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**U.S. Army  
Environmental  
Center**

# **U.S. ARMY ENVIRONMENTAL CENTER**

**FORT SHERIDAN  
ORDNANCE SURVEY (50 - ACRE PARCEL)**

## **FINAL TECHNICAL REPORT**

PREPARED FOR:

**U.S. ARMY ENVIRONMENTAL CENTER  
ABERDEEN PROVING GROUND, MARYLAND**

**CONTRACT No. DAAA15-91-D-0015**

**DELIVERY ORDER No. 0003**

Approved for public release  
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**AUGUST 1994**

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**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

FORM 45-1 FEB 93

**FORMER FORT SHERIDAN  
UNEXPLODED ORDNANCE SURVEY**

**FINAL TECHNICAL REPORT**

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**U.S. ARMY ENVIRONMENTAL CENTER  
ABERDEEN PROVING GROUND, MARYLAND 21010**

**CONTRACT NO. DAAA15-91-D-0015  
DELIVERY ORDER NO.0003**

**PREPARED BY**

**IT CORPORATION  
165 FIELDCREST AVENUE  
EDISON, NEW JERSEY 08837**

**AUGUST 1994**

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INTERNATIONAL  
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CORPORATION

August 15, 1994

Project No. 529678

Mr. Rusty Fendick  
Base Closure Division  
U.S. Army Environmental Center  
Bldg. 4480, Edgewood Area  
Aberdeen Proving Ground, MD 21010-5401

**Contract No. DAAA15-91-D-0015**  
**Delivery Order No. 3**  
**Former Fort Sheridan UXO Survey**  
**Final Technical Report**

Dear Mr. Fendick:

Enclosed are an original and twenty-four copies of the Final Technical Report for the unexploded ordnance (UXO) survey of a 50-acre parcel at the former Fort Sheridan.

This report describes the work that was accomplished and the results of the UXO survey. If you have questions regarding this report, please call me at (703) 739-1357.

Respectfully submitted,

**IT CORPORATION**

**Jim Pastorick**  
Project Manager

cc: Project file

[TSANTANA.WP.FTSHERIDAN]Pastorick.JulyTech

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<p>Fort Sheridan is a former 695-acre U.S. Army installation located approximately 25 miles north of Chicago, on the shore of Lake Michigan. The former fort is bounded by the three communities of Lake Forest, Highland Park, and Highwood.</p> <p>Under Public Law 100-526, the Defense Authorization Amendments and Base Closure and Realignment Act of 1988, Fort Sheridan was chosen for realignment and partial closure. Approximately 100 acres will be retained for use by the U.S. Army Reserves. The U.S. Navy has also purchased 200 acres in the southern portion for use as a military housing area and a 200 acres historic district is located in the middle of the former installation.</p>			
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**An Enhanced Preliminary Assessment was completed in October 1989 by the U.S. Army Toxic and Hazardous Materials Agency. This report stated that explosive ordnance disposal (EOD) operations were carried out at the site until 15 years ago. The report concluded that UXO potentially exists in the area.**

**The United States Army Environmental Center (AEC) Base Closure Division has contracted with IT Corporation (IT) to conduct a survey to locate and identify unexploded ordnance (UXO) on a 50-acre parcel under Delivery Order No. 003 to Contract No. DAAA15-91-D0015. This site is bounded on the north by Janes Ravine, on the south by Hutchinson Ravine, on the west by Haley Army Heliport, and on the east by Lake Michigan.**

**The objective of this UXO survey was to assess the amount of UXO remaining on the Fort Sheridan 50-acre parcel. This was accomplished by locating, identifying, recording, and removing unexploded ordnance, within specific parameters, from the UXO survey area.**

**This Final Technical Report was prepared in accordance with the requirements of Data Item Description DI-S-10241 to Contract No. DAAA15-91-D-0015 and describes the results of the UXO survey of the 50-acre parcel.**

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**This Final Technical Report was prepared in accordance with the requirements of Data Item Description DI-S-10241 to Contract No. DAAA15-91-D-0015 and describes the results of the UXO survey of the 50-acre parcel.**

## **1.0 Introduction**

---

Fort Sheridan is a former 695-acre U.S. Army installation located approximately 25 miles north of Chicago, on the shore of Lake Michigan. The former fort is bounded by the three communities of Lake Forest, Highland Park, and Highwood. Figure 1 depicts the location of the former Fort Sheridan.

Under Public Law 100-526, (the Defense Authorization Amendments and Base Closure and Realignment Act of 1988), Fort Sheridan was chosen for realignment and partial closure. Approximately 100 acres will be retained for use by the U.S. Army Reserves. The U.S. Navy has also purchased 200 acres in the southeastern portion for use as a military housing area, and a 200-acre historic district is located in the middle of the former installation.

The United States Army Environmental Center (AEC) Base Closure Division has contracted with IT Corporation (IT) to conduct a survey to locate and identify unexploded ordnance (UXO) on a 50-acre parcel under Delivery Order No. 003 to Contract No. DAAA15-91-D0015. This site is bounded on the north by Janes Ravine, on the south by Hutchinson Ravine, on the west by Haley Army Heliport, and on the east by Lake Michigan. Approximately 10 acres of the 50-acre parcel have been identified as Landfill #2. Figure 2 depicts the location of the 50-acre project area.

An Enhanced Preliminary Assessment was completed in October 1989 by the U.S. Army Toxic and Hazardous Materials Agency. This report stated that explosive ordnance disposal (EOD) operations, though quite infrequent, were carried out at Landfill #2 until 15 years ago and that an area consisting of Landfill #2 and adjacent property was used as a small arms firing range prior to 1960. The report concluded that UXO potentially exists in the area.

This Final Technical Report was prepared in accordance with the requirements of Exhibit Line Item Number (ELIN) A009 to Contract No. DAAA15-91-D-0015 and describes the results of the UXO survey of the 50-acre parcel.

## **2.0 Discussion**

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The objective of this UXO survey was to assess the amount of UXO remaining on the former Fort Sheridan 50-acre parcel. This objective was accomplished by locating, identifying, recording, and removing unexploded ordnance, within specific parameters, from the UXO survey area.

The 50-acre parcel was divided into five subareas of approximately 10-acres. Figure 3 shows the locations of the five subareas. Subarea 5, which covers the boundary of Landfill #2, as determined by the Enhanced Preliminary Assessment, was further divided into subareas 5A and 5B.

### **2.1 Project Tasks**

The UXO survey was originally intended to consist of a surface survey, using low-sensitivity magnetometers, of 100% of the survey area and excavation of detected ferrous metal items to a depth of six inches. This surface survey was to be followed by a subsurface survey, using a high-sensitivity magnetometer, of 10% of the survey area and excavation of detected ferrous metal items to a depth of four feet. The 10% survey was planned to be achieved by establishing one-meter-wide survey lanes with their centers spaced ten meters apart.

However, during the performance of the UXO survey the project goals were modified and the requirement to complete a 100% surface UXO survey and a 10% subsurface UXO survey were eliminated. IT was directed to restrict the UXO survey to several distinct areas within the original survey area. Figure 5 displays the areas that were surveyed including the sub-letter designated areas within subareas 3 and 4. Project goals were modified due to the onslaught of winter weather conditions which could hamper the survey and make for less safe survey conditions. It became questionable whether the entire project could be completed, so a small percentage of each subparcel was surveyed in order to get an idea of the number of UXO in each subparcel. Also, U.S. Army EOD support was difficult to obtain due to their other obligations during this survey effort.

The UXO survey was accomplished by performing the following tasks:

- Dividing the survey area into smaller subareas and dividing subareas 3 and 4 into three smaller survey areas
- Delineating the boundaries of wetlands
- Removing dense vegetation that impeded access for the UXO survey crews
- Inspecting the designated work areas for surface metallic objects by using low-sensitivity magnetometers and for subsurface metallic objects using a high-sensitivity magnetometer. Areas excluded from this procedure were the sites of buildings, paved surfaces, and inaccessible areas such as impassable wetlands.
- Excavating all metallic items found during the survey to a depth of six inches, for the surface survey, and to four feet, for the subsurface survey, and then identifying these items.
- Securing identified UXO until it was disposed of by the U.S. Army (EOD) unit
- Performing field quality control surveys
- Recording and documenting the results of the UXO survey with field records and site maps
- Monitoring and documenting the seismic and audio intensity of UXO disposal detonations
- Constructing a temporary fence, with warning signs, around the perimeter of the survey area.

The following sections describe in greater detail the performance of each of these general project tasks.

### ***2.1.1 Dividing the Survey Area into Subareas***

The 50-acre survey area was divided into five subareas numbered 1 through 5. Subareas 3 and 4 were further divided into three additional work areas labeled 3A, 3B, 3C, and 4A, 4B, and 4C. Subarea 5 was further divided into 5A and 5B to denote the distinct areas as separated by Nicholson Road.

The subarea boundaries were first marked in the field using highly-visible surveyor's flagging tape tied to wooden stakes and then mapped using the mapping methods described in section 2.1.8.

### ***2.1.2 Delineating Wetland Boundaries***

The project site was inspected to delineate wetland boundaries by using the methods outlined in the 1987 "U.S. Army Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1). The approach to wetland identification outlined in the wetlands delineation manual employs the three parameters of vegetation, soils, and hydrology to define and identify wetlands.

The identified wetlands were mapped using the technique described in Section 2.1.8 of this report, and are shown in Figure 3. The wetlands delineation memorandum report is included in Appendix A.

### ***2.1.3 Vegetation Removal***

To enable the survey and fencing crews to gain access to the required areas of the project site, minor amounts of vegetation were removed in the portions of the survey area that were wooded or contained high grasses. The vegetation removal was accomplished by using a gas-powered weedcutter.

### ***2.1.4 UXO Survey***

Two different magnetometers were used to conduct the UXO survey.

The Foerster Ferex Ordnance Locator is used by U.S. Military EOD forces, designated the MK 26 Ordnance Locator, for detecting subsurface ordnance items. The locator is a hand-held unit and uses two fluxgate magnetometers, aligned and mounted a fixed distance apart to detect changes in the earth's ambient magnetic field caused by ferrous metal or disturbances caused by soil conditions. Both an audio and metered signal are provided to the operator.

The detection capability of the Foerster Ferex Ordnance Locator is dependent upon the size of the item versus its depth. It is calibrated at the factory service center to locate ordnance to the following depths, which are verified by extensive military field use and operational testing at the EOD Technology Center, Indian Head, Maryland.

<u>ITEM</u>	<u>DEPTH (ft.)</u>
Small Arms Round	1
Hand Grenade	2
Anti-Personnel Mine	3
Anti-Tank Mine	4.5
Medium Projectile (105 mm)	10
Small Bomb	15
Large Bomb	19

Although the Foerster Ferex Ordnance Locator detects disturbances caused by changes in soil conditions, its ability to detect metallic items is not hindered by local soil conditions because of its ability to be recalibrated in the field to compensate for normal background metallic signature.

The Foerster Ferex Ordnance Locator is designed specifically for subsurface ordnance detection and is considered to be one of the standard geophysical instruments for this purpose. It is considered to be a high-sensitivity magnetometer because of its ability to detect ferrous objects to relatively great distances. Because of this, the Foerster Ferex Ordnance Locator was used as the subsurface investigation instrument and to perform quality assurance checks.

The other magnetometer used, the Schonstedt GA-52C Magnetometer, is a dual fluxgate magnetometer and operates on the same principal as the Foerster Ferex Ordnance Locator. But the Schonstedt GA-52C is not tested and approved by the U.S. Naval EOD Technology Center, and its ability to detect specific sizes of ordnance to various depths has not been scientifically tested. The Schonstedt GA-52C is an inexpensive and highly portable magnetometer and was used on this project to quickly screen surface and near-surface areas for ferrous content.

With the exception of paved areas and buildings, the designated survey areas, as shown in Figure 5, were surveyed for surface metallic objects. Schonstedt low-sensitivity magnetometers were

used by the UXO survey team to detect ferrous metallic objects. This team of UXO specialists traversed each designated work area while maintaining a line-abreast pattern and spacing close enough to ensure that adjacent search areas overlapped. The UXO specialist on one end was designated as the guide and all other members of the survey team were responsible to maintain their pace and proper spacing with the guide. A supervisor was responsible for observing the operation to ensure proper spacing and coverage of the work area.

The magnetometers were swept in a back-and-forth motion until the audible signal emitted by the magnetometer signaled the presence of a metallic object. If the metallic object was not readily visible on the surface the UXO specialist marked the object's location by inserting a pin flag into the ground and then continued with the survey. The location of the object was noted by the surface survey team supervisor for later action by the excavation team.

The subsurface survey was conducted, in the specific locations identified in Figure 6, within one-meter-wide subsurface survey lanes. The established lanes were surveyed with a Foerster Ferex high-sensitivity magnetometer and all detected items were marked with a pin flag, as previously described, for subsequent excavation.

### ***2.1.5 UXO Excavation***

Each detected subsurface object was excavated to determine its identification. During the surface UXO survey objects were hand-excavated to a maximum depth of six inches. Objects detected during the subsurface survey were hand excavated to a maximum depth of four feet. Established and proven methods of UXO hand excavation were used to excavate detected objects.

Non-UXO items were removed from the site, and the hole was immediately backfilled. UXO were identified, recorded on a UXO Accountability Log sheet, and moved to a secure holding area if they were safe to be moved. UXO that were not safe to be moved were recorded on a UXO Accountability Log sheet and left in place for disposal by military EOD personnel.

### **2.1.6 UXO Security**

Each UXO found was entered into the project UXO accountability system. Each UXO was assigned a sequential identification number, and all data pertaining to the UXO was recorded on a UXO Accountability Log sheet. The UXO Accountability Log was used to track all movement of the UXO until final disposal of the UXO by military EOD. Appendix B lists all UXO found during the project by sequential accountability number. The UXO Accountability Log sheets are included as Appendix C. The location of each UXO found is documented in Figure 6.

UXO that were determined safe to be moved were transported to the designated secure storage area for later disposal by the U.S. Army EOD team. UXO that were not safe to be moved were kept secure by an IT UXO specialist who stood a 24-hour watch over them until the UXO was disposed of by the U.S. Army EOD team.

### **2.1.7 Field Quality Control**

Quality control (QC) UXO surveys were originally planned to ensure the completeness and accuracy of the UXO survey. The subsurface UXO survey was to have served as the QC check of the surface UXO survey.

This approach was changed when the project goals were modified from performing a UXO survey on 100% of the work area to performing quick surface and subsurface spot-checks of certain designated areas. This resulted in a reduction in the amount of subsurface UXO survey, and therefore a reduction in the amount of surface survey QC, that was performed. The complete and approved subsurface survey plan and QC plan was implemented in the block of subarea 2 in the vicinity of E-4/5 shown on Figure 6. Although a subsurface survey was conducted in other portions of the project area it was not accomplished in accordance with the approved QC plan and, therefore, should not be considered as assurance of the quality of the surface survey conducted in these areas.

