

Final
2017 Annual Land Use Control Monitoring Report,
RVAAP-01 Ramsdell Quarry Landfill,
RVAAP-05 Winklepeck Burning Grounds,
RVAAP-08 – 11 Load Lines 1 – 4, and
RVAAP-12 Load Line 12

Camp James A. Garfield Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-18-C-0013

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



February 28, 2019

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U.S. Army Corps of Engineers
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Prepared by:



February 28, 2019



Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

April 1, 2019

RE: US Army Ravenna Ammunition Plt RVAAP
Remediation Response
Project Records
Remedial Response
Portage County
ID # 267000859029

Mr. David Connolly
Army National Guard Directorate
Environmental Programs Division
ARNG-ILE-CR
111 South George Mason Drive
Arlington, VA 22204

Subject: Receipt and Review of the "Final 2017 Annual Land Use Control Monitoring Report, RVAAP-01 Ramsdell Quarry Landfill, RVAAP-05 Winklepeck Burning Grounds, RVAAP-08 – 11 Load Lines 1 – 4, and RVAAP-12 Load Line 12," Dated February 28, 2019

Dear Mr. Connolly:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) has received and reviewed the document entitled "Final 2017 Annual Land Use Control Monitoring Report, RVAAP-01 Ramsdell Quarry Landfill, RVAAP-05 Winklepeck Burning Grounds, RVAAP-08 – 11 Load Lines 1 – 4, and RVAAP-12 Load Line 12". This document, received by Ohio EPA, NEDO on February 28, 2019 was prepared for the U.S. Army Corps of Engineers Louisville District, by Chenega Tri-Services, LLC.

Ohio EPA has reviewed this documentation, has no comments and concurs with the final findings of the report. If you have any questions or concerns, please do not hesitate to contact me at (330) 963-1235.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicholas Roope", with a long horizontal flourish extending to the right.

Nicholas Roope
Site Coordinator
Division of Environmental Response and Revitalization

NCR/sc

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Final 2017 Annual Land Use Control Monitoring Report,

Camp James A. Garfield Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

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AR = Administrative Record

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USACE = U.S. Army Corps of Engineers

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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AR	Army Regulation
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
DFFOs	Director's Final Findings and Orders
FWSAP	Facility-Wide Sampling and Analysis Plan
FWGWMPP	Facility-Wide Groundwater Monitoring Program Plan
FY	Fiscal Year
IRP	Installation Restoration Program
LUC	Land Use Control
MK	Mark
MEC	Munitions and Explosives of Concern
MRS	Munitions Response Site
MSW	Municipal Solid Waste
NCP	National Contingency Plan
OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard
PMP	Property Management Plan
RD	Remedial Design
ROD	Record of Decision
RQL	Ramsdell Quarry Landfill
RVAAP	Ravenna Army Ammunition Plant
SOP	Standard Operating Procedure
U.S.C.	United States Code
USP&FO	United States Property and Fiscal Officer
UXO	Unexploded Ordnance
WBG	Winklepeck Burning Grounds

SECTION 1.0 INTRODUCTION

1.1 Report Introduction

As of July 2017, three areas at the former Ravenna Army Ammunition Plant (RVAAP), now known as the Camp James A. Garfield Joint Military Training Center (Camp James A. Garfield), have designated Land Use Controls (LUCs); Ramsdell Quarry Landfill (RQL), Winklepeck Burning Grounds (WBG) and Load Line 12.

The Final Revised Interim Record of Decision (ROD) did not contain any formal LUCs for Load Lines 1, 2, 3 and 4. The Land Use for these areas was designated as National Guard Mounted Training (no digging). Until the remedial process is completed at these four Areas of Concern (AOCs), the Ohio Army National Guard (OHARNG) will ensure land use is maintained as Mounted Training – No Digging (tracked and wheeled vehicle use, no digging beyond 4 feet below ground surface (bgs), exposure of 24 hours/day for 39 days/year for 25 years). Annual inspections to confirm that the land use is consistent with the requirements of the Interim ROD are required.

As explained in greater detail in Sections 1.4 and 1.5, annual reports are required for the areas at Camp James A. Garfield that utilize LUCs and remedy components to protect the integrity of an environmental remedy (if present), human health, and the environment by limiting the activities that may occur at those areas.

This report reviewed the following Areas of Concern (AOCs):

- RVAAP-01 Ramsdell Quarry Landfill,
- RVAAP-05 Winklepeck Burning Grounds,
- RVAAP-08 – 11 Load Lines 1 – 4, and
- RVAAP-12 - Load Line 12.

A review of LUCs at Load Line 12 and remedy components at Load Lines 1-4 was completed in 2017 and this is the first annual report for those areas.

This annual report is laid out as follows:

Section 1.0 – General introduction to the facility, and a general description of Land Use Controls, monitoring and annual reporting requirements.

Section 2.0 – Annual LUC Monitoring Report for RQL.

Section 3.0 – Annual LUC Monitoring Report for WBG.

Section 4.0 - Annual Monitoring Report for Load Lines 1 – 4

Section 5.0 – Annual LUC Monitoring Report for Load Line 12

Section 6.0 – Conclusions

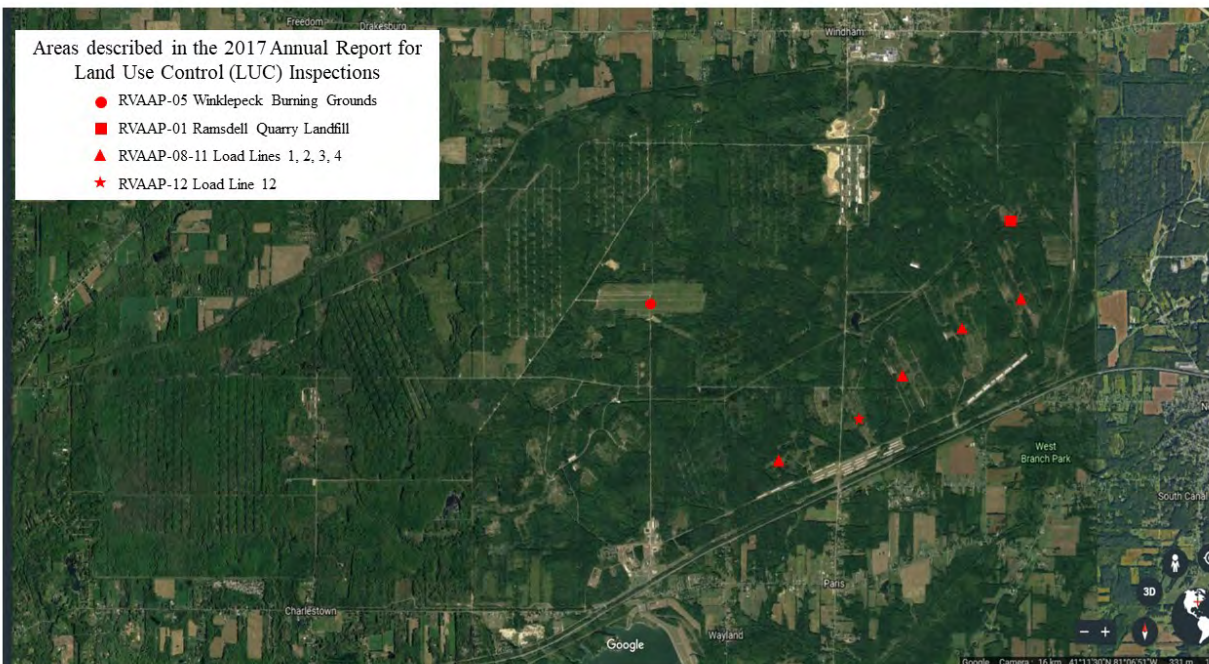
Section 7.0 – References

1.2 Facility Location

Camp James A. Garfield is located in northeastern Ohio within Portage and Trumbull counties, and is approximately three miles east/northeast of the City of Ravenna and one mile

north/northwest of the City of Newton Falls. The facility is approximately 11 miles long and 3.5 miles wide. The facility is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad to the south; Garret, McCormick, and Berry Roads to the west; the Norfolk Southern Railroad to the north; and State Route 534 to the east, as shown in Figure 1. In addition, the facility is surrounded by the communities of Windham, Garrettsville, Charlestown, and Wayland.

