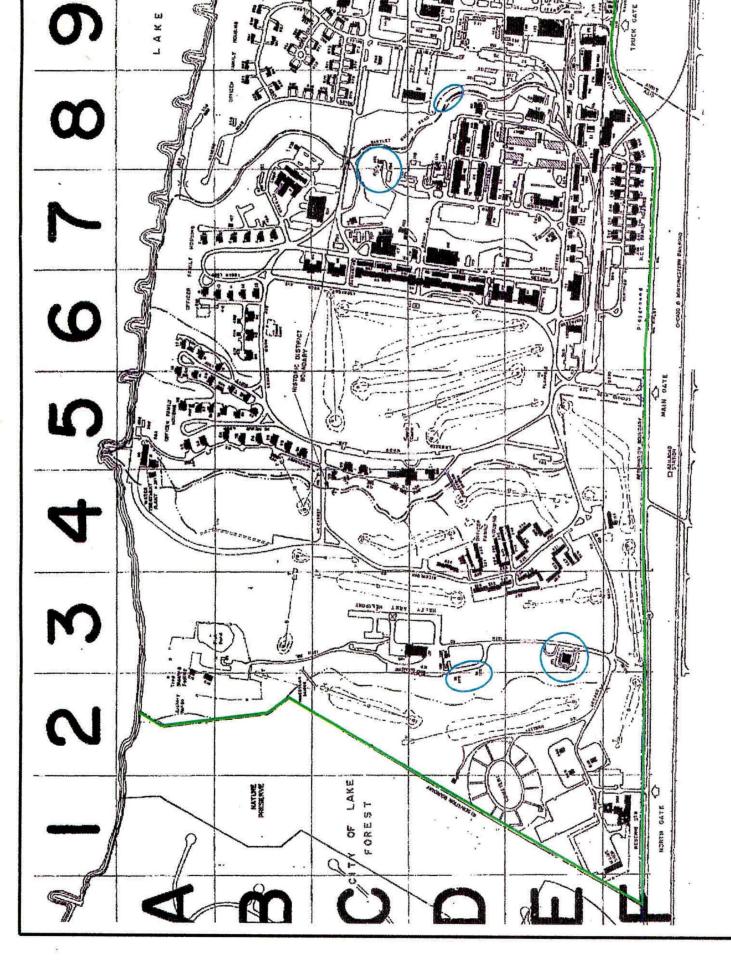
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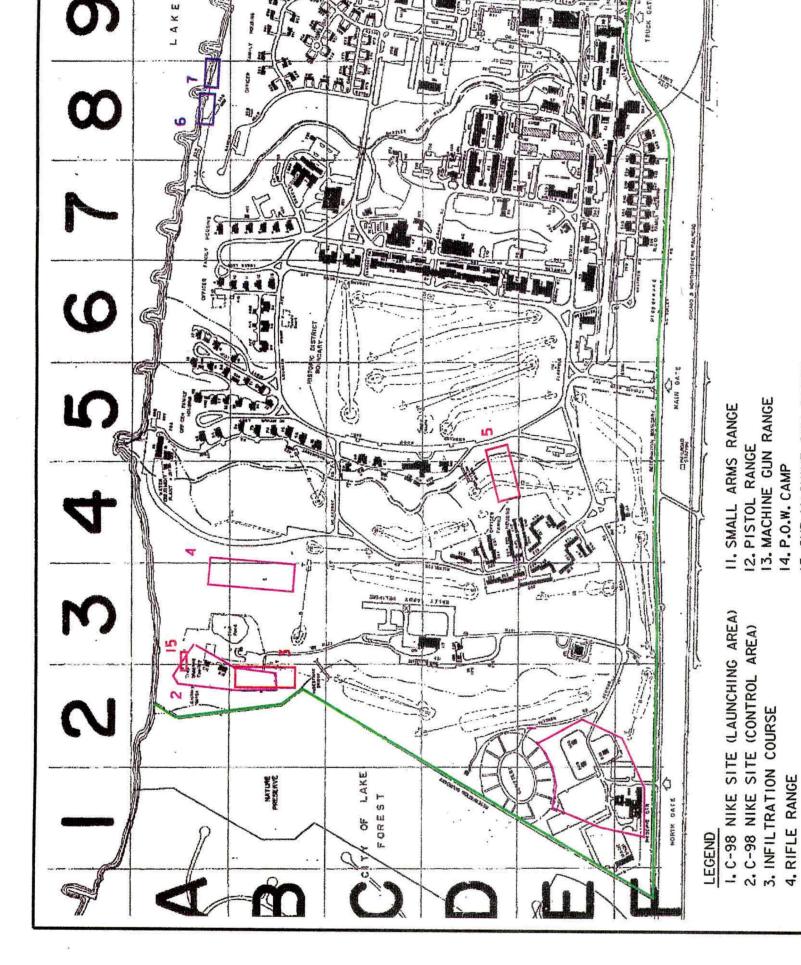


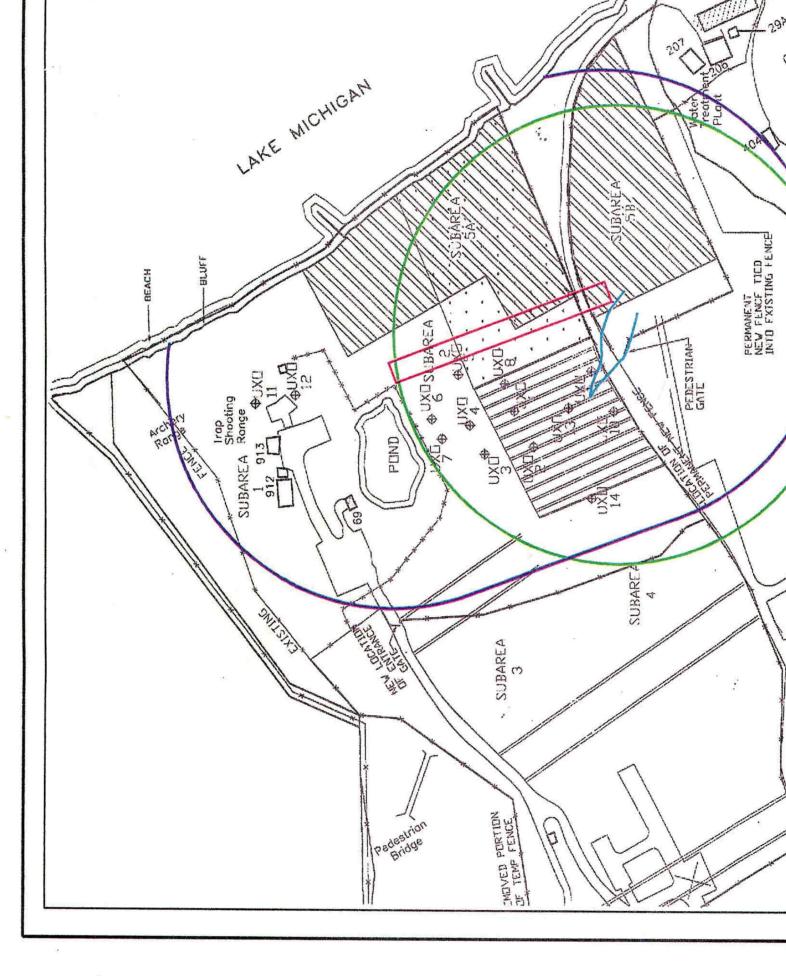




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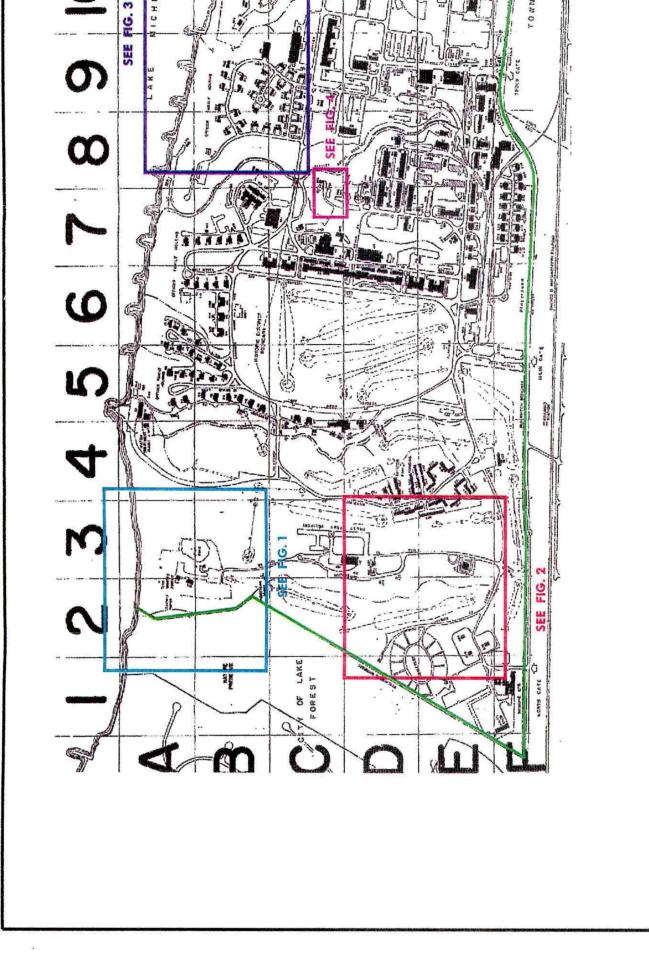


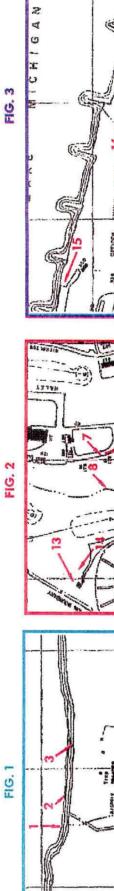


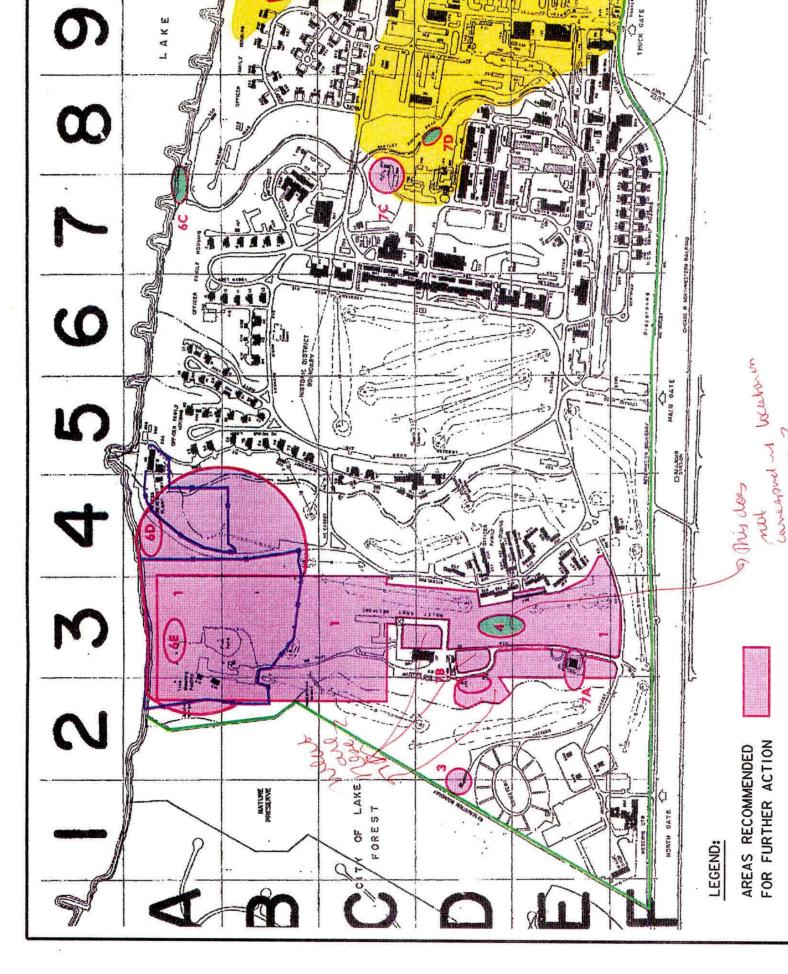












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ORDNANCE, AMMUNITION AND EXPLOSIVES ARCHIVES SEARCH REPORT CONCLUSIONS AND RECOMMENDATIONS FOR FOR FORT SHERIDAN LAKE COUNTY, ILLINOIS

PHOTO MAPS

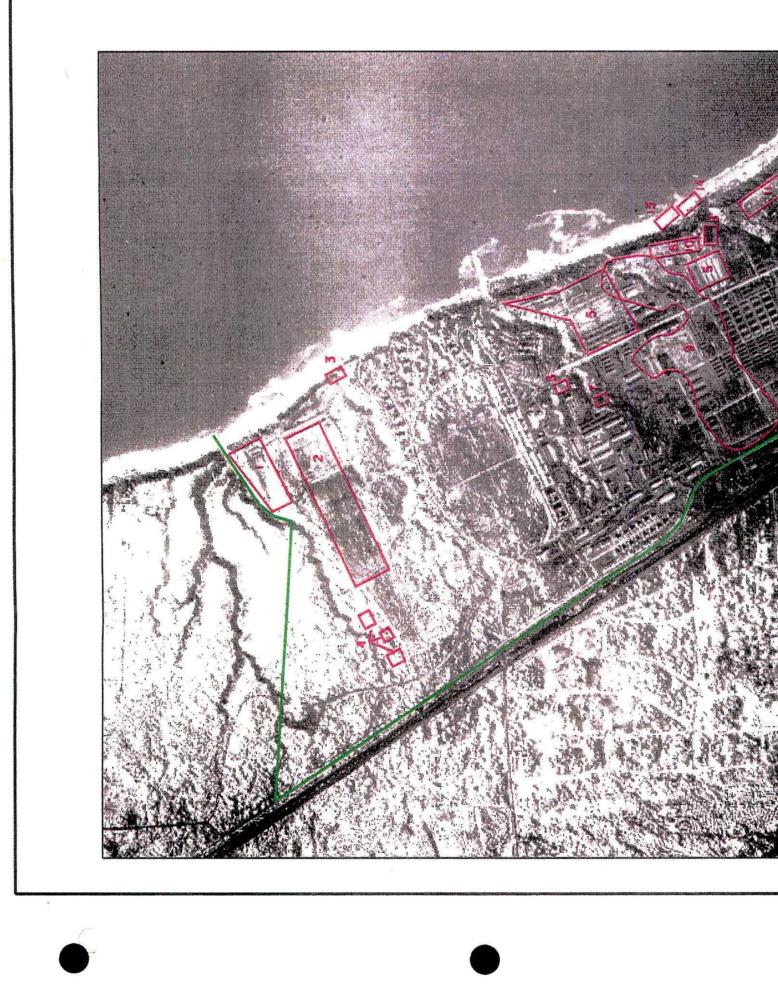
DESCRIPTION

MAP

-55-

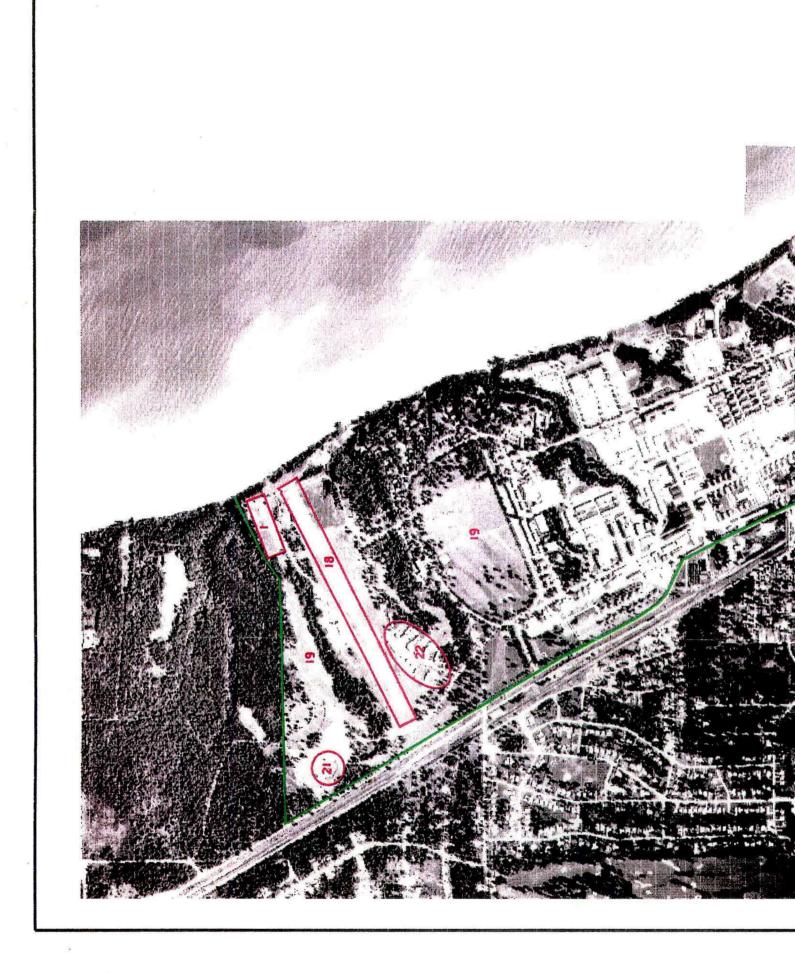
1	AERIAL PHOTO INTERPRETATION - 1943
2	AERIAL PHOTO INTERPRETATION - 1949
3	AERIAL PHOTO INTERPRETATION - 1954
4	AERIAL PHOTO INTERPRETATION - 1961
5	AERIAL PHOTO INTERPRETATION - 1970
6	AERIAL PHOTO INTERPRETATION - 1980
7	AERIAL PHOTO INTERPRETATION - 1990

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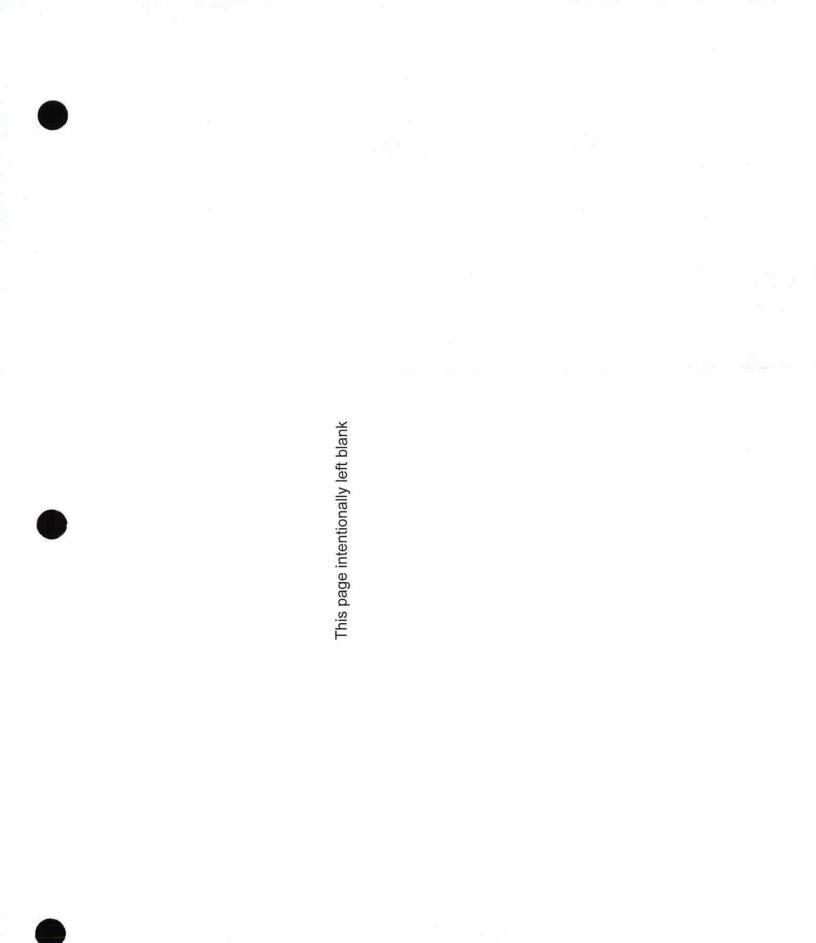












APPENDIX D

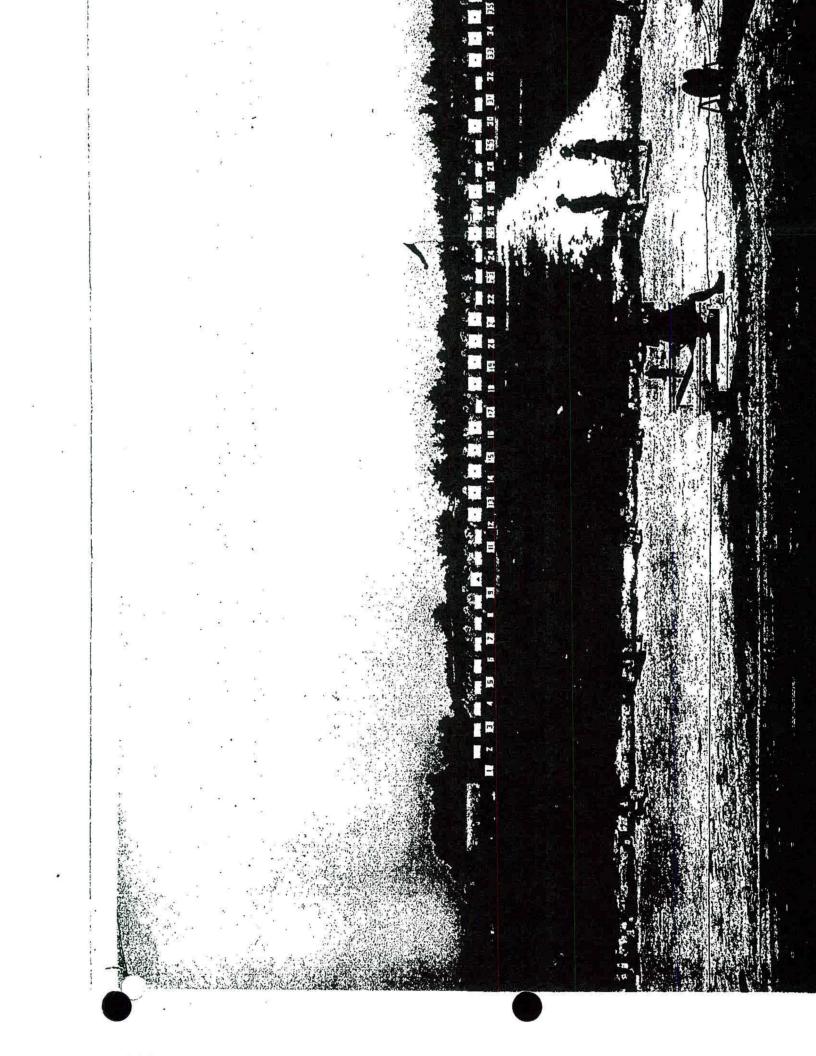
HISTORICAL PHOTOGRAPHS

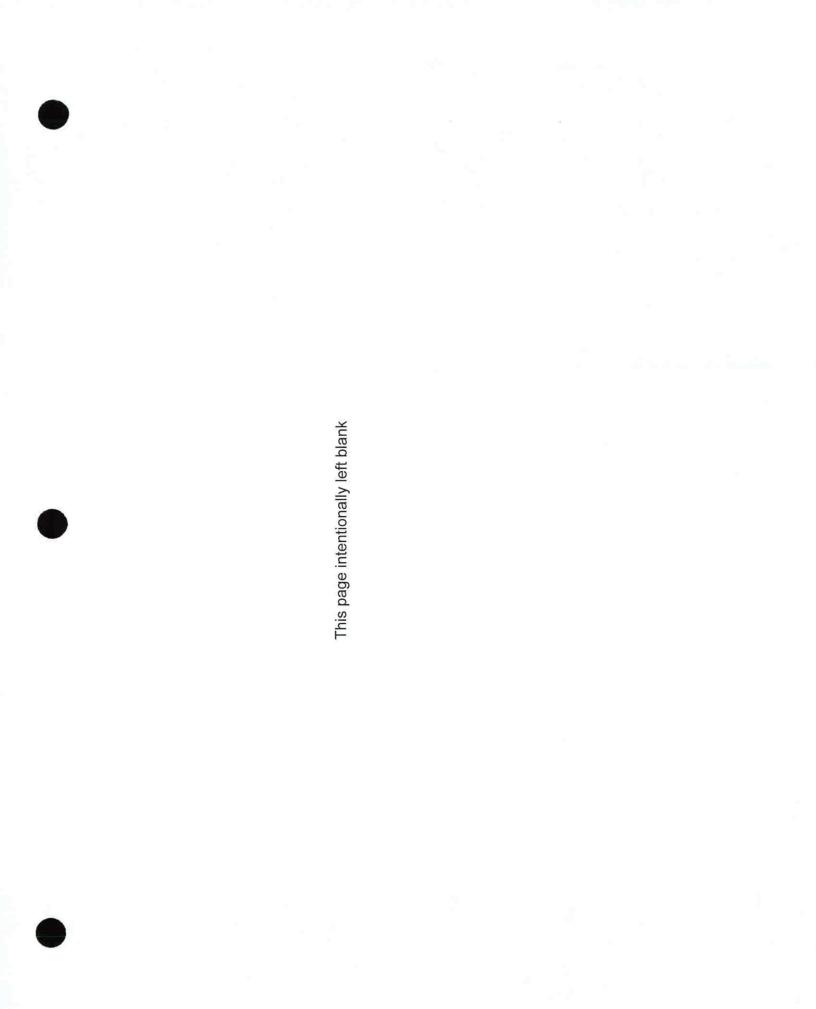


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The original rifle range at Fort Sheridan

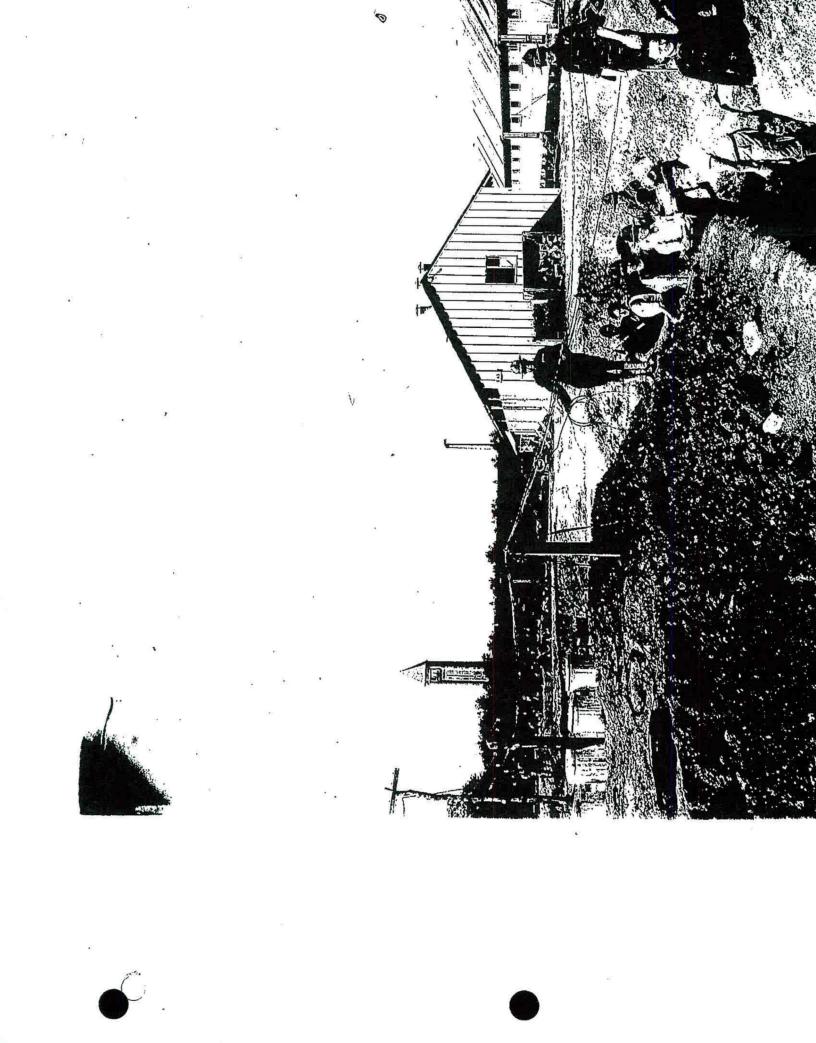




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Portion of extensive trenching system constructed at Fort Sheridan