Project goals were modified due to the onset of winter weather conditions which could hamper the survey conditions. It became questionable whether the entire project could be completed, so a small percentage of each subparcel was surveyed in order to get an idea of the number of UXO in each subparcel. Also, U.S. Army EOD support was difficult to obtain due to their other obligations during this survey effort.

### ***2.1.8 Recording and Documenting the Survey***

A computerized data base was maintained throughout the project. The satellite navigation Global Positioning System was interfaced with the data management system to record field data including mapping data. Then the project maps were produced utilizing an Autocad interface to the data base. Data maintenance is described in greater detail in Section 3.0 of this report.

### ***2.1.9 Monitoring UXO Disposal Detonations***

The seismic and audio impacts of all five UXO disposal detonations, performed by the U.S. Army EOD unit, were monitored and recorded. Two Geosonics SSU 2000 DK seismographs were stationed within a one mile radius of the detonation site at the locations shown on Figure 4. The seismograph data from the five UXO disposal detonations, and interpretation of the data done by the seismograph manufacturer, are reproduced in Appendix D.

### ***2.1.10 Constructing a Temporary Fence and Posting Warning Signs***

Modification No. 001 was issued to the original delivery order for the construction of a temporary rental fence around the survey area and the posting of warning signs on the fence. In May, 1994 the western portion of the fence was moved to its current position to allow public access to the previously fenced portion of the golf course. The fence was also purchased by the U.S. Army.

### **3.0 Documentation**

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The results of the previously-described field activities are documented in this report. Figure 3 shows:

- Project and subarea boundaries
- The location of the temporary fence
- The location of wetlands

Figure 4 shows:

- The project site boundary
- The location of UXO disposal detonations
- The location of the two seismographs

Figure 5 shows:

- The project site boundary
- The temporary fence location
- Subarea boundaries
- Surface UXO survey areas completed
- The location of UXO disposal detonations

Figure 6 shows:

- The project site boundary
- The temporary fence location
- Subarea boundaries
- Subsurface UXO survey areas completed
- The location, identification, and depth for 14 UXO detected during the project
- The location of UXO

## 4.0 Summary

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This Final Technical Report details the results of the UXO survey at the former Fort Sheridan, IL. Fort Sheridan has been closed under Public Law 100-526, the Defense Authorization Amendments and Base Closure and Realignment Act of 1988. The objective of this UXO survey was to determine the extent of UXO contamination at the site by finding, identifying, and removing UXO on the 50-acre site. UXO removal was performed by a military EOD unit. The removal method chosen was on-site detonation because transportation of UXO off site was considered to be too hazardous. The locations of the former Fort Sheridan and the project site are shown in Figures 1 and 2.

The UXO survey was conducted during October and November 1993 and consisted of surface and subsurface surveys. The surface survey was planned to be accomplished by surveying all accessible land surface, divided into smaller manageable units called subareas, using low-sensitivity magnetometers. This plan was modified to a sample approach using spot surveys to verify the presence of UXO. Therefore, the 50-acre area was not completely surveyed. Suspected UXO were excavated to a depth of six inches.

The subsurface UXO survey was accomplished by using a high-sensitivity magnetometer. These instruments were planned to be employed in parallel one-meter-wide lanes. As with the surface survey, the subsurface survey plan was modified from surveying parallel one-meter-wide lanes, the centers of which were spaced ten meters apart, to conducting limited spot sampling of areas most likely to contain UXO. Suspected UXO were excavated to a depth of four feet.

All UXO located were disposed of onsite by the U.S. Army EOD 88th team from Fort McCoy, Wisconsin.

Maps of the survey area, depicting the location of UXO, were produced from data acquired with electronic navigating and recording instruments. Navigation and map data gathering was accomplished using the global positioning system satellite constellation. An Autocad interface to the data base was used to produce the site maps that accompany the report in Figures 3 through 6.

A rental fence was constructed around the project site, and warning signs were hung on it, to keep out unauthorized people who could be injured by any UXO remaining at the site. In May, 1994 the western portion of the fence was moved to its current position to allow public access to the previously fenced portion of the golf course. The fence was purchased by the U.S. Army.

## **5.0 Conclusion**

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The UXO survey established that UXO is likely to be present in subparcels 1 and 2 at the project site. The systematic and complete survey that was originally planned was modified due to circumstances encountered at the project site. These modifications lessened the thoroughness of the UXO survey by excluding portions of the 50-acre parcel from the survey.

The most thorough UXO survey was done in subarea 2, and that is also the subarea where most of the UXO was found. Subareas 1, 3, 4, and 5 received a much-less-thorough UXO survey because of modifications to the project objectives after the beginning of the project. Consequently, the fact that less UXO was found in these areas should not be construed to indicate a low likelihood that UXO is present there.

The 50-acre parcel appears to have been used as a mortar impact area. Mortars are notoriously inaccurate and usually will be found over a wide ranging target area. Thus, it is highly likely that more UXO, particularly 3" Stokes mortars, still remain on the 50-acre parcel.

The M4 land mine was a puzzling find. There is no other indication that this area was ever mined.

Several of the 3" Stokes mortars that were found were fuzed and explosively loaded making them subject to detonation if disturbed. Additionally, most of these UXO were discovered either within six inches of the surface or on the surface. One was protruding from the ground in a fuze-up attitude and could have exploded if struck by a grass mower or golf club.

Upon review of the findings of this UXO survey, the Huntsville Division of the U.S. Army Corps of Engineers, the U.S. Army Corps of Engineers Mandatory Center of Expertise for Ordnance and Explosive Waste, has determined that the possibility of the presence of UXO in subareas 3 and 4 does not pose an imminent safety hazard to golfers.<sup>1</sup>

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<sup>1</sup>Memorandum from Mr. Lawson S. Lee, Huntsville Division, U.S. Army Corps of Engineers, to Mr. Russell Fendick, U.S. Army Environmental Center, March 11, 1994.

## **5.1 Analysis of the Subsurface Survey**

The subsurface UXO survey was originally designed to offer an economical "slice-of-the-pie" view of the portion of the survey area between six inches and four feet in depth. Although the magnetometers used during the surface UXO survey are capable of detecting ferrous metal items deeper than six inches, excavation to a maximum depth of six inches was specified in the project statement of work.

The 10% subsurface survey indicates whether UXO is present within 6 to 48 inches of the surface. If UXOs is detected during the 10% subsurface survey, there is an increased probability that anomalies detected below 6 inches during the surface survey are also UXO.

This planned subsurface protocol was only completed in the block shown in Figure 6 in subarea 2 (E-4/5). Three subsurface UXO (Numbers 2, 13, and 14) were located in this small area. This is a strong indicator that, based on the designed use of the subsurface survey, it can be assumed that there is a high probability of more subsurface UXO remaining in the vicinity of subareas 1 and 2. Upon review of the findings of this UXO survey, the Huntsville Division of the U.S. Army Corps of Engineers, the U.S. Army Corps of Engineers Mandatory Center of Expertise for Ordnance and Explosive Waste, has determined that the probability of the existence of additional UXO within subareas 3 and 4 is so low that no further action is required.<sup>2</sup>

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<sup>2</sup>Memorandum from Mr. Lawson Lee, Huntsville Division, U.S. Army Corps of Engineers, to Mr. Lambert, Louisville District, U.S. Army Corps of Engineers, of January 14, 1994.

## **APPENDIX A**



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To: Jim Pastorick, Project Manager

Date: January 14, 1994

From:

Ronald Prann

A handwritten signature in cursive script, appearing to read 'RP' or 'R. Prann', written in black ink.

Subject: Ft. Sheridan Wetlands

On October 25 and 26 , 1993 a wetland investigation was conducted on a 50 acre parcel of Ft. Sheridan. This investigation coincided with the UXO survey that was being conducted on the same parcel. The wetlands investigation was conducted following the guidelines established in the 1987 ACOE Wetland Delineation Manual. This manual bases its wetland determination on three criteria; soils, vegetation, and hydrology. Under normal circumstances positive indicators of the three criteria must be present for the area to be classified as a wetland.

The field investigation resulted in the delineation of three areas as wetlands. The most dominate wetland feature on site was the storm water pond. This small body of open water was surrounded by a narrow band of emergent vegetation. A narrow drainage channel feeding the pond was also identified as a wetlands, as well as an isolated pocket adjacent to the pond (refer to wetland boundary survey map). The vegetation encountered in these areas was that of typical wetland species and therefore was determined to have a positive indicator. The soils were a heavy silty clay and grey in color which is typical for hydric or wetland soils. The hydrology of the wetlands on site was determined to be positive of a wetland system, due to the standing water noted during the field investigation. The heavy soils also delay any percolation that may occur, therefore benefiting the wetland system.

The majority of the site was a level upland terrace leading to a steep embankment grading into Lake Michigan. The site contained numerous buildings, a parking lot, a maintained lawn with scattered oaks.

## APPENDIX B

## TABULAR LISTING OF UXO LOCATED

<u>UXO #</u>	<u>Type</u>	<u>Depth</u>
1	3" Stokes Mortar, Fuze Missing	6"
2	3" Stokes Mortar, Fuze Intact	8"
3	3" Stokes Mortar, Fuze Missing	4"
4	3" Stokes Mortar, Fuze Missing	6"
5	3" Stokes Mortar, Fuze Intact	6"
6	3" Stokes Mortar, Fuze Missing	3"
7	3" Stokes Mortar, Fuze Intact	6"
8	M6A5 Rifle Grenade, Fuze Intact	6"
9	3" Stokes Mortar, Fuze Missing	Surface
10	3" Stokes Mortar, Fuze Intact	3"
11	75 MM Projectile	3"
12	M4 Land Mine, Fuze Missing	3"
13	3" Stokes Mortar, Fuze Missing	12"
14	3" Stokes Mortar, Fuze Missing	10"

## APPENDIX C

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found 1445

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 1

SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: APPRX

MEMBERS OF EXCAVATION TEAM: Brian Sunderman Charles Crawford

IDENTIFICATION OR FEATURES OF ITEM:  
3" STOVES MORTAR w/FUZE MISSING

NOTES:  
Transported to STORAGE AREA

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: Charles L. Crawford (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-27-93 1430HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_ (Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found UXO 10-29-93

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 2 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: APPRX 8-10"

MEMBERS OF EXCAVATION TEAM: BRIAN SUNDERMAN, CARLOS STAWFORD

IDENTIFICATION OR FEATURES OF ITEM:  
3" STOKES MORTAR W/ FUSE

NOTES:  
FUSE CONTAINED A BOMB RIDING SAFETY WHICH WAS IN PLACE AND WHICH WE SECURED IN PLACE TO INSURE IT WOULD NOT ACCIDENTLY MOVE IF TRANSPORTED  
TRANSPORTED TO STORAGE AREA

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation X Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: Clark L. [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-29-93 1920 HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_ (Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found 0830 10-27

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 3

SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 4-6"

MEMBERS OF EXCAVATION TEAM: BRADSNAN AND SUNDERMAN

IDENTIFICATION OR FEATURES OF ITEM:

3" STOKES MORTAR W/Fuze MISSING

NOTES:

TRANSPORT TO STORAGE AREA

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-28-98 1430 HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found 02 5 10-93

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 4 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 6"

MEMBERS OF EXCAVATION TEAM: SUNDERMAN - BRADSHAW

IDENTIFICATION OR FEATURES OF ITEM:

3" STOKES MORTAR w/o FUZE

NOTES:

WILL TRANSPORT TO SNA

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation X Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-28-93 1410 HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

FOUND 0935

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 5 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 6"

MEMBERS OF EXCAVATION TEAM: COLEMAN PARSONS

IDENTIFICATION OR FEATURES OF ITEM:  
3" STOKES MORTAR W/ FU20

NOTES:  
CONTACTED JIM PASTORIK - HE WILL MAKE NECESSARY  
CAUTION ON THIS ITEM - ITEM WILL NOT BE MOVED BY  
IT UXO TEAM

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-28-93 1410 NRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

FOUND 1100

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 6 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 3"

MEMBERS OF EXCAVATION TEAM: BRADSHAW - SUDERMAN

IDENTIFICATION OR FEATURES OF ITEM:

3" STOKES MORTAR w/o FUZE

NOTES:

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-28-93 1350 HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: \_\_\_\_\_ SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 6"

MEMBERS OF EXCAVATION TEAM: POLEMAN - PARSON

IDENTIFICATION OR FEATURES OF ITEM:

3" STOKES W/ FUZE

NOTES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation \_\_\_\_\_ Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 12-29-93 1350 hrs

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found 1330 10-27-93

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 8 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 6"

MEMBERS OF EXCAVATION TEAM: COLEMAN - PARSONS

IDENTIFICATION OR FEATURES OF ITEM:

TITLE GRENADE - M6RS  
CANNOT DETERMINE FIRE CONDITION - MUST ASSUME  
SINCE FIRED - ARMED

NOTES:

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation x Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 10-28-93 1350 NCS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

**FIGURE 6  
UXO ACCOUNTABILITY FORM**

**Fort Sheridan UXO Survey**

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 9 SUBAREA: F

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: ON SURFACE

MEMBERS OF EXCAVATION TEAM: COLEMAN-PARSONS

IDENTIFICATION OR FEATURES OF ITEM:

3" STOKES MORTAR W/OUT TUBE

NOTES:

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation X Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 1915NPT 2 NOV 93

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

**FIGURE 6  
UXO ACCOUNTABILITY FORM**

**Fort Sheridan UXO Survey**

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 10 SUBAREA: 2A

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 3"

MEMBERS OF EXCAVATION TEAM: COLEMAN-PARSONS

IDENTIFICATION OR FEATURES OF ITEM: 3" STOKES MORTAR WITH FUZE

NOTES:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 1715 HRS 2 NOV 93

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_ (Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

FOUND 2003

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: \_\_\_\_\_ SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: \_\_\_\_\_

MEMBERS OF EXCAVATION TEAM: SUNFERNAN-READSHAW

IDENTIFICATION OR FEATURES OF ITEM:

7.5MM CASUALTY IN HEX HOLE IN CENTER OF  
FRONT END OF ORDNANCE.

NOTES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation \_\_\_\_\_ Other  TRANSPORTED BACK TO  
837th AOD BT 556 TAC

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: \_\_\_\_\_

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 12 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 3-4"

MEMBERS OF EXCAVATION TEAM: SUNDERMAN-BRAESHAU

IDENTIFICATION OR FEATURES OF ITEM:

SPIDER MINE (GERMAN (?) TELLER MINE (?)