Figure 1.0 Map of Camp James A. Garfield Joint Military Training Center
(Former Ravenna Army Ammunition Plant)



1.3 Facility History

RVAAP was a load, assemble, and pack facility built to produce large-caliber artillery projectiles and bombs. Although RVAAP downsized after World War II, plant production lines were reactivated during the Korean and Vietnam Wars. Additionally, the plant conducted nearly continuous demilitarization of war stocks, refurbishment of inventoried ammunition, and minor research and development projects. By 1992, the installation's status changed from "inactive but maintained" to that of "caretaker."

The Department of Defense established the Installation Restoration Program (IRP) to provide guidance and funding for the investigation and cleanup of potential contamination and past operations caused by historical activities at military installations. The IRP began at RVAAP in 1989. Administrative accountability for the initial acreage of the facility was transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio in May 1999 with subsequent transfers to follow. To date, administrative accountability for the entire 21,683-acre facility has been transferred to the USP&FO for Ohio and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a military training site, Camp Ravenna. The RVAAP restoration

program involves cleanup of former production/operational areas throughout the facility related to former activities conducted under the RVAAP. The restoration program is currently managed by the Army National Guard (ARNG) with support from the OHARNG. The facility was renamed from Camp Ravenna to Camp James A. Garfield in October 2018.

1.4 Land Use Controls, Monitoring, And Reporting Requirements

All work, plans, and documentation for the RVAAP Restoration Program at Camp James A. Garfield must be in conformance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) [42 United States Code (U.S.C.) §9601, *et seq.*], the National Contingency Plan (NCP) [40 Code of Federal Regulations (C.F.R.) Part 300], and the Director's Final Findings and Orders (DFFOs) [June 10, 2004]. If residual contamination is left in place after the CERCLA remediation process is complete and the contamination still poses a potential for unacceptable risks or exceeds cleanup standards, then the Record of Decision (ROD) for the Areas of Concern/Munitions Response Sites (AOC/MRS) will require LUCs in accordance with the approved Remedial Design (RD).

LUCs include any physical, legal, or administrative mechanism that places restrictions on the use of, or limits access to, real property to prevent exposure to contaminants at concentrations greater than permissible levels or other safety issues. The intent of using these controls is to protect the integrity of the remedy (if present), human health, and the environment by limiting the activities that may occur at an AOC/MRS. When implemented, these LUCs provide protection to individuals using or working at the AOC/MRS by limiting and/or preventing activities which could potentially result in risks to those individuals. The Army is responsible for controlling land use on active installations such as Camp James A. Garfield and can internally restrict the use of such property. LUCs may include engineering controls such as fences, Seibert markers and signs, or administrative controls such as awareness training and restrictions on use including type of use and duration.

The Property Management Plan (PMP, dated August 2012) was in effect during 2017, and a revised PMP (dated March 30, 2018) that was being prepared during 2017 identifies LUCs and restrictions for specific AOCs/MRSs at Camp James A. Garfield and provides mechanisms to implement and manage those LUCs. The PMP is required under Army Regulation (AR) 210-20 and satisfies requirements of the DFFOs. The PMP lists general performance objectives of LUCs at Camp James A. Garfield as well as AOC/MRS specific LUCs detailed to address the concerns present on that particular AOC/MRS. According to Section 1.3 of both the 2012 and 2017 PMPs, it is the responsibility of the Army to implement, inspect, maintain and enforce LUCs set forth under the RVAAP Restoration Program.

1.5 Annual LUC Inspection and Monitoring Report Requirement

The PMP requires that the Army conduct a minimum of an annual inspection of the LUCs to confirm that the LUCs remain effective and still meet the LUC objectives, and also requires that the results of the annual LUC inspection be included in an Annual LUC Monitoring Report to be submitted to the Ohio EPA for review and approval. The Annual LUC Monitoring Report is required to evaluate the status and effectiveness of LUCs with a description of how LUC

deficiencies, including inconsistent land uses, were addressed. The Annual LUC Monitoring Reports will be used in the preparation of the CERCLA 121(c) Five-Year Review. This report presents the LUC monitoring activities that occurred in 2017 for RQL, WBG, and Load Line 12, as well as the monitoring of the remedy components at Load Lines 1, 2, 3 and 4.

Additionally, the PMP requires that a written certification will be submitted with the Annual Monitoring Report that states whether or not the LUCs remain in place and are effective. The written certifications for the sites listed above are presented in Section 6.7.

SECTION 2.0 ANNUAL LUC MONITORING REPORT FOR RAMSDELL QUARRY LANDFILL

2.1 Ramsdell Quarry Landfill

In accordance with the Camp Ravenna/former RVAAP PMP (dated August 2012) and Appendix A-2 and the Final Remedial Design for Soil and Dry Sediment at RVAAP-01 Ramsdell Quarry Landfill (RQL), a LUC inspection of RQL was conducted by Allan Brillinger (Vista Sciences Corporation in 2017, now with Chenega Tri-Services, LLC) on behalf of Camp Ravenna on September 15, 2017. This annual report covers the period of January 2017 through December 2017.

According to LUCs set forth in the *Final Remedial Design for Soil and Dry Sediment at the RVAAP-01 Ramsdell Quarry Landfill*, dated 9 April 2014, and memorialized in the PMP, periodic monitoring of LUCs, in the form of site inspections, is required to be conducted by the Army to confirm that the LUCs remain effective and still meet LUC objectives for continued remedy protectiveness. Site inspections are required to be conducted on an annual basis and inspections of the solid waste landfill are conducted in accordance with State of Ohio solid waste regulations and the Ohio Environmental Protection Agency (Ohio EPA) Director's Final Findings and Orders (Ohio EPA 2004). Additional LUC inspections may be conducted when landfill inspections are conducted as needed. The required Annual LUC Report is to be submitted to the Ohio EPA for review and approval.

The inspections shall include the following:

- Review of LUC training/inbriefs/maintenance and access logs and other documentation as applicable to RQL.
- Evaluation of activities at RQL to ensure that all activities executed within RQL are in compliance with the established digging restrictions and established exposure limits (Security Guard/Maintenance Worker - one (1) hour/day for 250 days/year for 25 years).
 - All digging or excavation within the quarry bottom is prohibited due to residual asbestos and contamination.
 - Digging and excavation on the landfill cap will be regulated by the post closure care plan and the Ohio solid waste regulations.
 - Due to not meeting the industrial/commercial standard, exposure monitoring for the full-time facility employee must be conducted to ensure and document that exposure at the AOC is not above the established exposure limit set for the Security Guard/Maintenance worker of one (1) hour/day for 250 days/year for 25 years.
- Inspection of warning signs on gates and fencing.
- Inspection of RQL fencing and gates.

LUC deficiencies or inconsistent land uses that are identified must be reported and identified on the inspection form/report and must also be reported to the Army National Guard (ARNG)/Ohio Army National Guard (OHARNG).