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37mm gun firing from an unidentified location on a bluff above Lake Michigan at Fort Sheridan

(Regional History Archives, Lake County Museum, Wauconda, Illinois)



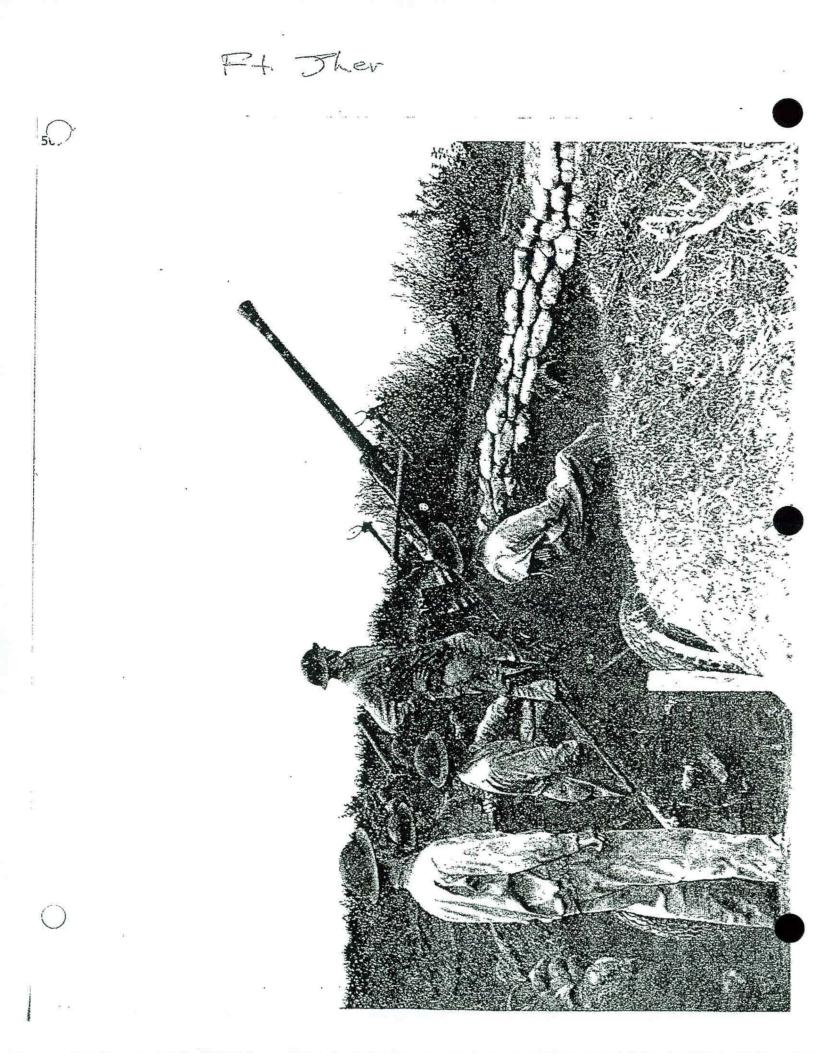
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40mm gun firing from an unidentified location on a bluff above Lake Michigan at Fort Sheridan





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Anti-aircraft battery "B" firing at Fort Sheridan



	Infantry Battalion	Cavalry Squadron	Field Artillery Battalion
75mm Howitzer	0	6	12
57mm Gun	3	0	0
.50 Cal MG	6	25	8
.30 Cal MG	14	54	0
Mortar 81mm/8"	6	3	0
Mortar 60mm	9	27	0
Rocket Launcher 2.36 AT	29	31	16

Table 1 Typical Battalion Equipment (WWII)

Stanton, 1984. *World War II Order of Battle*. Galahad Books, New York, New York

Table 2 Typical Anti-Aircraft Artillery Battalions

		Automatic
	Gun (Semimobile)	Weapons
		(Semimobile)
40mm AA Gun	0	32
90mm AA Gun	16	0
Multi-Carriage .50		
Cal MG	16	32
.50 Cal MG HB	14	5
Rocket Launcher		
2.36 AT	8	32

Stanton, 1984. *World War II Order of Battle*. Galahad Books, New York, New York

APPENDIX B List of Historical Documents Reviewed

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Appendix B List of Historical Documents Reviewed

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File Number	File Name
,	Environmental Condition of Property Report Checklist and Supporting Information for the Planned Transfer of the Westover Residential Proper
H	Sheridan, Naval Station Great Lakes.
2	Environmental Baseline Survey Navy Property, Fort Sheridan, Illinois
m	Environmental Condition of Property Report for Westover Residential Properties and the Former Building 209 Parcel, Fort Sheridan, Naval Static
4	Oversight of Removal of Lead-Contaminated Soil, West Units, Fort Sheridan, Highland Park, Illinois.
S	Categorical Exclusion and Environmental Condition of Property for The Van Horne and Shenck Ravines, The Bartlett Ravine Setback, and Bluff Pa
9	Final Environmental Assessment for the Disposal and Reuse of Fort Sheridan, Illinois.
7	U.S. Army Toxic and Hazardous Materials Agency Enhanced Preliminary Assessment Report: Fort Sheridan, Fort Sheridan, Illinois.
8	Completed Preliminary Assessment Checklis/Decision Form Submittal and Request for No Further Action Letter for Fort Sheridan Illonois Naval
6	Memoradum of Understanding Between the Department of the Army and the Department of the Navy Transfer of Certain Properties at Fort She
10	History of Fort Sheridan 1887 - 1993
11	Army Announces Cleanup Decision for Fort Sherdian Landfills 6 and 7.
12	Memorandum of Understanding Between the Department of the Army and the Department of they Navy Transfer of Certain Properties at Fort
13	Ft Sherdian Deal Status.
14	Transfer of Fort Sheridan Housing and Real Property to Navy.
15	For Ingress and Egress and Public Utilities.
16	Unexploded Ordance Statement of Clearance, Fort Sheridan, IL.
17	Environmental Issue Status, Fort Sheridan Landfill #7.
18	Ordnance Survey and Removal 38-Acre Former Firing Range, Fort Sheridan, Illinois.
19	Memorandum of Understanding Between the Department of the Army and the Department of they Navy Transfer of Certain Properties at Fort
	Record of Categorical Exclusion, Real Estate Ground Lease and Conveyance of Facilities, Agreement in Principle.
	Request for Army Review of Potential for Munitions and Explosives of Concern within the Shenck Ravine, Fort Sheridan, Illinois.
22	Final Anti-Aircraft Artillery Rangers Site Investigation Report Surplus Operable Unit Fort Sheridan, IL 3/16/2001.
23	Final Decision Document for the No Action Study Areas DOD Operable Unit Fort Sheridan, IL 6/1/2001.
24	Draft Miltary Munitions Response Program Historical Records Review Fort Sheridan, IL (Draft Acting as Final) 6/4/2005.
25	Environmental Baseline Survey Easement for Ingress and Egress and Public Utilities West of Centerline of Patton Road Fort Sheridan, IL 12/1/19
26	Ordnance Survey and Removal 38-Acre Former Firing Range, Fort Sheridan, Illinois.
27	Final Site Investigation Inspection Report Munitions Response Sites Fort Sheridan, IL 3/1/2007.
28	Final Work Plan Munitions Response Sites, Fort Sheridan, IL 3/1/2006.
29	Letter from Illinois Environmental Protection Agency Regarding Comments on Land Use Control Memorandum of Agreement for Four Sites Fort
30	Base Realignment and Closure Cleanup Plan Version 2 Fort Sheridan, IL 11/1/1995.
31	Draft Environmental Impact Statement, Fort Sheridan, Illinois, Base Closure.
32	Ft. Sheridan 2021GRX Map2
33	Environmental Baseline Survey Public / Private Venture Housing Privatization Naval Station Great Lakes, Great Lakes, Illinois, March 2004.
34	NAVSTA Great Lakes - Fort Sheridan Special Areas.
35	Environmental Baseline Survey Navy Property, Fort Sheridan, Illinois
36	Final Site Inspection Report Munitions Response Sites for Fort Sheridan, IL, 3/1/2007.
37	Report of Phase II Environmental Site Assessment Fort Sheridan, Naval Region Midwest Family Housing Privatization, 12/14/2005.
38	Report of Phase I Environmental Site Assessment NAVSTA Fort Sheridan, Naval Region Midwest Family Housing Privatization, 12/1/2005.
39	Topography, Fort Sheridan, IL.
40	Documentation of Environmental Investigation Areas for the Property being Transferred to the Navy at Fort Sheridan, 03/23/1993.
	Department of the Navy letter concerning the environmental condition and authorization to remove the foundations for the property near for

.

	Appendix B List of Historical Documents Reviewed
49	Letter from locay Mayors to Secretary of Defense on Fort Sheridan closure process.
50	Letter to Fort Sheridan Chairman from Navy on issues and concerns with proposed transfer of the Fort Sheridan housing.
51	Fax message on 2/23/1991 public meeting.
52	Emails regarding a letter on the Illinois Nature Preserve Request and land protection
53	Transfer of Housing to Department of the Navy
54	Navy Easement Study figure
55	Finding of Suitability for Easement - Envt Baseline Survey Review 1997
56	News Article EPA and Ft. Sherdian Toxic Waste Questions
57	Petro Runoff from ACOE Dirtpile on Navy Prop at Ft. Sheridan
58	EPA Concurrence Letter NFA for 23 No Action Study Areas under BRAC RI for DoD OU at Ft. Sheridan.
59	IL EPA Issures & Concerns RE Ongoing Remediation Activites at Ft. Sheridan
60	CERCLA Assesement Report for Ft. Sheridan Naval Property
61	Envt Issues Associated with Navy Property Ft. Sheridan 1995
62	Deed for Bluffs, Ravines, and Beach Conservation Properties Phase I Openlands Parcels and Phase I Bridge Parcel
63	Transmittal Letter RE Draft SI Report Munitions Response Sites Ft. Sheridan 2008
64	High level file review of docs in folder by N. Cowand 2021
65	Lead-Based Paint O&M Manual Ft. Sheridan 1996
66	Ft. Sheridan KBCRS Numbers
67	Correspondence RE Comments to Enhanced PA Report Ft. Sheridan 2004
68	Email RE Closeout Letter Distribution for Ft. Sheridan 2004
69	Deed and Grant of Easement Phase I Transfer 2007
70	
71	Transmittal Letter RE Phase II ESA Ft. Sheridan 2005
72	Quitclaim Deed and Grant Easement Ft. Sheridan 2009
73	Transferring Army BRAC Lands Containing UXO
	Folder - Files from Openlands
74	Openlands Final Army Statement Potential Ordnance Discovered 2021
75	Final Landfill 5 and Coal Storage Area 3 LUC Remedial Design 2015
76	DoDD - DSCA - Incorporating Changes 2018
77	DoDI - Defense Support of Civilian Law Enforement Agencies - Incorporating Changes 2019
78	Letter Navy to City of Highland Park RE Openlands Lakeshore Preserve
62	Navy Letter RE Openland Assessment from City of Highland Park
80	Agreement in Principle Navy and Openlands
81	Final Geophysical Investigation Survey Report AAA Firing Point B Ft. Sheridan 2011
82	OLP General Map
83	OLP Correspondence Log
84	Openlands lakeshore Preserve timeline of acquisition and events
85	Brief letter Explosive Detection Canine Team Sweep at Openlands Lakeshore Preserve for explosive odor and UXO
86	Investigation of threat from explosives at OLP 2021
87	Openlands investigation information, FaceBook page and comments
88	Chicago Tribune Highland Park News on OPL explosive material found
89	Navy response to city of Highland Park RE "FOIA" request 2021
90	Tetra Tech cost estimate for UXO Survey

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Appendix B List of Historical Documents Reviewed

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66	l Final SSFR Appendix F Project Photographs
100	Final SSFR Appendix G Field Change Request
101	Final SSFR Appendix H Native Prairie Seed Mix
102	Final SSFR Fort Sheridan Supplemental Investigation 2016
103	Archives Search Report Findings, Fort Sheridan, Draft
104	Archives Search Report Conclusions and Recommendations, Fort Sheridan, Draft
105	38-Acre Parcel Fill Area Sampling and Analysis Plan for Fort Sheridan, Illinois, Draft
106	38-Acre Parcel Fill Area Sampling and Analysis Plan for Fort Sheridan, Illinois, Final
107	Removal Action Work Plan, Site-Specific Safety & Health Plans, Roadway/Concrete Patio Sampling, B42, B43, B77, and CSA3, Volume 2 of 2, Dra
108	Sampling and Analysis Plan for Supplemental Investigation at Building 172, Draft
109	Sampling and Analysis Plan for Supplemental Investigation at Building 172, Final
110	Limited Investigation 172, Final
111	Follow-on Investigation Report for the Building 172 Study Area of the Surplus Operable Unit, Final
112	Finding of Suitability to Transfer (FOST), Historic District, Landfills 3 & 4 and Miscellaneous Study Areas
113	Site Specific Environmental Baseline Survey for Fort Sheridan Historic District Lease Parcel, Draft
114	Fort Sheridan Historic District Lease Parcel Environmental Baseline Survey & Fort Sheridan Historic District Lease Parcel, Finding of Suitability to
115	Draft Finding of Suitability to Lease (FOSL), Final
116	Fort Sheridan Historic District Transfer Parcel Environmental Baseline Survey, Fort Sheridan Base Realignment and Closure Surplus Property, Dra
117	Fort Sheridan Historic District Transfer Parcel Environmental Baseline Survey and Finding of Suitability to Transfer (FOST), Fort Sheridan Base Re
118	Decision Document for the Ravines and Beach Study Areas of the Surplus Operable Unit, Final
119	Proposed Remedial Action Plan for the Ravines and Beach Area Study Areas of the Surplus Operable Unit, Draft
120	Proposed Remedial Action Plan for the Ravines and Beach Area Study Areas of the Surplus Operable Unit, Final
121	Remedial Investigation/Baseline Risk Assessment for the Ravines and Beach Area Sudy Areas of the Surplus Operable Unit, Fort Sheridan, Illinoi
122	Remedial Investigation/Baseline Risk Assessment for the Ravines and Beach Area Sudy Areas of the Surplus Operable Unit, Fort Sheridan, Illinoi
123	Report of Field Activity, Roadway/Pool Patio Sampling and Analysis Investigation, Fort Sheridan, Illinois
124	Ordnance and Explosive (OE) Site Operations Fort Sheridan Work Plan, Addendum 001
125	Archives Search Report Findings, Fort Sheridan
126	Removal Report, Ordnance, Ammunition & Explosives Removal Action, Fort Sheridan, Illinois, Volume 1 of 2, Draft Final
127	Removal Report, Ordnance, Ammunition & Explosives Removal Action, Fort Sheridan, Illinois, Volume 2 of 2, Draft Final
128	Removal Report, Ordnance & Explosives Interim Removal and Sampling Action, Fort Sheridan, Illinois, Volume 1 of 2, Final
129	Removal Report, Ordnance & Explosives Interim Removal and Sampling Action, Fort Sheridan, Illinois, Volume 2 of 2, Final
130	Removal Report, Ordnance & Explosives Interim Removal Action, Fort Sheridan, Illinois, Draft
131	Removal Report, Ordnance & Explosives Interim Time Critical Removal Action, Fort Sheridan, Illinois, Final
132	Fort Sheridan Unexploded Ordnance Survey (50 Acre Parcel) Work Plan, Draft
133	Fort Sheridan Unexploded Ordnance Survey (50 Acre Parcel) Work Plan, Final
134	Fort Sheridan Unexploded Ordnance Survey (50 Acre Parcel) Technical Report, Draft
135	Fort Sheridan Unexploded Ordnance Survey (50 Acre Parcel) Technical Report, Final
136	Anti-Aircraft Artillery Ranges Sampling and Analysis Plan, Fort Sheridan, Illinois, Final
137	Anti-Aircraft Artillery Ranges Site Investigation Report, Surplus Operable Unit, Fort Sheridan, Illinois, Draft
138	Anti-Aircraft Artillery Ranges Site Investigation Report, Surplus Operable Unit, Fort Sheridan, Illinois, Final
139	Historical Overview of the Nike Missile System
140	Ammunition Antiaircraft Guided Missile M1 (Nike-Ajax) Indentification, Description Packing, Care, Handling Preservation, and Destruction
141	The Nike Missile Site Investigation Program

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Appendix B List of Historical Documents Reviewed

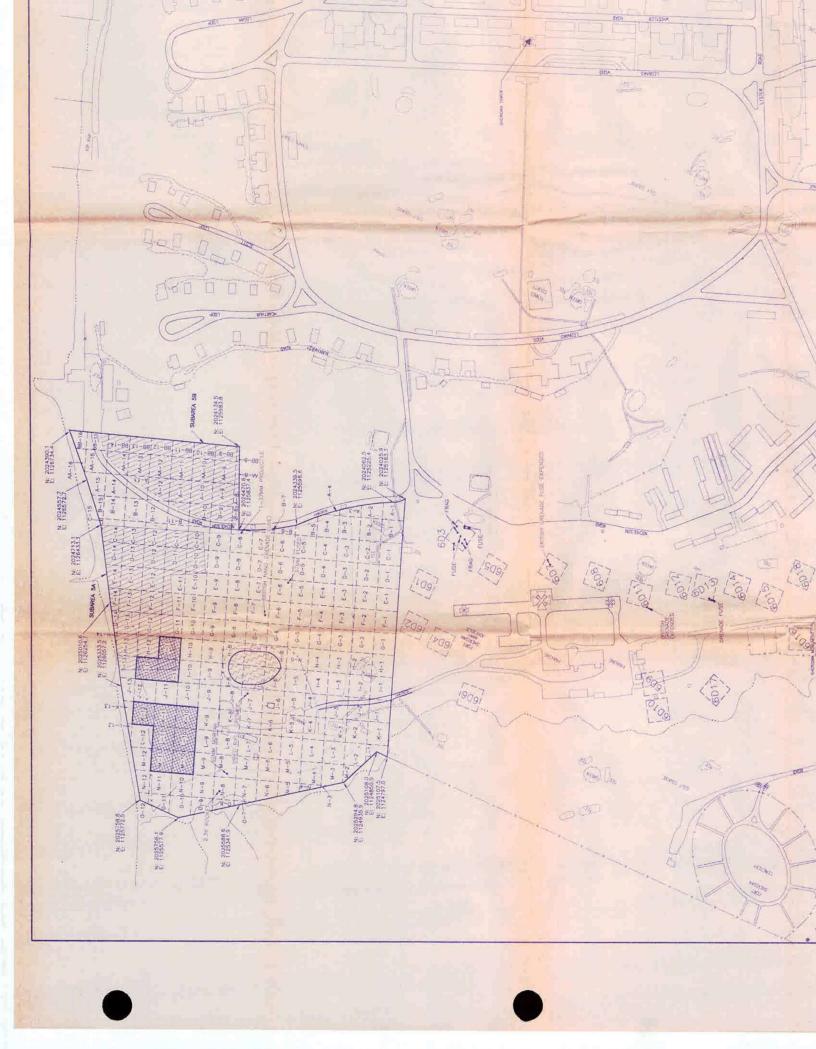
151	Army Position on UXO; Time-Critical Removal Action for Ordance & Explosive Waste; Addendum to Ordnance and Explosive Work Plan - EPA C
152	UXO - Cultural/Natural Resource Survey
153	UXO Signs
154	Explosive Safety Submission for Ordnance Removal and Land Disposal of 38-Arce Parcel at Ft. Sheridan, IL
155	ASR - Archive Search Report & Army Comments
156	Open Burning/Open Detonation UXO Baseline Final Report
157	Open Burning/Open Detonation UXO Baseline Final Report Submittal
158	Community Relating: Public Notice
159	Final UXO Briefing/43.25 Acre Work Site,Basewide Ordnance Survey (38-Acres)
160	LCFPD Correspondence
161	UXO Soil Sampling
162	UXO Action MEMO
163	Explosive Safety Submission for Ordnance Removal and Land Disposal of 38-Arce Parcel at Ft. Sheridan, IL & Correspondence
164	UXO - 38-Acres - Correspondence
165	UXO Work Plan (SAP)
166	Work Plan/SOW - Correspondence
167	Anti-Aircraft Ammunition used at Fort Sheridan
168	STATEMENT OF CLEARANCE FORT SHERIDAN, ILLINOIS
169	STATEMENT OF CLEARANCE FORT SHERIDAN, ILLINOIS (revised)

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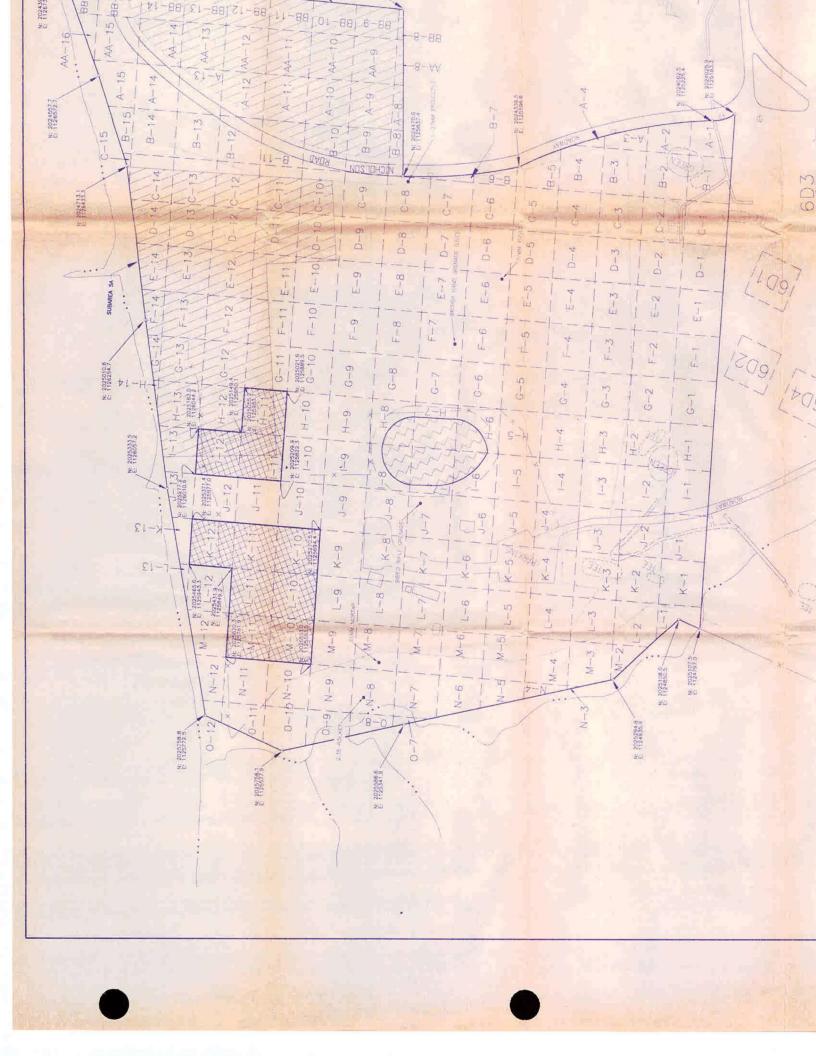
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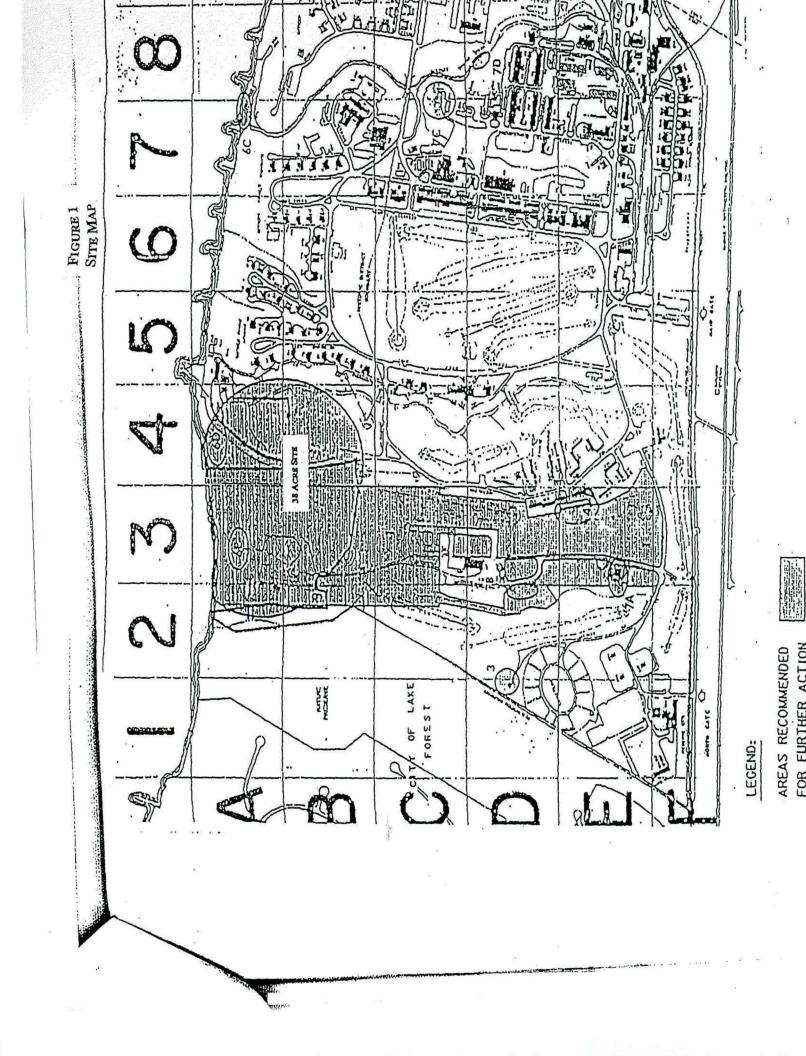
APPENDIX C

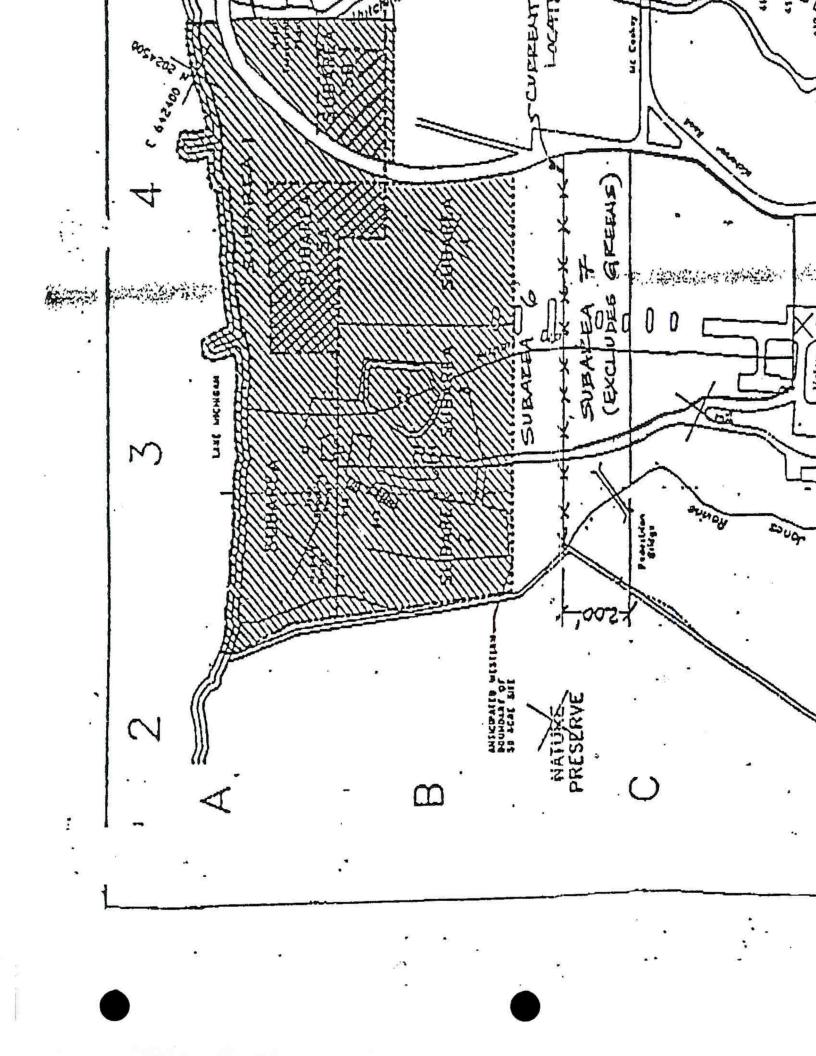
Historical Figures and Tables Associated with the Grenade Course MRS