APPR V 8" in DIAMETER - 1" THICK

POSSIBLY U.S. M4 W/M1 PRESSURE PLATE CONFIRMED

NOTES:

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation x Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: Charles L. Craft (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 9 NOV 93 12:17 HRS

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

FIGURE 6  
UXO ACCOUNTABILITY FORM

Found 15 NOV 93  
11:15 AM

Fort Sheridan UXO Survey

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 13

SUBAREA: 2A

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 2"

MEMBERS OF EXCAVATION TEAM: FINDLEY-BRADSHAW

IDENTIFICATION OR FEATURES OF ITEM:

3 STOKES MORTAR WITH OUT FUZE

NOTES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation  Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: [Signature] (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 11:20 HRS 23 NOV 93

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

Found 0740  
1-18-93

**FIGURE 6  
UXO ACCOUNTABILITY FORM**

**Fort Sheridan UXO Survey**

Directions: Complete one (1) Excavation/Accountability Form for each UXO located.

ITEM NUMBER: 14 SUBAREA: \_\_\_\_\_

SUSPECTED DEPTH OF ITEM: \_\_\_\_\_ (To be completed after GPR measurements)

DEPTH AT WHICH ITEM WAS LOCATED: 10"

MEMBERS OF EXCAVATION TEAM: CRAWFORD & FINLEY

IDENTIFICATION OR FEATURES OF ITEM:  
3" STORES MORTAR w/o fuze

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTES:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FINAL DISPOSAL ACTION: Removal \_\_\_\_\_ Detonation X Other \_\_\_\_\_

REMOVAL/DISPOSAL CERTIFIED BY: Charles L. Crawford (Signature of Army EOD Technician)

DATE/TIME OF REMOVAL/DETONATION: 11:22 hrs 23 Nov 93

AREA BACKFILLED: \_\_\_\_\_ (Initials of UXO Technician performing certification)

VERIFICATION OF REMOVAL/DETONATION/BACKFILL: \_\_\_\_\_  
(Signature of QA Officer)

## APPENDIX D

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2160  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Thursday, 10/28/93 14:46:04

Client: USAEC  
Operation: FT.SHERIDAN  
SSU Location: NORTH CORNER  
Distance to Blast: 700  
Operator: RRP IT CORP.  
Comments: SHOT #1  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

BAT: 13.0 SN:2160 v3.30 10/28/93 15:13  
RECORD < 5> GRAPH < 6 in> COPIES <1>  
OSM CHARTS <DISABLED> DISK COPIES <1>  
EVENT HOLD <DISABLED> ALARM <DISABLED>  
TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2124  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Thursday, 10/28/93 15:08:31

Client: USAEC  
Operation: FT. SHERIDAN  
SSU Location: WEST  
Distance to Blast: 3000  
Operator: B.M.S. IT CORP.  
Comments: SHOT 1  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

BAT: 13.3 SN:2124 v3.26 11/02/93 10:40  
RECORD < 5> GRAPH < 6 in> COPIES <1>  
OSM CHARTS <DISABLED> DISK COPIES <1>  
EVENT HOLD <DISABLED> ALARM <DISABLED>  
TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2124  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Thursday, 10/28/93 14:41:20

Client: USAEC  
Operation: FT. SHERIDAN  
SSU Location: WEST  
Distance to Blast: 3000  
Operator: B.M.S. IT CORP.  
Comments: SHOT 1  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

BAT: 13.1 SN:2124 v3.26 10/28/93 15:08  
RECORD < 5 > GRAPH < 6 in > COPIES < 1 >  
OSM CHARTS < DISABLED > DISK COPIES < 1 >  
EVENT HOLD < DISABLED > ALARM < DISABLED >  
TRIGGERS: SEIS < 0.02 > SOUND < 106 db >  
COMMAND:

\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\*  
SN:2160  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Thursday, 10/28/93 15:13:30

Client: USAEC  
Operation: FT.SHERIDAN  
SSU Location: NORTH CORNER  
Distance to Blast: 700  
Operator: RRP IT CORP.  
Comments: SHOT #1  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---



Thursday, 10/28/93 15:43:30

MAX PPU= 0.05 10/28/93 15:22:30  
MAX dB = 129 10/28/93 15:31:30  
BAT: 13.3 SN:2160 v3.30 11/02/93 10:43  
RECORD < 5> GRAPH < 6 in> COPIES < 1>  
OSM CHARTS < DISABLED> DISK COPIES < 1>  
EVENT HOLD < DISABLED> ALARM < DISABLED>  
TRIGGERS: SEIS < 0.02> SOUND < 106 db>  
COMMAND:

\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\*  
SN:2160  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Tuesday, 11/02/93 15:00:55

Client: USAEC  
Operation: FT.SHERIDAN  
SSU Location: NORTH CORNER  
Distance to Blast: 700  
Operator: RRP IT CORP.  
Comments: TWO 3'' STOKES MORTARS  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

BAT: 13.3 SN:2160 v3.30 11/04/93 11:26  
RECORD < 5 > GRAPH < 6 in > COPIES < 1 >  
OSM CHARTS < DISABLED > DISK COPIES < 1 >  
EVENT HOLD < DISABLED > ALARM < DISABLED >  
TRIGGERS: SEIS < 0.02 > SOUND < 106 db >  
COMMAND:

\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\*  
SN:2124  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Tuesday, 11/02/93 15:03:26

Client: USAEC  
Operation: FT. SHERIDAN  
SSU Location: WEST  
Distance to Blast: 3000  
Operator: H.A.C. IT CORP.  
Comments: TWO 3IN STOKES  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---


BAT: 13.0 SN:2124 v3.26 11/02/93 15:10  
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OSM CHARTS <DISABLED> DISK COPIES <1>  
EVENT HOLD <DISABLED> ALARM <DISABLED>  
TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2160  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Monday, 11/04/93 14:06:06

Client: USAEC  
Operation: FT.SHERIDAN  
SSU Location: NORTH CORNER  
Distance to Blast: 300  
Operator: JB IT CORP  
Comments: ONE AT MINE ONE 75MM PRO  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---



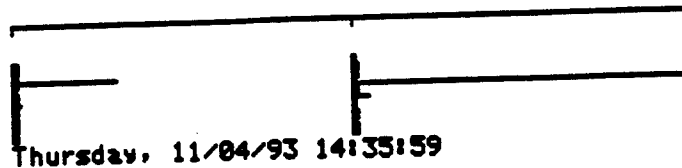
Monday, 11/04/93 14:36:06

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MAX dB = 126 11/04/93 14:16:06  
BAT: 13.0 SN:2160 v3.30 11/23/93 8:57  
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TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2124  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Thursday, 11/04/93 14:05:59

Client: USAEC  
Operation: FT. SHERIDAN  
SSU Location: WEST  
Distance to Blast: 350  
Operator: C.A.C. IT CORP  
Comments: 1 AT MINE 1 75 MM  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140	0.00	in/sec 1.28



MAX PPU= 1.27 11/04/93 14:16:59  
MAX dB = 132 11/04/93 14:13:59  
BAT: 13.2 SN:2124 v3.26 11/23/93 8:54  
RECORD < 5> GRAPH < 6 in> COPIES < 1>  
OSM CHARTS <DISABLED> DISK COPIES < 1>  
EVENT HOLD <DISABLED> ALARM <DISABLED>  
TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2160  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Saturday, 11/23/93 13:09:08

Client: USAEC  
Operation: FT.SHERIDAN  
SSU Location: NORTH CORNER  
Distance to Blast: 300  
Operator: JB IT CORP  
Comments: TWO STOKES MORTARS  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

BAT: 13.2 SN:2160 v3.30 11/29/93 14:26  
RECORD < 5> GRAPH < 6 in> COPIES <1>  
OSM CHARTS <DISABLED> DISK COPIES <1>  
EVENT HOLD <DISABLED> ALARM <DISABLED>  
TRIGGERS: SEIS <0.02> SOUND < 106 db>  
COMMAND:

**\*\* SAFEGUARD SEISMIC UNIT 2000DK \*\***  
SN:2124  
CONTINUOUS SEISMIC & LINEAR SOUND MODE  
Tuesday, 11/23/93 13:06:28

Client: USAEC  
Operation: FT. SHERIDAN  
SSU Location: WEST  
Distance to Blast: 350  
Operator: BMS IT CORP  
Comments: 2 3INCH STOKES MOTARS  
Report Interval: 6 (30 min)

	SOUND		SEISMIC	
100	dB	140 0.00	in/sec	1.28

---

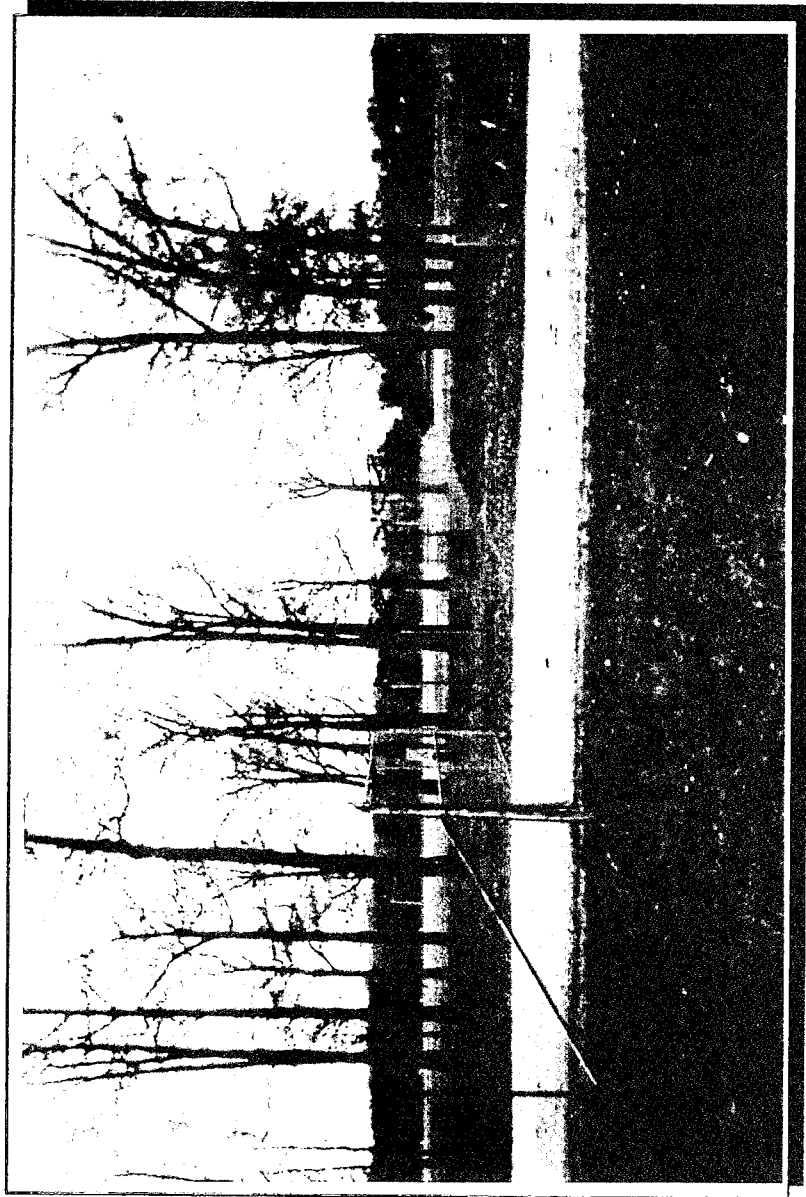
BAT: 13.4 SN:2124 U3.26 11/29/93 14:18  
RECORD < 5 > GRAPH < 6 in > COPIES < 1 >  
OSM CHARTS < DISABLED > DISK COPIES < 1 >  
EVENT HOLD < DISABLED > ALARM < DISABLED >  
TRIGGERS: SEIS < 0.02 > SOUND < 106 db >  
COMMAND:

## APPENDIX E



**Photograph No. 1**

**Main entrance to project site at the northwestern corner of the site looking southeast. Ft. Sheridan, IL.**

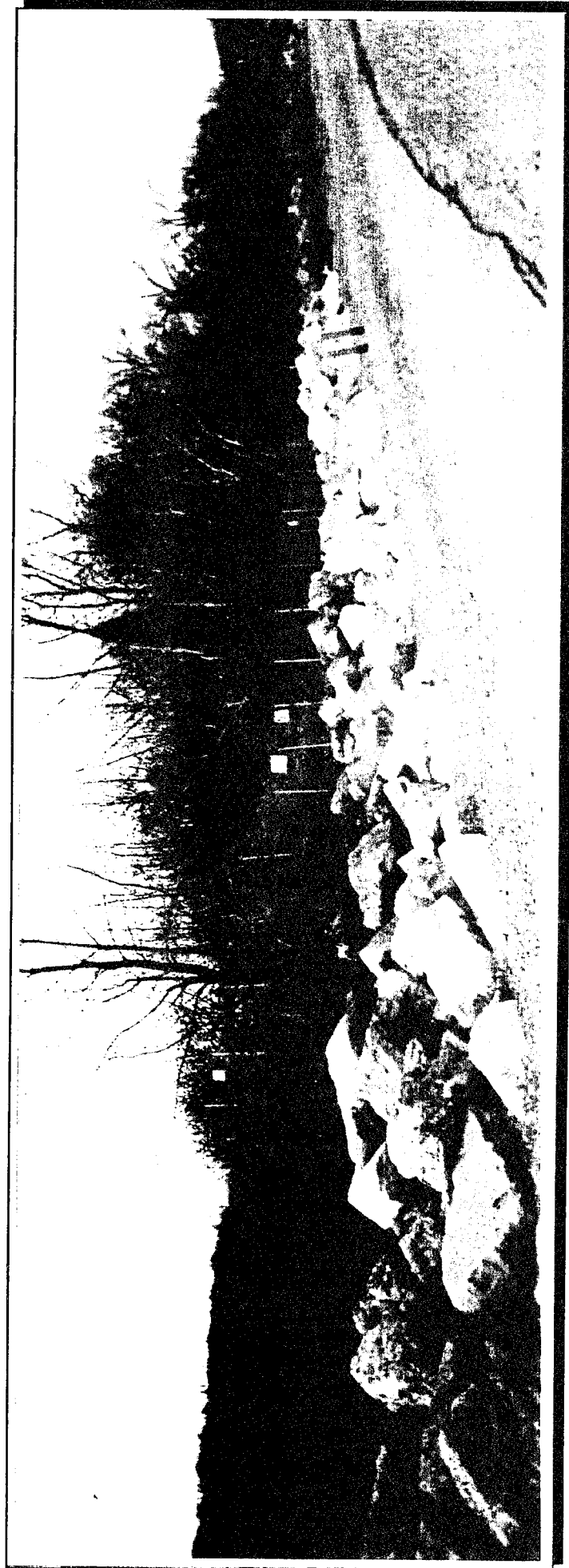


**IT**  
INTERNATIONAL  
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CORPORATION



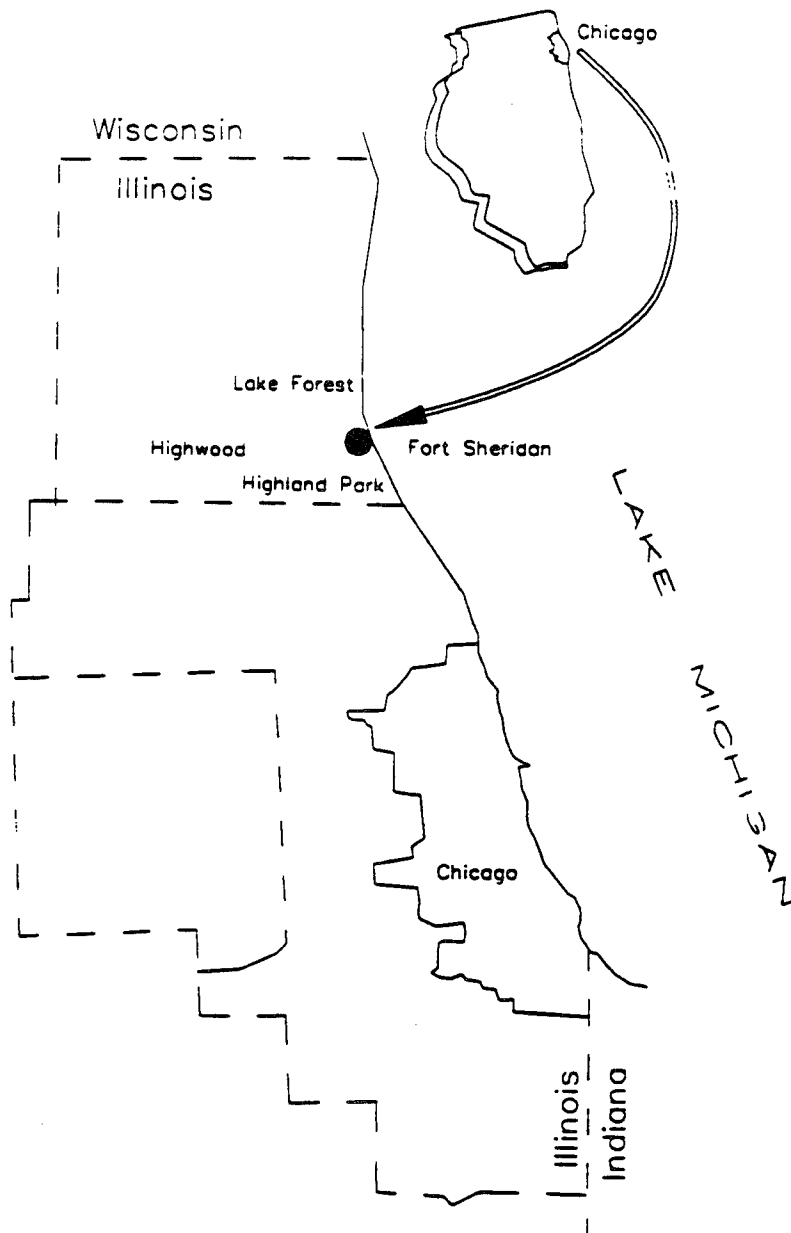
**Photograph No. 2**

***Beach front area at eastern corner of the site  
looking northwest. Ft. Sheridan, IL.***



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TECHNOLOGY  
CORPORATION**

## FIGURES



529678A1 09/22/93 10:43am D.M.B.

No.	DATE	REVISION/DESCRIPTION	NAME	DATE
		DESIGN BY:		
		DRAWN BY:	D.M.B.	9/22/93
		CHECKED BY:		
		ENGINEER:		
		APPROVED BY:		



**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**



**U.S. ARMY  
ENVIRONMENTAL CENTER**

**FIGURE 1  
LOCATION MAP OF  
FORT SHERIDAN**

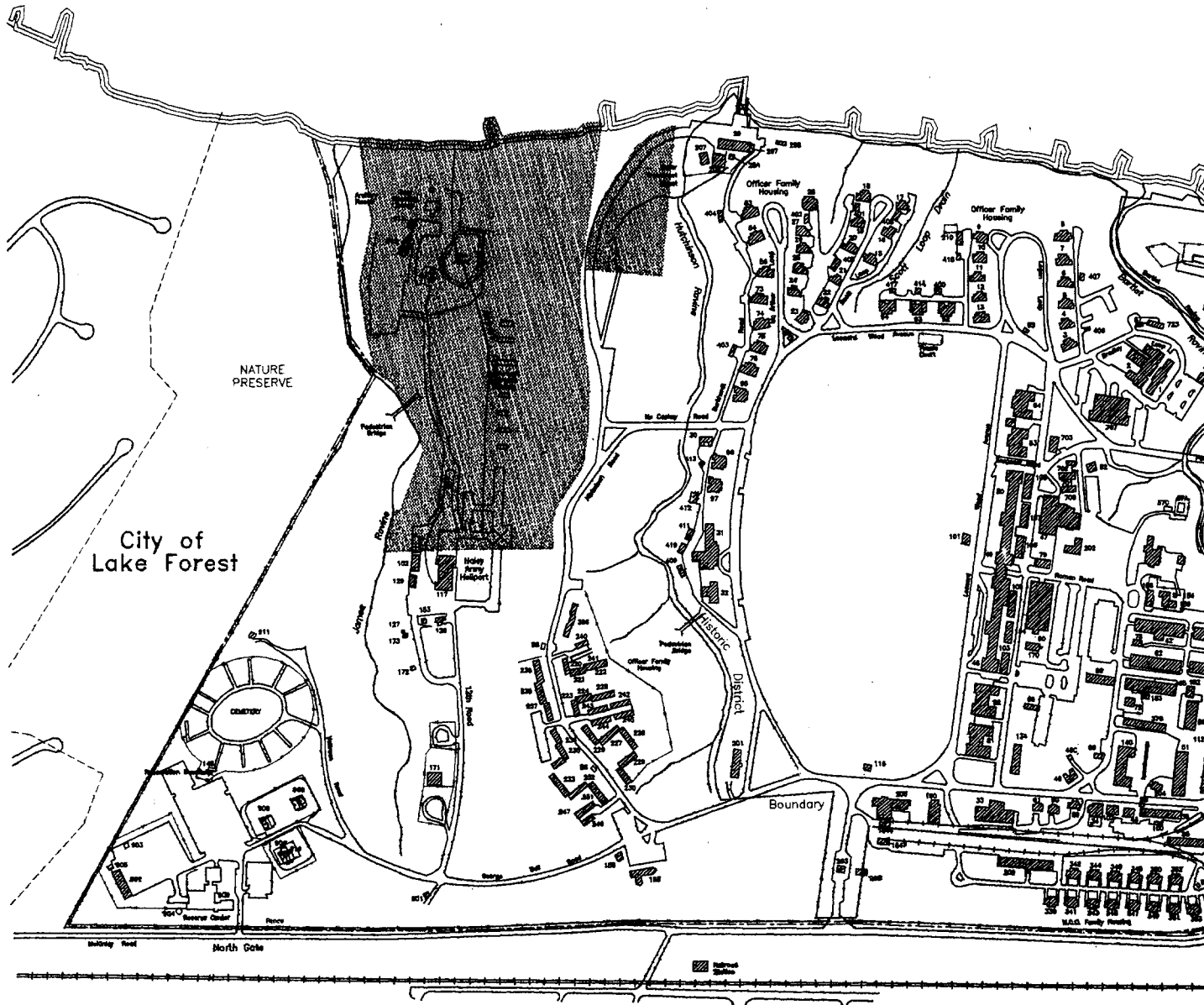
Prepared For:  
**FORT SHERIDAN, ILLINOIS  
UXO SURVEY OPERATION  
AUGUST 1994**

PROJECT No. 529678

DATE 9/22/93

SHEET OF

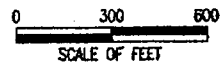
DWG No. 529678-A1



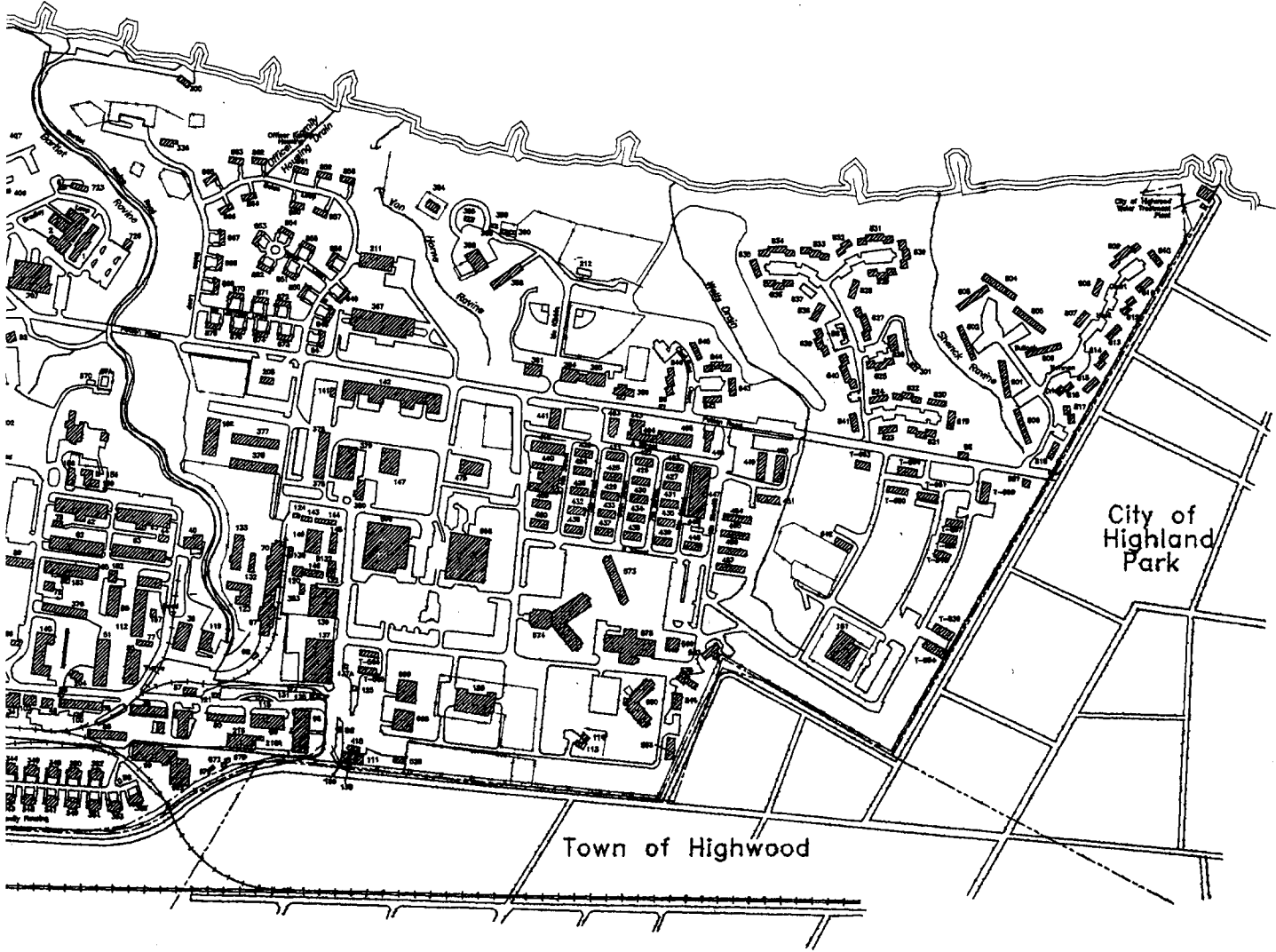
Adapted from Official Post Map, Directorate of Engineering and Housing, Fort Sheridan, Illinois, January 8, 1989

No.	DATE	REVISION/DESCRIPTION	INIT.	NAME	DATE
				DESIGN BY:	
				DRAWN BY:	DMB 12/93
				CHECKED BY:	
				ENGINEER:	
				APPROVED BY:	

SCALE



LAKE MICHIGAN



LEGEND:



50 ACRE PARCEL

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TECHNOLOGY  
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U.S. ARMY  
ENVIRONMENTAL CENTER

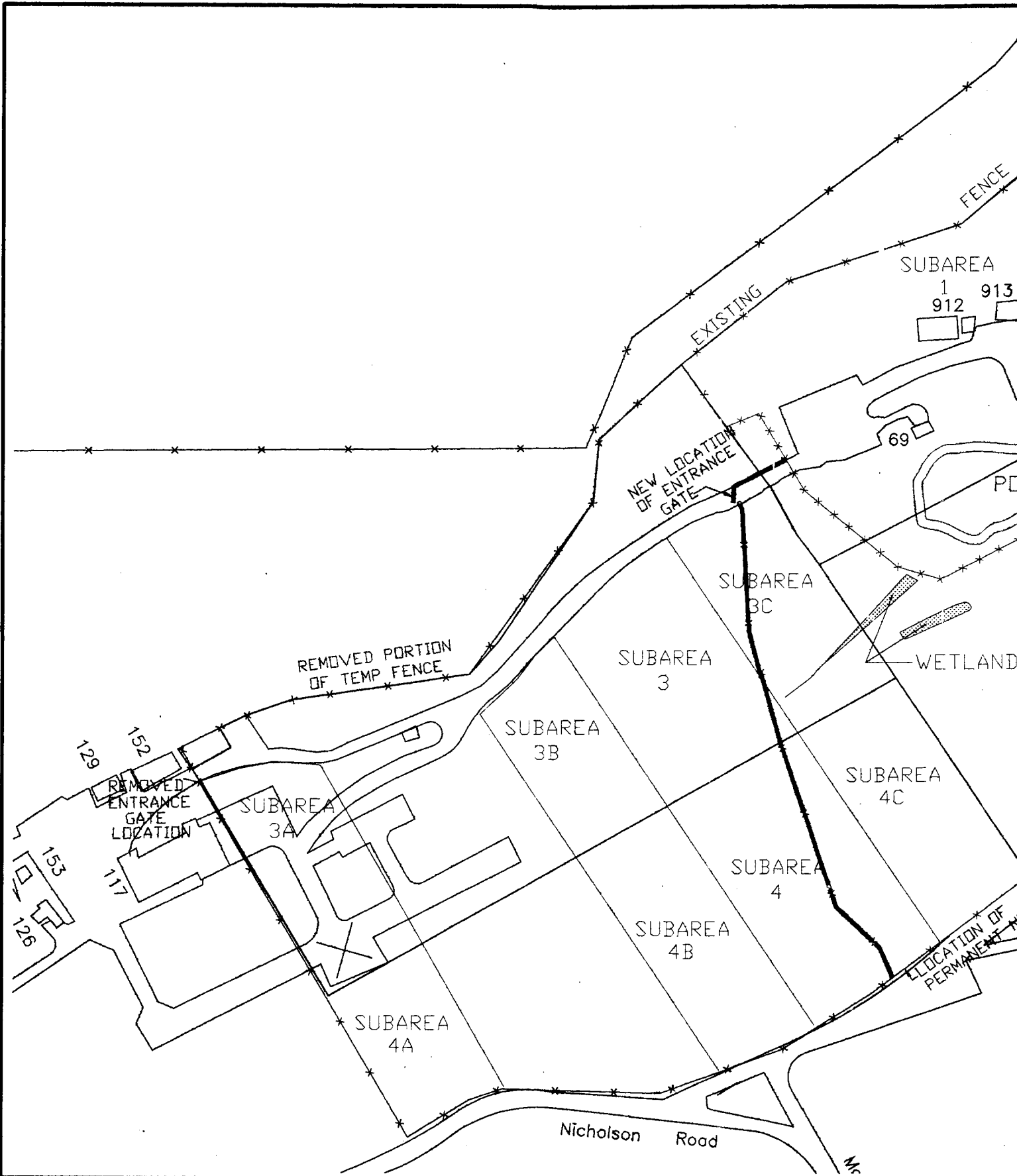
SHEET TITLE: **FIGURE 2**  
**LOCATION OF 50 ACRE PARCEL**  
**FT. SHERIDAN**  
Prepared For:  
**FT. SHERIDAN, ILLINOIS**  
**UXO SURVEY OPERATION**  
**AUGUST 1994**

JOB No. 529678

DATE 4/14/94

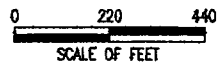
SHEET . OF .