2.2 LUC Inspection Form for RVAAP-01 Ramsdell Quarry Landfill AOC

Review of LUCs – Management/Corrective Action

Activities and Land Use:

- a) *This AOC is to be managed as Restricted Access and is restricted from residential land use. Has residential use occurred? Have other land uses or land use changes occurred?*

No residential land use has occurred at the RQL. There have been no other land uses or land use changes over the past year.

- b) *What activities have occurred at RQL since last Inspection? Has any maintenance been performed at the AOC?*

Minor soil depressions and animal burrows within the AOC and both on and off the landfill cap were filled with clean soil and seeded in June 2017. Repair activities were conducted in accordance with solid waste regulations. Annual mowing was conducted for the RQL in October 2017.

Quarterly inspections in accordance with the State of Ohio were conducted by Vista Sciences Corporation and OHARNG in 2017 for the landfill portion of the RQL. The quarterly inspection letters/forms were sent to the Ohio EPA as required by the solid waste regulations and are on file at the Ohio EPA and the Camp Ravenna Environmental Office.

Semi-annual groundwater monitoring activities were conducted at the RQL in April/May, July and December 2017.

- c) *Are activities at RQL being conducted in compliance with established digging restrictions and established exposure limits (exposure for full-time employees who access RQL must be tracked)?*

The activities taking place at RQL are being conducted in accordance with the established digging restrictions. No digging has been conducted, only repair activities (soil fill) to repair any animal burrows or soil depressions on the landfill cap. Personnel exposure is being tracked with Log In sheets that any person entering and exiting the AOC must fill out. The completed Access Log sheets for January 2017 through December 2017 are presented in Appendix A.

- d) *Are the warning signs in place and functional? Please note condition and any deficiencies.*

The warning signs are posted on the RQL LUC fence and gate as required. Signs that read “DANGER – Unauthorized Personnel Keep Out” and “Danger – Asbestos Waste Disposal Site – Do Not Create Dust – Breathing Asbestos is Hazardous to Your Health” are posted on the gates and the LUC fence every 300 feet.

- e) *Is the RQL fencing and gates intact and in good condition? Please note condition and any deficiencies.*

The RQL fencing and gate are intact and in good condition. There are no deficiencies with the fence and gates.

Inspections and Reporting

Inspections are required on an annual basis. Periodic monitoring inspections may be conducted as needed. Are annual inspections being conducted as required? Have any additional inspections been completed?

The annual LUC inspection was conducted on September 15, 2017. Other inspections in 2017 included quarterly landfill inspections conducted by Vista Sciences Corporation and the OHARNG as required by the State of Ohio solid waste regulations. Photographs of the RQL LUC area taken during 2017 are presented in Appendix B.

An Annual Report is required. Has the annual report been completed and submitted to the Ohio EPA?

Annual LUC Monitoring Reports for RQL were completed in 2015 and 2016. This is the third Annual Report being completed for RQL.

Training/Inbriefs (as applicable to RQL):

Are RQL LUC training and/or inbriefs (for those who need to access RQL) being conducted as applicable? Describe the training (content/who attended/who provided/documentation of training).

LUC training is provided annually to all Camp Ravenna staff and tenant units at Camp Ravenna, and was conducted on April 13 and 18, 2017. The LUC training is typically provided by Katie Tait and/or Tim Morgan, Camp Ravenna -Environmental. The training provides an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/Munitions Response Sites (MRS), and specific LUC and other restrictions for RQL, as well as other areas at Camp James A. Garfield. Training materials and rosters are on file in the Camp Ravenna Environmental Office. Training was conducted for additional Camp Ravenna staff that missed the April training dates as needed.

A "Land Use Control (LUC) Brief for Contractors/Personnel" was conducted for all personnel/contractors that entered the RQL LUC area (required on an annual basis). The training consisted of a review of the RQL site history, the environmental hazards present at the RQL, the LUC s that have been instituted, and the requirements of all personnel that enter the LUC area. All personnel that have received the brief sign the briefing form that states that they have been briefed and understand the RQL LUC requirements, and that they will comply with all requirements. The briefing was provided for eight contractors in 2017. The signed briefing forms are kept on file at the Camp Ravenna Environmental office.

If training was not provided, explain why and what corrective actions were initiated.

Not applicable.

Is access to RQL for full-time employees of the facility being logged in order to track exposure? Please review access logs to ensure exposure is within the established exposure limits.

Access to anyone entering the RQL is being tracked with the Access Log. The established exposure limits are one (1) hour/day for 250 days/year for 25 years. The most any one worker was working inside the RQL area from September 15, 2016 through December 2017 based on the log-in sheets was 20 hours for a Maintenance Worker. The Maintenance Worker that had the 23.5 hours within the LUC area spent 7.5 hours conducting soil repairs and 16 hours mowing. Therefore exposure is within the established exposure limits.

LUC Violations (if any):

Description of any observed/noted LUC violation(s) as identified.

No LUC violations were noted during the reporting period (January 2017 through December 2017).

Date of Notification of LUC violations (if applicable) to ARNG/OHARNG:

Not applicable.

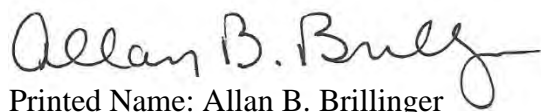
Description of any corrective actions taken to remedy observed LUC violations or recommended corrective actions:

Not applicable.

Additional Notes/Comments:

Original Inspection Completed by:

Signature:



Printed Name: Allan B. Brillinger

Title: Program Manager

Organization: Vista Sciences Corporation

Date: September 15, 2017

SECTION 3.0 ANNUAL LUC MONITORING REPORT FOR WINKLEPECK BURNING GROUNDS

3.1 Winklepeck Burning Grounds

In accordance with the Camp Ravenna/former RVAAP Property Management Plan (PMP) dated August 2012 and Appendix A-1, quarterly LUC inspections of RVAAP-05 Winklepeck Burning Grounds (WBG) were conducted By Vista Sciences Corporation for Fiscal Year (FY) 2017 (October 2016 – September 2017). Three of the quarterly LUC inspections were conducted in calendar year 2017 and are presented in Appendices D, E and F. A Removal Action (RA) at WBG was completed in August 2017 that removed contaminated soil and allowed the site to achieve Commercial/Industrial Use standards. Since the site now meets the Commercial/Industrial Use standards, the LUCs at WBG were revised after the RA was completed (documented in the Final PMP dated March 2018) so that (among other things), an annual LUC inspection was required instead of quarterly inspections.

3.2 LUC Quarterly Inspection and Report Mechanisms for WBG

The 3 quarterly LUC inspections were conducted as per the requirements of the 2012 PMP, which was in effect in 2017. The 2012 PMP states that site inspections will be conducted on a quarterly basis at WBG. The WBG Inspectors Quarterly Inspection Report Form for the quarterly inspections completed in 2017 states that all quarterly inspections include evaluation of the following:

- Review of LUC training and documentation as applicable to WBG.
- Evaluation of the facility perimeter fence to ensure that it is maintained in a manner that is protective and effective and deters trespassers.
- Evaluation of activities at WBG to ensure that all activities executed within WBG are in compliance with OHARNG range safety regulations/standard operating procedures (SOPs), established digging restrictions, and established exposure limits. All digging, intrusive activities, or excavation on the WBG AOC outside of the Unexploded Ordnance (UXO)/ MEC-cleared areas within the MK-19 Grenade Machinegun Range is prohibited with the following exceptions:
 - Routine maintenance of roads, ditches, culverts and activities listed in A-1.4 of the PMP (maintenance of targetry and associated lifting mechanisms, range maintenance activities including removal of practice rounds, vegetation management, compatible natural resource management activities, nuisance wildlife control, drainage maintenance, wetland delineation, grassland management, scientific research and sampling activities);
 - Ground surface repairs by authorized range personnel in support of authorized range activities;
 - Digging along target array areas by authorized range personnel to a depth of one (1) foot below ground surface (bgs).