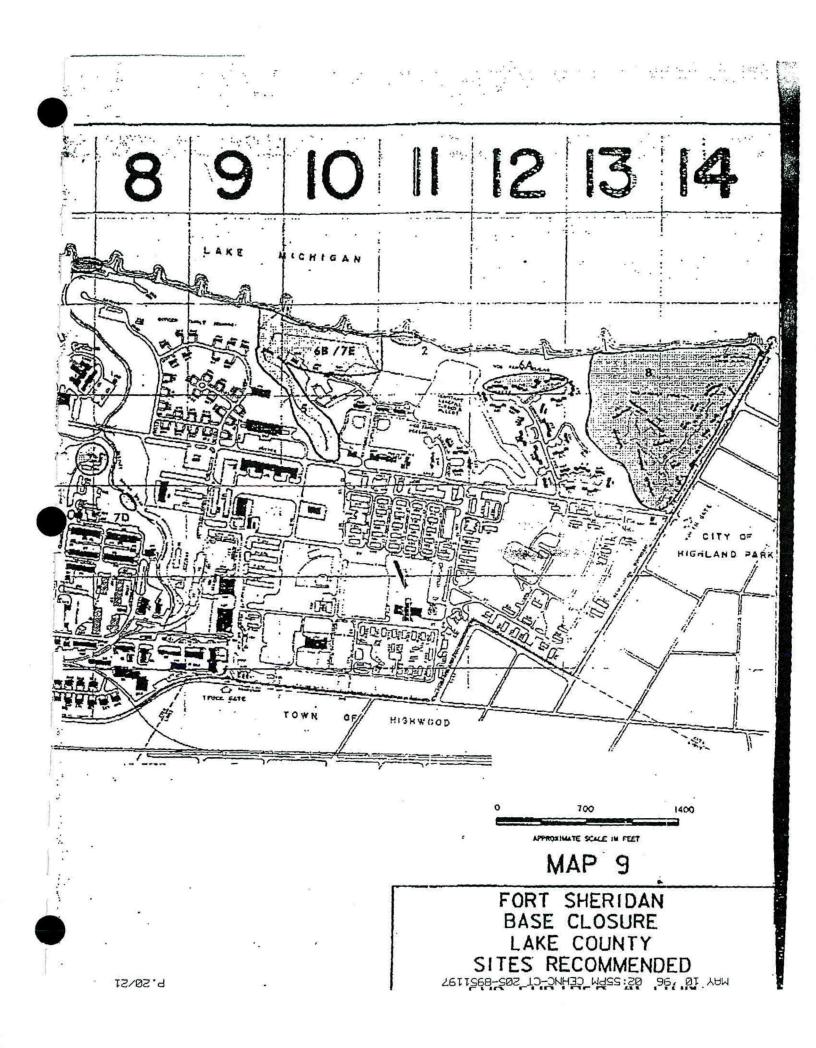


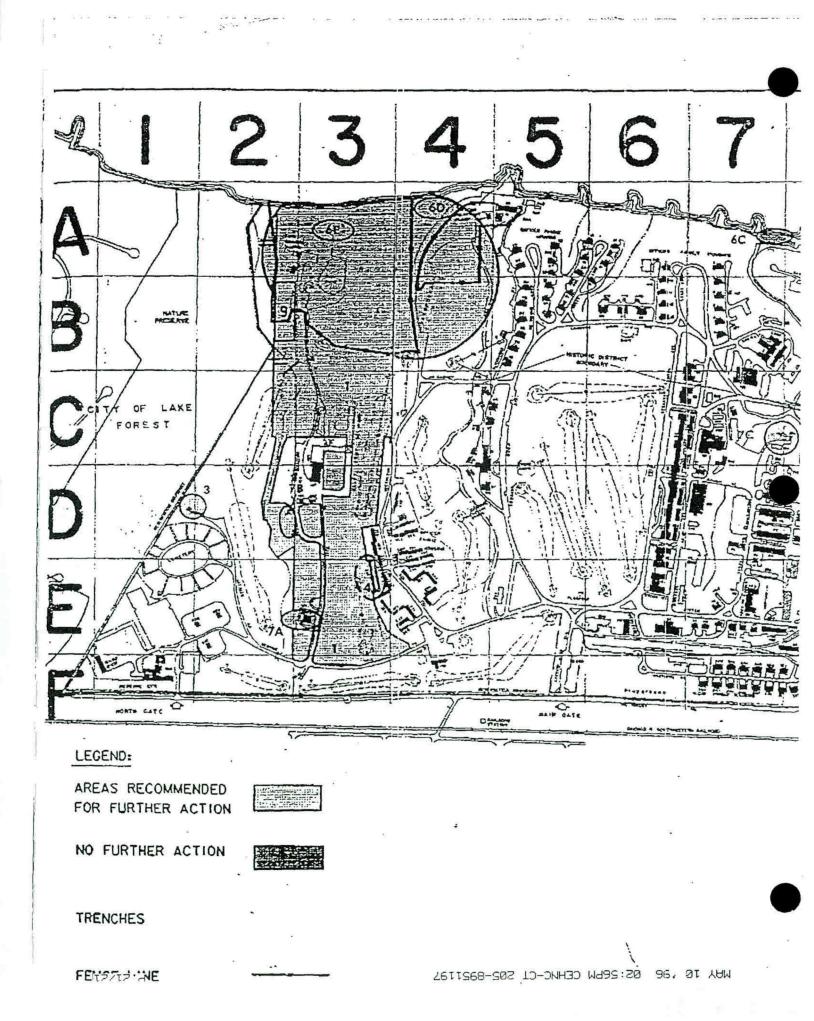


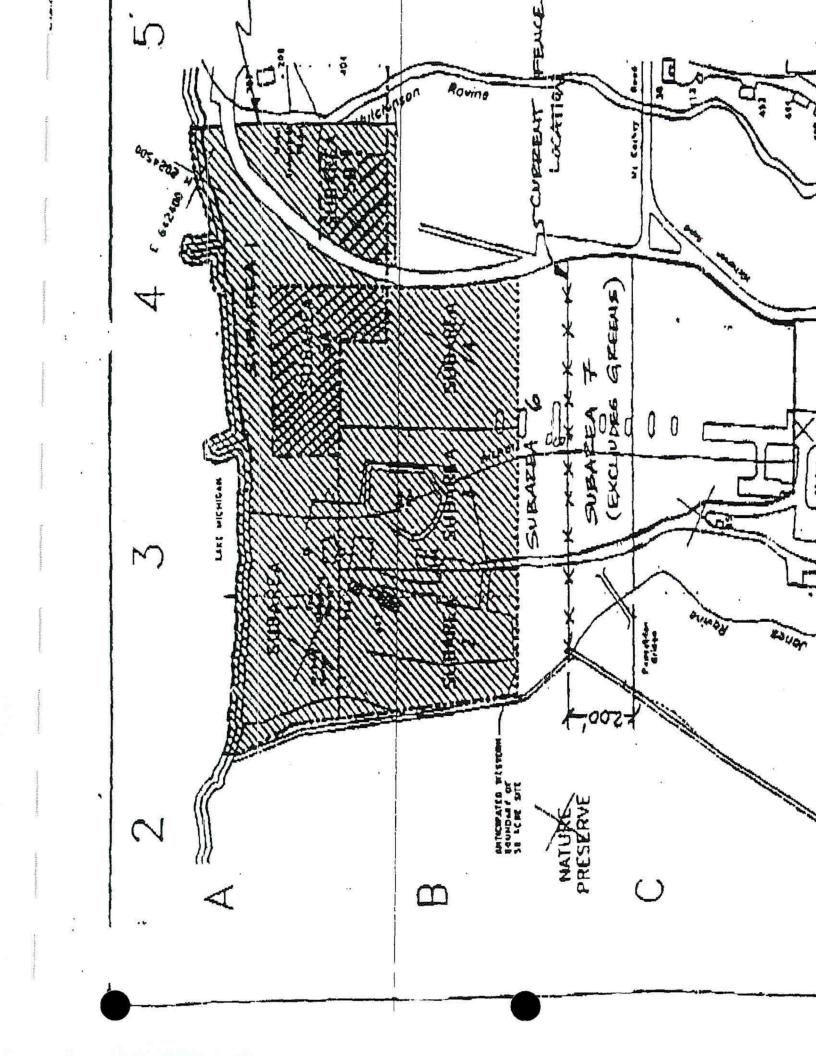






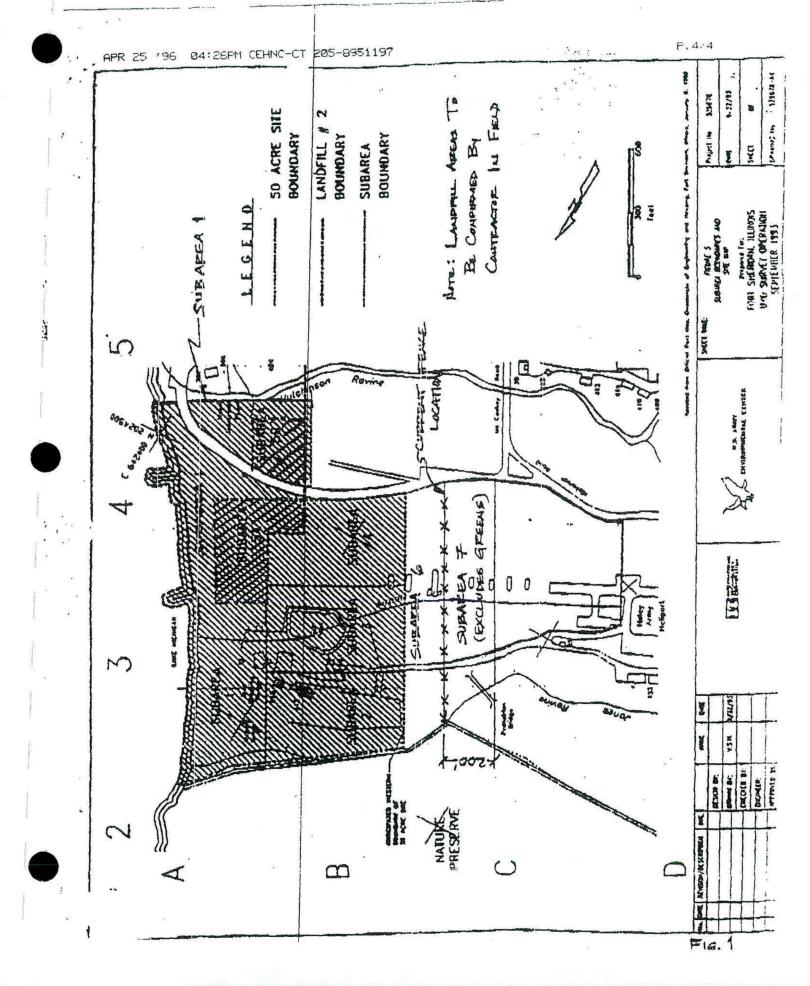


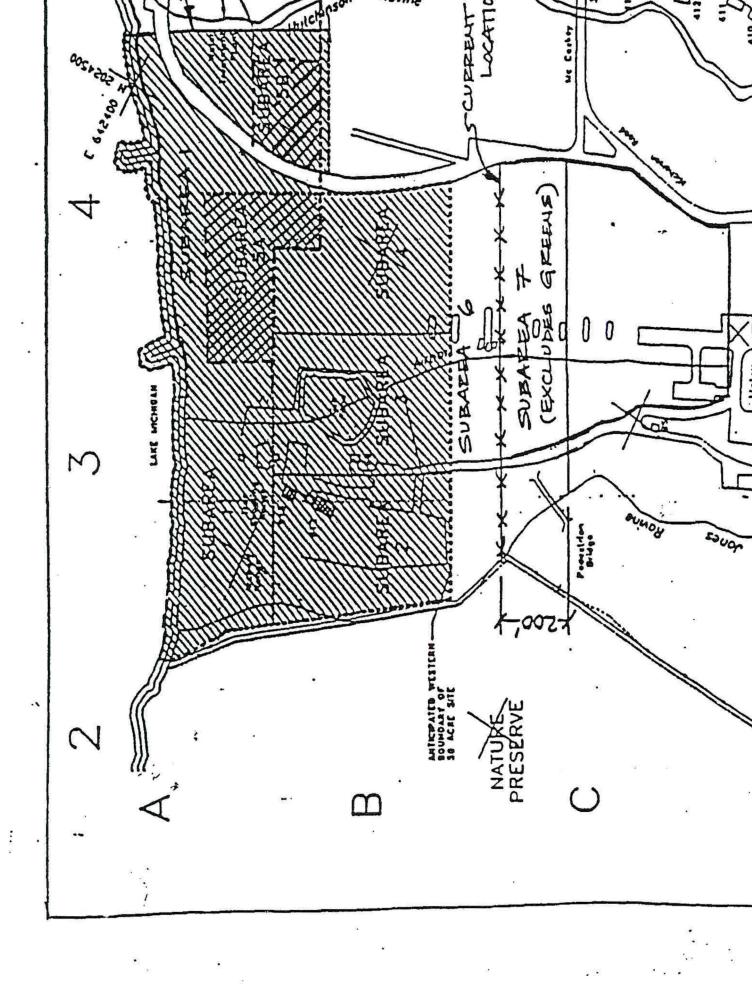


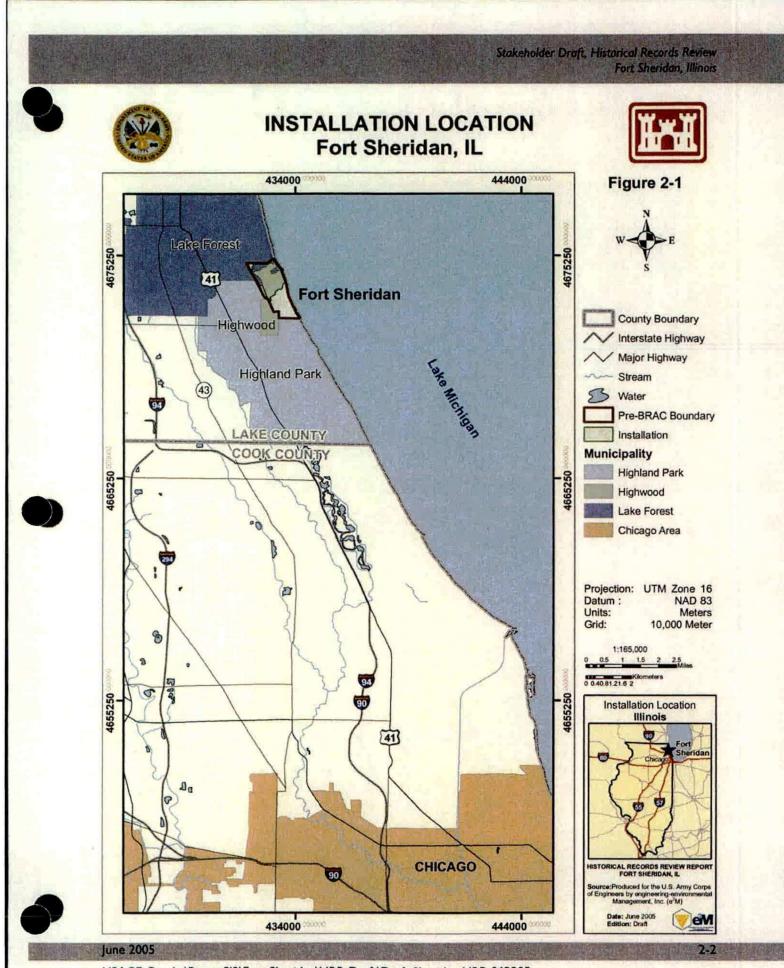


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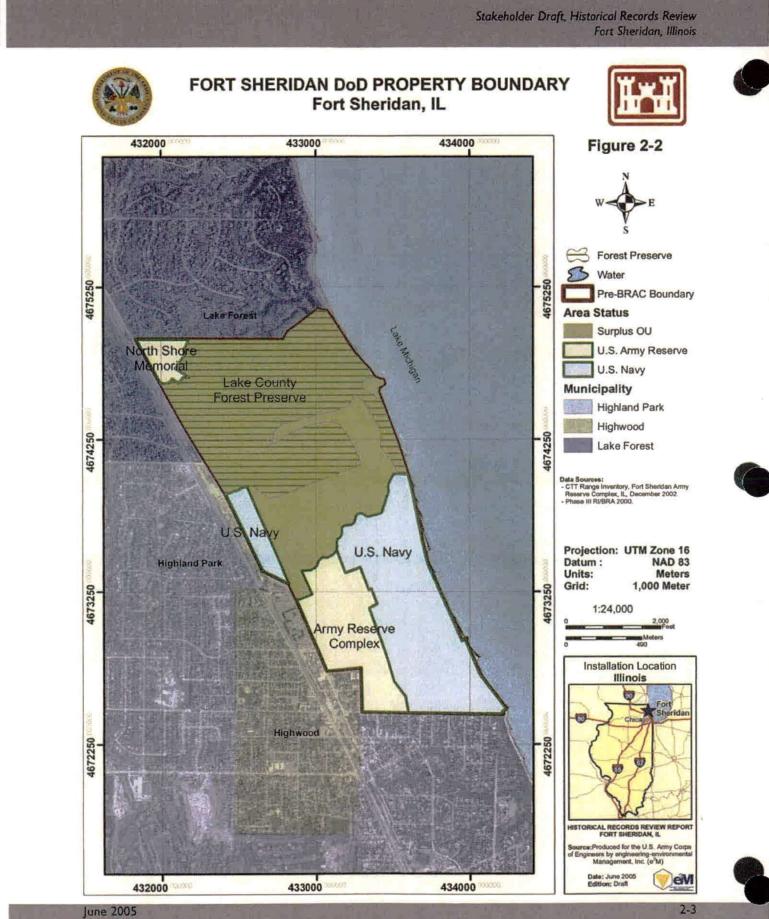
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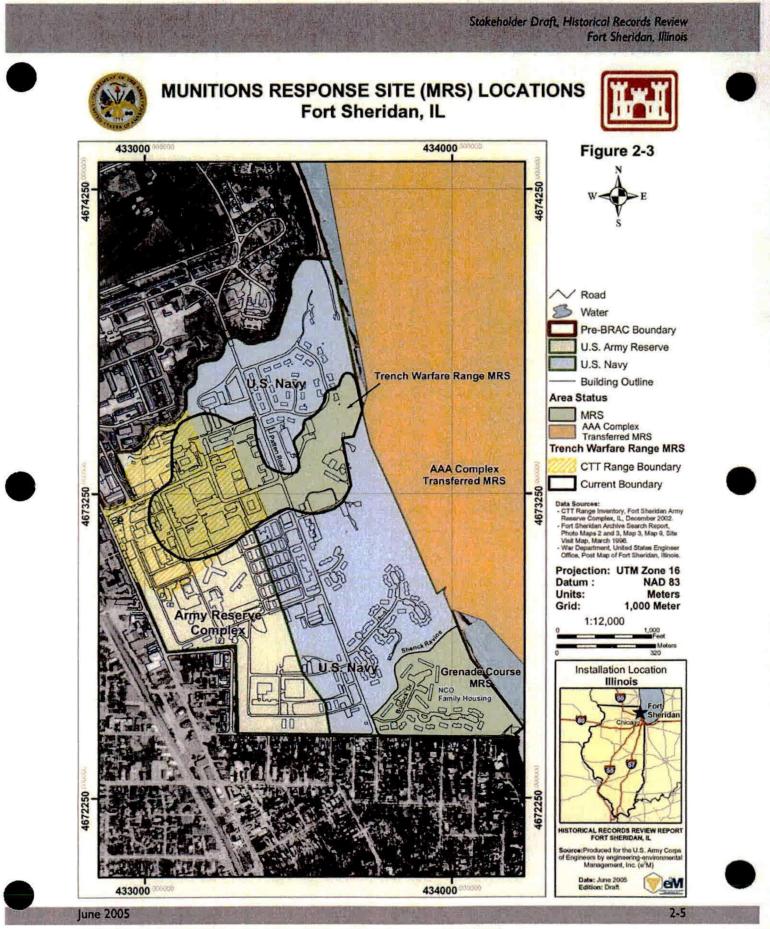




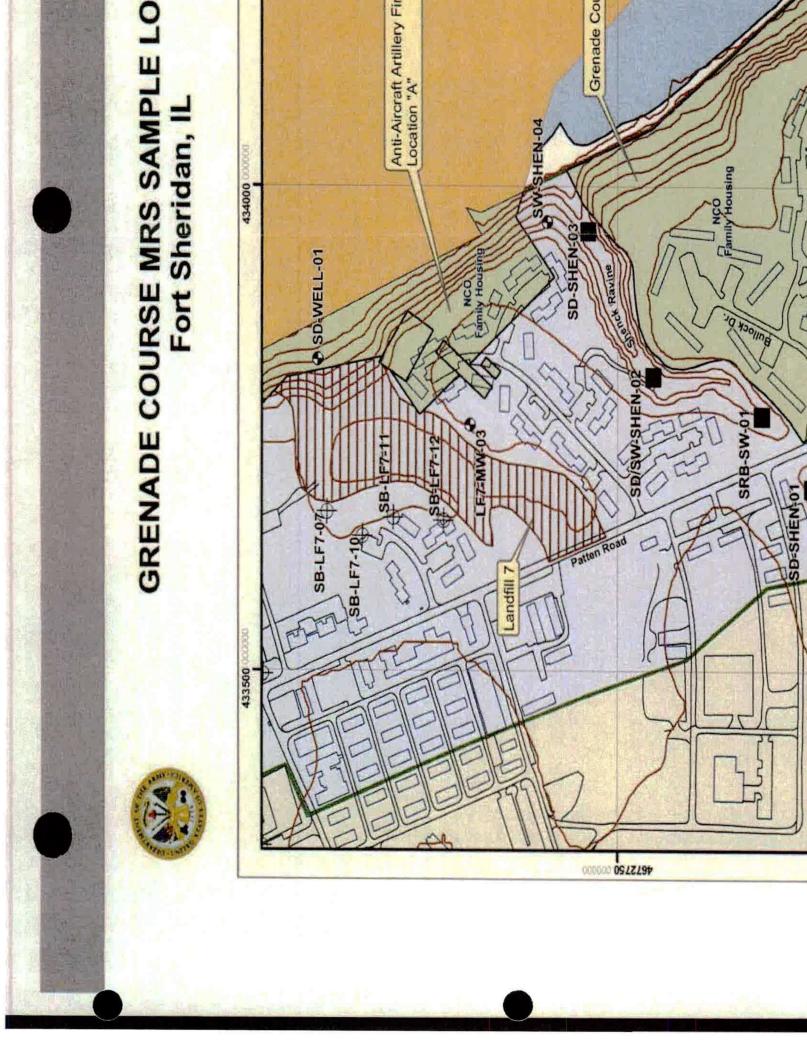
USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905

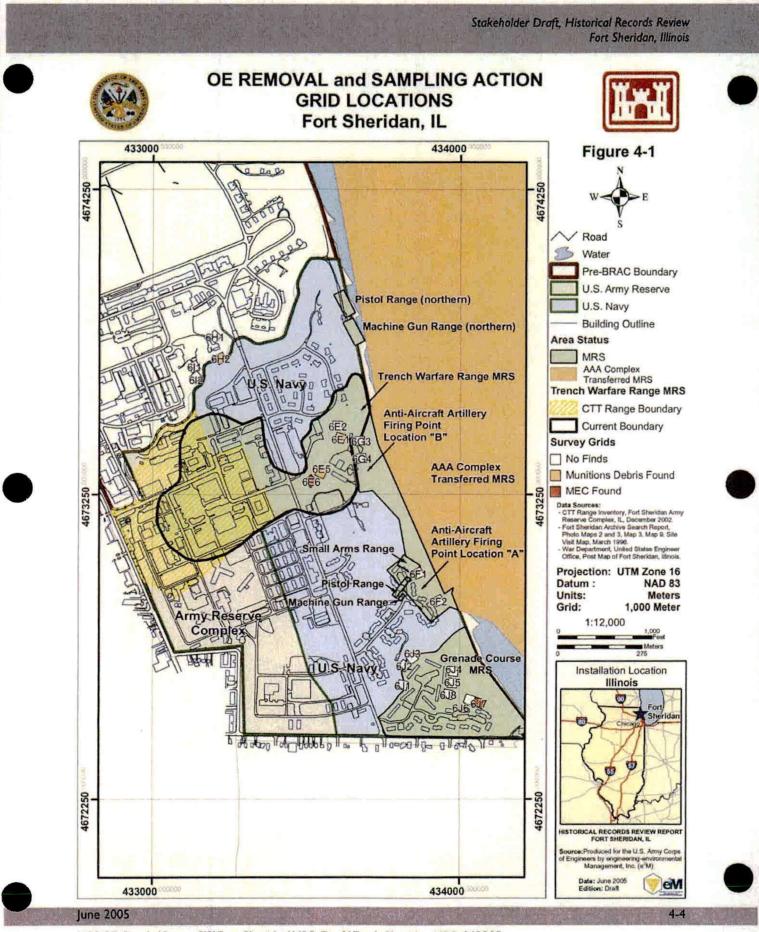


USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905



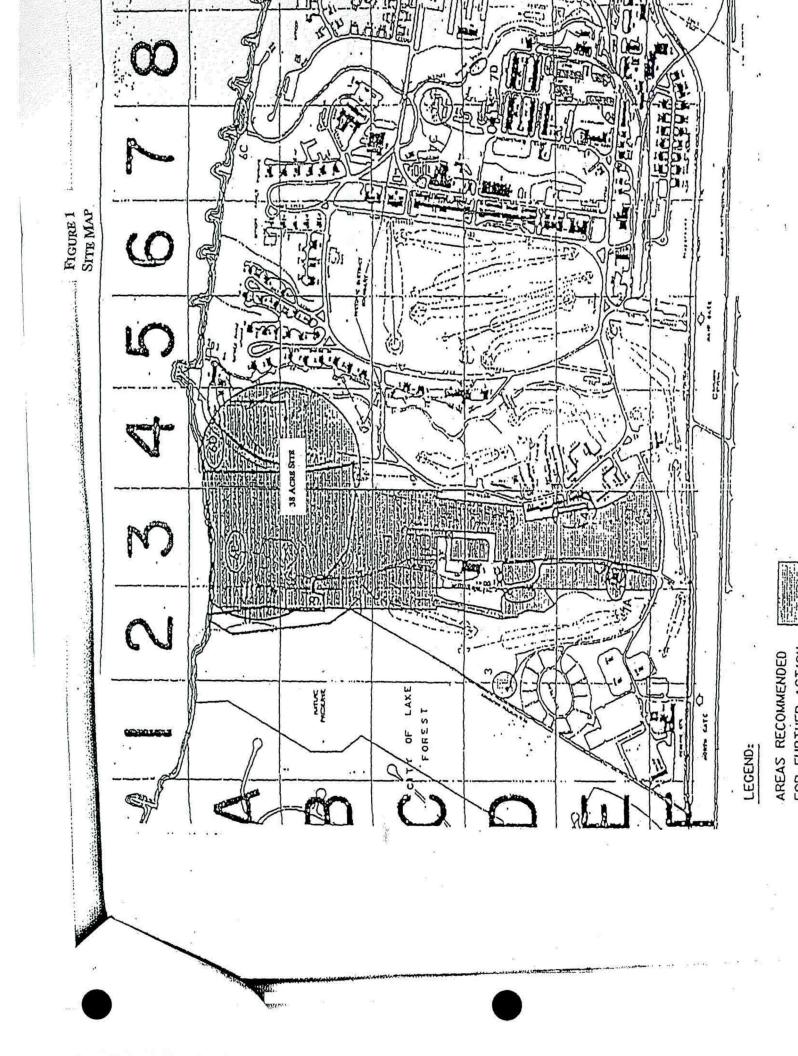
USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905