DRAWING No. 529678-B5

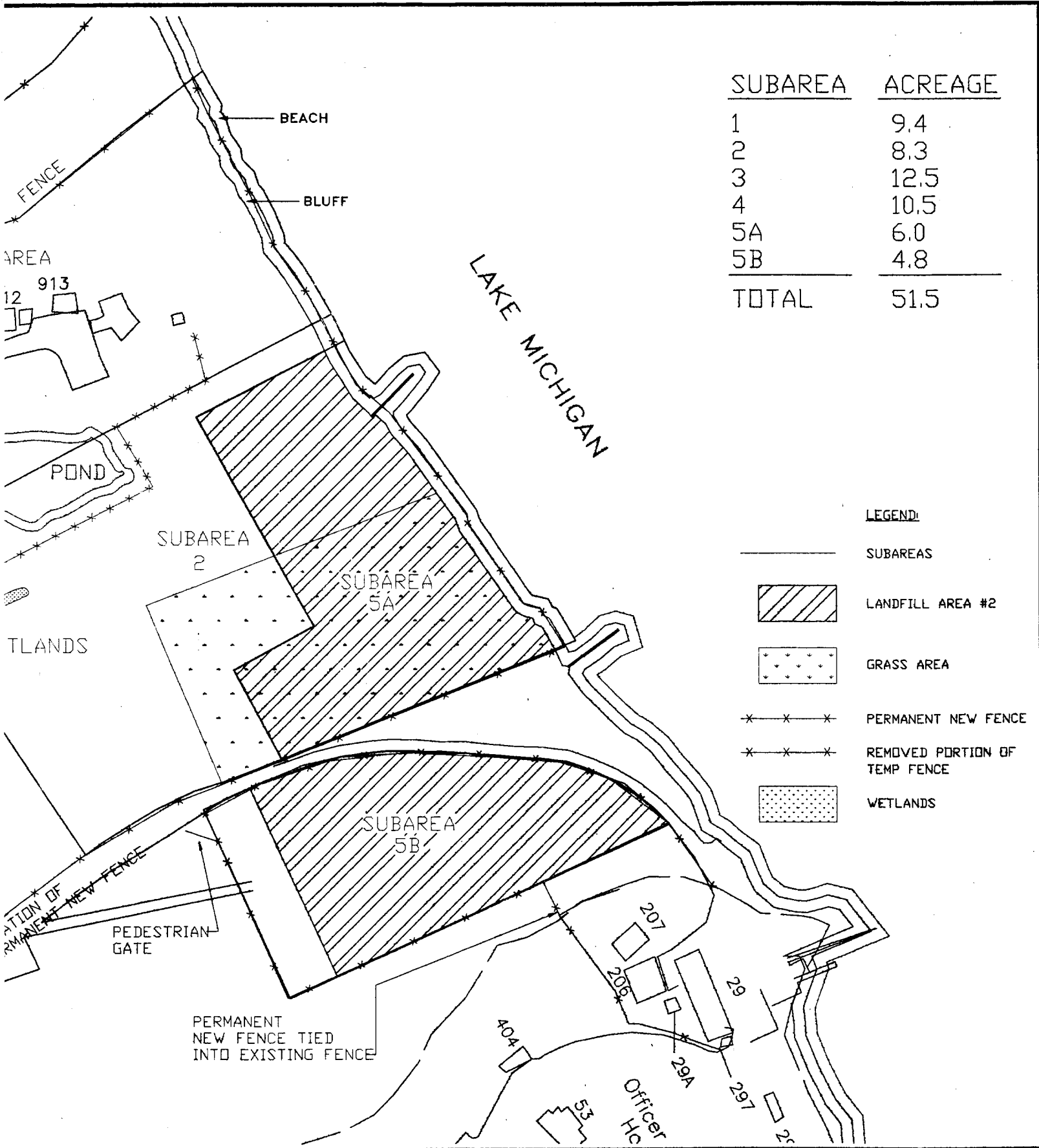


No.	DATE	REVISION/DESCRIPTION	INIT.	NAME	DATE
				DESIGN BY:	
				DRAWN BY:	DMB 12/93
				CHECKED BY:	
				ENGINEER:	
				APPROVED BY:	

SCALE

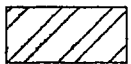
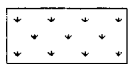
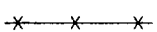
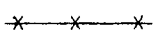
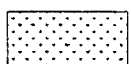


52067883.00/02/04 11:14am D.M.B.  
 XREF:83.1



SUBAREA	ACREAGE
1	9.4
2	8.3
3	12.5
4	10.5
5A	6.0
5B	4.8
<b>TOTAL</b>	<b>51.5</b>

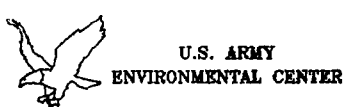
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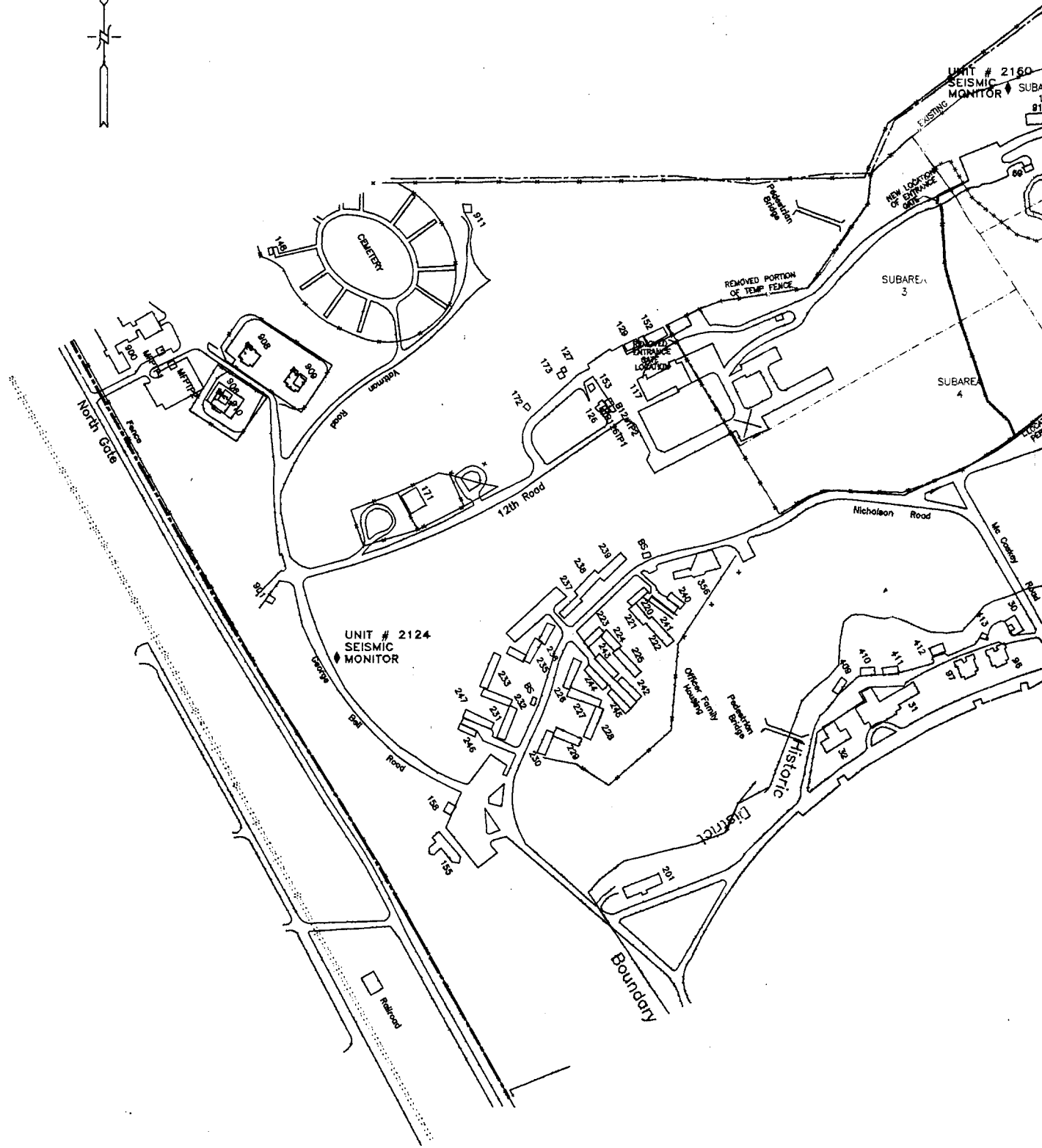
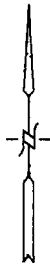
- SUBAREAS
-  LANDFILL AREA #2
-  GRASS AREA
-  PERMANENT NEW FENCE
-  REMOVED PORTION OF TEMP FENCE
-  WETLANDS

SHEET TITLE: **FIGURE 3**  
**SUBAREA DIVISIONS AND WETLANDS**  
**FT. SHERIDAN**  
 Prepared For:  
**FT. SHERIDAN, ILLINOIS**  
**UXO SURVEY OPERATION**  
**AUGUST 1994**

JOB No.	529678
DATE	02/04/94
SHEET	OF
DRAWING No.	529678-B4

**INTERNATIONAL TECHNOLOGY CORPORATION**





No.	DATE	REVISION/DESCRIPTION	INIT.	NAME	DATE
				DESIGN BY:	
				DRAWN BY:	DMB 12/93
				CHECKED BY:	
				ENGINEER:	
				APPROVED BY:	

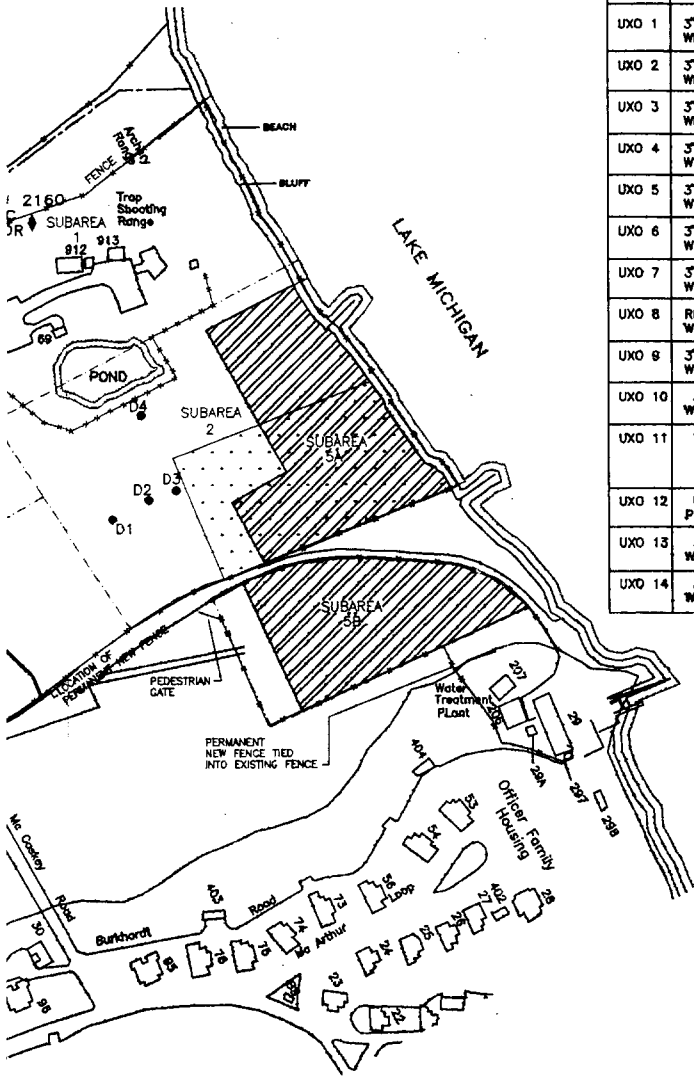
SCALE

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SCALE OF FEET

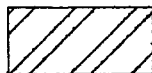

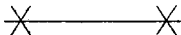




62667881 08/02/94 11:55am D.L.B.  
 .dwf: b1.p1



No.	ITEM	DEPTH FOUND AT	DETONATION SITE	STATE PLANAR COORDINATES NAD 83		LATITUDE	LONGITUDE
				(X) EASTING	(Y) NORTHING		
UXO 1	3" STOKES MORTAR WITH FUSE MISSING	6"	D1	1420739.2859	15337792.1894	78° 35' 24.84"	082° 18' 03.47"
UXO 2	3" STOKES MORTAR WITH FUSE	8"	D1	1420644.5792	15337741.4395	78° 35' 24.44"	082° 18' 08.40"
UXO 3	3" STOKES MORTAR WITH FUSE MISSING	4"	D1	1420627.1332	15337872.9751	78° 35' 25.74"	082° 18' 08.59"
UXO 4	3" STOKES MORTAR WITH FUSE MISSING	6"	D1	1420702.7324	15337911.8143	78° 35' 28.04"	082° 18' 04.66"
UXO 5	3" STOKES MORTAR WITH FUSE	6"	D1	1420637.3157	15337941.3321	78° 35' 26.20"	082° 17' 57.86"
UXO 6	3" STOKES MORTAR WITH FUSE MISSING	3"	D4	1420720.1784	15338013.3142	78° 35' 27.02"	082° 18' 03.26"
UXO 7	3" STOKES MORTAR WITH FUSE	5"	D4	1420668.6713	15337986.3857	78° 35' 28.81"	082° 18' 05.96"
UXO 8	RIFLE GRENADE - M8A5 WITH FUSE	6"	D4	1420810.7313	15337816.0108	78° 35' 25.00"	082° 17' 59.81"
UXO 9	3" STOKES MORTAR WITH FUSE MISSING	ON SURFACE	D2	1420642.3002	15337563.4932	78° 35' 22.66"	082° 17' 59.44"
UXO 10	3" STOKES MORTAR WITH FUSE	3"	D2	1420735.1321	15337523.9397	78° 35' 22.22"	082° 18' 05.04"
UXO 11	75 MM PROJECTILE	3"	TRANSPORTED BY 88th EOD TEAM TO FT. McCOY, WI	1420766.8014	15338484.4006	78° 35' 31.58"	082° 17' 56.56"
UXO 12	US M4 W/ M1 PRESSURE PLATE WITH FUSE MISSING	3"	D1	1420788.6144	15338377.1898	78° 35' 30.51"	082° 17' 58.03"
UXO 13	3" STOKES MORTAR WITH FUSE MISSING	12"	D3	1420745.2748	15337646.1538	78° 35' 23.40"	082° 18' 03.92"
UXO 14	3" STOKES MORTAR WITH FUSE MISSING	10"	D3	1420509.2004	15337565.5486	78° 35' 23.06"	082° 18' 15.89"