This shall also include evaluation of required range signage. The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations.

- Evaluation of groundwater activities to ensure that any groundwater activities are being conducted in a manner consistent with established LUCs. Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:
 - The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent Facility-Wide Sampling and Analysis Plan (FWSAP) as part of the AOC-specific IRP or Facility-Wide Ground Water Monitoring Program Plan (FWGWMPP).
 - The abandonment and replacement of monitoring wells damaged by activities conducted on the Installation and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio EPA guidance, the most recent FWSAP, and applicable Ohio Administrative Code requirements.

The LUC inspections generally consisted of the following:

- An inspection of the Camp Ravenna perimeter fence.
- A review of current land uses at WBG to determine if they are in compliance with the LUCs.
- A review of activities at WBG since the previous inspection to determine if they are in compliance with the LUCs.
- A review of required warning signage.
- A review of training applicable to WBG LUCs.
- A description of any noted LUC deficiencies, any corrective actions taken to remedy the LUC deficiencies, and/or any recommended corrective action.

The following WBG quarterly inspections were conducted in 2017 by Don Trocchio of Vista Sciences Corporation:

- FY 2017 Second Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds (report dated April 12, 2017, inspection completed January 30, 2017). This report is presented in Appendix D.
- FY 2017 Third Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds (report dated June 27, 2017, inspection completed May 1, 2017). This report is presented in Appendix E.
- FY 2017 Fourth Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds (report dated May 21, 2018, inspection completed July 27, 2017). This report is presented in Appendix F.

SECTION 4.0 ANNUAL LUC MONITORING REPORT FOR LOAD LINES 1, 2, 3 AND 4

4.1 Load Lines 1, 2, 3, and 4

According to the *Final Interim Record of Decisions (ROD) for the Remediation of Soils at Load Lines 1 through 4 at the Ravenna Army Ammunition Plant*, dated January 2007, the selected remedy included soil excavation and the following components:

- Groundwater monitoring to ensure the remedy did not impact groundwater;
- Maintenance of building slabs and foundations; and
- Five year reviews in accordance with CERCLA 121(c) and 300.430(f)(4)(ii).

The 2007 Interim ROD further indicated that “for the selected remedy, groundwater monitoring will be performed for five years at select existing wells in LLs 1-4 to monitor for potential impacts to groundwater from remedy implementation. Groundwater monitoring data will supplement data from the Facility-Wide Groundwater Monitoring Program. Groundwater samples will be collected semi-annually for the first two years after remedy implementation. The sampling frequency thereafter will be based on the laboratory results. Groundwater samples will be submitted to an environmental chemistry laboratory for analysis of the full suite of constituents (i.e., VOCs, SVOCs, PCBs, pesticides, explosives, propellants and TAL metals). Findings will be evaluated in the context of the facility-wide groundwater monitoring program and any action will be determined by the Army, with approval by Ohio EPA. In addition, the concrete slabs and building foundations that remain in place after remediation will be inspected periodically to ensure their integrity has not been compromised allowing infiltration to potentially contaminated soils underneath. The remedial action will be subjected to five-year reviews as part of the CERCLA process to assure that human health and the environment are being protected.” According to the Interim ROD, the intended future use of the AOCs is Mounted Training – No Digging.

Based on the 2007 Interim ROD, the U.S. Army will conduct the following to ensure the components of the selected remedy are met:

- Ensure that groundwater monitoring was conducted for five years after the remedial action was completed in 2007/2008;
- Ensure that building slabs and foundations were maintained and inspected periodically if in place;
- Ensure land use is maintained as Mounted Training – No Digging (tracked and wheeled vehicle use, no digging beyond 4 feet bgs, exposure of 24 hours/day for 39 days/year for 25 years); and
- Conduct five-year reviews as necessary.

The LUC Inspection Form for Load Line 1, 2, 3 and 4 were assembled in October 2017, and was included as part of the Final PMP in March 2018. Due to funding and contracting issues, the 2017 annual inspection for these areas was not conducted until July 2018.

4.2 Load Lines 1 – 4 Annual Inspection Form

<p align="center">Camp Ravenna Joint Military Training Center (Camp Ravenna)/ Former Ravenna Army Ammunition Plant (RVAAP) Inspection Form for RVAAP-08 Load Line 1, RVAAP-09 Load Line 2, RVAAP-10 Load Line 3, and RVAAP-11 Load Line 4 Areas of Concern (AOC)</p> <p>In accordance with the Camp Ravenna/former RVAAP PMP (dated March 30, 2018), an annual inspection of RVAAP-08, 09, 10, and 11 Load Lines 1, 2, 3 and 4 was conducted by Allan Brillinger (Chenega Tri-Services, LLC) on behalf of Camp Ravenna on July 27, 2018.</p> <p>Inspection Form for Load Lines 1, 2, 3 and 4</p>
<p>1. Activities and Land Use:</p> <p>a. This AOC is to be managed as Mounted Training – No Digging. What activities have occurred at LL1 – 4 within the last year? Are the activities within the established use for the AOCs?</p> <p>The only activities at LL1 – 4 in 2017 were groundwater monitoring well sampling and mowing of access roads. The sites have not been used for training.</p> <p>b. Are the activities being conducted at LL1 – 4 in compliance with established digging restrictions and exposure parameters?</p> <p>No digging was observed or reported to have taken place at the AOCs in 2017.</p>
<p>2. Inspections and Reporting:</p> <p>a. Has a 5-Year Review been completed for this AOC as required?</p> <p>Two 5-Year Reviews have been completed for these AOCs. The first 5-Year Review was completed in August 2012 and the second 5-Year Review was completed in June 2017.</p>
<p>3. Groundwater Monitoring:</p> <p>a. Was groundwater monitoring conducted for 5 years after the remedial action in accordance with the Interim ROD?</p> <p>Groundwater monitoring has been performed at least annually at the AOCs since 2005 as part of a facility-wide groundwater monitoring program.</p>
<p>4. Concrete Slabs and Building Foundations:</p> <p>a. Were the concrete slabs and building foundations inspected periodically to ensure their integrity has not been compromised allowing infiltration to potentially contaminated soils underneath?</p> <p>Not Applicable. Slabs and building foundations have been removed.</p>
<p>Additional Notes/Comments</p>

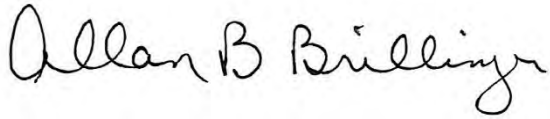
Inspection Completed by:

Date: July 27, 2018

Name/Title: Allan B. Brillinger, Program Manager

Organization: Chenega Tri-Services, LLC

Signature:

A handwritten signature in black ink that reads "Allan B Brillinger". The signature is written in a cursive style with a large initial 'A' and 'B'.

SECTION 5.0 ANNUAL LUC MONITORING REPORT FOR LOAD LINE 12

5.1 Load Line 12

According to LUCs set forth in the *Final Remedial Design for the RVAAP-12 Load Line 12*, dated 1 October 2009, and memorialized in the PMP, periodic monitoring of LUCs, in the form of site inspections, is required to be conducted by the Army to confirm that the LUCs remain effective and still meet LUC objectives for continued remedy protectiveness. Site inspections are required to be conducted as necessary but not less than once per year. The required Annual LUC Report is to be submitted to the Ohio EPA for review and approval.