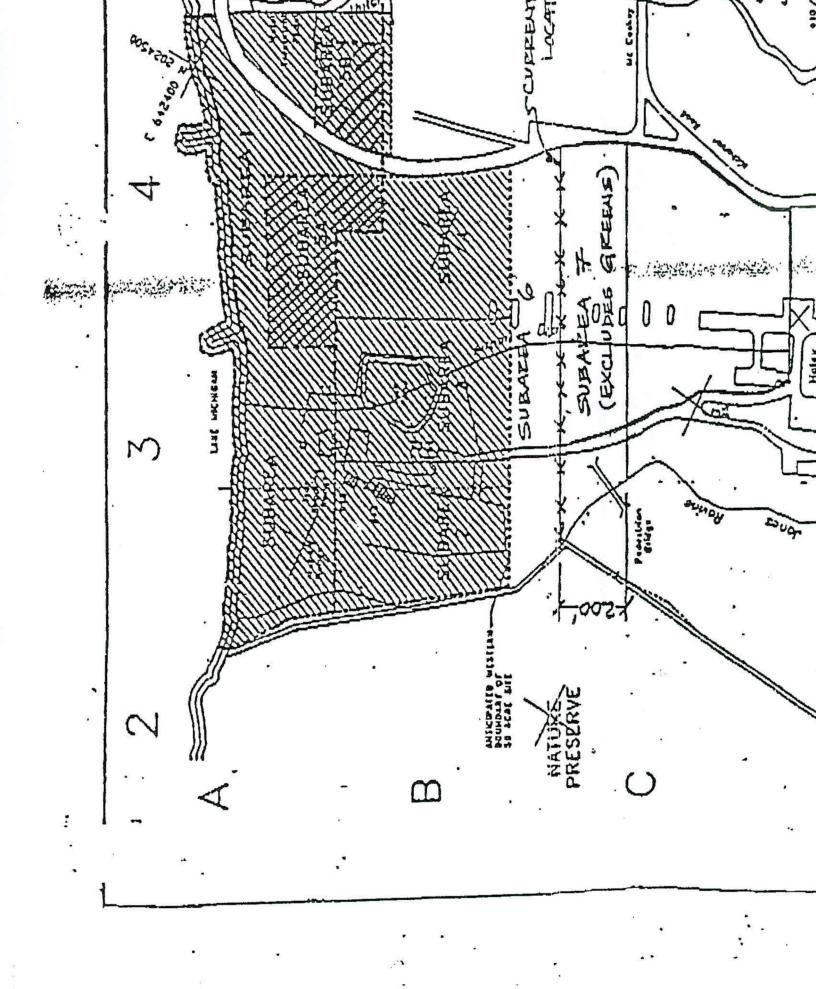


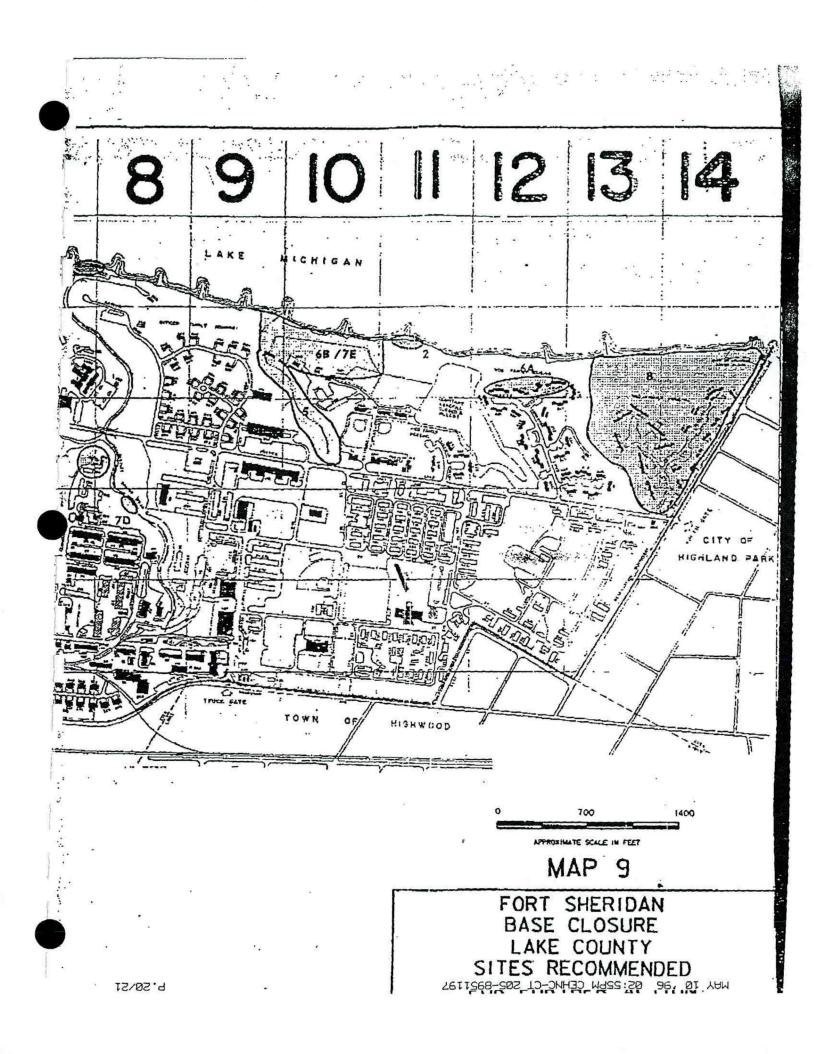


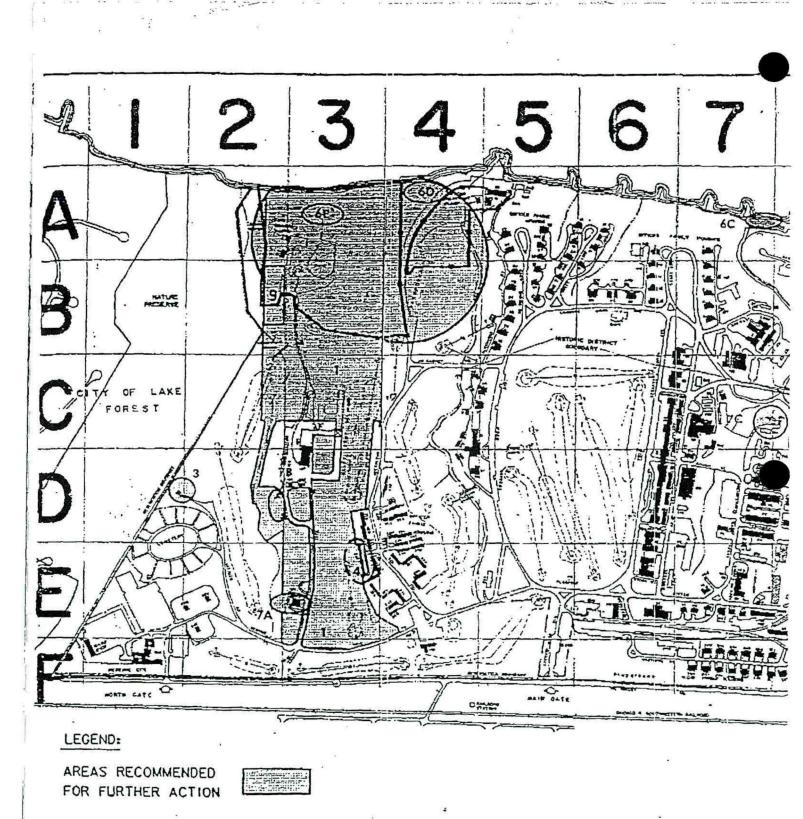
USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905

APPENDIX D Historical Figures Associated with the AAA Complex







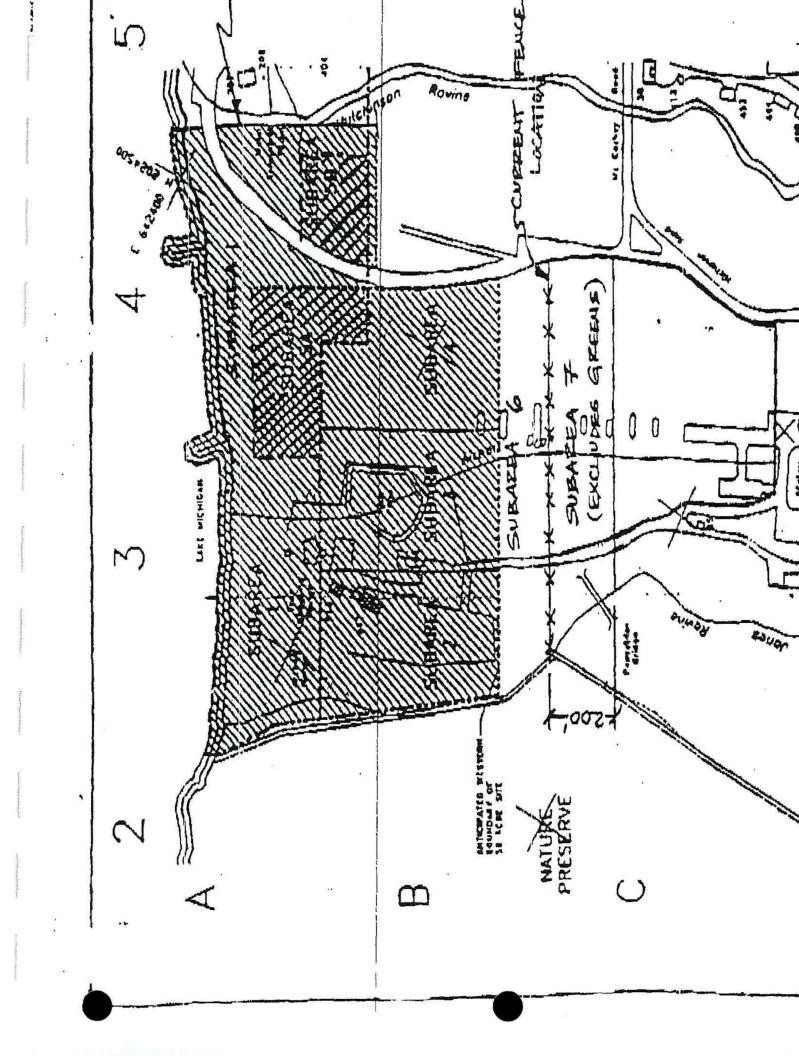


NO FURTHER ACTION



TRENCHES

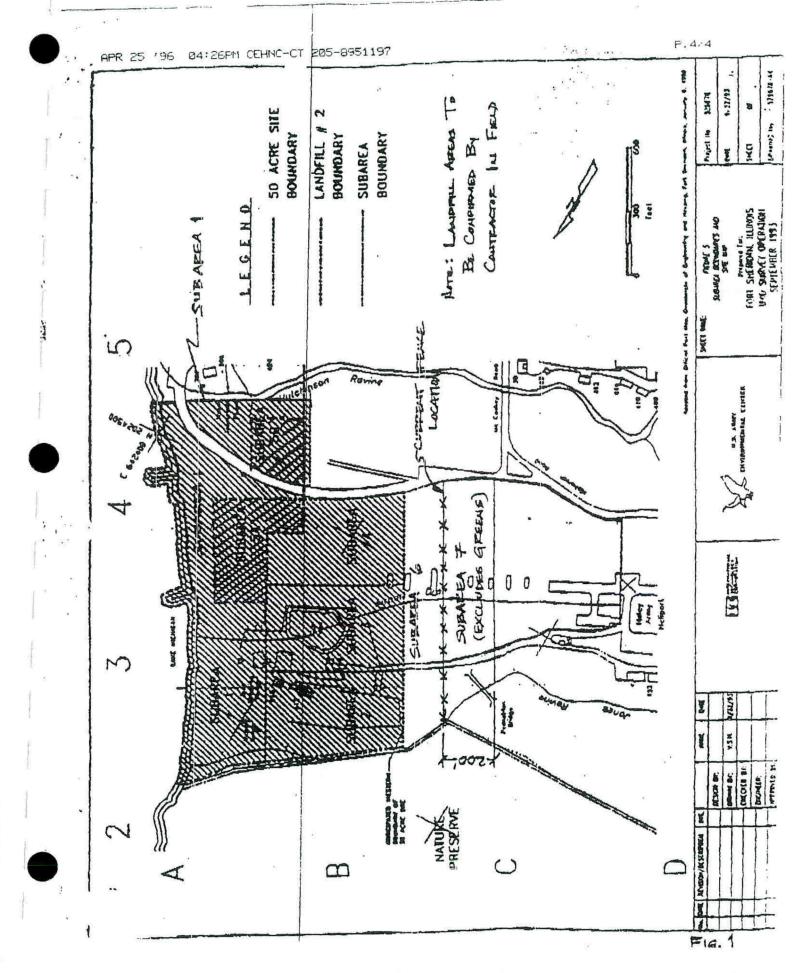
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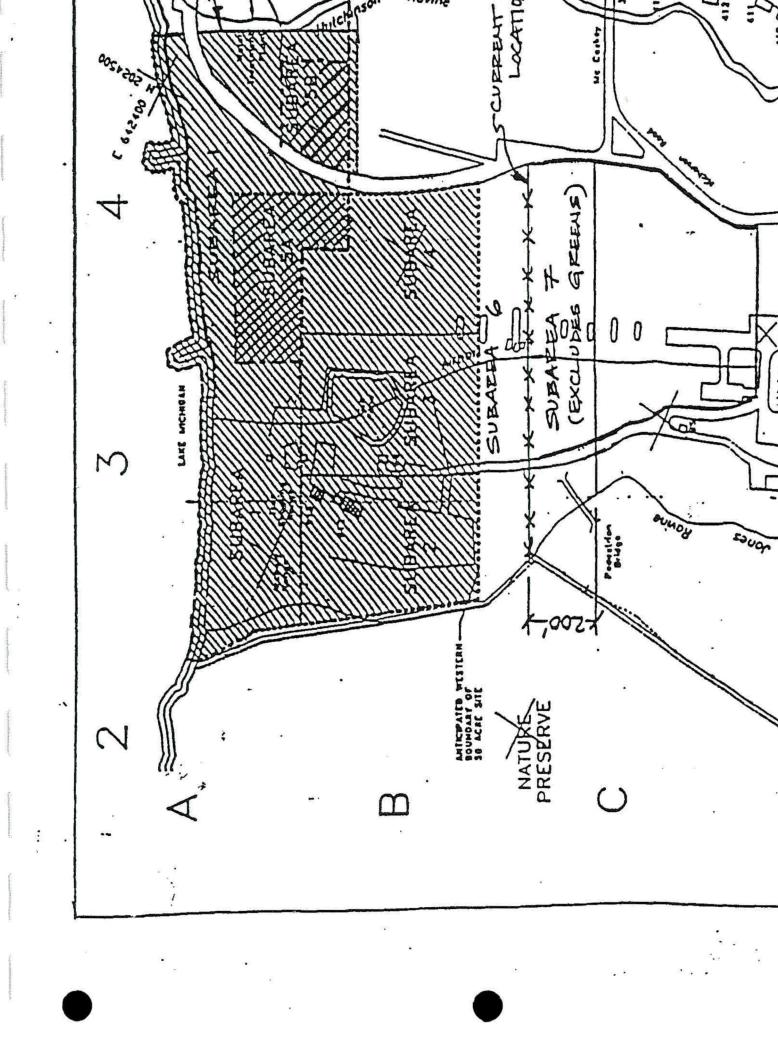


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	PIKA-PI	RNIE JV	DAILY RE	PORT
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NU	JMBER
W912DY-10-D-0025 TO# 0026	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Monday, June 15, 2015	01 Page	5

Photo 01: Excavator Arriving_1



Photo 02: Excavator Arriving_2



	РІКА-РІ	RNIE JV	DAILY REP	PORT
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUM	IBER
W912DY-10-D-0025 TO# 0026	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Tuesday, June 16, 2015	02 Page	5

Photo 01: Instrument Test Strip



Photo 02: Plexi-Glass Installation for Excavator Armoring



	PIKA-PI	RNIE JV	DAILY RE	PORT
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NU	MBER
	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES		03	
W912DY-10-D-0025 TO# 0026	ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Wednesday, June 17, 2015	Page	5

Photo 01: Checking the excavated soil from the High Density Area



Photo 02: Checking the High Density Area excavation



	PIKA-PI	RNIE JV	DAILY RE	PORT
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NU	JMBER
	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES		03	
W912DY-10-D-0025 TO# 0026	ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Wednesday, June 17, 2015	Page	6

Photo 03: West end of Group 2 Feature



			_	
			REPORT NU	MBER
	TITLE AND LOCATION	DAY/DATE	04	
W912DY-10-D-0025 TO# 0026	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Thursday, June 18, 2015	Page	5

Photo 01: Linear Feature 1 north utility wire



Photo 02: Linear Feature 1 south end 10 pipe



o 03: Linear Feature 2 south end



	PIKA-PI	RNIE JV	DAILY REPOR
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES		05
W912DY-10-D-0025 TO# 0026	ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Friday, June 19, 2015	Page 5

Photo 01: High Density Area excavation area



2: Scrap removed during excavations



	РІКА-РІ	RNIE JV	DAILY RE	PORT
CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NU	MBER
W912DY-10-D-0025 TO# 0026	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY	Friday, June 19, 2015	05	
10# 0026	BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS		Page	6

Photo 03: Site clean up



CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NU	MBER
	SUPPLEMENTAL INVESTIGATIONS		07	
W912DY-10-D-0025 TO# 0026	OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B FORT SHERIDAN, ILLINOIS	Tuesday, September 29, 2015	Page	5
	PHOTOS			
Correcting LF2 points	Excav	ation of LF2 point		





2" pipe located in gully point at LF2

10" pipe located in gully point at LF2



PIKA-P	IRNIE JV	DAILY RE	PORT
TITLE AND LOCATION	DAY/DATE	REPORT NU	MBER
SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B	Wednesday, September 30, 2015	08 Page	5
	TITLE AND LOCATION SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY	SUPPLEMENTAL INVESTIGATIONS OF POTENTIAL MUNITIONS BURIAL SITES ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY BATTERY FIRING SITE B Wednesday, September 30, 2015	TITLE AND LOCATION DAY/DATE REPORT NL SUPPLEMENTAL INVESTIGATIONS 08 OF POTENTIAL MUNITIONS BURIAL SITES 08 ADJACENT TO FORMER ANTI-AIRCRAFT ARTILLERY Wednesday, September 30, 2015 BATTERY FIRING SITE B Page

Restoration efforts



Conditions after June event - restoration required area

Restoration efforts completed





Restoration efforts completed



Restoration efforts completed





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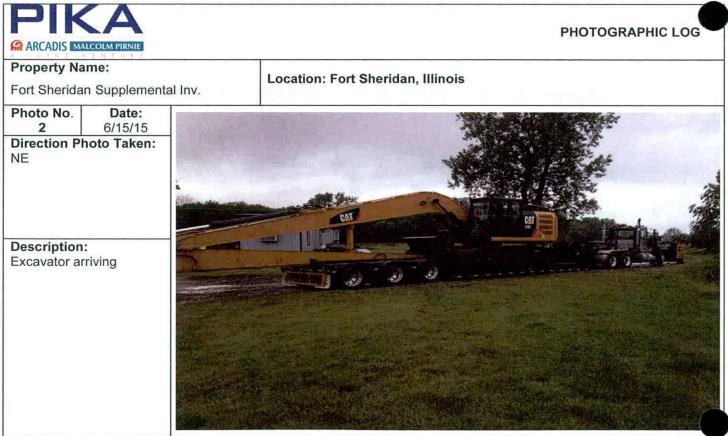
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SE

Fort Sheridan Supplemental Inv.



Location: Fort Sheridan, Illinois













Property Name:

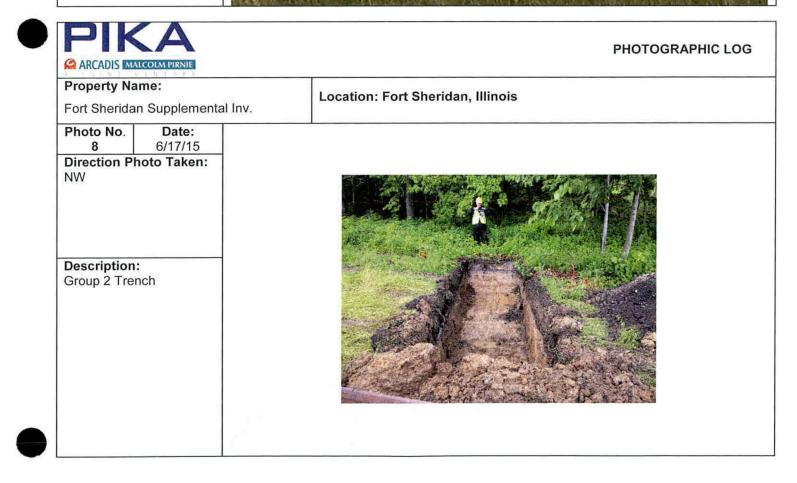
Fort Sheridan Supplemental Inv.

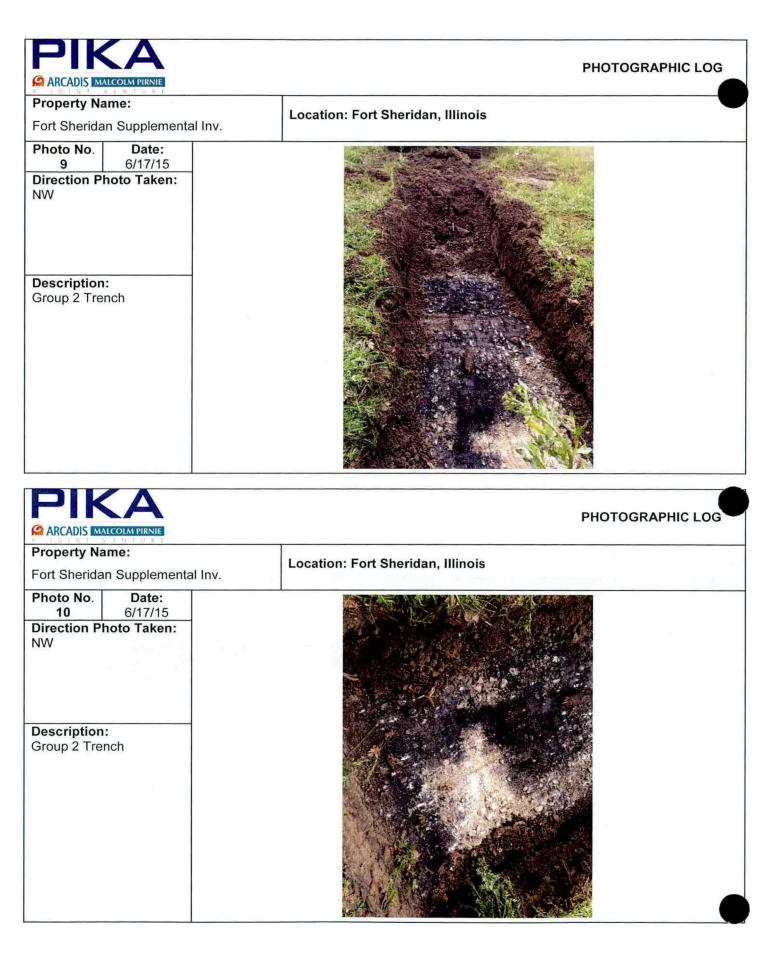
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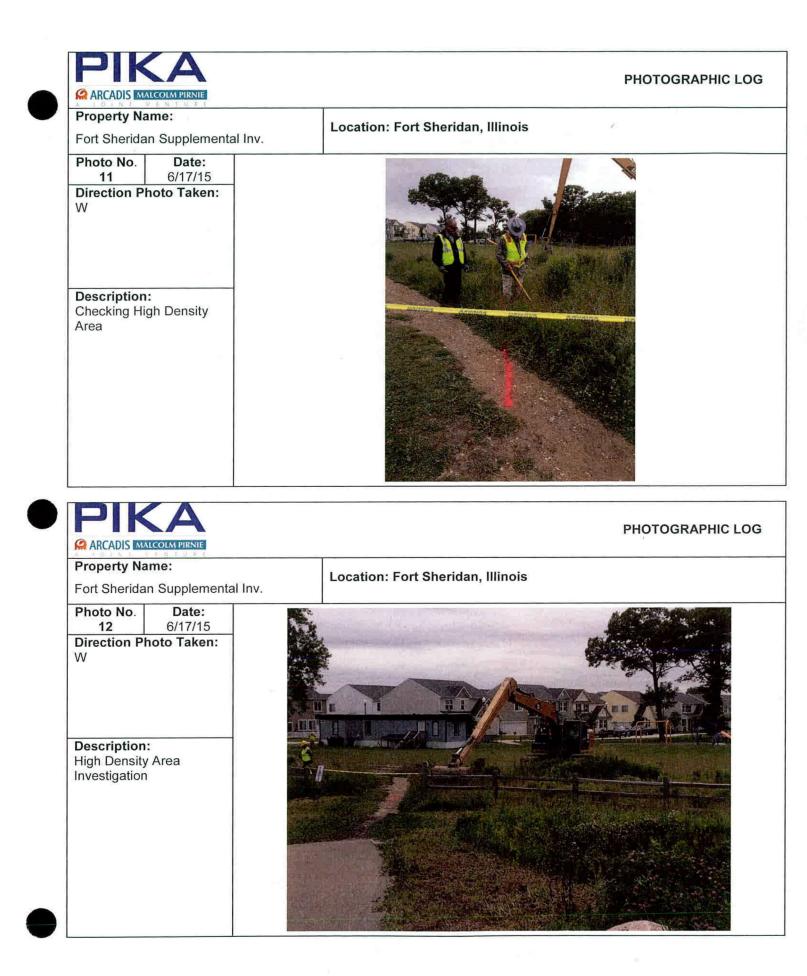
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Location: Fort Sheridan, Illinois





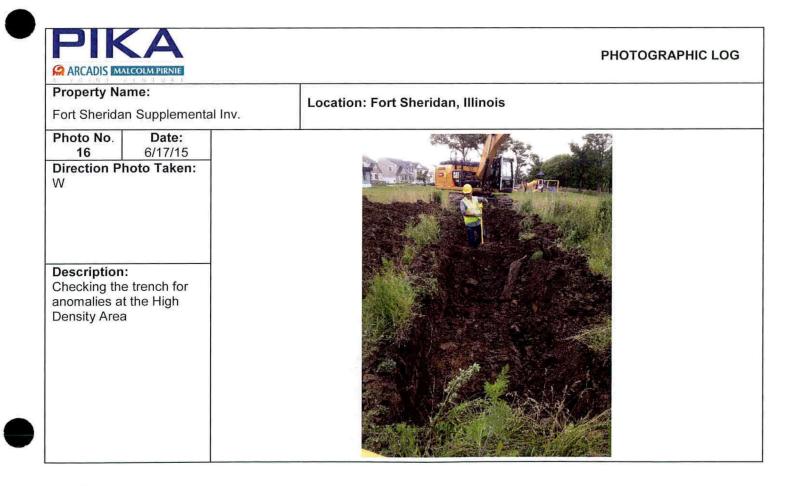


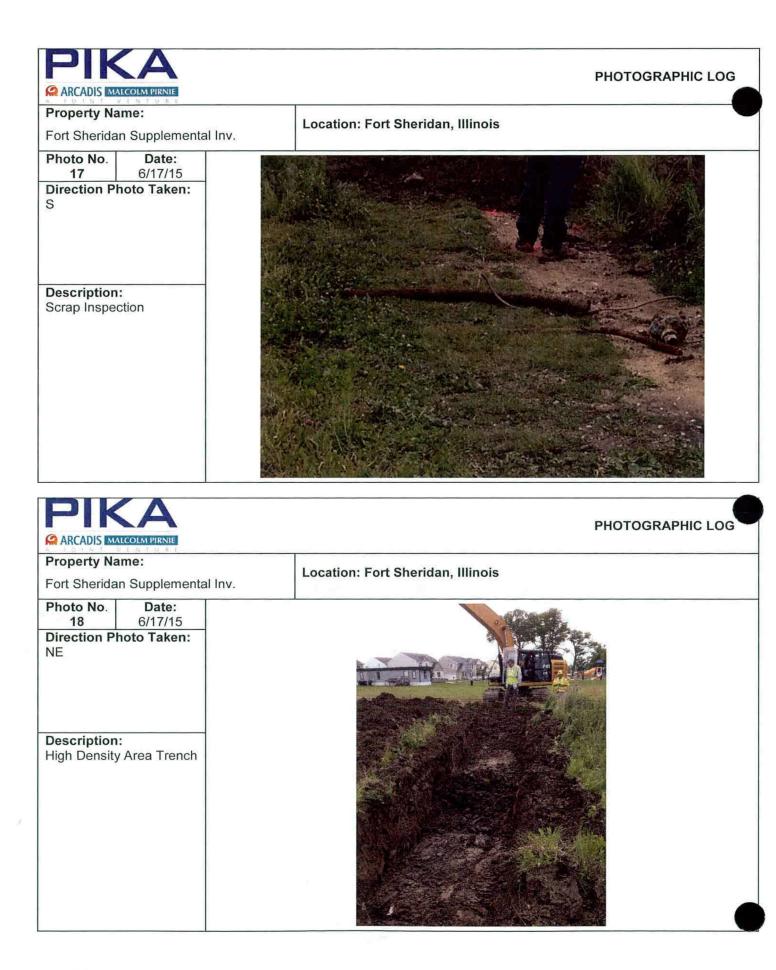




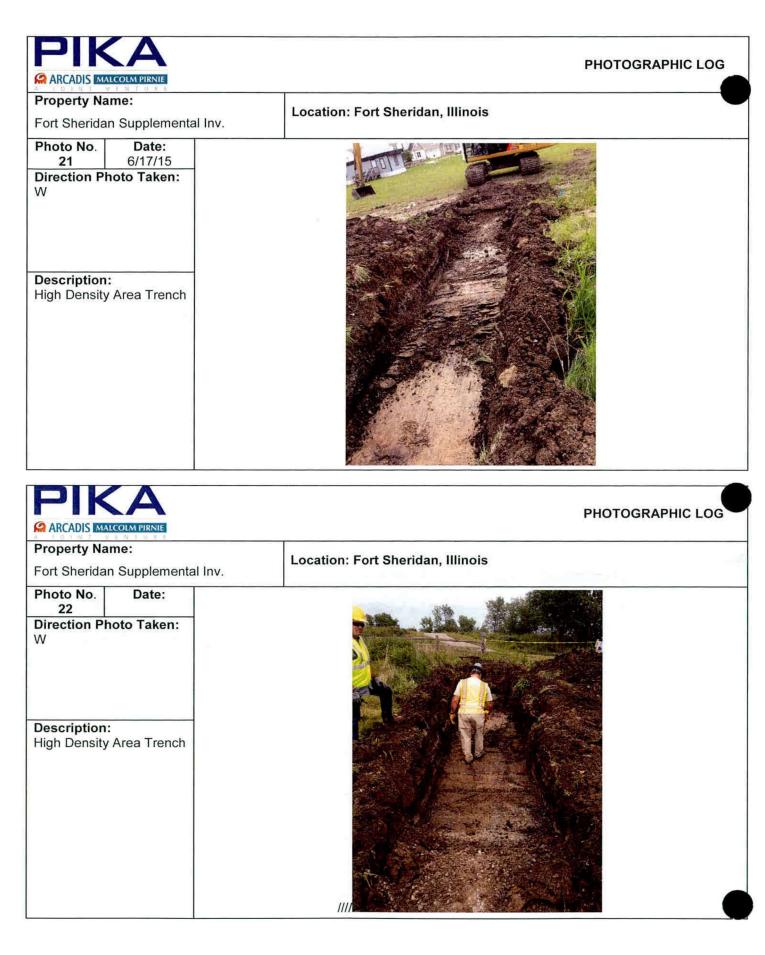




















Property Name:

Fort Sheridan Supplemental Inv.