**LEGEND:**

- SUBAREAS
-  LANDFILL AREA #2
-  GRASS AREA
-  NEW FENCE
-  DETONATION SITE
-  SEISMIC MONITOR

**INTERNATIONAL TECHNOLOGY CORPORATION**



**U.S. ARMY ENVIRONMENTAL CENTER**

SHEET TITLE: **FIGURE 4**  
**LOCATION OF DISPOSAL DETONATIONS AND SEISMIC MONITORS**  
 Prepared For:  
**FT. SHERIDAN, ILLINOIS**  
**UXO SURVEY OPERATION**  
**AUGUST 1994**

JOB No. 529678  
 DATE 02/04/94  
 SHEET OF  
 DRAWING No. 529678-B2

A

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C

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




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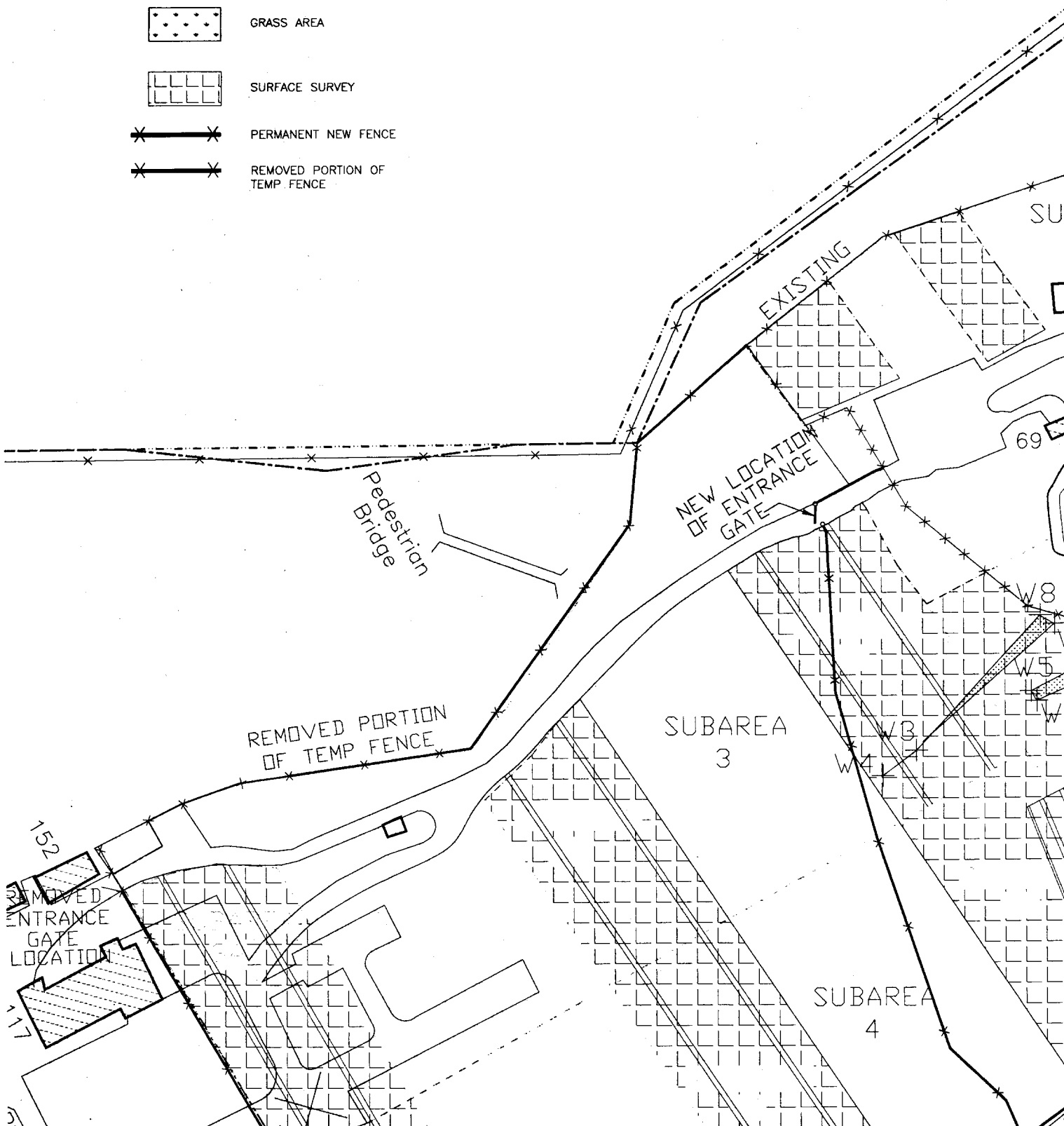
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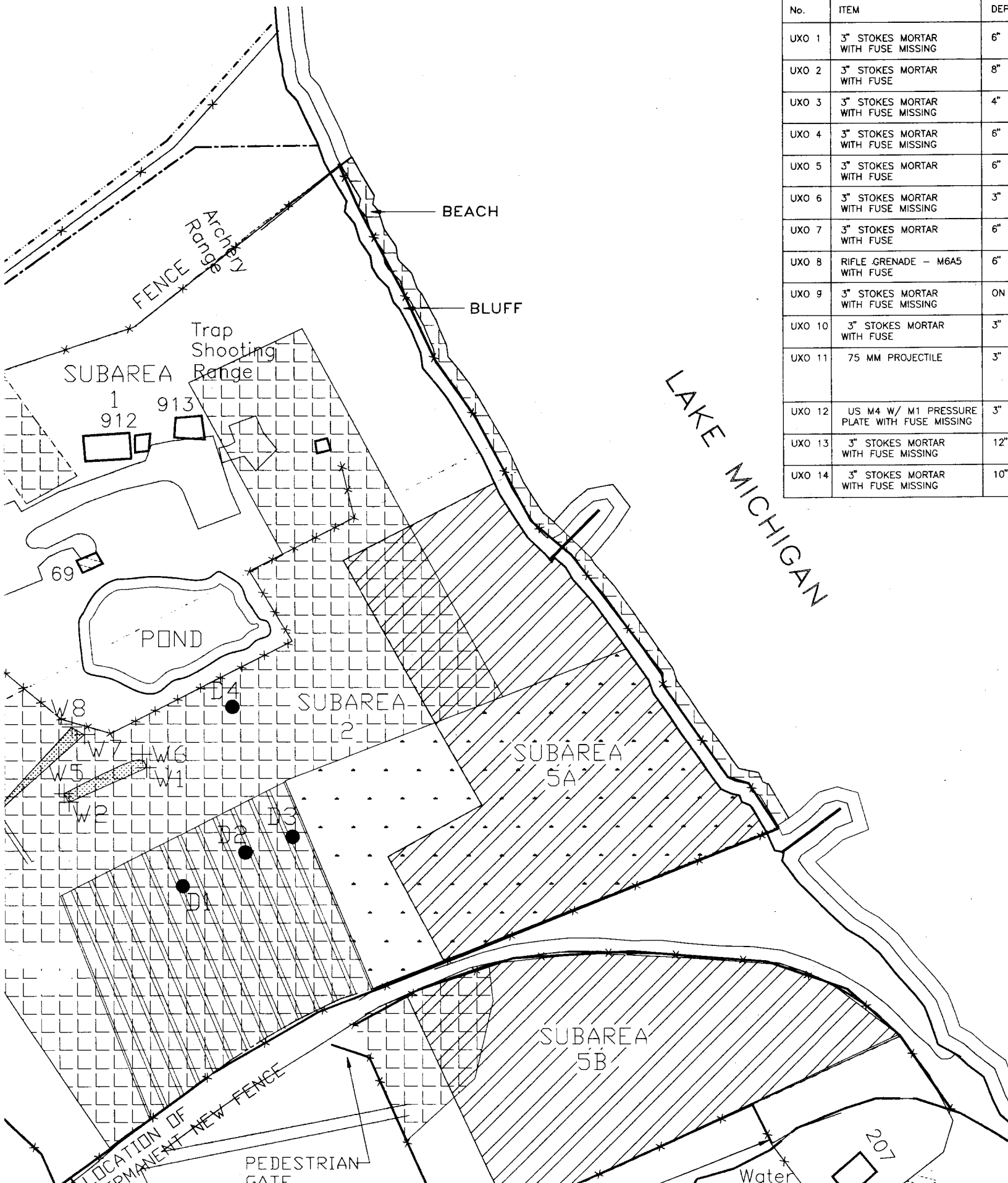
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LEGEND:

- SUBAREAS
-  LANDFILL AREA #2
-  GRASS AREA
-  SURFACE SURVEY
-  PERMANENT NEW FENCE
-  REMOVED PORTION OF TEMP FENCE

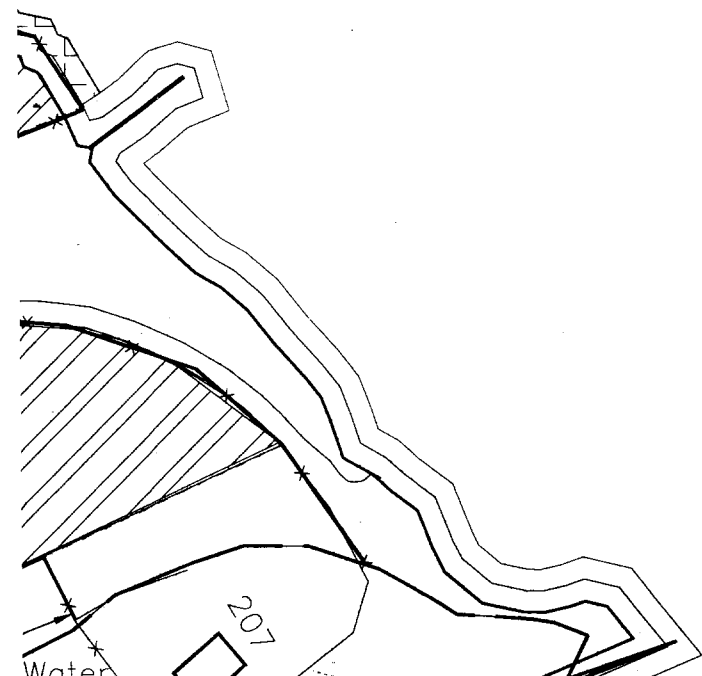


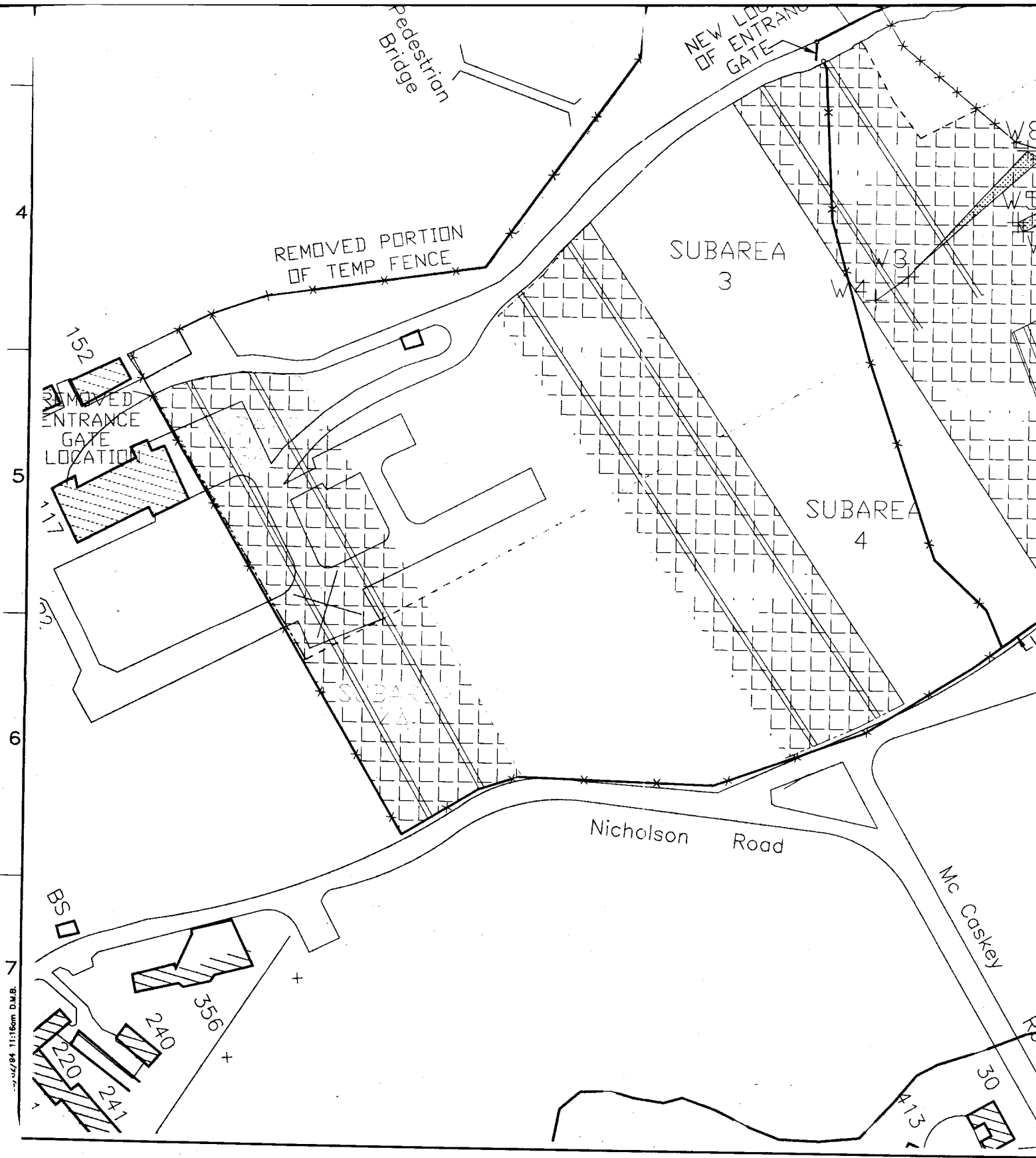


No.	ITEM	DEP
UXO 1	3" STOKES MORTAR WITH FUSE MISSING	6"
UXO 2	3" STOKES MORTAR WITH FUSE	8"
UXO 3	3" STOKES MORTAR WITH FUSE MISSING	4"
UXO 4	3" STOKES MORTAR WITH FUSE MISSING	6"
UXO 5	3" STOKES MORTAR WITH FUSE	6"
UXO 6	3" STOKES MORTAR WITH FUSE MISSING	3"
UXO 7	3" STOKES MORTAR WITH FUSE	6"
UXO 8	RIFLE GRENADE - M6A5 WITH FUSE	6"
UXO 9	3" STOKES MORTAR WITH FUSE MISSING	ON
UXO 10	3" STOKES MORTAR WITH FUSE	3"
UXO 11	75 MM PROJECTILE	3"
UXO 12	US M4 W/ M1 PRESSURE PLATE WITH FUSE MISSING	3"
UXO 13	3" STOKES MORTAR WITH FUSE MISSING	12"
UXO 14	3" STOKES MORTAR WITH FUSE MISSING	10"

No.	ITEM	DEPTH FOUND AT	DETONATION SITE	STATE PLANAR COORDINATES NAD 83		LATITUDE	LONGITUDE
				(X) EASTING	(Y) NORTHING		
UXO 1	3" STOKES MORTAR WITH FUSE MISSING	6"	D1	1420739.2859	15337792.1894	78° 35' 24.84"	082° 18' 03.47"
UXO 2	3" STOKES MORTAR WITH FUSE	8"	D1	1420644.5792	15337741.4395	78° 35' 24.44"	082° 18' 08.40"
UXO 3	3" STOKES MORTAR WITH FUSE MISSING	4"	D1	1420627.1332	15337872.9751	78° 35' 25.74"	082° 18' 08.59"
UXO 4	3" STOKES MORTAR WITH FUSE MISSING	6"	D1	1420702.7324	15337911.8143	78° 35' 26.04"	082° 18' 04.66"
UXO 5	3" STOKES MORTAR WITH FUSE	6"	D1	1420837.3157	15337941.3321	78° 35' 26.20"	082° 17' 57.86"
UXO 6	3" STOKES MORTAR WITH FUSE MISSING	3"	D4	1420720.1784	15338013.3142	78° 35' 27.02"	082° 18' 03.28"
UXO 7	3" STOKES MORTAR WITH FUSE	6"	D4	1420668.6713	15337986.3857	78° 35' 26.81"	082° 18' 05.96"
UXO 8	RIFLE GRENADE - M6A5 WITH FUSE	6"	D4	1420810.7313	15337816.0108	78° 35' 25.00"	082° 17' 59.81"
UXO 9	3" STOKES MORTAR WITH FUSE MISSING	ON SURFACE	D2	1420842.3002	15337583.4932	78° 35' 22.69"	082° 17' 59.44"
UXO 10	3" STOKES MORTAR WITH FUSE	3"	D2	1420735.1321	15337523.9397	78° 35' 22.22"	082° 18' 05.04"
UXO 11	75 MM PROJECTILE	3"	TRANSPORTED BY 88 <sup>th</sup> EOD TEAM TO FT. MCKOY, WI.	1420766.9014	15338484.4008	78° 35' 31.58"	082° 17' 58.56"
UXO 12	US M4 W/ M1 PRESSURE PLATE WITH FUSE MISSING	3"	D1	1420788.6144	15338377.1898	78° 35' 30.51"	082° 17' 58.03"
UXO 13	3" STOKES MORTAR WITH FUSE MISSING	12"	D3	1420745.2748	15337646.1538	78° 35' 23.40"	082° 18' 03.92"
UXO 14	3" STOKES MORTAR WITH FUSE MISSING	10"	D3	1420509.2004	15337585.5498	78° 35' 23.05"	082° 18' 15.89"

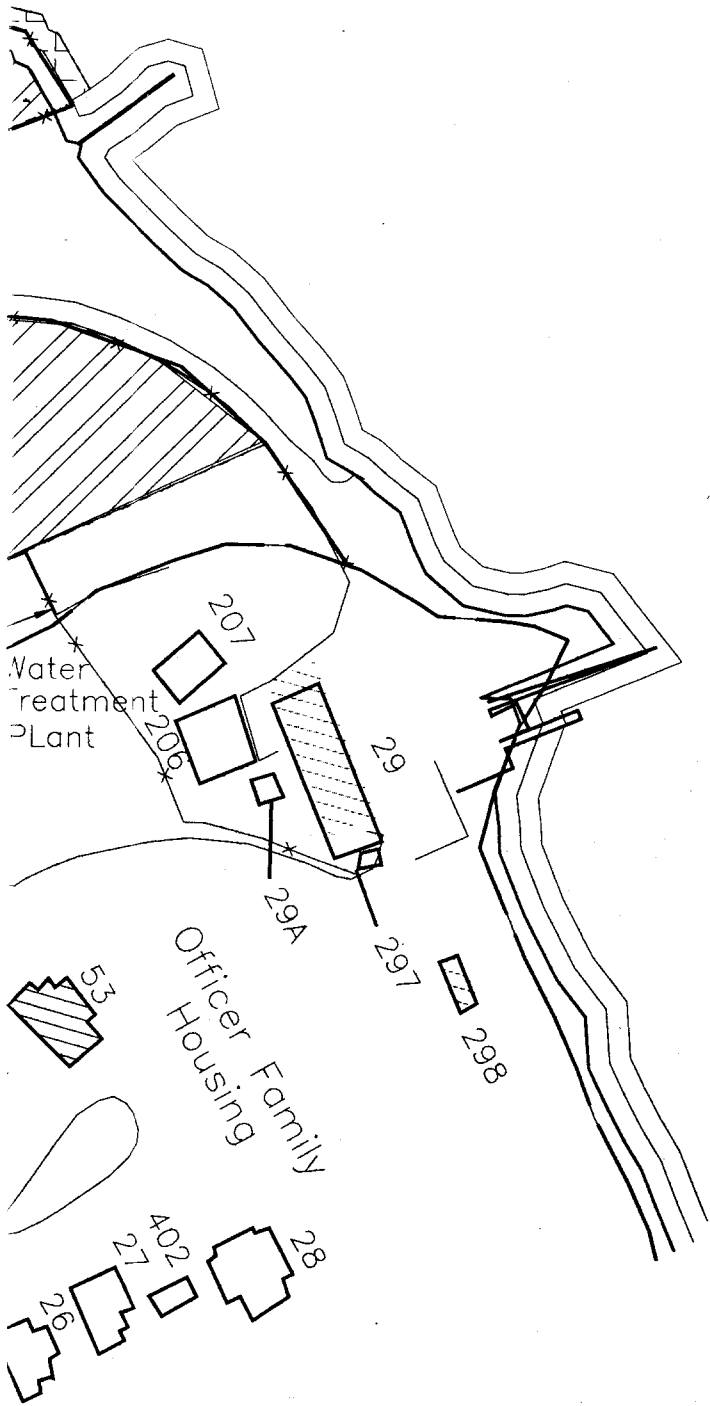
MICHIGAN






07/04 11:16am D.M.B.





REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	ENG	CHKD BY	APPVD BY
PROJECT MANAGER: J. PASTORICK		DRAWN BY: D.M.B.		DATE: 02/04/94		
 <b>INTERNATIONAL TECHNOLOGY CORPORATION</b>						
<b>FIGURE 5</b> <b>AREA SUBJECT TO UXO SURFACE SURVEY</b>						
Prepared For: FORT SHERIDAN, ILLINOIS UXO SURVEY OPERATION AUGUST 1994						
PROJECT NO.	FILE NO.	CHKD:	DRAWING NUMBER		REV. NO.	
529678	E8	ENG. V.S.H. APPVD.	529678-E8			

XREF: E8.E1

A

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C

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1

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3

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5

LEGEND:

==== SUBSURFACE LANES

SUBAREAS

[Dotted Box] SURFACE SURVEY

[Hatched Box] LANDFILL AREA #2

[Line with X] PERMANENT TEMP FENCE

[Dashed Line with X] REMOVED PORTION OF TEMP FENCE

[Circle with X] UXO LOCATION

Pedestrian Bridge

EXISTING  
NEW LOCATION OF ENTRANCE GATE

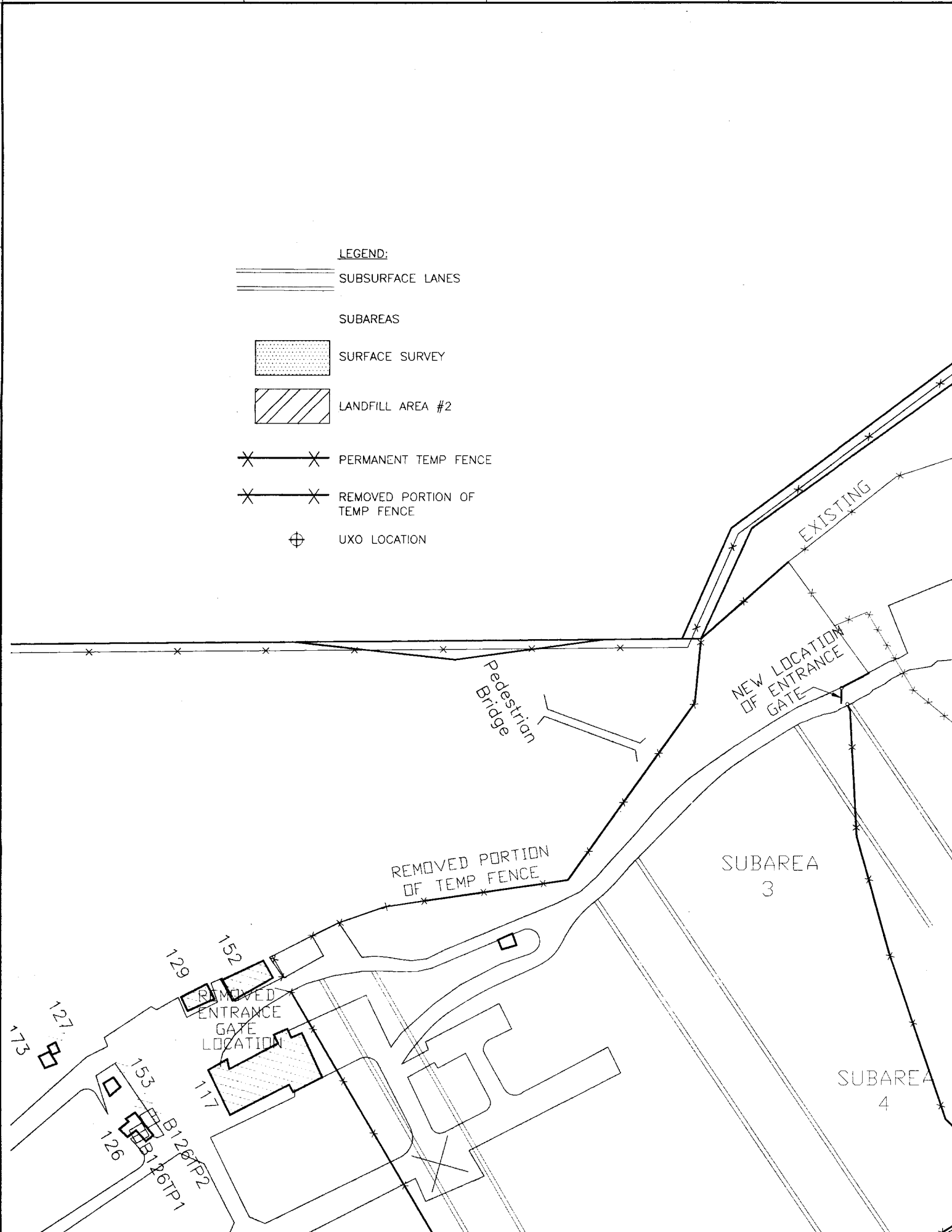
REMOVED PORTION OF TEMP FENCE

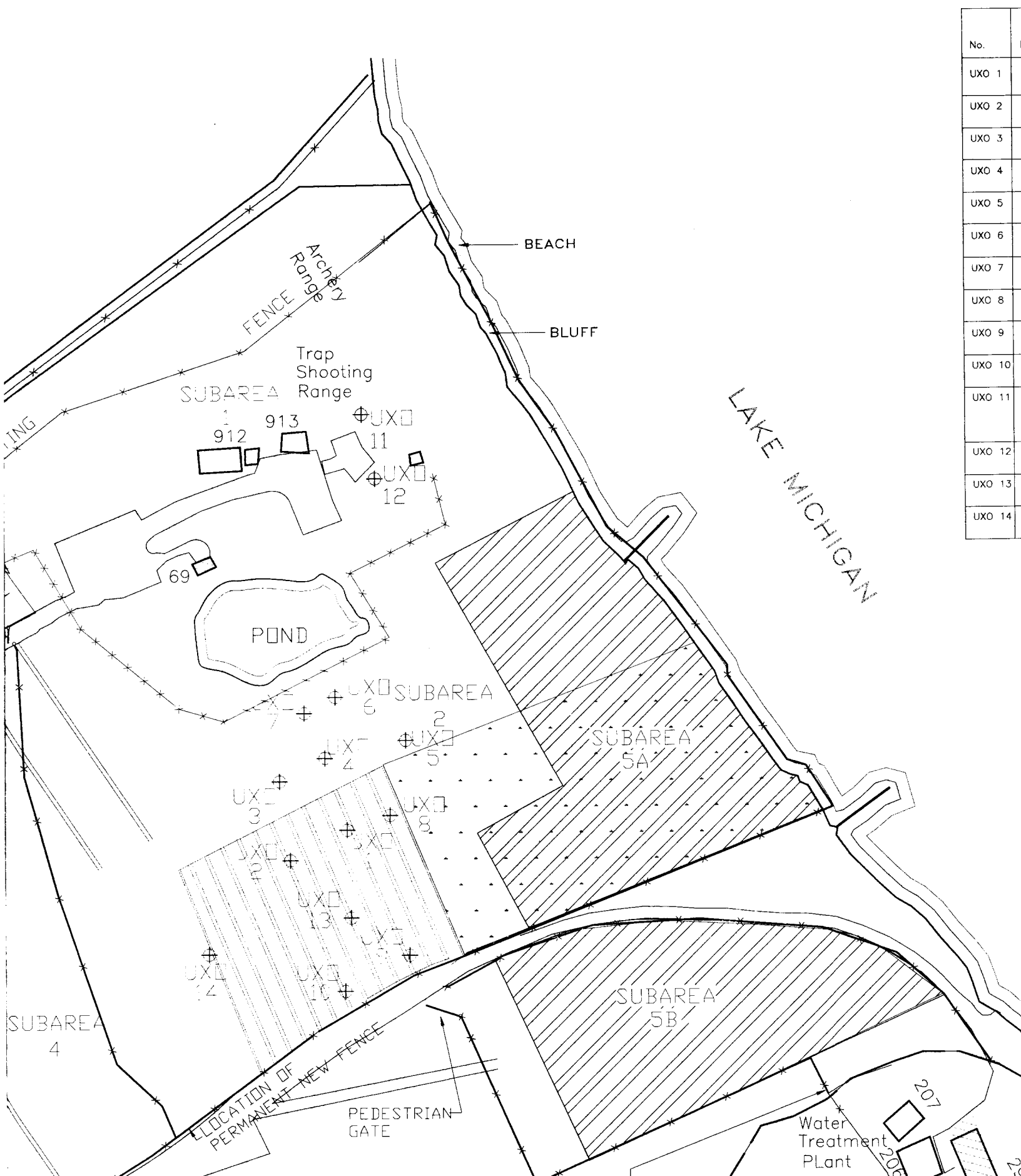
SUBAREA 3

REMOVED ENTRANCE GATE LOCATION

SUBAREA 4

129 152  
127 173  
153 B128TP2  
126 B126TP1  
117

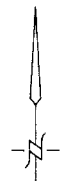
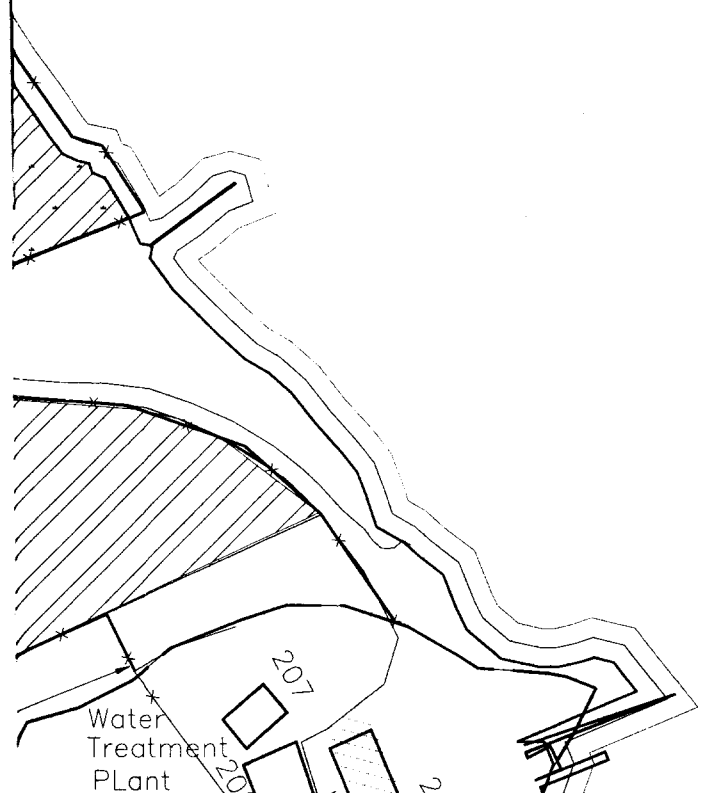




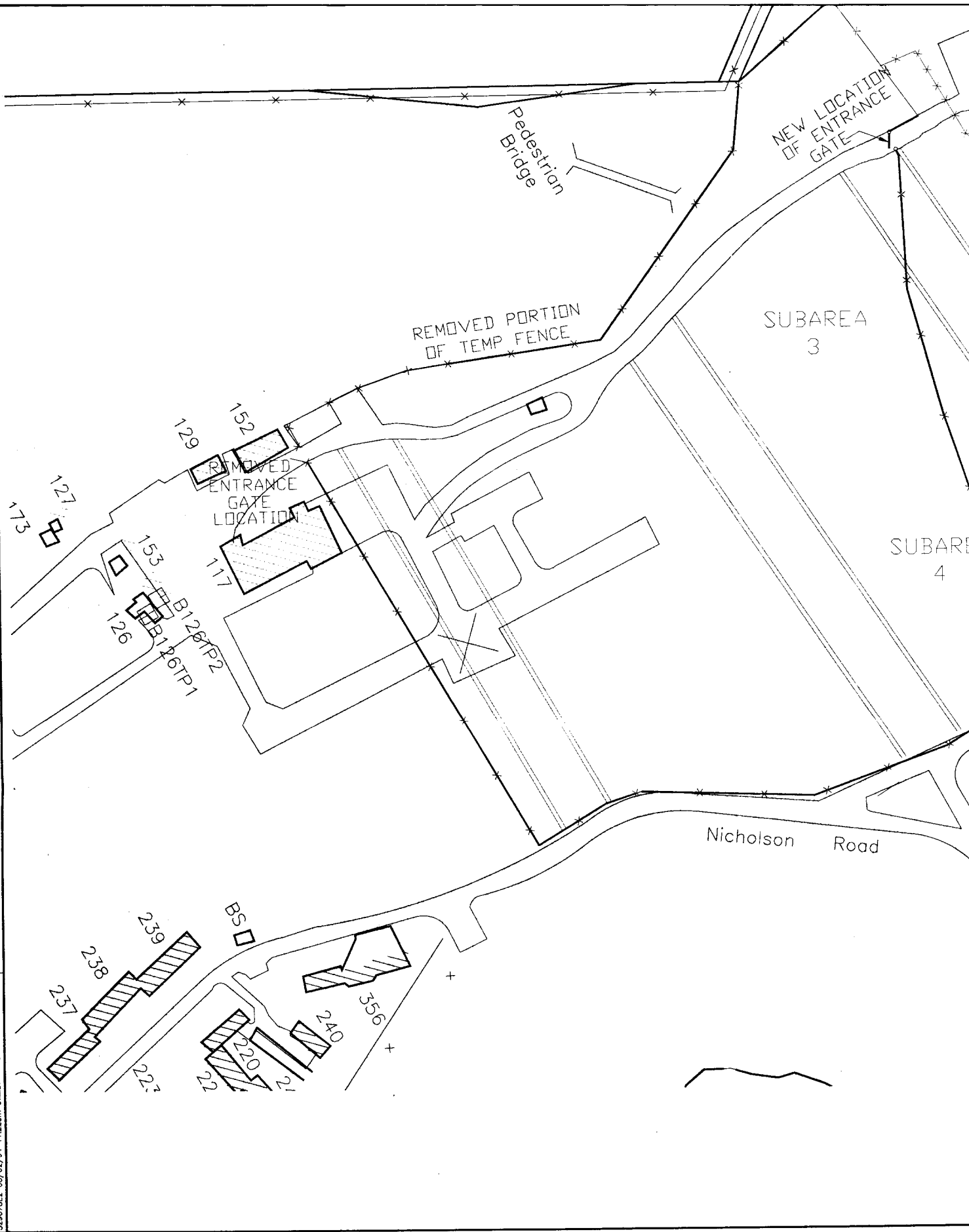
No.
UXO 1
UXO 2
UXO 3
UXO 4
UXO 5
UXO 6
UXO 7
UXO 8
UXO 9
UXO 10
UXO 11
UXO 12
UXO 13
UXO 14

No.	ITEM	DEPTH FOUND AT
UXO 1	3" STOKES MORTAR WITH FUSE MISSING	6"
UXO 2	3" STOKES MORTAR WITH FUSE	8"
UXO 3	3" STOKES MORTAR WITH FUSE MISSING	4"
UXO 4	3" STOKES MORTAR WITH FUSE MISSING	6"
UXO 5	3" STOKES MORTAR WITH FUSE	6"
UXO 6	3" STOKES MORTAR WITH FUSE MISSING	3"
UXO 7	3" STOKES MORTAR WITH FUSE	6"
UXO 8	RIFLE GRENADE - M6A5 WITH FUSE	6"
UXO 9	3" STOKES MORTAR WITH FUSE MISSING	ON SURFACE
UXO 10	3" STOKES MORTAR WITH FUSE	3"
UXO 11	75 MM PROJECTILE	3"
UXO 12	US M4 W/ M1 PRESSURE PLATE WITH FUSE MISSING	3"
UXO 13	3" STOKES MORTAR WITH FUSE MISSING	12"
UXO 14	3" STOKES MORTAR WITH FUSE MISSING	10"

LAKE MICHIGAN



3  
4  
5  
6  
7  
02/9678E2 08/02/94 11:22am D.M.B.



CHIGAN

69

POND

SUBAREA 2

SUBAREA 3A

UXC 3

UXC 5

UXC 4

UXC 8

UXC 2

UXC 13

UXC 10

UXC 9

UXC 14

UXC 10

SUBAREA 5B

SUBAREA 4

LOCATION OF PERMANENT NEW FENCE

PEDESTRIAN GATE

PERMANENT NEW FENCE TIED INTO EXISTING FENCE

Water Treatment Plant

Officer Family Housing

Mc Caskey Rd

Road

Road

Burkhardt

Arthur

Loop

30

403

74

73

59

25

26

27

402

28

207

206

29A

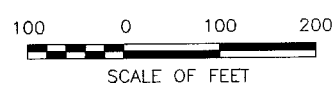
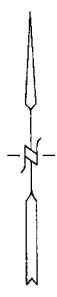
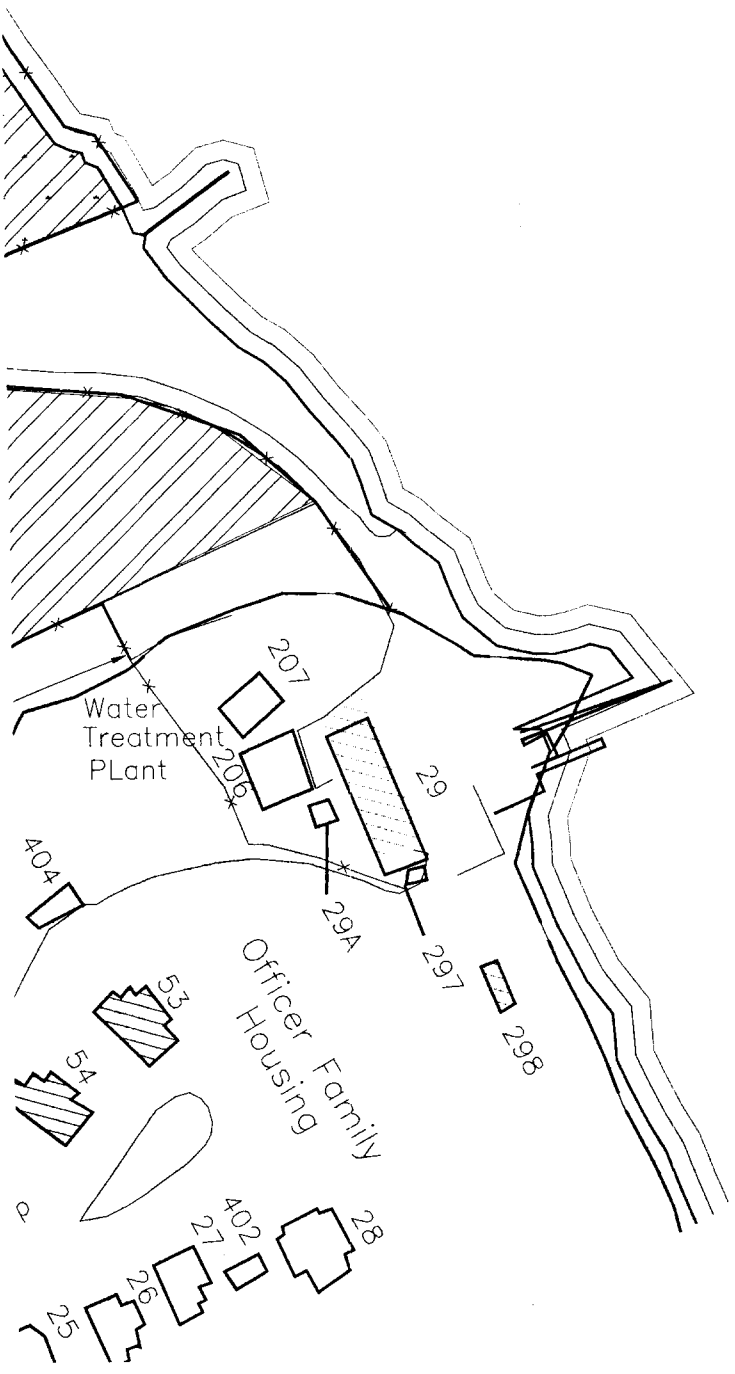
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25

CHIGAN



REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	ENG	CHKD BY	APPVD BY
PROJECT MANAGER: J. PASTORICK		DRAWN BY: D.M.B.		DATE: 02/04/94		
<p><b>FIGURE 6</b>                  UXO SURVEY RESULTS &amp; AREA SUBJECT                  TO UXO SUBSURFACE SURVEY</p> <p>Prepared For:                  FT. SHERIDAN, ILLINOIS                  UXO SURVEY OPERATION                  AUGUST 1994</p>						
PROJECT NO.	FILE NO.	CHK'D:	DRAWING NUMBER		REV. NO.	
529678	E3	ENG. V.S.H.	529678-E3			
		APPVD.				