Based on the 2009 Remedial Design document, the U.S. Army will implement LUCs to achieve the performance objectives listed below for LL12:

- Maintain the Camp Ravenna perimeter fence – Land use of LL12 shall be limited by the maintenance of the existing Camp Ravenna, a perimeter fence which shall be of 6-foot, chain-link fence topped with v-shaped bracket slanting inward and outward with a three-strand barbed wire bracket.
- Restrict future land use to National Guard mounted training – Land use shall be limited to use of LL12 for National Guard mounted training operations. Activities at LL12 shall be limited to the following: tracked and wheeled vehicle operations and associated training activities along with training area development and maintenance, maintaining the integrity of monitoring wells, road and culvert repair, routine ditch maintenance, vegetation management, and compatible natural resources management activities;
- Maintain a LUC training program;
- Limit activities to tracked and wheeled operations that are consistent with the National Guard mounted training scenario and other essential security, safety, and natural resources management activities (National Guard Trainee – Mounted Training - 24 hours/day for 39 days/year for 25 years); and
- Prohibit digging beyond four (4) feet below ground surface (bgs) except for routine maintenance of roads, ditches and culverts, and ground surface repairs resulting from maneuver damage.

Therefore, the annual LUC inspection shall include the following (at a minimum):

- Inspection of the Camp Ravenna perimeter fence;
- Review of activities at LL12 including exposure timeframes, signage/markers, types of activities performed, and any disturbance/digging activities;
- Review of LUC training program as applicable to LL12;

LUC deficiencies or inconsistent land uses that are identified must be reported and identified on the inspection form/report and must also be reported to the ARNG/OHARNG.

5.2 Load Line 12 Annual Inspection Form

In accordance with the Camp Ravenna/former RVAAP PMP (dated March 30, 2018), a LUC

inspection of RVAAP-12 Load Line 12 was conducted by Allan Brillinger (Chenega Tri-Services, LLC) on behalf of Camp Ravenna on July 27, 2018.

Review of LUCs – Management/Effectiveness/Corrective Action

1. Activities and Land Use:

- a. This AOC is to be managed as National Guard Trainee - Mounted Training. What activities have occurred at LL12 within the last year? Are the activities within the established limitations of use for the AOC?

The only activities at LL12 in 2017 were groundwater monitoring well sampling and mowing of access roads. The site has not been used for training.

- b. Are the activities being conducted at LL12 in compliance with established digging restrictions and exposure parameters? How is this being tracked and managed?

No digging was observed or reported to have taken place at the AOC in 2017.

- c. Are signage/markers in place to identify areas where the LUCs apply? Are they being maintained?

Although not required for this AOC, appropriate signage is posted at the locked Load Line gates limiting access to authorized personnel only.

- d. Is the Camp Ravenna perimeter fence and associated gates being maintained in order to be an effective and protective control and deter trespassers?

The 6-foot high perimeter fence around Camp Ravenna was a LUC for WBG (see Section 3) for 2017. The fence was inspected quarterly for WBG and the issues noted for the fence in 2017 are documented in the quarterly reports presented in Appendices D, E, and F of this report.

2. Inspections and Reporting:

- a. Inspections are required on an annual basis. Are annual inspections being conducted as required?

The LUCs for Load Line 12 were instituted in 2017. Due to budget and contract issues, the LUC inspection for 2017 was conducted on his first annual LUC inspection for Load Line 12 was conducted on July 27, 2018. As described in Item 1 above, the perimeter fence was a LUC for WBG in 2017 and was inspected three times during 2017.

- b. An Annual Report is required. Has the annual report been completed and submitted to the Ohio EPA? Did the annual report provide a written certification stating whether or not the LUCs remain in place and effective?

This is the first annual LUC Inspection report for Load Line 12. It contains written certification (see Section 6) stating that the LUCs in place are in place and effective.

- c. Are the LUCs for LL12 incorporated into the Property Management Plan (PMP) (i.e., map indicating the location and dimensions of the AOC with the LUC location, environmental overlay and appropriate Ohio EPA notice procedures)?

The LUCs for Load Line 12 have been incorporated into the PMP dated March 2018.

- d. Has a 5-Year Review been completed for this AOC as required?

Two 5-Year Reviews have been completed for these AOCs. The first 5-Year Review was completed in August 2012 and the second 5-Year Review was completed in June 2017.

2. Training/Inbriefs (as applicable to LL12):

- a. Is a LUC training program in place and being conducted as applicable to LL12? Describe the training (content/who attended/who provided/documentation of training).

LUC training is provided annually to all Camp Ravenna staff and tenant units at Camp Ravenna, and was conducted on April 13 and 18, 2017. The LUC training is typically provided by Katie Tait and/or Tim Morgan, Camp Ravenna-Environmental. The training provides an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/Munitions Response Sites (MRS), and specific LUC and other restrictions for AOCs at Camp Ravenna. Training materials and rosters are on file in the Camp Ravenna Environmental Office. Training was conducted for additional Camp Ravenna staff that missed the April training dates as needed.

- b. If training was not provided, explain why and what corrective actions were initiated.

Not Applicable.

4. LUC Evaluation and Reporting of Violations (if any):

- a. Are LUCs in place and being effectively managed at LL12?

Land Use Controls are in place and being effectively managed at Load Line 12.

- b. Were any LUC violations or deficiencies noted?

(Provide a description of any observed/noted LUC violation(s) as identified and a date of notification of LUC violations (if applicable) to ARNG/OHARNG. Also provide a description of any corrective actions taken to remedy observed LUC violations or recommended corrective actions.)

The quarterly reports presented in Appendices D, E, and F list the dates that perimeter fence deficiencies were reported to the Army, and the corrective actions taken in 2017.

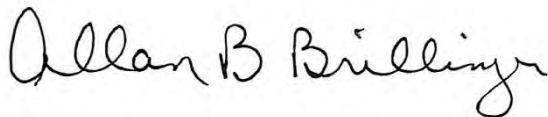
Additional Notes/Comments:

Date: July 27, 2018

Name/Title: Allan B. Brillinger, Program Manager

Organization: Chenega Tri-Services, LLC

Signature:



SECTION 6.0 CONCLUSION

6.1 General LUC Training

The OHARNG provided training to all Camp James A. Garfield staff and tenant units including an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/MRSs, and specific restrictions for RQL and WBG (See Section 2.2 and 3.3). All training requirements presented in the PMP were met by the OHARNG in 2017. Training materials and rosters are on file in the Camp James A. Garfield Environmental Office.

6.2 Land Use Consistency and Land Use Control Effectiveness at RQL

The land use at RQL is Restricted Access. Based on the 2017 inspection, there are no inconsistent uses or activities discovered or reported at RQL. All activities conducted within the RQL AOC were performed in compliance with established digging restrictions, and established exposure limits as described in the PMP. This indicates current LUC objectives are being met to ensure the remedy is effective and protective.

An in-brief was provided to all personnel entering the RQL LUC area that included an overview of the history of the RQL, the land use controls/restrictions, and specific restrictions for RQL. All training and maintenance requirements specific to the RQL LUC were met by the OHARNG/ARNG during this reporting period and is documented in the pages of this report.