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Description: Linear Feature 1 South Excavation Box – 10-inch Pipe

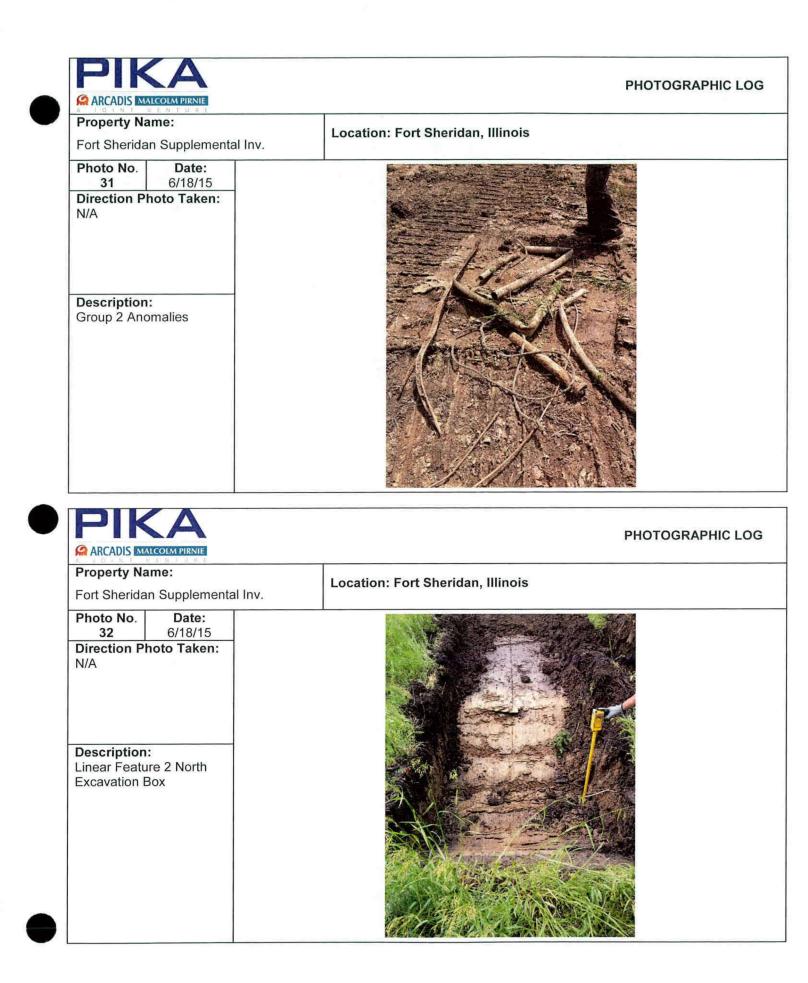


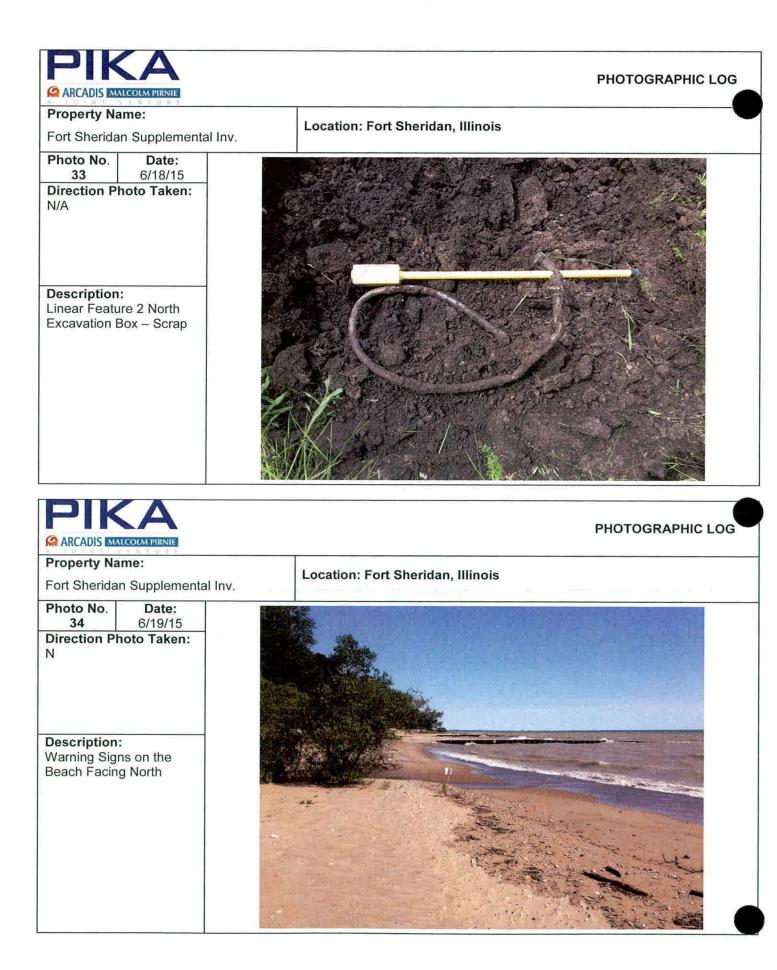


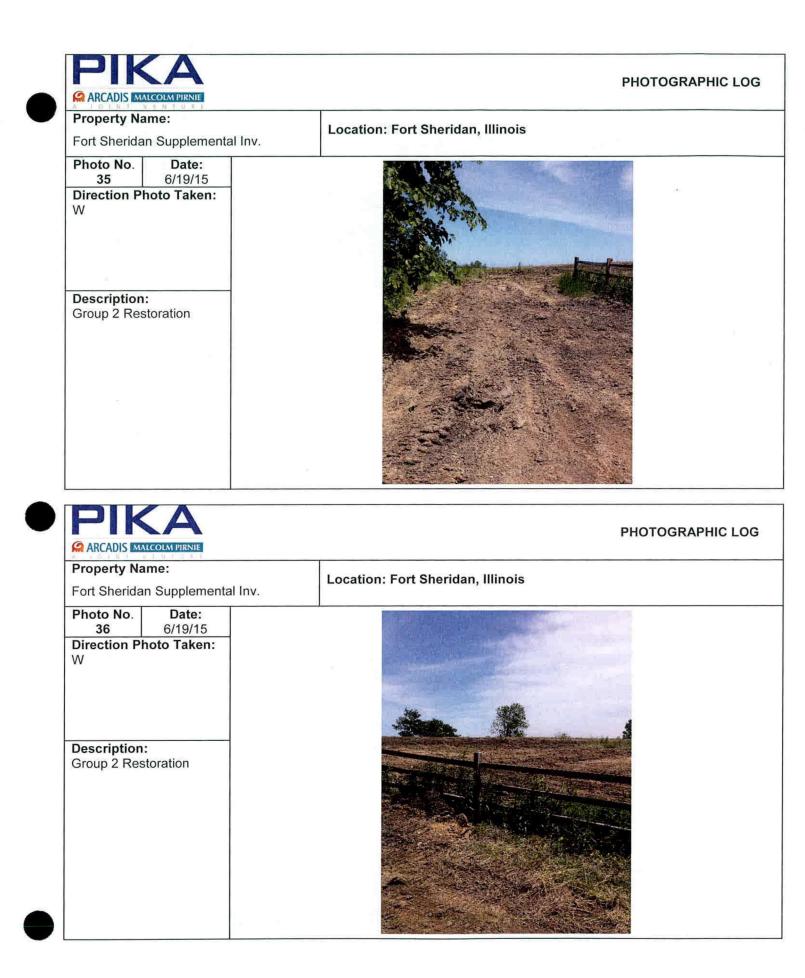
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Property Name: Fort Sheridan Supplemental Inv.	Location: Fort Sheridan, Illinois
Photo No.Date:286/18/15Direction Photo Taken:N/A	
Description: Linear Feature 1 North Excavation Box - Utility Wire	



Property Name	:	Location: Fort Sheridan, Illinois
Fort Sheridan S	upplemental Inv.	
Photo No. 29 Direction Photo N/A	Date: 6/18/15 o Taken:	
Description: Linear Feature 1 Excavation Box Wire		
		PHOTOGRAPHIC LOG
Property Name		Location: Fort Sheridan, Illinois
Photo No.	Date:	
30	2/40/45	
Direction Photo N/A	6/18/15 5 Taken:	







F-18



Property Name:

Photo No.

37

Description: Group 2 Restoration

W

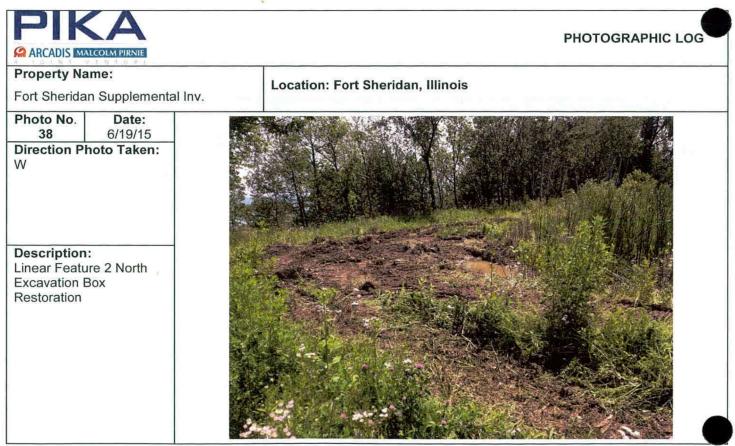
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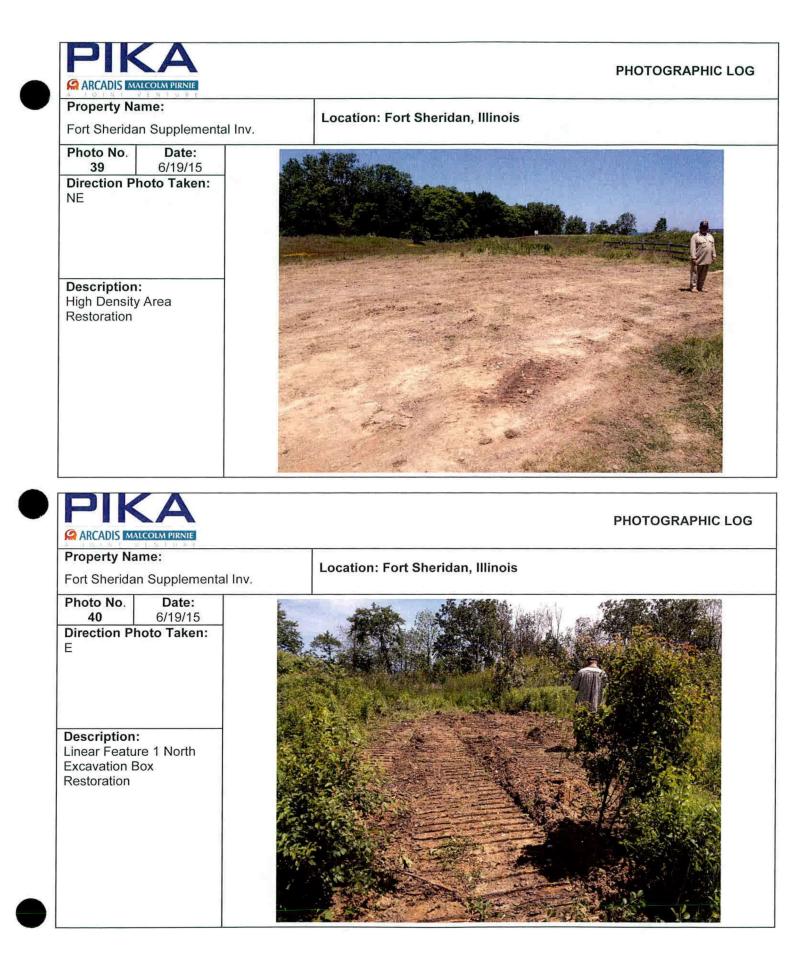
Date: 6/19/15

Location: Fort Sheridan, Illinois





F-19





Property Name:

Fort Sheridan Supplemental Inv.	Location: Fort Sheridan, Illinois
Photo No.Date:416/19/15Direction Photo Taken:E	
Description: Linear Feature 2 South Excavation Box Restoration	
	PHOTOGRAPHIC LOG
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Photo No. Date: 42 6/19/15	
Direction Photo Taken: W	









PHOTOGRAPHIC LOG

Property Name:

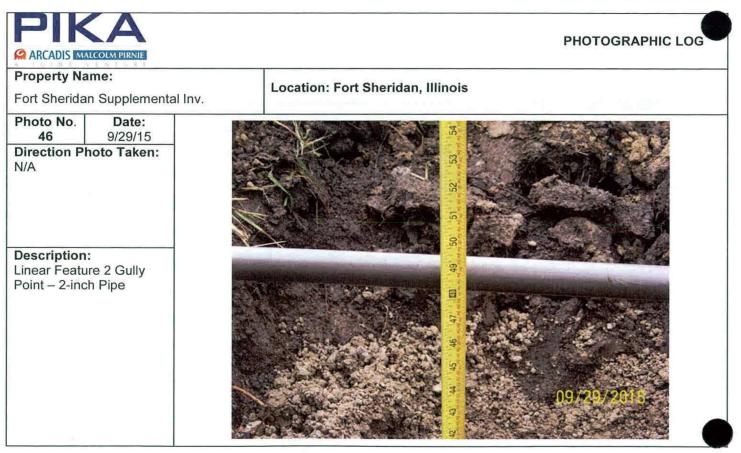
Fort Sheridan Supplemental Inv.

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Description: Hand excavation at Linear Feature 2



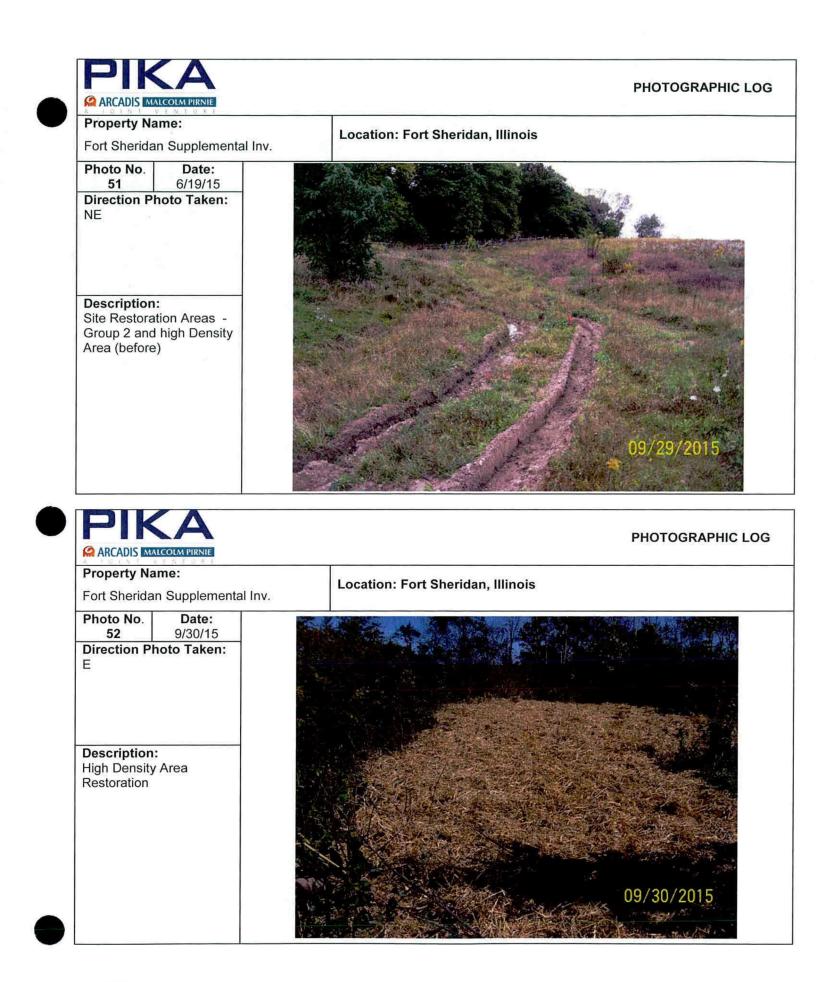






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Property Name:	Location: Fort Sheridan, Illinois
Fort Sheridan Supplemental Inv.	
Photo No. Date: 49 6/19/15 Direction Photo Taken: E	X4297
Description: Linear Feature 2 Restoration	09/29/2015
PIKA ARCADIS MALCOLM PIRNIE Property Name:	PHOTOGRAPHIC LOG
Fort Sheridan Supplemental Inv.	Location: Fort Sheridan, Illinois
Photo No. Date:	A CONTRACT OF A
50 9/30/15 Direction Photo Taken:	
SW	A Contraction of the second se



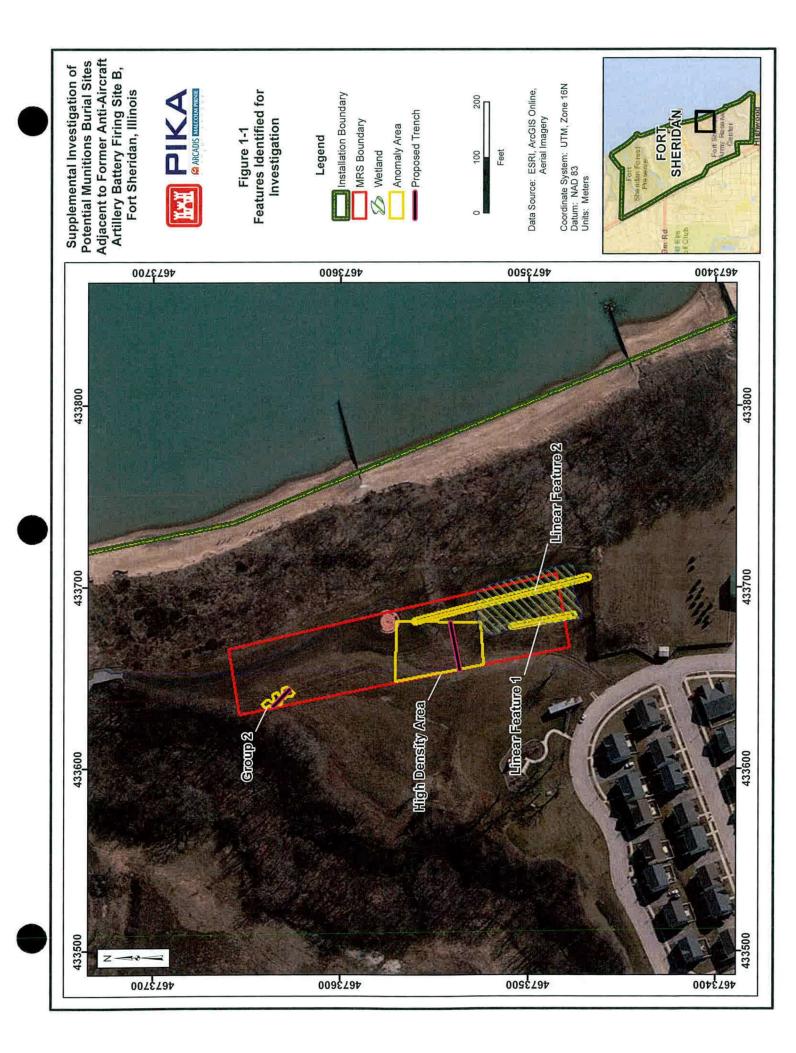


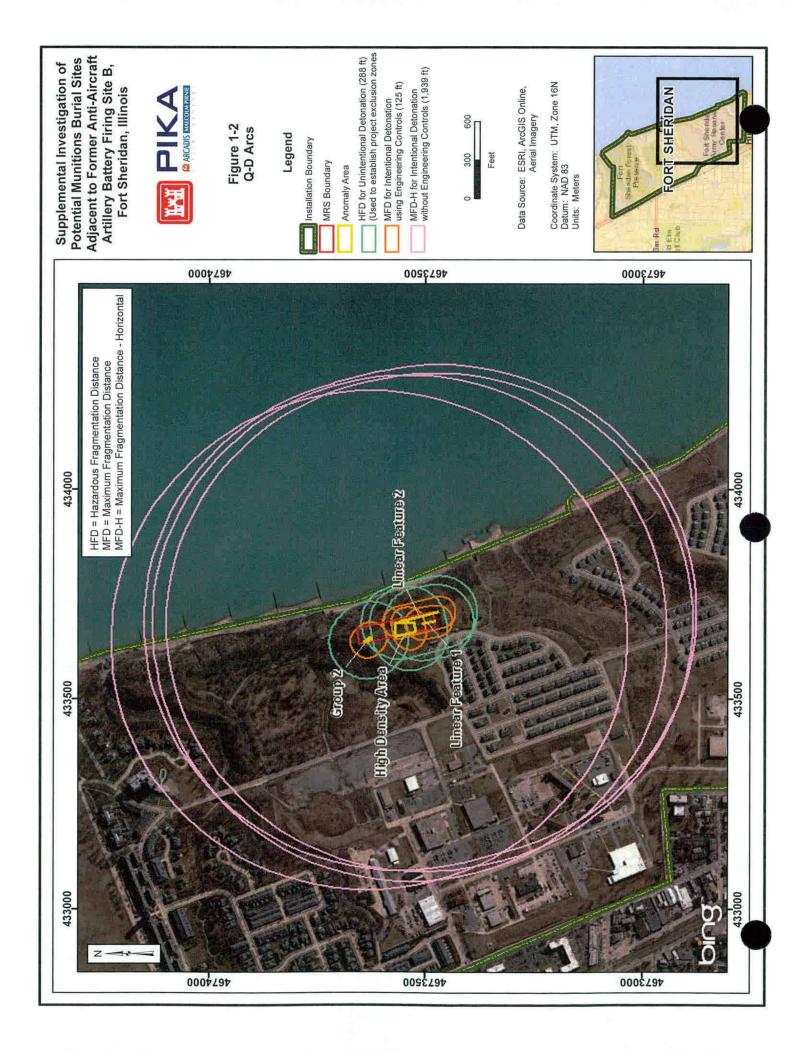
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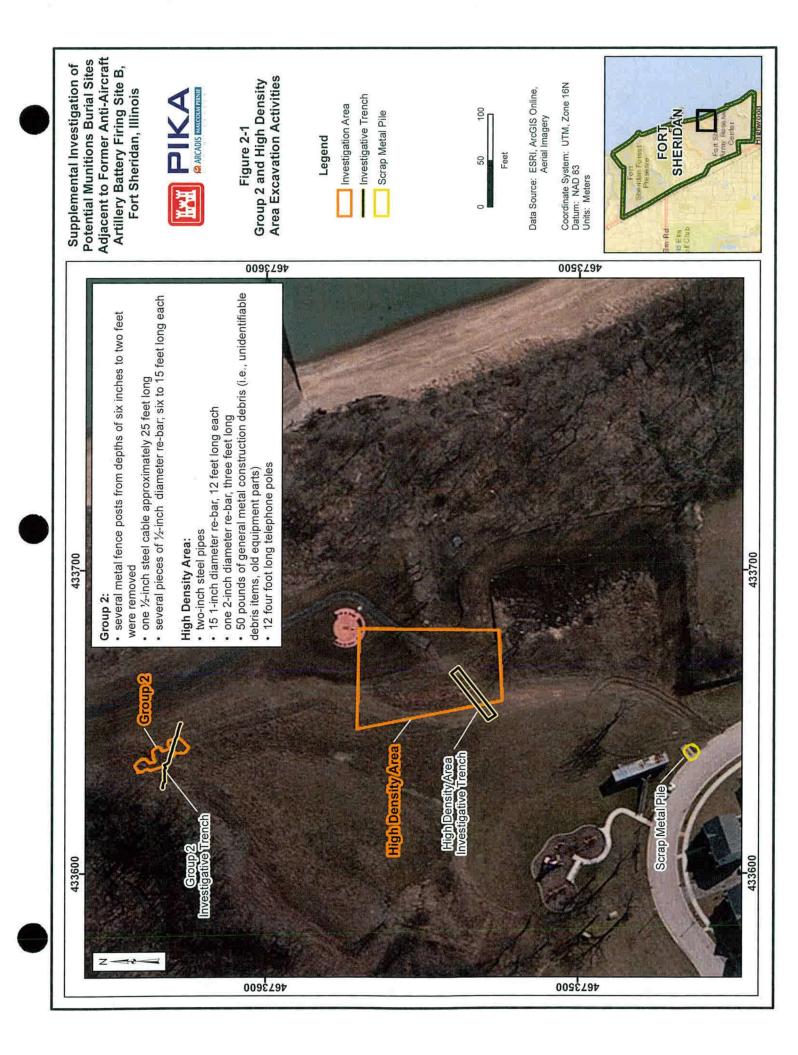
09/30/2015