6.3 Land Use Consistency and Land Use Control Effectiveness at WBG

Per the PMP (2012) which was in effect in 2017, the land use for the WBG is Small Arms Range (including the existing MK-19 Grenade Machinegun Range) for the OHARNG Military Use and Training. Based on the completed inspections during 2017, there were no inconsistent uses or activities discovered or reported at WBG. All training and activities conducted within the WBG AOC were performed in compliance with OHARNG range safety regulations/SOP, established digging restrictions, and established exposure limits as described in the PMP. This indicates current LUC objectives are being met to ensure the remedy is effective and protective of human health and the environment.

The LUCs for the WBG AOC were evaluated during the first 3 quarters in 2017 as stated in the PMP using the parameters listed in Section 3.1 LUC Quarterly Inspection and Reporting Mechanisms for WBG. These Quarterly LUC Inspections show all LUCs requirements presented in the PMP for WBG remained in place and were effective through 2017.

Units that utilize the range at WBG also receive an in brief prior to firing on the range and are not allowed down range. Contractors who access WBG are also provided with an in-brief which informs them of the LUCs/restrictions at the AOC. All training, operation, and maintenance requirements specific to WBG presented in the PMP were met by the OHARNG in 2017 and is documented in the FY 2017 Quarterly LUC Inspection Reports included in Appendix D, E and F of this report.

6.4 Land Use Consistency and Land Use Control Effectiveness at Load Lines 1, 2, 3 and 4

The Load Lines 1, 2, 3 and 4 sites are limited to Mounted Training - No Digging for the Trainee. Load Lines 1, 2, 3 and 4 were not used for training in 2017.

6.5 Land Use Consistency and Land Use Control Effectiveness at Load Line 12

The current acceptable land use at Load Line 12 is for Mounted Training - National Guard Trainee. The Camp James A. Garfield perimeter fence is a Land Use Control for Load Line 12. In 2017, the Camp James A. Garfield perimeter fence was a LUC for WBG and quarterly inspections were conducted. The land use control effectiveness of the Camp James A. Garfield perimeter fence is presented in Section 3 and Section 6.3. In 2018, the Camp Ravenna perimeter fence is no longer a LUC for WBG, but is a LUC for Load Line 12. One annual inspection of the Camp Ravenna perimeter fence will be conducted in 2018 similar to the previous quarterly inspections conducted for WBG.

Additionally, use of the AOC is limited to National Guard mounted training operations. Digging below 4 feet is restricted (with certain exceptions). Load Line 12 was not used for National Guard training in 2017.

6.6 Land Use Control Deficiency Corrective Action at RQL, WBG, Load Lines 1 through 4 and Load Line 12

The main purpose of inspecting and monitoring LUCs is to identify and correct LUC deficiencies and violations. LUC inspection reports allow the OHARNG to document consistent land use, as well as corrective action if deficiencies are encountered.

For the RQL, inspections were conducted by personnel familiar with the RQL so that changes (if present) were readily noted. Minor fence repairs and soil cover deficiencies were noted and corrected as weather conditions allowed. These repairs were tracked throughout the year to monitor their effectiveness.

For the WBG, each quarterly inspection has been conducted using the same parameters, resulting in a uniform and concise system of identification and repair of perimeter fence defect call outs. Of the total number of perimeter fence defect call-outs identified, approximately 80% were repaired by the next quarterly inspection.

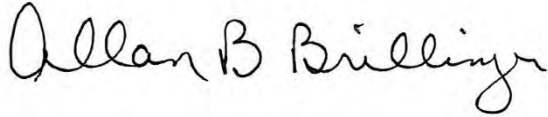
For Load Lines 1, 2, 3 and 4, LUC deficiencies were not observed during the annual inspection and periodic site visits by personnel familiar with the sites. Corrective actions were not needed for these AOCs during 2017.

For Load Line 12, LUC deficiencies were not observed during the annual inspection and periodic site visits by personnel familiar with the sites. Corrective actions were not needed for this AOC during 2017, other than those noted above for the perimeter fence.

6.7 Land Use Control and Remedy Component -Effectiveness Certification

This certifies that to the best of my knowledge and belief all of the information contained in this Annual LUC Monitoring Report is accurate, and that the Land Use Controls instituted for the

Ramsdell Quarry Landfill, Winklepeck Burning Grounds, Load Lines 1 through 4 and Load Line 12 are in place and remain effective.



(signature)

August 6, 2018

(date)

Allan B. Brillinger
(printed name)

Program Manager, Chenega Tri-Services, LLC
(Title).

SECTION 7.0 REFERENCES

General

Final Property Management Plan for the Designated Areas of Concern and Munitions Response Sites, Volume One – Version 1.0. U.S. Army Corps of Engineers. August 2012.

Ravenna Army Ammunition Plant Restoration Program website: www.rvaap.org

Final Remedial Action Report for Soil and Dry Sediment at RVAAP-01 Ramsdell Quarry Landfill, Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio. US Army Corps of Engineers. January 30, 2015.

Final Revised Property Management Plan for the Designated Areas of Concern and Munitions Response Sites, Version 2.0, Former Ravenna Army Ammunition Plant, Camp Ravenna Joint Military Training Center, Portage and Trumbull Counties, Ohio, US Army Corps of Engineers. March 30, 2018.

Ramsdell Quarry Landfill

Final Remedial Action Report for Soil and Dry Sediment at the RVAAP-01 Ramsdell Quarry Landfill. Leidos. 30 January 2015.

Final Remedial Design for Soil and Dry Sediment at the RVAAP-01 Ramsdell Quarry Landfill. Leidos. 9 April 2014.

Final Record of Decision Amendment for the RVAAP-01 Ramsdell Quarry Landfill at the Ravenna Army Ammunition Plant, Ravenna, Ohio. SAIC. 24 May 2013.

Revised Final Modified Proposed Plan for Soil and Dry Sediment at RVAAP-01 Ramsdell Quarry Landfill at the Ravenna Army Ammunition Plant, Ravenna, Ohio. SAIC 2012. 6 June 2012.

Revised Final Remedial Design for the RVAAP-01 Ramsdell Quarry Landfill at Ravenna Army Ammunition Plant. SAIC. 17 June 2010.

Winklepeck Burning Grounds

Final Remedial Action Completion Report for the Soil Removal Remedy at RVAAP-05 Winklepeck Burning Grounds. Tetra Tech. February 2018.

Final Remedial Design Supplement Soil Removal Action at RVAAP-05 Winklepeck Burning Grounds. Tetra Tech. 30 June 2016.

Final Remedial Design for the Post-ROD Changes to the Remedy at RVAAP-05 Winklepeck Burning Grounds, Former Ravenna Army Ammunition Plant/Camp Ravenna. USACE. 27 August 2015.

Final Record of Decision for Soil and Dry Sediment at RVAAP- 05 Winklepeck Burning Grounds at Ravenna Army Ammunition Plant. SAIC. Aug 2008.

Proposed Plan for the Winklepeck Burning Grounds, Ravenna Army Ammunition Plant, Ravenna, Ohio. SAIC. Dec 2005.

Load Lines 1, 2, 3 and 4

Final Revised Interim Record of Decision for the Remediation of Soils at RVAAP-08, 09, 10, and 11 Load lines 1 – 4. Shaw Environmental; USACE. 18 January 2007.

Final Proposed Plan for the Remediation of Soils at Load Lines 1 through 4 at the Ravenna Army Ammunition Plant Ravenna, Ohio, July 2005.

Load Line 12

Final Plan for Wet Sediment and Surface Water at RVAAP 12 Load Line 12. Leidos. 9 November 2017.

Final Remedial Design for RVAAP-12 Load Line 12 at Ravenna Army Ammunition Plant, October 2009.