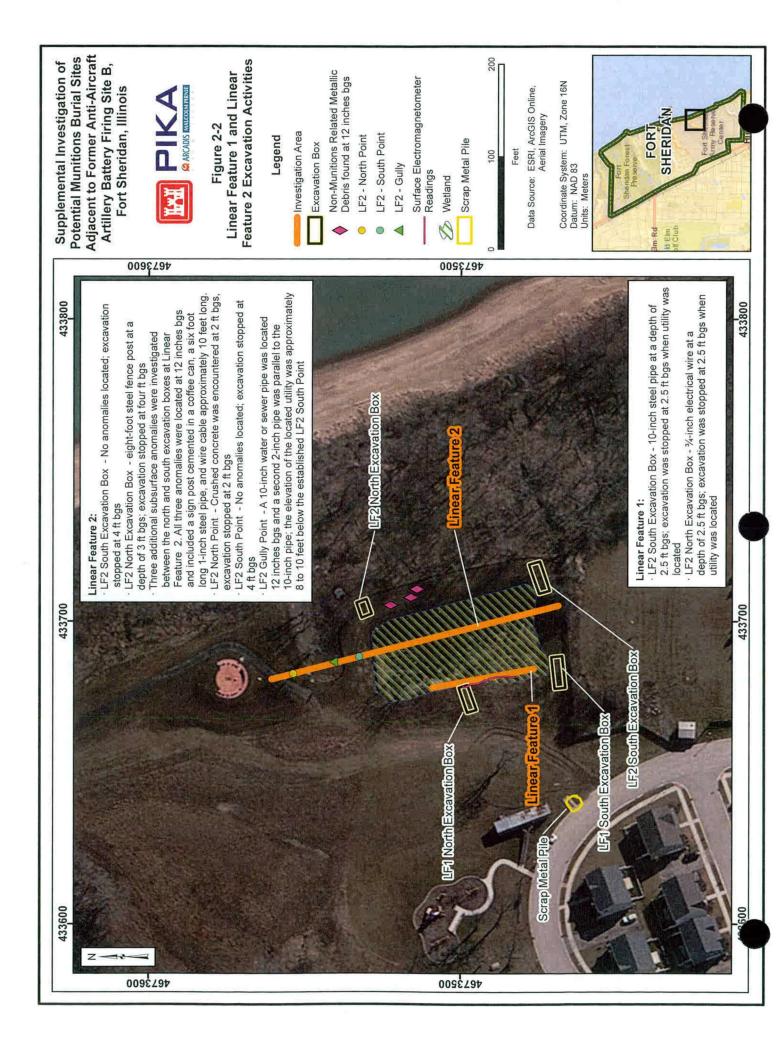
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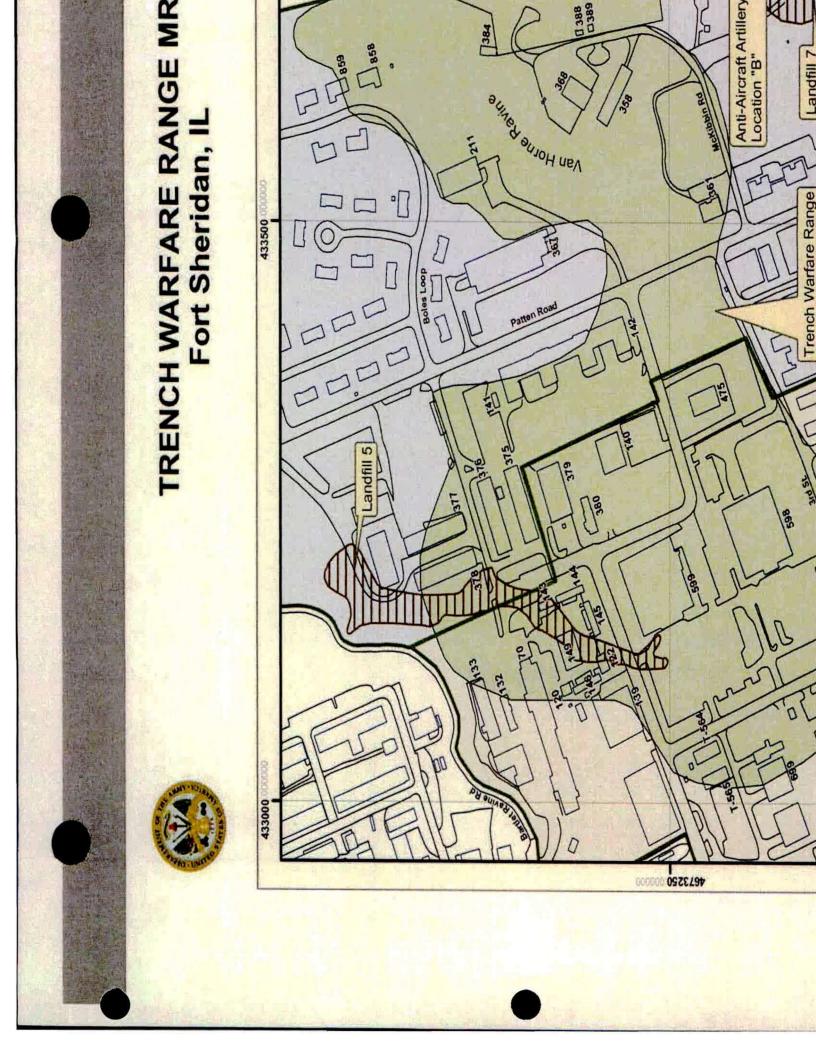
F-27



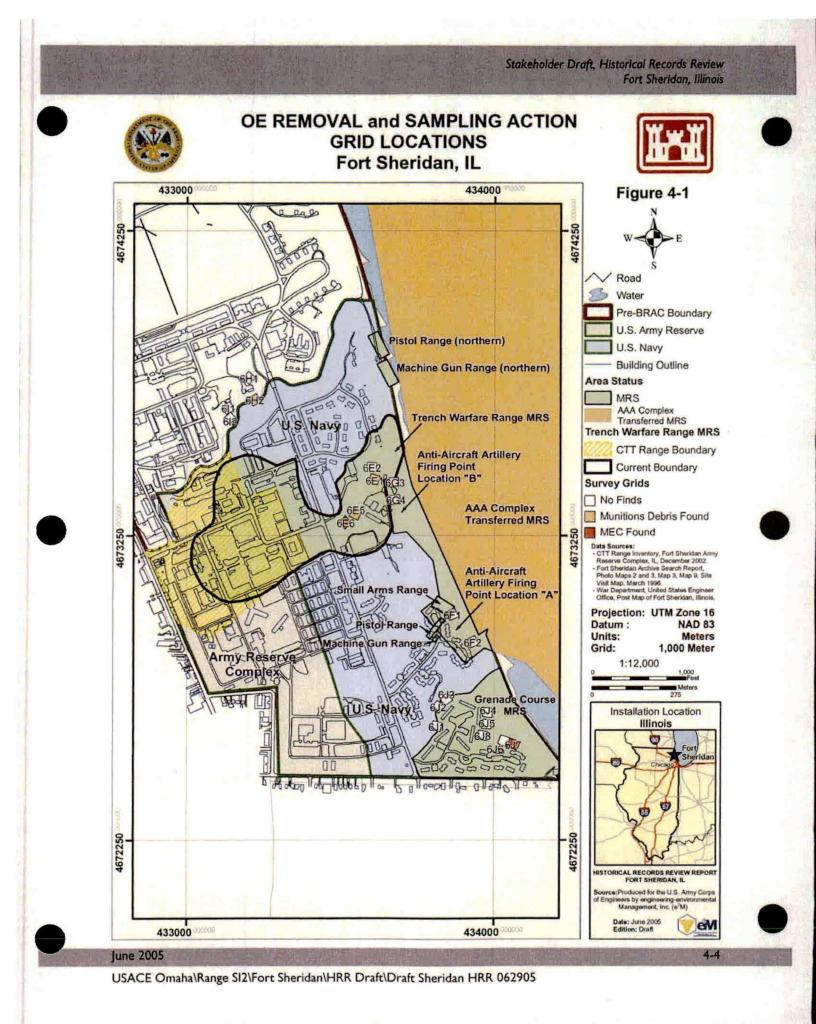












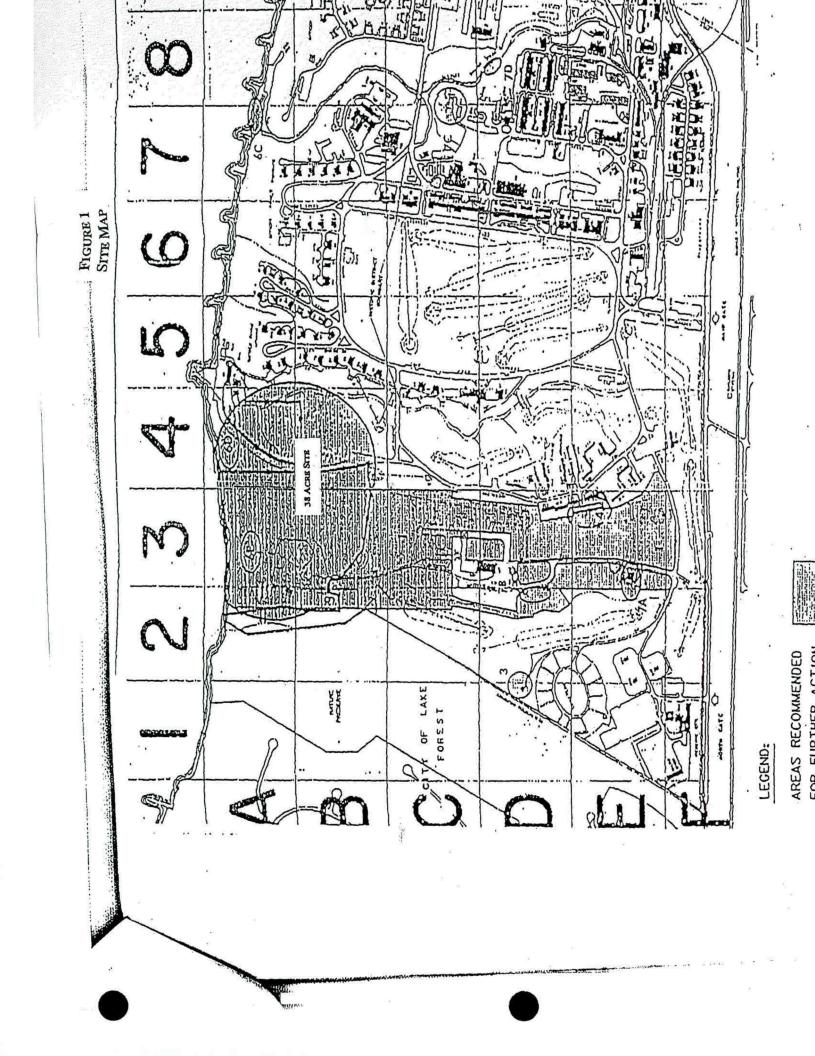
APPENDIX E

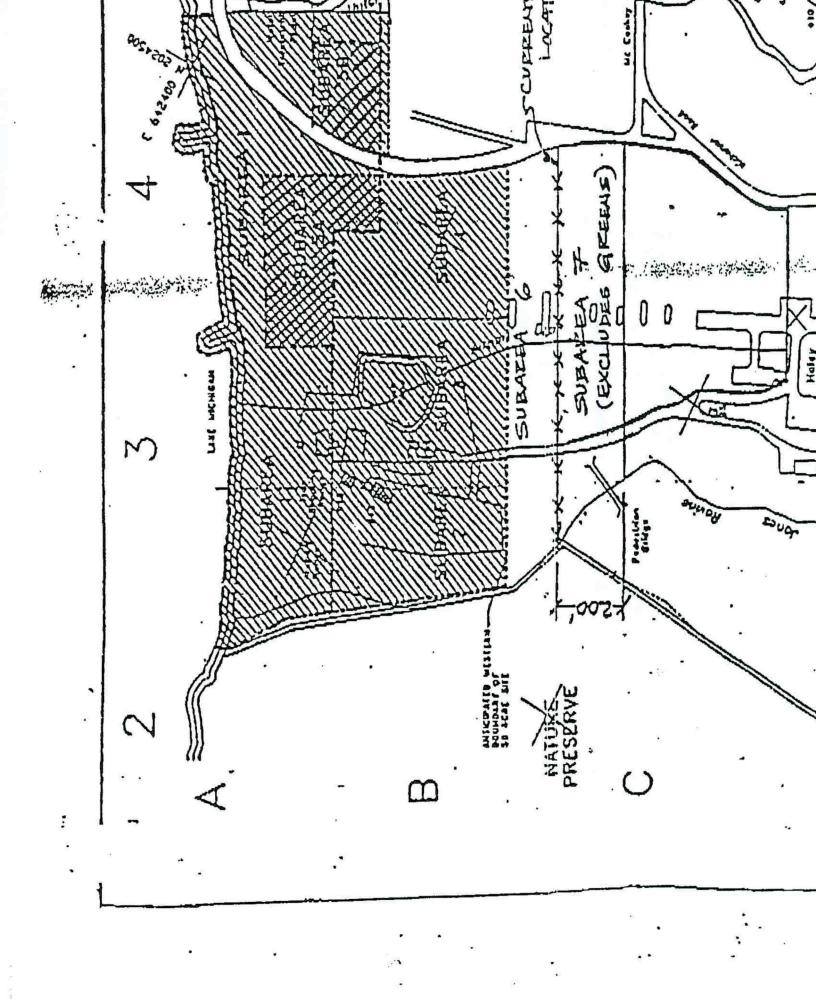
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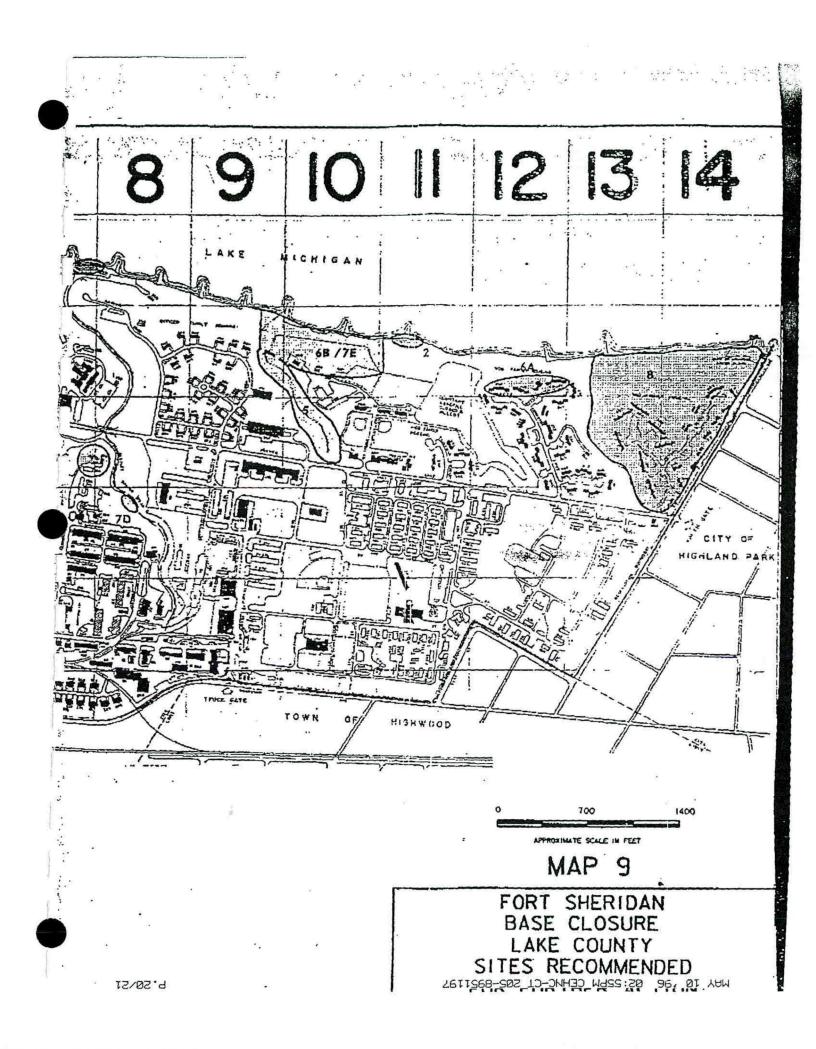
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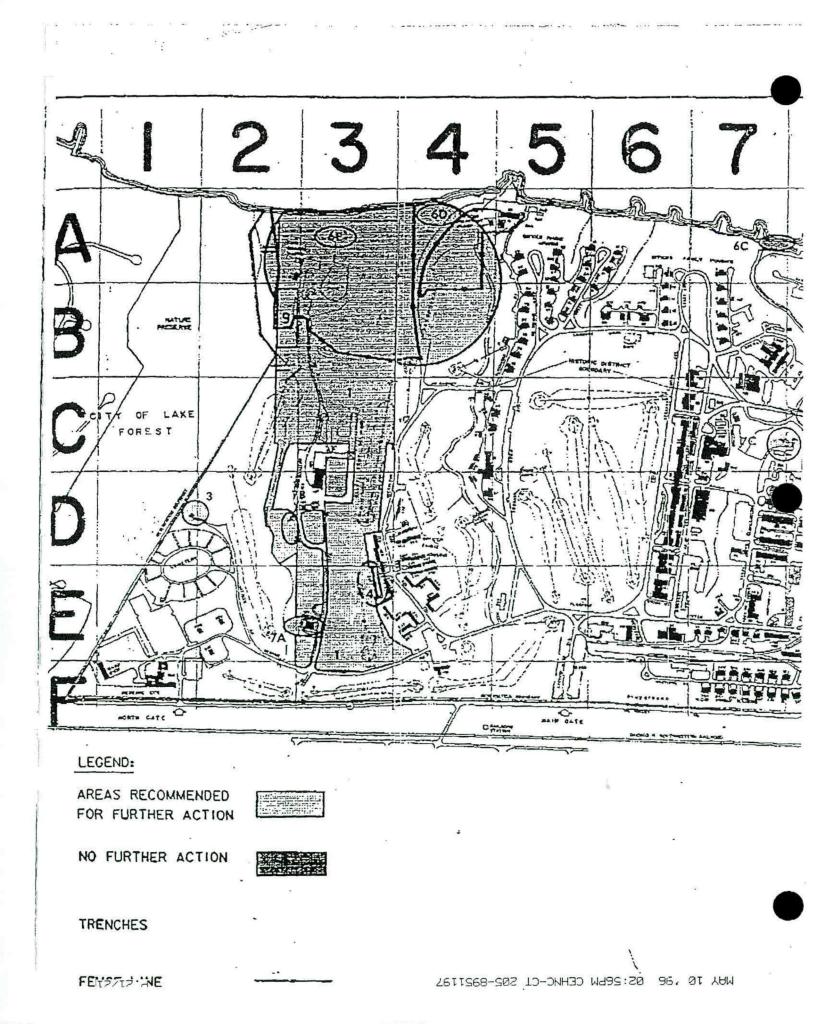
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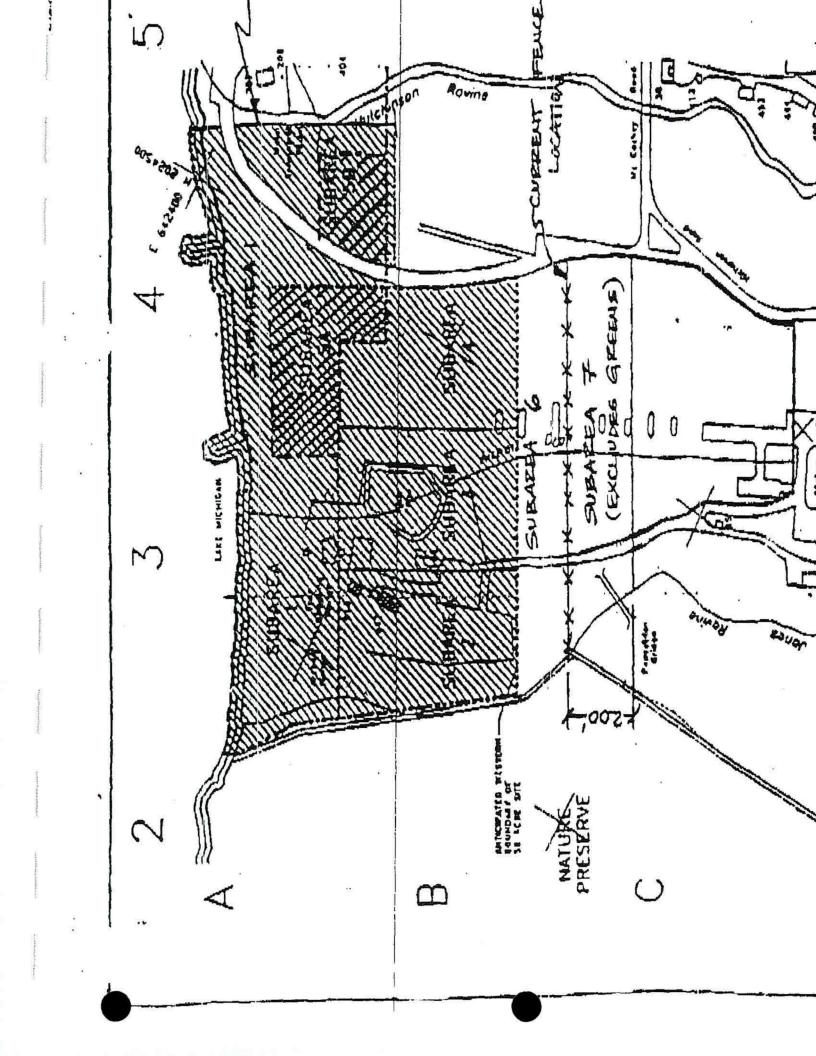
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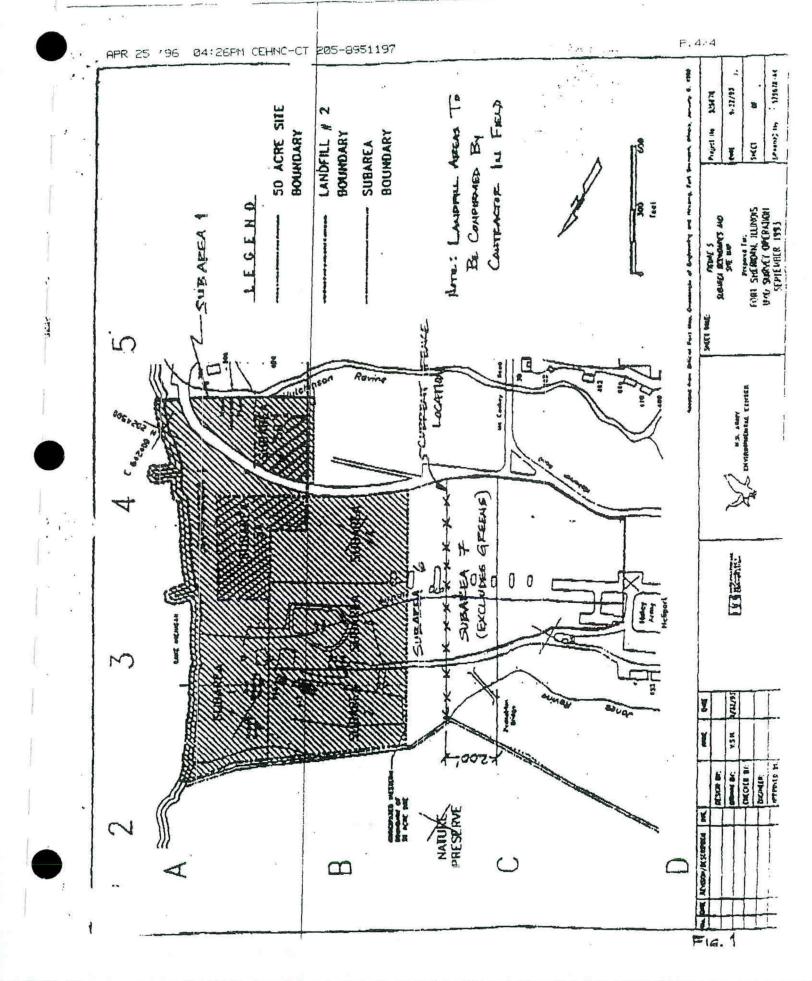