Final Record of Decision for Soil and Dry Sediment at RVAAP-12 Load Line 12. SAIC Engineering of Ohio. 14 April 2009.

Appendix A

RQL Access Logs

Sign In/Out Sheet for Ramsdell Quarry Landfill – Please sign in and out when entering and exiting the Ramsdell Quarry Landfill.
Please also note what activities were performed and what areas of the AOC were accessed.

Name	Date	Time In	Time Out	Description of Activities Performed (i.e., mowing, gw sampling, etc)	Areas Accessed (please choose and check)
Andy Ops. ^{4/16/16} ATC	11/15/16	1238	1520	monthly well sampling	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Al Brillinger VSC	12-02-2016	11:15	11:45	weekly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Al Brillinger VSC	01-06-2017	11:20	11:50	weekly insp.	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Kim Kroenke ATC	1/13/17	1045	1510	groundwater sampling	<input checked="" type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Al Brillinger VSC	1-20-17	11:20	11:50	weekly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Al Brillinger VSC	1-24-17	11:50	12:20	weekly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Al Brillinger VSC	3-23-17	10:00	11:00	quarterly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Brod Kline	3-23-17	10:10	11:00	Quarterly Inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Jack Madved	3-25-17	10:10	11:00	"	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Joselyn Adams	3-23-17	10:00	11:00	"	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap

Sign In/Out Sheet for Ramsdell Quarry Landfill – Please sign in and out when entering and exiting the Ramsdell Quarry Landfill.
Please also note what activities were performed and what areas of the AOC were accessed.

Name / Company	Date	Time In	Time Out	Description of Activities Performed (i.e., mowing, gw sampling, etc)	Areas Accessed (please choose and check)
JANSEN RIZZA	4/13/17	10:02	11:24	GW GAUGING	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
JEFF SHUBERT	4/13/17	10:02	11:24	GW GAUGING	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Tom ST. JOHN	5/1/17	0943	11:42	GW Monitoring	<input checked="" type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Elton Kunzler	5-1-17	0943	15:49	GW monitoring	<input checked="" type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Charles Disetzin	5-1-17	0943	11:42	GW Monitoring	<input checked="" type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Mark Hambril	5-1-17	0952	App	GW monitoring	<input checked="" type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
GARY & ESTER	5-23-17	9:00	11:30	Repair	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
AL BRILLINGER VSC	6-9-17	11:30	12:00	weekly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
David Klin	6/19/17	12:00	12:45	Quarterly Inspect	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Jack Madved	6/19/17	12:00	12:45	Quarterly Inspection	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap

Sign In/Out Sheet for Ramsdell Quarry Landfill – Please sign in and out when entering and exiting the Ramsdell Quarry Landfill.
Please also note what activities were performed and what areas of the AOC were accessed.

Name / Company	Date	Time In	Time Out	Description of Activities Performed (i.e., mowing, gw sampling, etc)	Areas Accessed (please choose and check)
Al Brillinger / Vsc	6-20-17	2:15	3:00	quarterly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Jack Madueh	9/25/17	1000	1100	quarterly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Brad Kline	9/25/17	1000	1100	quarterly inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Randy Floom	10/26/17	1100	1500	Mowing	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Brad Kline	10/26/17	1100	1120	Mowing	<input type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Jack Madueh	11/8/17	1045	1200	Quarterly Inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Brad Kline	11/8/17	1045	1200	Quarterly Inspection	<input checked="" type="checkbox"/> Quarry bottom <input type="checkbox"/> Groundwater monitoring wells <input checked="" type="checkbox"/> Landfill cap
Devin Rowell / Lesley Myers / Cardno	12/7/17	1300	16:24	Quarterly sampling	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Jessie Cain / Dean Bonder / Cardno	12/7/17	13:10	16:15	Quarterly Sampling	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap
Danyelle Phillips / Caitlin Jafolla	12/7/17	14:20	16:24	Quarterly sampling	<input type="checkbox"/> Quarry bottom <input checked="" type="checkbox"/> Groundwater monitoring wells <input type="checkbox"/> Landfill cap

Appendix B

RQL Photographs



West part of Ramsdell Quarry Landfill, looking east from west fence.



South side of Ramsdell Quarry Landfill, looking east from southwest corner.



West side of Ramsdell Quarry Landfill, looking south.



East side of Ramsdell Quarry Landfill, looking north from southeast corner.

Appendix C

2017 RVAAP-05 Winklepeck Burning Grounds

Quarterly Land Use Control Index Maps

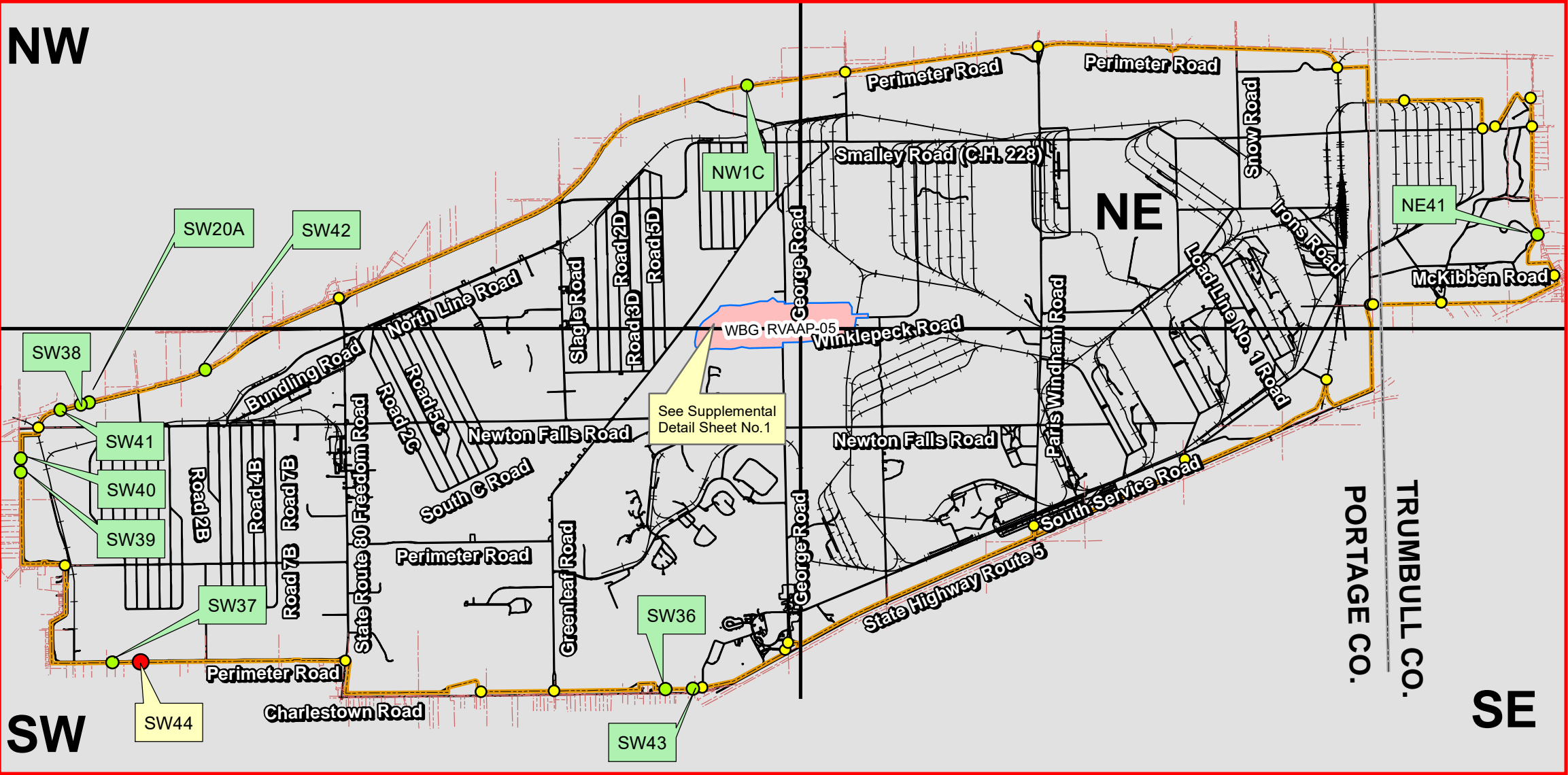


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

- Opening in fence (2'≥) and/or fabric missing/damaged (1 Location)
- Repaired (11 Locations)
- Gates (26 locations for reference only, no detail sheets)
All gates appear to be maintained and are in working order