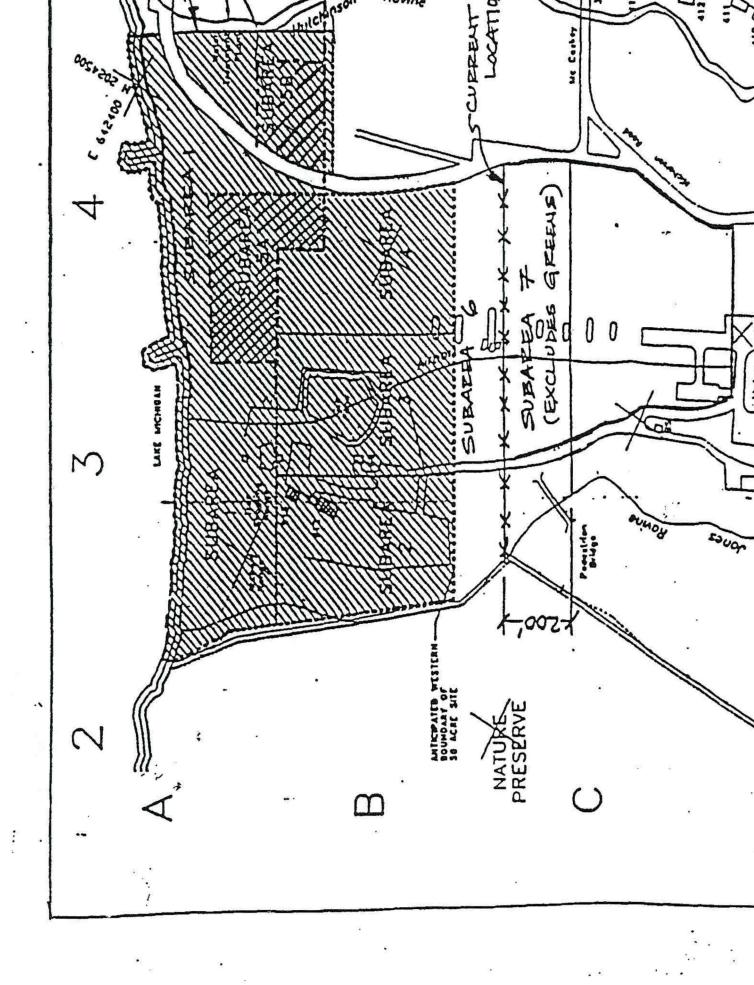


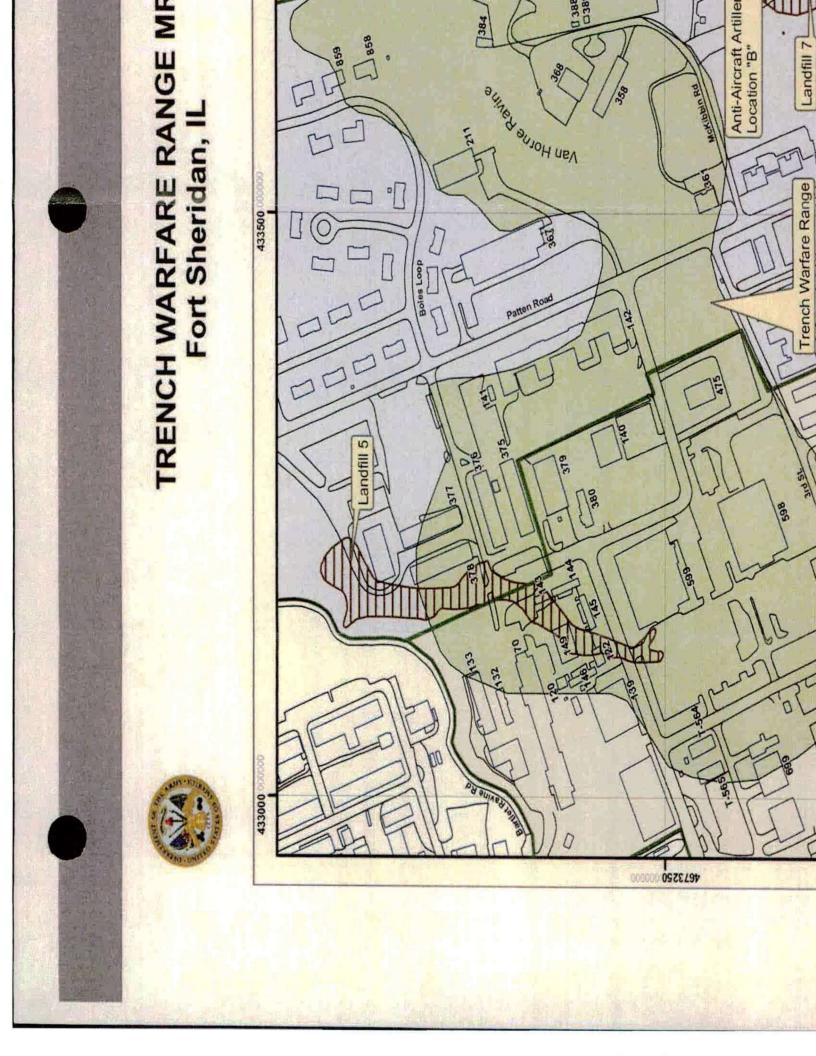


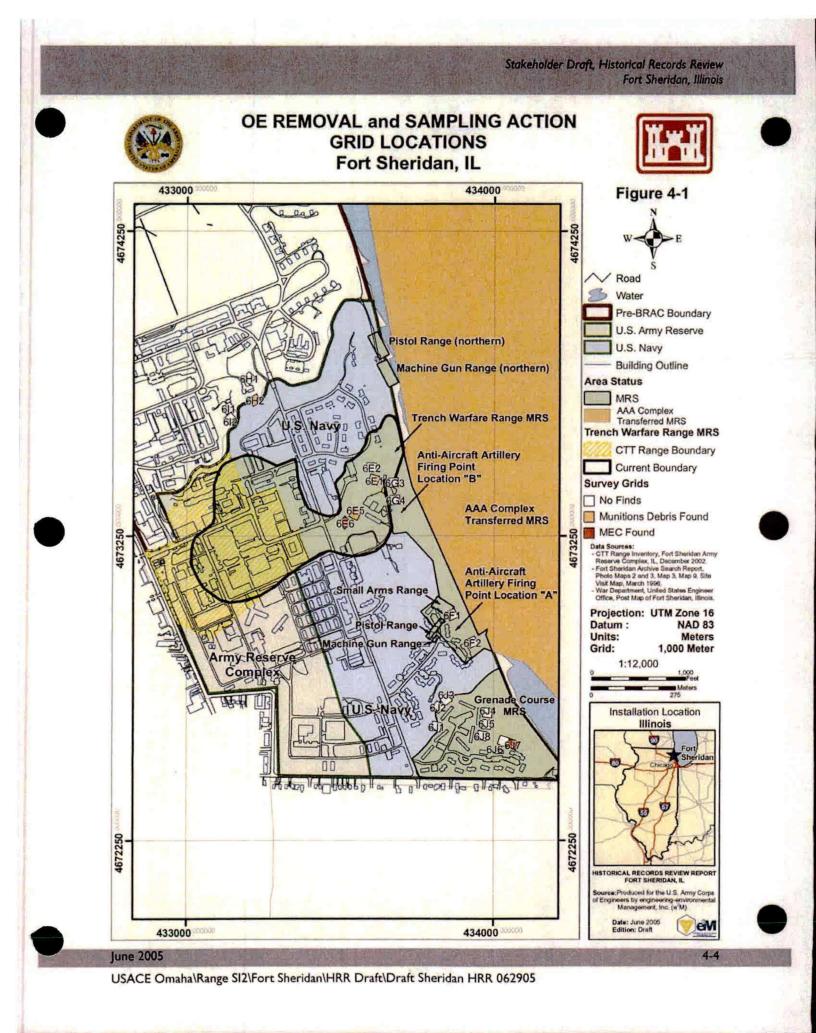
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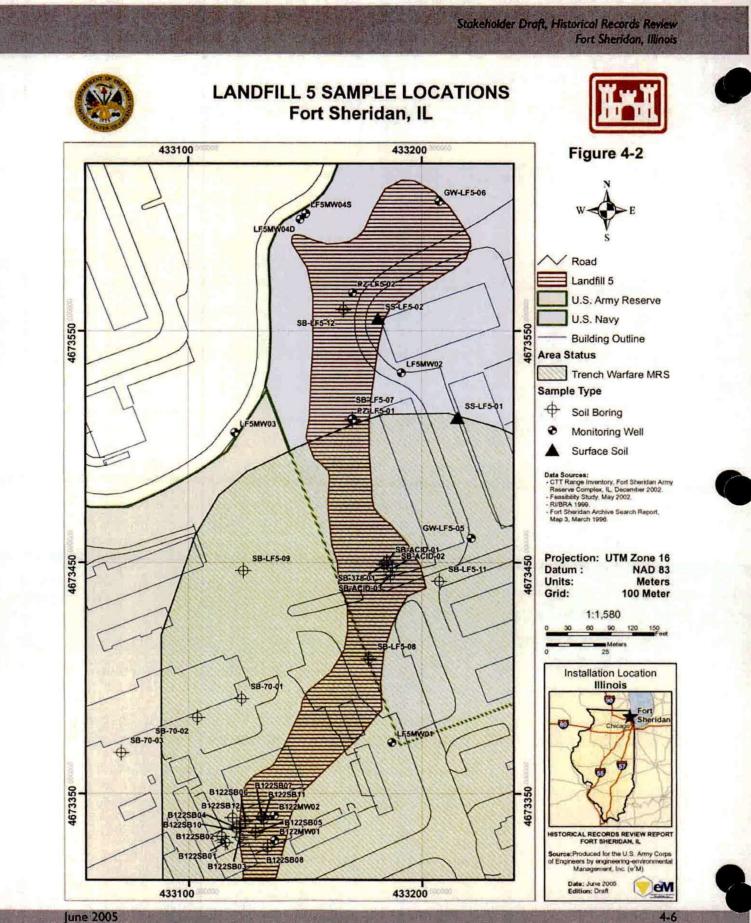
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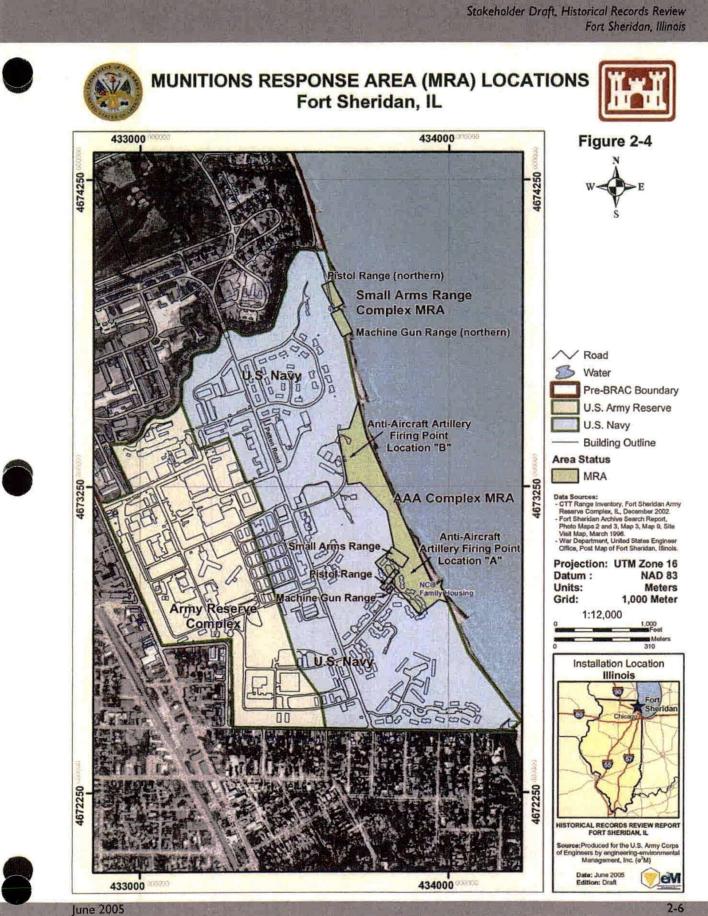




USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905

APPENDIX F

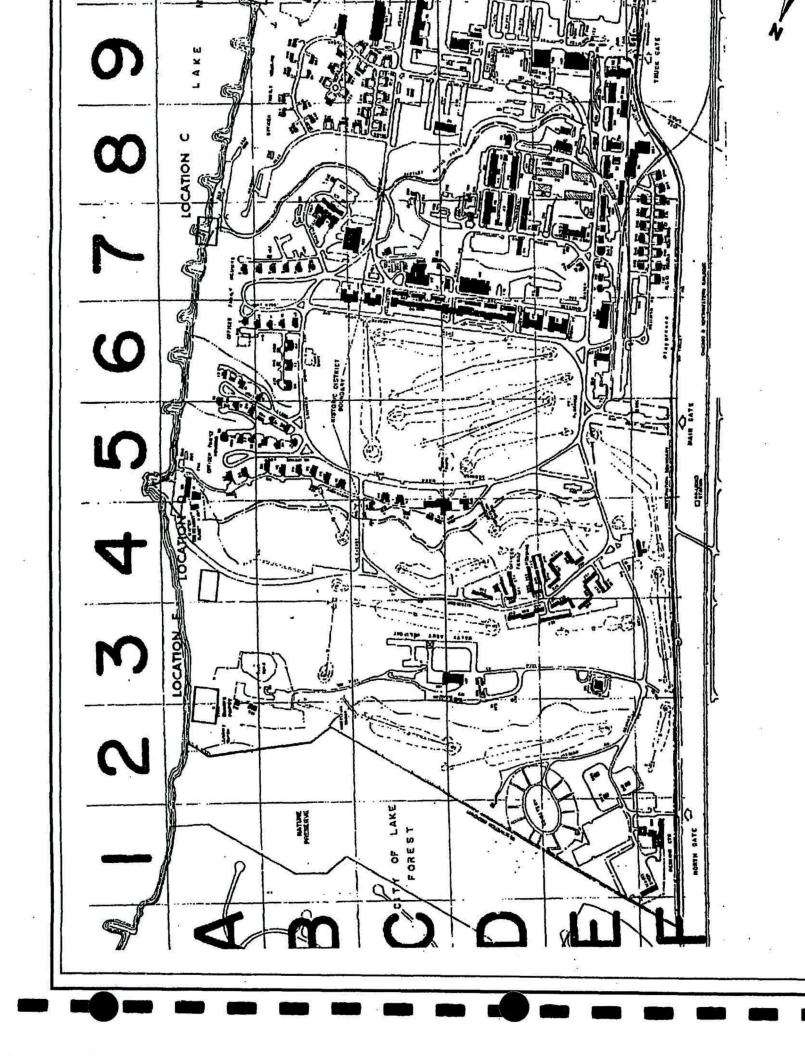
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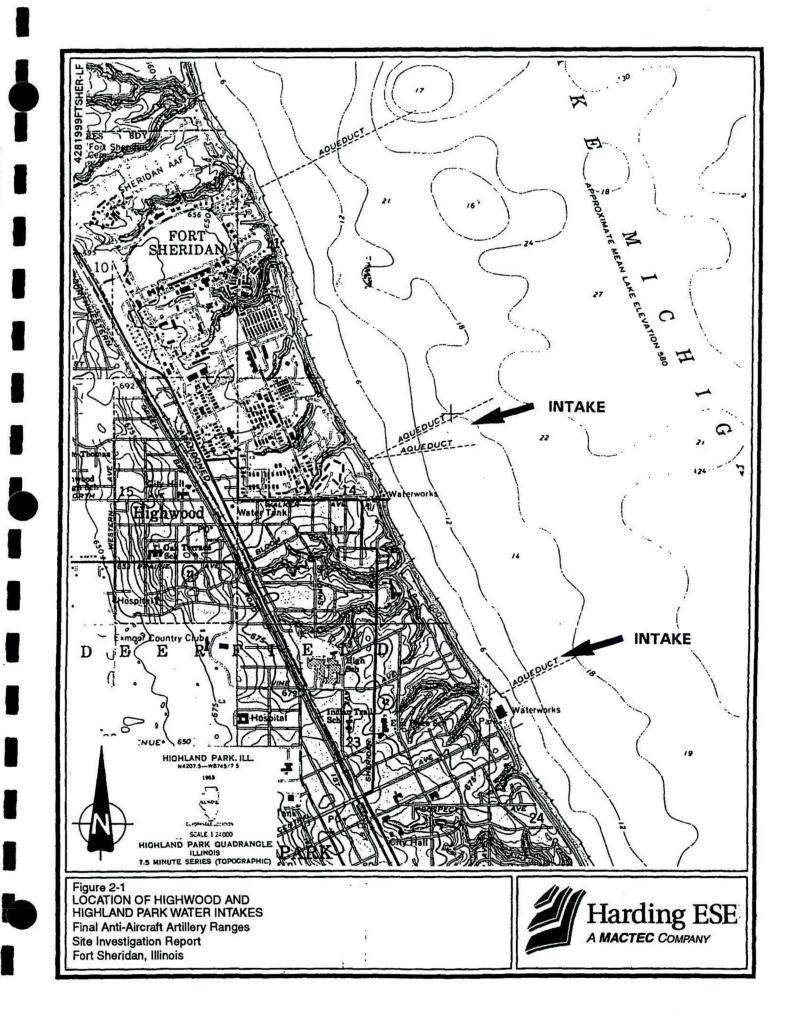


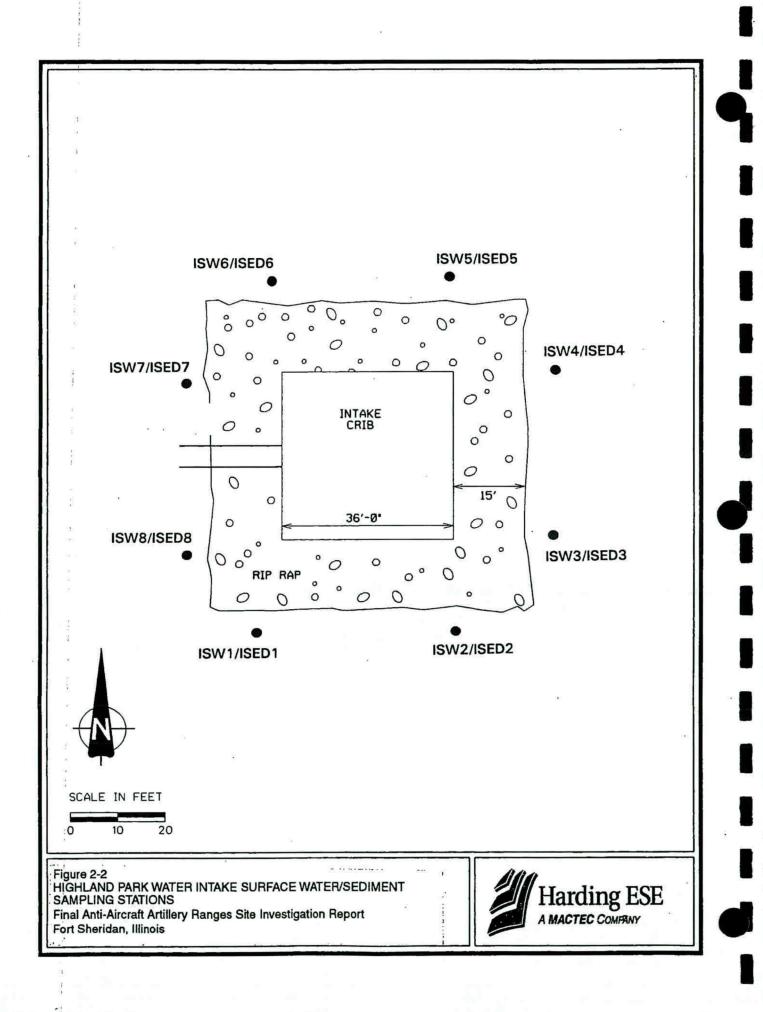
USACE Omaha\Range SI2\Fort Sheridan\HRR Draft\Draft Sheridan HRR 062905

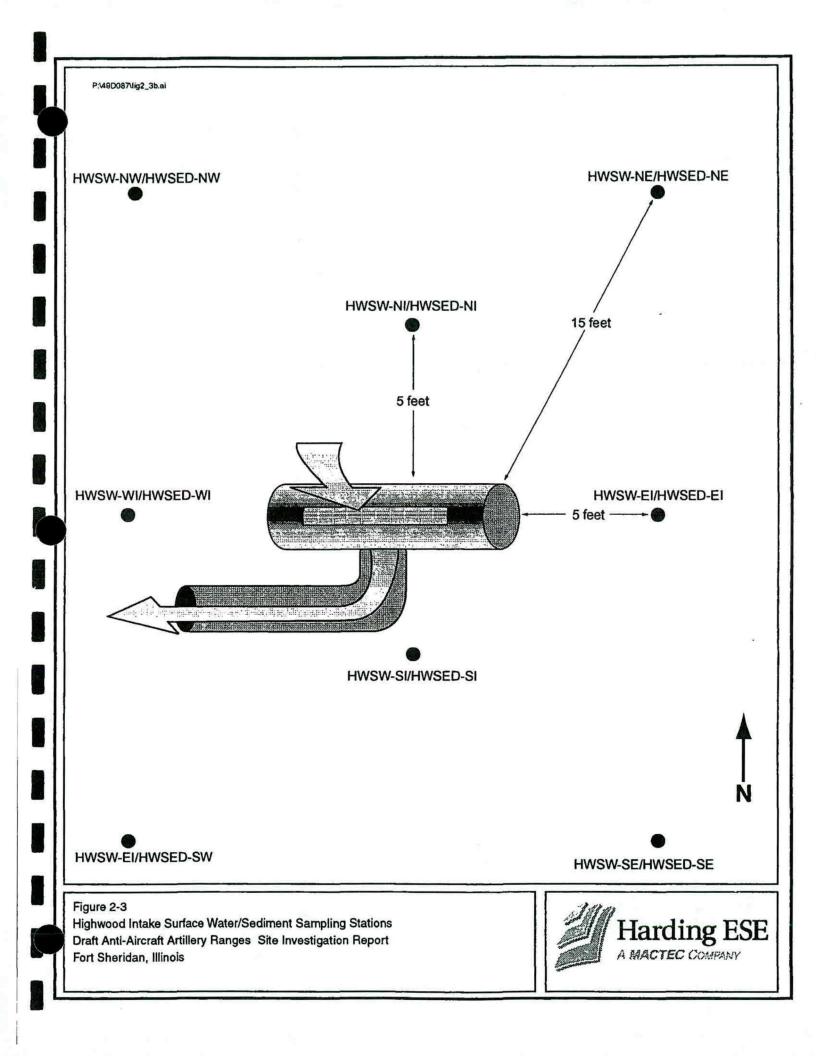
APPENDIX G

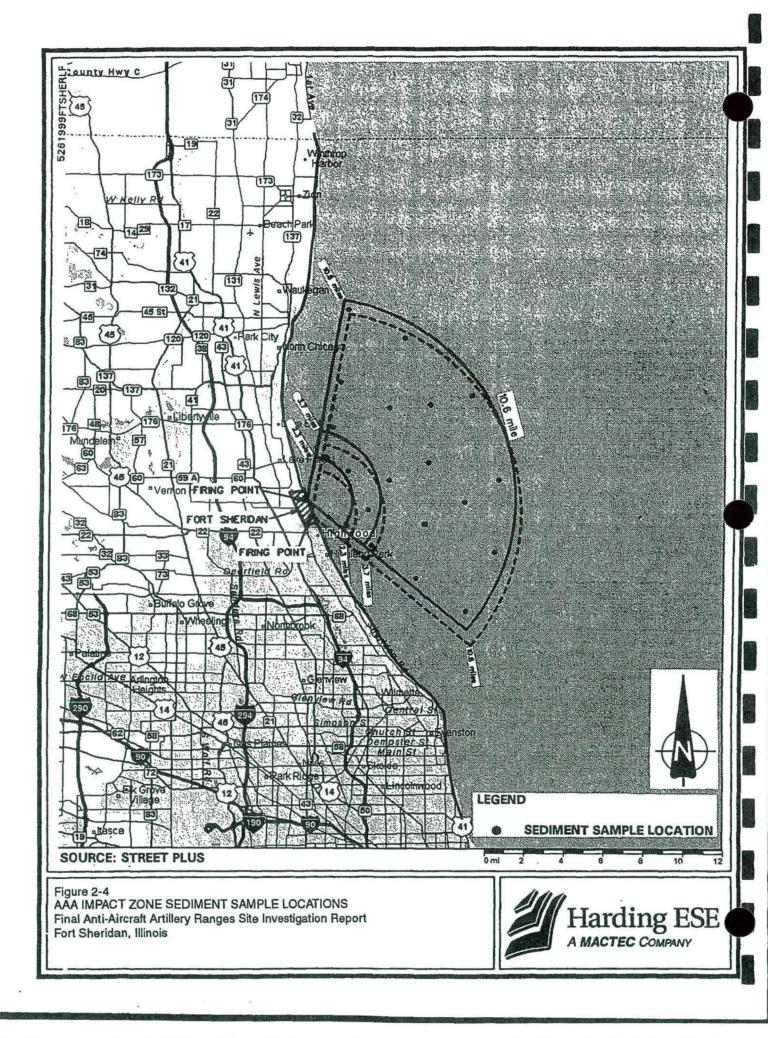
Historical Figures Associated with the AAA Complex Transferred MRS

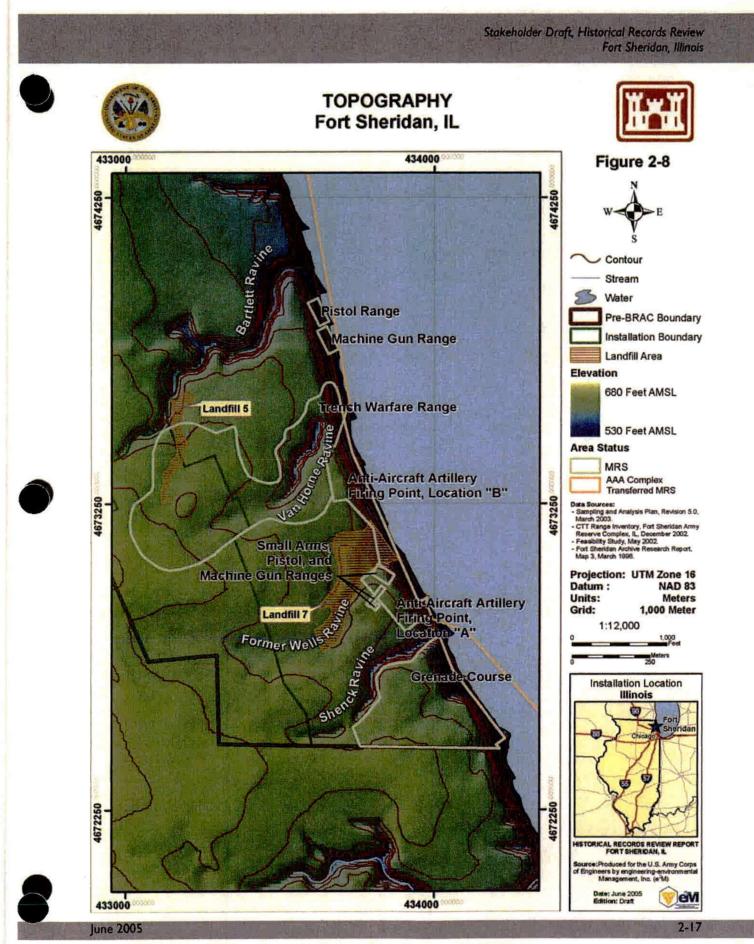




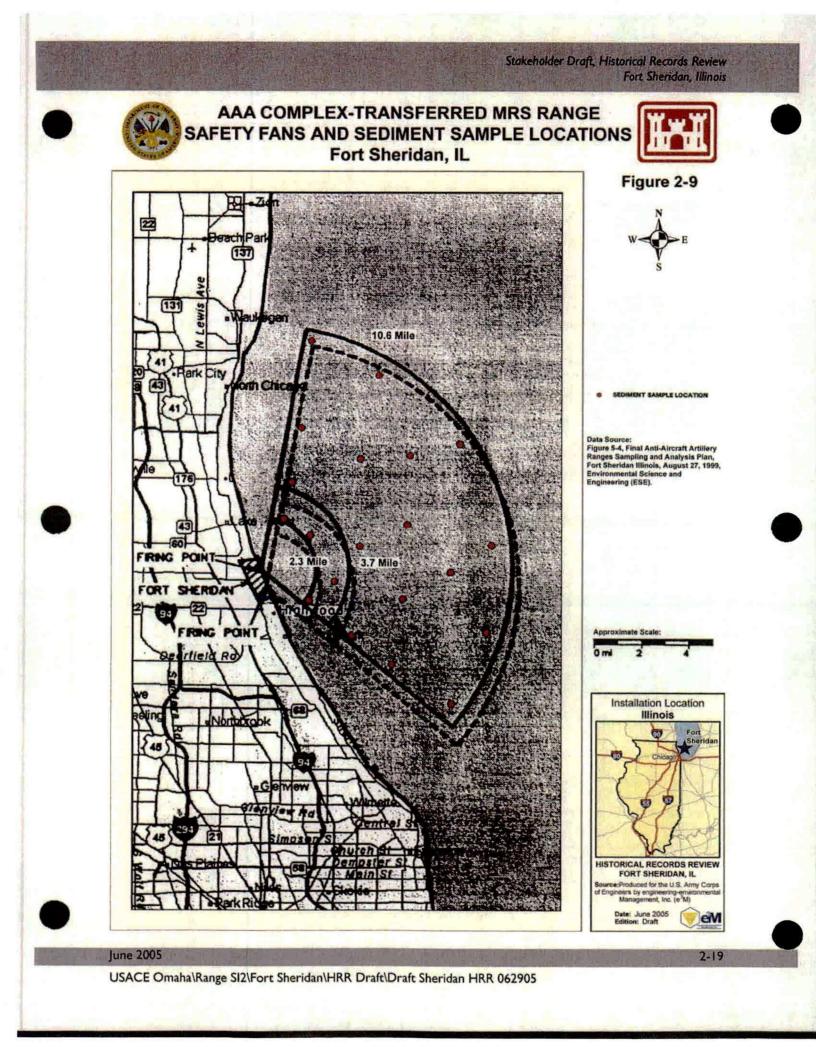








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APPENDIX H Field Documentation

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1

TETRA TECH

MRP FF.22

DAILY TAILGATE SAFETY BRIEFING/TRAINING RECORD

Facility/Location: Highwood, Lake County, IL

Site(s): Former Fort Sheridan

	Name	Signatur	e	Position		
1. Briefing(s) Given By:	Jon Agl. 0	- por may	[.]	Project Monose		
Jon Astio						
Date: 5-9-12	Time: 1200	Team #:				
2. Reason for Briefing:						
X Initial Safety Briefing		New Site Pr				
Daily Safety Briefing		New Site In	-			
New Task Briefing:	····	Review of S		ation		
Periodic Safety Meeting	ng	Other: (Spe	cify)	<u> </u>		
3. List Today's Project Tas ひこらいいし エルタ	3. List Today's Project Tasks (reference definable features of work - See Worksheet 12.): U:Surl Inspection Up Preserve					
4. Safety Topics: (Check	·····	or Work Permit)	,	•		
Site Safety Personnel		Decontamination				
Site/Work Area Descri	iption	Emergency Res	• •	uipment		
Physical Hazards	(On-Site Injuries				
Chemical/Biological H	lazards	Reporting Proc				
Heat/Cold Stress Work/Support Zones		Directions to M		-		
PPE		Medical Monito				
Safe Work Practices		Evacuation/Egr	-	dures		
Air Monitoring	r					
Task Training		Confined Space	es			
OE Precautions		Other:		,		
5. Remarks:						
6. Personnel Attending Name	Sic	Inature		Position		
Jon Aglio	¢ M	1981	Po	M		
Jim Coffr	nan James	James N. Ch		neo		
Dane McCar	thy the	Do x		o Tech		
Iris Mire	lint			>		
Stephen Hamma	nds Steph	Haina	UX	Tech		

Last Revised: 3/31/2011



MRP FF.22

DAILY TAILGATE SAFETY BRIEFING/TRAINING RECORD

Facility/Location: ____Highwood, Lake County, IL____

i	Name	Signatu	re	Position	
1. Briefing(s) Given By:	Stephen Harmonord	5 Sta-14e		Tech.IT	
· · ·	·		<u> </u>	··· •	
Date: <u>3/0/22</u>	Time: 0700	Team #:	<u> </u>		
2. Reason for Briefing:	· · · · · · · · · · · · · · · · · · ·		· ····		
Initial Safety Briefing	i	New Site P	rocedure:		
X. Daily Safety Briefing		New Site In	formation:		
New Task Briefing:		Review of \$	Site Information	•	
Periodic Safety Meeti	ng	Other: (Spa	cify)		
3. List Today's Project Ta	sks (reference definable fe	atures of work - See	Worksheet 12.):	·	
	led surface swee				
the becour one		٣	/		
	· · · · · · · · · · · · · · · · · · ·			<u>~</u>	
4. Safety Topics: (Check	All That Apply – per AHA	or Work Permit)	-		
Site Safety Personnel		Decontaminati	on Procedures		
Site/Work Area Descr	iption	Emergency Re	Emergency Response/Equipment		
Physical Hazards		Con-Site Injurie	Con-Site Injuries/Illness		
Chemical/Biological H	lazards	Reporting Procedures			
Heat/Cold Stress		Directions to M	Directions to Medical Facility		
Work/Support Zones		V Drug and Alco	hol Policies		
PPE		Medical Monito	-		
Safe Work Practices			ress Procedures	3	
Air Monitoring		Communicatio Confined Space			
	Task Training		es		
OE Precautions		Other:		1	
5. Remarks:					
,					
6. Personnel Attending					
Name	Sig	nature		Position	
Iris Mire	brie 1	bie Mire			
Dane McCart	ny Dan	- ·	Tech 2	•	
Stephen Hummond	is Stop 1		Tech 3		
JinCoffme	in Jan 2.	<u>II</u>	Glo	-	
		10-			

Last Revised: 3/31/2011



MRP FF.22 DAILY TAILGATE SAFETY BRIEFING/TRAINING RECORD

Facility/Location: _____Highwood, Lake County, IL_____

	Name	Signatur	e	Position	
1. Briefing(s) Given By:	J.m Coffman	Jame D.	Chillian -	620	
Date: <u>5/11/2</u> 2	Time: 0730	Team #: /			
2. Reason for Briefing:	4 4-5				
Initial Safety Briefing			ocedure:		
_X Daily Safety Briefing		New Site Int			
New Task Briefing:			ite Informatio	on	
Periodic Safety Meetin	ng 	Other: (Spe		· · · · · · · · · · · · · · · · · · ·	
3. List Today's Project Ta	sks (reference definable fea	atures of work – See \	Vorksheet 12.	.):	
Defector-did	ed visual surv	reg			
		U			
4. Safety Topics: (Check	All That Apply – per AHA	or Work Permit)			
Site Safety Personnel		Decontamination	n Procedure	s	
Site/Work Area Descri	ption	Emergency Res	ponse/Equip	oment	
<u> </u>	•	On-Site Injuries			
Chemical/Biological H	azards	Reporting Proc			
Heat/Cold Stress Work/Support Zones	•		_ Directions to Medical Facility _ Drug and Alcohol Policies		
PPE		_ Drug and Alcohol Policies _ Medical Monitoring			
Safe Work Practices		Evacuation/Egress Procedures			
Air Monitoring		Communications			
Task Training		Confined Spaces			
OE Precautions	· · ·	Other:			
5. Remarks:					
6. Rersonnel Attending					
Name	Sig	nature		Position	
Jim Coffm		A Gem	Geo		
Silgohen Hammon	dis Stephen 7	Steph Hammond		a <u>tit</u>	
Iris Mire	lis M.	luis Mire			
Iris Mire Done Miler	Pore m	Done me		. 11	



MRP FF.22

DAILY TAILGATE SAFETY BRIEFING/TRAINING RECORD

Facility/Location: Highwood, Lake County, IL

Site(s): Former Fort Sheridan

	Name	Signature		sition
1. Briefing(s) Given By:	Jim Coffman	James D. 4	lfm Ge	20
			<u> </u>	
Date: 5/12/22	Time: <u>0755</u>	Team #:		
2. Reason for Briefing:	Has			
Initial Safety Briefing		New Site Proc	edure:	
X Daily Safety Briefing		New Site Infor		
New Task Briefing:		Review of Site	Information	
Periodic Safety Meeting	ng	Other: (Specif	y)	
3. List Today's Project Ta	sks (reference definable feat	tures of work - See Wo	rksheet 12.):	<u> </u>
· · ·				
. Detector-	- ailed visual	- sur vly		
4. Safety Topics: (Check	All That Apply – per AHA o	r Work Permit)		
Site Safety Personnel		Decontamination Procedures		
Site/Work Area Descr	iption _	Emergency Resp	onse/Equipment	
Physical Hazards	-	✓On-Site Injuries/Illness		
Chemical/Biological H	lazards _	Reporting Procedures		
Heat/Cold Stress	-	Directions to Medical Facility		
Work/Support Zones	-	Drug and Alcohol		
PPE	-	Medical Monitorir	-	
Safe Work Practices	-	Evacuation/Egres	s Procedures	
Air Monitoring	-	Communications		
Task Training	-	Confined Spaces	·	
OE Precautions		Other:	· · · · · · · · · · · · · · · · · · ·	
5. Remarks:				
6. Personnel Attending				
Name	Sign	ature	Position	
Jim Coffman	Jam D	6/	Gl.	
Stephen Hammon	de Stept	emmod	Tech II	
Icis Mire	Inila	\mathcal{L} \mathcal{R}_{i0}		
Done meCarthy	form		Tech 2	

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<u>TETRA TECH</u>

MRP FF.22

DAILY TAILGATE SAFETY BRIEFING/TRAINING RECORD

Facility/Location: _____Highwood, Lake County, IL____

Site(s): ______Former Fort Sheridan

ſ <u></u>	Name	Signature	e	Position		
1. Briefing(s) Given By:	Stephen Hammond		immond	Fech Ttt		
T. Driemig(s) Given by.	Stephen Hamimord	S Stephen Ha	mmoye	<u></u>		
Date: <u>5-13-22</u>	Time:	Team #:		**************************************		
2. Reason for Briefing:						
X Initial Safety Briefing	<u></u>	New Site Pro	ocedure:			
Daily Safety Briefing	•	New Site Inf	-			
New Task Briefing:	·	Review of Si	-			
Periodic Safety Meetin	ng	Other: (Spec	cify)			
	3. List Today's Project Tasks (reference definable features of work – See Worksheet 12.): Visual Inspection of Preserve					
4. Safety Topics: (Check	All That Apply – per AHA	or Work Permit)				
🖌 Site Safety Personnel		Decontaminatio	n Procedu	ires		
🔀 Site/Work Area Descri	ption	Emergency Res	ponse/Equ	uipment		
🔀 Physical Hazards		On-Site Injuries/Illness				
🔀 Chemical/Biological H	azards	Reporting Procedures				
Heat/Cold Stress	.	Directions to Medical Facility				
Work/Support Zones	.	Drug and Alcohol Policies				
PPE		Medical Monitoring				
Safe Work Practices	-	K Evacuation/Egre	ess Proced	tures		
Air Monitoring	-	<u> Communication</u>	S			
Task Training		Confined Space	S			
OE Precautions	•	Other:				
5. Remarks:						
6 Domonnol Attending						
6. Personnel Attending Name	Sigu	nature		Position		
Iris Mire	lun.	the	ß,	0		
Dane McCar	thy par	m	Tech	2		
Stephen Hamme	and's Steph	Hand	Tech	3		
Jim Coff		D. Coth		-es		
	0	10				



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DAILY TAILGATE SAFETY BRIEFING

Facility/Location: Highwood, Lake County, IL.

Site: Former Fort Sheridan

	Name	Sigpature	Position	
1. Briefing(s) Given By:	Tye Turner	Aller	SSHO/Tech 3	
Date: 12/10/21	1. Time: 0700	Team #: N/A	-	
2. Reason for Briefing:	•			_
Initial Safety Briefing		New Site Pro	ocedure:	
_XX Daily Safety Briefing			ormation:	
New Task Briefing:			te Information	
Periodic Safety Meeti	ng	Other: (Spec	;ify)	
3. List Today's Project Ta	sks (reference definable	features of work – See V	Vorksheet 12.):	
4. Safety Topics: (Check		A or Work Permit)		
X Site Safety Personne		Decontaminatio		
X Site/Work Area Desci	ription	X Emergency Res		
X Physical Hazards	Jazarda	On-Site Injuries		
Chemical/Biological P	1828105	Reporting Proce X Directions to Me		
Work/Support Zones		Drug and Alcoh	÷	
X PPE		Medical Monitor		
X Safe Work Practices		X Evacuation/Egr	-	
Air Monitoring		_X Communication	-	
Task Training		Confined Space	S ·	
OE Precautions		Other:		
5. Remarks: Basic UXO av	wareness information gi	ven out.		
6. Personnel Attending				
Name	S	ignature	Position	
Jon Aglio	Je	nata	PM	
Shaun Woods	Shlva	5	UXO Tech 3	
Iris Mire	M	AN	Biologist	
Jake Booth	Ville J	A)	Env. Tech	

Last Revised: 3/31/2011

DAILY TAILGATE SAFETY BRIEFING

Facility/Location: Highwood, Lake County, IL.

Site: Former Fort Sheridan

	Name	Sigpature	7	Position			
1. Briefing(s) Given By:	Tye Turner	Auch	n	SSHO/Tech 3			
Date: 12/7/21	1. Time: 0700	Team/N/A					
2. Reason for Briefing:	2. Reason for Briefing:						
Initial Safety Briefing		New Site Pr	ocedure:_				
_XX Daily Safety Briefing							
New Task Briefing:	<u> </u>	Review of S		ation			
Periodic Safety Meeti	ng	Other: (Spe	cify)				
3. List Today's Project Ta	sks (reference definable	features of work - See \	Vorksheet	12.):			
4. Safety Topics: (Check	All That Apply – per AH	A or Work Permit)	····				
X Site Safety Personne	I	Decontaminatio					
X Site/Work Area Desc	ription	X Emergency Res	•	uipment			
X Physical Hazards		On-Site Injuries					
Chemical/Biological H	lazards	Reporting Proc		1874 -			
_X Heat/Cold Stress		X Directions to M		•			
Work/Support Zones		Drug and Alcon	Alcohol Policies				
X Safe Work Practices			ress Procedures				
Air Monitoring		X Communication	-				
Task Training		Confined Space					
OE Precautions	•	Other:					
5. Remarks: Basic UXO a	wareness information g	iven out.					
C. Demonral Attending			<u></u> .				
6. Personnel Attending		lanatura		Position			
Name		Signature		Position			
Jon Aglio		MAR		PM			
Shaun Woods	Stul	Jule 1		UXO Tech 3			
Iris Mire	In	Ini Mile		Biologist			
Jake Booth	Janded	Janotean		Env. Tech			

Last Revised: 3/31/2011

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DAILY TAILGATE SAFETY BRIEFING

Facility/Location: Highwood, Lake County, IL.

Site: Former Fort Sheridan

Name	Signature	Position
Ton HAHNE (P. 6.
Ton HAHNE (Mike Gran	Juhlip	P.G. NAUFACALT.
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Last Revised: 3/31/2011



DAILY TAILGATE SAFETY BRIEFING

Facility/Location: Highwood, Lake County, IL.

Site: Former Fort Sheridan

	Name	Signatur	e/	Position		
1. Briefing(s) Given By:	Tye Turner	And	in	SSHO/Tech 3		
Date: 12/8/21	1. Time: 0700	Fear #: N/A				
2. Reason for Briefing:						
Initial Safety Briefing		New Site Pi	ocedure:			
_XX Daily Safety Briefing		New Site In	formation:			
New Task Briefing:	<u>.</u>	Review of S	Site Informa	ition		
Periodic Safety Meeting	ng	Other: (Spe	cify)			
3. List Today's Project Ta	sks (reference definable f	features of work See	Worksheet	12.):		
4. Safety Topics: (Check	All That Apply – per AH	A or Work Permit)				
X Site Safety Personnel		Decontaminati	on Procedu	ires		
X Site/Work Area Descr	iption	X Emergency Re	sponse/Eq	uipment		
X Physical Hazards		On-Site Injuries		• .		
Chemical/Biological H	lazards ,	Reporting Proc				
X Heat/Cold Stress		X Directions to N		•		
Work/Support Zones			cohol Policies			
X PPE		Medical Monito	-			
X Safe Work Practices		X Evacuation/Eg		dures		
Air Monitoring Task Training		X Communicatio				
OE Precautions		Confined Space Other:	es			
5. Remarks: Basic UXO av	vareness information di					
	aloneoo information gi					
6. Personnel Attending				· · · · · · · · · · · · · · · · · · ·		
Name	S	ignature		Position		
Jon Aglio	N	A		РМ		
Shaun Woods	This	Things		UXO Tech 3		
Iris Mire	lin	linture		Biologist		
Jake Booth	Allo	Justian		Env. Tech		

Last Revised: 3/31/2011



<u>TETRA TECH</u> DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey	JBJECT: UXO Surface Survey	
PROJECT NO: 1/2 608005 - ML216526	TASK CODES:	5-9-22 FL.UL
SUMMARY OF DAILY PROGRESS: (Undate Definable Fe	ature of Work - Work	rsheet 12)
Mobilization/Site Preparation: Persone Mobilization	I - T3, Stephen	an-Geo, Iris MireTT,
Site Survey: N/A	Joe Aglio	- PM
IVS Installation: $\mathcal{N}\mathcal{A}$		
GPS Positional Data: Used Trimble Geo 7x te	o Create track 1	log of areas swept
DGM Survey: N/A		
Target Anomaly Reacquisition: N/A		···· ····
Detector Aided Survey: Conducted instrument a	aicled survey swa surveyed)	eep with a valion
MEC/MPPEH Management: N/A		
Demobilization: N/A		
Other:		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR NO		
	Item ID Descrip	<u></u>
None		
х. Х		
		,



TETRA TECH DAILY MEC ACTIVITY LOG

Facility/Location: Highwood, Lake Country, IL

Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey	Date: 5-9-22
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS 0700 - All personnel assembled for daily safety brief 0730 - Began instrument assitted suffice sweep 1260 - Lunch	•
1230 - Resume instrument assisted suface swerp	
1700 - End of Day, No Moc or MDAS Found	
	`
\sim	
IMPORTANT PHONE CALLS, /DECISIONS:	•
FIELD TASK MODIFICATIONS: None	·,
WEATHER CONDITIONS: Hi 84°F, LOW57°F, Wind 14mph	52° Humidity
VISITORS ON SITE:	· · · · · · · · · · · · · · · · · · ·
None	
PERSONNEL ON SITE: TT- In's Mire	
Geo - Jim Cottman, PM- Jon Aglio, TZ - Dan	e McCarthy , [3 - Stephen Hammer
	TE: 59-22



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<u>TETRA TECH</u> DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey	Date:
	5-10-22
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS	r
0700 - Sately Bref	
0715 - Began instrument assisted surface sweep	
1200 - Lunch	
1230 - Resume instrument assisted surface sweep	
1730 - End of Day - No Mee or MDAS F	
1100 - End of Dog - not nice of MDAS A	
IMPORTANT PHONE CALLS, /DECISIONS:	
None	· ·
FIELD TASK MODIFICATIONS:	
WEATHER CONDITIONS:	
Hi 91°F - Low 86°F, Winds 13m	on. 50% Humidity
VISITORS ON SITE:	
None	
PERSONNEL ON SITE:	
TT Iris Mire, Geo - Jim Cottman, T3 - Stephen Hun	monds, T2 Dane Melarthy
SIGNATURE:	DATE:
Stephen Hammond	5-10-22



<u>TETRA TECH</u> DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey		Date: 5-10-22
PROJECT NO: 112 GOBOOS - ML216526	TASK CODES:	FLauL
SUMMARY OF DAILY PROGRESS: (Update Definable	Feature of Work - Worl	ksheet 12)
Mobilization/Site Preparation: N/A_{-}	. · · ·	•
Site Survey: NA		
IVS Installation: ハ/A	`	- (
GPS Positional Data: Used Tremble Geo 7x +	s create track	log of areas swept
DGM Survey: N/A	•	١.,
Target Anomaly Reacquisition: 시/A))
Detector Aided Survey: Conducted instrument of (16.36 a	aided survey swee	ep with a Vallon
MEC/MPPEH Management: N/A		• .
Demobilization: ル/A)	
Other:	· · · · ·	
		• · · · · ·
		· ·
	× ·	
	• .	•
,	-	
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR N		, '
Item ID Description	Item ID Descri	ption
None		
	· · ·	
:		
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		-

Updated: 3/31/2011



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TETRA TECH DAILY MEC ACTIVITY LOG

Facility/Location: Highwood, Lake Country, IL

FIELD ACTIVITY SUBJECT: UXO Surface Survey	Date:
······	5-11-22
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS	·
0700 - Salety Brief	
0710 - Began instrument assisted surface sweep	
1200 - Lunch	
1230 - Resume instrument assisted surface sweep	
1800 - End of Day - No Mec or MDAS.	Found
	· ·
ب ،	
IMPORTANT PHONE CALLS, /DECISIONS: None	
FIELD TASK MODIFICATIONS: None	
WEATHER CONDITIONS: Hi 90°F - Low 77°F, Winds 5mph	, 65% Humidity
VISITORS ON SITE:	
PERSONNEL ON SITE:	· · · · · ·
T3 Stephen Hummond, T2 Dame McCarthy, Gro-Jim (offman, TT Iris Mire
SIGNATURE	
Stepho Hermind	5-11-22



<u>TETRA TECH</u> DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey		Date:
		5-11-22
PROJECT NO: 112608005 - ML216526		FILL
SUMMARY OF DAILY PROGRESS: (Update Definable Fo	eature of Work - Worl	rsheet 12)
Mobilization/Site Preparation: N/A		
Site Survey: N/A		
IVS Installation: ハム		
GPS Positional Data: Used Tremble 7x to Creat	track log of	area swept
DGM Survey: NIA-		
Target Anomaly Reacquisition: NJA	`	
Detector Aided Survey: Conducted instrument a	ided survey sweet	o with vallon (7.78 acres)
MEC/MPPEH Management: ハ/ヘ		
Demobilization: ハル		
Other:		
		- \
. · ·		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR N		
Item ID Description	Item ID Descri	ption
None		

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TETRA TECH DAILY MEC ACTIVITY LOG

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Facility/Location: Highwood, Lake Country, IL

Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey	Date:	
۱	5-12-22	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS		
0760 - Sately Brief		
0715- Began Instrument assisted surface sweep		
1200 - Lunch 1230 - Resume instrument assisted surface su	Xeld	
1700 - End of Day - No Mec or MDAS	Found	
IMPORTANT PHONE CALLS, /DECISIONS:		
FIELD TASK MODIFICATIONS:	•	
WEATHER CONDITIONS: Hi 52°F - Low 63°F, Winds 10 mph	53% Humidity	
VISITORS ON SITE:		
None		
PERSONNEL ON SITE:		
T3 Stephen Hummonds, T2 Dane McCarthy, Gro Jim Cottman, It Iris Mire		
	TE:	
Sph to	5-12-22	

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TETRA TECH DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

LD ACTIVITY SUBJECT: UXO Surface Survey		Date: 5-12-22
PROJECT NO: 112G008005 - ML214526	TASK CODES	FI.OL
SUMMARY OF DAILY PROGRESS: (Update Definable Fe	ature of Work - Work	(sheet 12)
Mobilization/Site Preparation: N/P		•
Site Survey: N/A		
IVS Installation: \mathcal{N}/\mathcal{A}		•
GPS Positional Data: Used Tremble 7X to cre	ale track log i	of area swept
DGM Survey: N/A		
Target Anomaly Reacquisition: N/A		
Detector Aided Survey: Conducted instrument	aided survey	sweep with vallon
MEC/MPPEH Management: 人)/人	-	
Demobilization: ルル		
Other:	-	
		•
		. •
· ·		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR NO		
Item ID Description	Item ID Descrij	ption
None		
		,



TETRA TECH DAILY MEC ACTIVITY LOG

Facility/Location: Highwood, Lake Country, IL

FIELD ACTIVITY SUBJECT: UXO Surface Survey	Date: 5-13-22			
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS 0700 Sately Brief 0715 Began instrument assisted sutace sweep of beach area				
1200 Lunch 1230 Resume instrument assisted surface sweep				
1730 - End of Day				
IMPORTANT PHONE CALLS, /DECISIONS:				
FIELD TASK MODIFICATIONS:				
WEATHER CONDITIONS: Hi 87°F Low 62°F, Wind 10 mph	50% Humidity			
VISITORS ON SITE:				
PERSONNEL ON SITE:				
T3 Stephen Hummond, T2 Dane McCurthy, Geo, Jim	Cattman IT Ins Mme			
SIGNATURE DA	TE: -13-22			



TETRA TECH DAILY MEC ACTIVITY LOG Facility/Location: Highwood, Lake Country, IL Site(s): Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Surface Survey		Date: -/3-22
PROJECT NO: 112 GO 8005 - ML216526	TASK CODES:	Jour
SUMMARY OF DAILY PROGRESS: (Update Definable F	eature of Work - Worl	ksheet 12)
Mobilization/Site Preparation: NIA		
Site Survey: N/A		
IVS Installation: N/A		
GPS Positional Data: Used tremble Geo 7x to	creale track log	ot a reas swept
DGM Survey: ゃ/Ą		
Target Anomaly Reacquisition: \mathcal{N}/\mathcal{A}		
Detector Aided Survey: Conduct instrument aid	ed survey sweep	with a Jallon
MEC/MPPEH Management: N/A-		
Demobilization: N/A		
Other: N/A		
	٩	
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR N		
Item ID Description	ltem ID Descri	ption
None		



Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey		Date: 12/5/2021
PROJECT NO: 112G08005-ML216526	TASK CODES: FI.UL	
SUMMARY OF DAILY PROGRESS: (Update Definable	Feature of Work - Work	sheet 12)
Mobilization/Set Preparation: Team mobilized on D	ecember 5 th 2021	
Site Survey: N/A		
Vegetation Management: N/A		
GPS Positional Data: N/A		
Detector Aided Surface Surveys: NA		
Target Reacquisition: N/A		
Intrusive Operation: N/A		
Donor Explosives Handling/Storage: N/A		
MEC Management (Treatment): N/A		
MPPEH Management (Inspections): N/A		
MPPEH Management (Certification): N/A ,		
MPPEH Management (Disposal): N/A		
Demobilization: N/A		
Construction Support: N/A		
Other: N/A		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR N	IONE	
Item ID Description	Item ID Descrip	tion ·
NONE		



Facility/Location: Highwood,Lake County, IL.

Site: Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Survey	Date: 12/5/2021
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	
Team mobilized to the job site.	
Secured and test field equipment.	
	·
	<i></i>
-	
	· 1
IMPORTANT PHONE CALLS/DECISIONS: None	
	* .
FIELD TASK MODIFICATIONS: None	
WEATHER CONDITIONS: Mostly sunny with high 38 degrees	
······································	
VISITORS ON SITE: None	
PERSONNEL ON SITE: Tye Turner (UXO Tech 3), Shaun Woods (U (Biologist), Jon Anglio (Tt PM)	XO Tech 3), Jake Booth (Env. Tech), Iris Mire

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<u>TETRA TECH</u> MRP FF.2 DAILY MEC ACTIVITY LOG

Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey		Date: 12/6/2021
PROJECT NO: 112G08005-ML216526	TASK CODES: FI.UL	
SUMMARY OF DAILY PROGRESS: (Update Definable	Feature of Work - Work	sheet 12)
Mobilization/Set Preparation: Team mobilized on D	ecember 5 th 2021	
Site Survey: N/A		
Vegetation Management: N/A		
GPS Positional Data: N/A	· _	
Detector Aided Surface Surveys: Used Valon all meta	al detectors to do a aided	surface investigation of the site.
Target Reacquisition: N/A		· · · · · · · · · · · · · · · · · · ·
Intrusive Operation: N/A		· · · · ·
Donor Explosives Handling/Storage: N/A		
MEC Management (Treatment): N/A		
MPPEH Management (Inspections): N/A		
MPPEH Management (Certification): N/A	• · · ·	
MPPEH Management (Disposal): N/A		
Demobilization: N/A		
Construction Support: NO		
Other: N/A		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR I Item ID Description	NONE Item ID Descrip	tion
NONE		
NONE		
	•	



Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey	Date: 12/6/2021
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	·
0700 Team meet at field site and conducted safety brief. Performer properly.	d function test on Valons. Functioning
0715 UXO Team began conducting detector-aided visual survey of	beach
1600 Team departs site.	
No MEC/MPPEH discovered.	
IMPORTANT PHONE CALLS/DECISIONS: None	
FIELD TASK MODIFICATIONS: None	
	•
;	
WEATHER CONDITIONS: Mostly sunny with high 38 degrees	``````````````````````````````````````
VISITORS ON SITE: None	~
PERSONNEL ON SITE: Tye Turner (UXO Tech 3), Shaun Woods (UXO (Biologist), Jon Anglio (Tt PM)	D Tech 3), Jake Booth (Env. Tech), Iris Mire
SIGNATURE: Tye Turner	DATE: 6 Dec. 2021





Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey	_	Date: 12/7/2021
PROJECT NO: 112G08005-ML216526	12G08005-ML216526 TASK CODES: FI.UL	
SUMMARY OF DAILY PROGRESS: (Update Definable	Feature of Work - Works	sheet 12)
Mobilization/Set Preparation: N/A		
Site Survey: N/A		
Vegetation Management: N/A		
GPS Positional Data: N/A		
Detector Aided Surface Surveys: Used Valon all meta	al detectors to do a aided	surface investigation of the site.
Target Reacquisition: N/A		
Intrusive Operation: N/A		
Donor Explosives Handling/Storage: N/A	•	N
MEC Management (Treatment): N/A		
MPPEH Management (Inspections): N/A		
MPPEH Management (Certification): N/A		
MPPEH Management (Disposal): N/A		
Demobilization: N/A		
Construction Support: NO		
Other: N/A		
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR	NONE	
Item ID Description	Item ID Descrip	tion
NONE		
		¢.



Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey	Date: 12/7/2021
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	· · ·
0730 Team arrived at site	
0745 Daily safety brief conducted. Performed function test on Valons	5. Functioning properly.
0800 UXO Team begins detector-aided survey of walkways/pathways	through site
1600 Team departs site	
No MEC/MPPEH recovered.	
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	· · · · · ·
	` ·
·	•
IMPORTANT PHONE CALLS/DECISIONS: NONE	`
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WEATHER CONDITIONS: Mostly sunny with high of 25 degrees	
VISITORS ON SITE: NONE	
PERSONNEL ON SITE: Mike Green (NAVFAC), Tom Hahne (Geologist),	
(UXO Tech 3), Jake Booth (Env. Tech), Iris Mire (Biologist), Jon Anglio (Tt PM)
SIGNATURE: Tye Turner	DATE: 7 Dec. 2021



Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey	Date: 12/8/2021			
ر PROJECT NO: 112G08005-ML216526	TASK CODES: FI.UL			
SUMMARY OF DAILY PROGRESS: (Update Definable Feature of Work - Worksheet 12)				
Mobilization/Set Preparation: N/A				
Site Survey: N/A				
Vegetation Management: N/A	-			
GPS Positional Data: N/A				
Detector Aided Surface Surveys: Used Valon all meta	al detectors to do a aided surface investigation of the site.			
Target Reacquisition: N/A				
Intrusive Operation: N/A				
Donor Explosives Handling/Storage: N/A				
MEC Management (Treatment): N/A				
MPPEH Management (Inspections): N/A				
MPPEH Management (Certification): N/A	· · · ·			
MPPEH Management (Disposal): N/A	· · · · · ·			
Demobilization: N/A				
Construction Support: NO	·			
Other: N/A				
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR I	Item ID Description			
· · ·				
NONE	•			
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Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey	Date: 12/8/2021
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	· · · · · · · · · · · · · · · · · · ·
0800 Team arrives at site	
0815 Daily safety brief conducted; Performed function te	st on Valons. Functioning properly.
0830 UXO team begins detector-aided survey of remainir	ng pathway areas.
1200 Revisited the beach area to double check some area	as of concern.
1600 Team departs site	•
Equipment cleaned, packaged, and returned to vendors.	
No MEC/MPPEH recovered.	
IMPORTANT PHONE CALLS/DECISIONS: NONE	r
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FIELD TASK MODIFICATIONS: NONE	
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WEATHER CONDITIONS: Mostly sunny with high of 36 de	egrees
VISITORS ON SITE: NONE	
PERSONNEL ON SITE: Tye Turner (UXO Tech 3), Shaun W (Biologist), Jon Anglio (Tt PM)	oods (UXO Tech 3), Jake Booth (Env. Tech), Iris Mire
	DATE: 8 Dec. 2021



Facility/Location: Highwood,Lake County, IL.

Site: Former Fort Sheridan

FIELD ACTIVITY SUBJECT: UXO Survey	T	Date: 12/9/2021			
PROJECT NO: 112G08005-ML216526	TASK CODES: FI.UL	•			
SUMMARY OF DAILY PROGRESS: (Update Definable Feature of Work - Worksheet 12)					
Mobilization/Set Preparation: N/A					
Site Survey: N/A					
Vegetation Management: N/A					
GPS Positional Data: N/A					
Detector Aided Surface Surveys: N/A					
Target Reacquisition: N/A					
Intrusive Operation: N/A					
Donor Explosives Handling/Storage: N/A	τ	s			
MEC Management (Treatment): N/A					
MPPEH Management (Inspections): N/A	_				
MPPEH Management (Certification): N/A					
MPPEH Management (Disposal): N/A					
Demobilization: Team demobilized December 9th 202	21				
Construction Support: NO					
Other: N/A					
		1			
LIST OF MEC ITEMS ID, MPPEH ITEM ID, MDAS, OR N					
Item ID Description	Item ID Descripti	on			
NONE					

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TETRA TECH MRP FF.2 DAILY MEC ACTIVITY LOG

Facility/Location: Highwood,Lake County, IL.

FIELD ACTIVITY SUBJECT: UXO Survey		Date: 12/9/2021
DESCRIPTION OF DAILY ACTIVITIES AND EVEN	ГS:	
Team demobilization		
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IMPORTANT PHONE CALLS/DECISIONS: NONE		· · · · · · · · · · · · · · · · · · ·
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FIELD TASK MODIFICATIONS: NONE		
WEATHER CONDITIONS: Mostly sunny with hig	sh of 35 degrees	
VISITORS ON SITE: NONE		
PERSONNEL ON SITE: Tye Turner (UXO Tech 3) (Biologist), Jon Anglio (Tt PM)	, Shaun Woods (UXO Teo	ch 3), Jake Booth (Env. Tech), Iris Mire
SIGNATURE: Tye Turner		DATE: 9 Dec. 2021
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