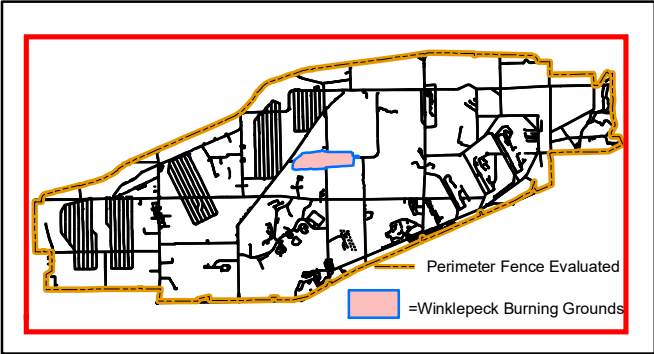
— Perimeter Fence Evaluated (29.6 miles)

Detail Sheet
Callout

Detail Sheet
Repair Callout

SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

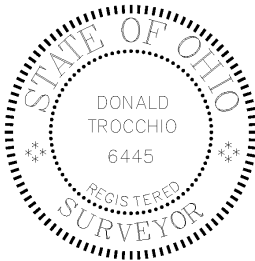
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in January 2017 for:



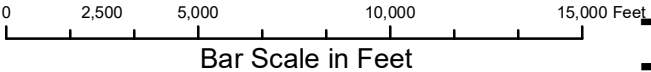
US Army Corps of
Engineers

600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202

Louisville District



Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



Camp Ravenna JMTc
1438 State Route 534 SW
Newton Falls, OH 44444
Don Trocchio, PS
don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

FIGURE 1 INDEX MAP

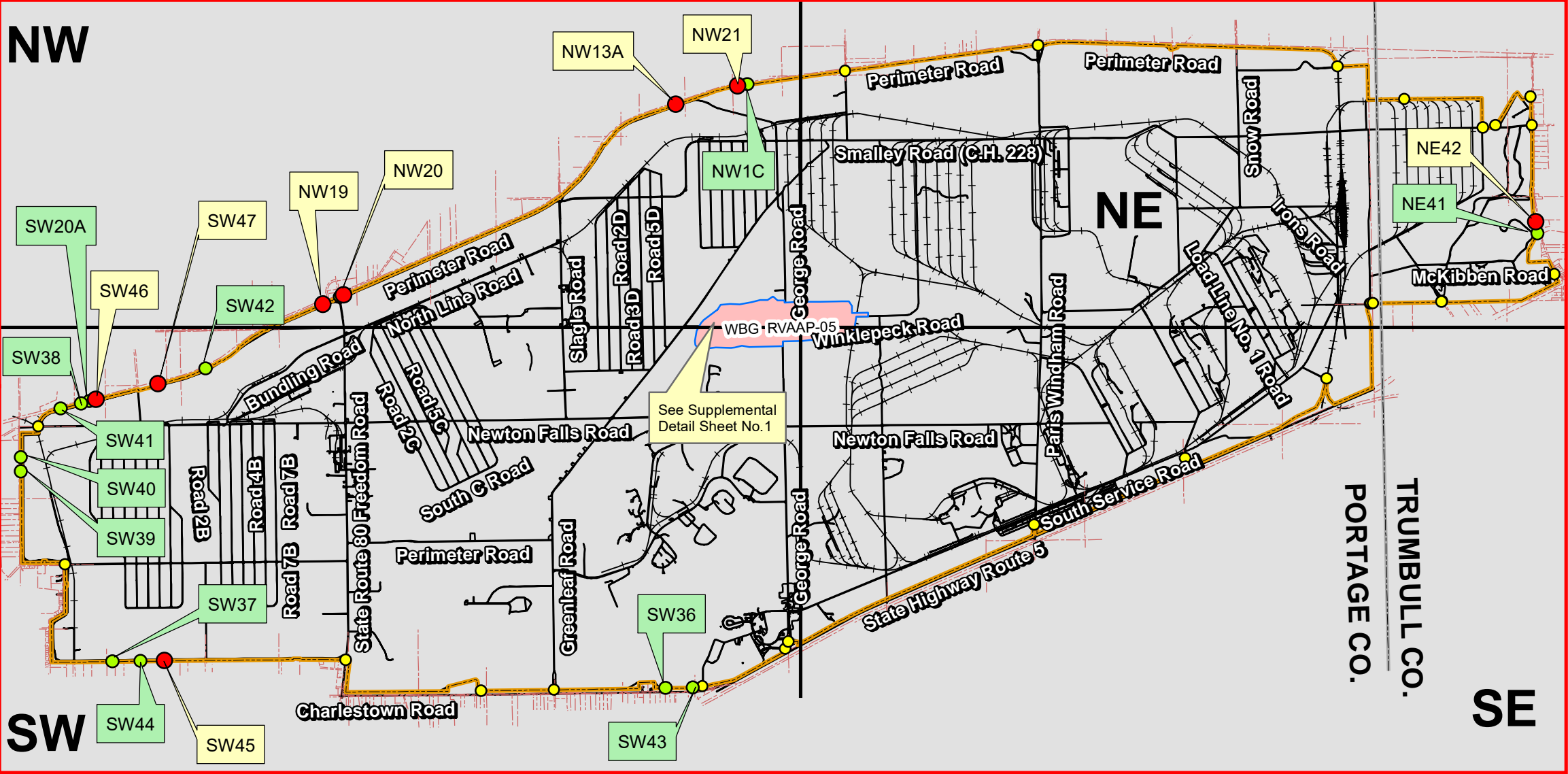


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

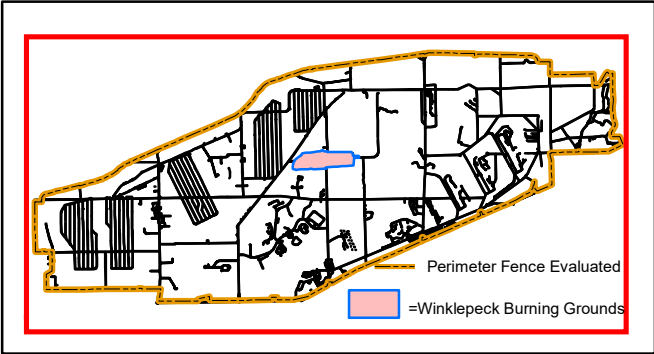
- Opening in fence (2'≥) and/or fabric missing/damaged (8 Locations)
- Repaired (12 Locations)
- Gates (26 locations for reference only, no detail sheets)
All gates appear to be maintained and are in working order

— Perimeter Fence Evaluated (29.6 miles)

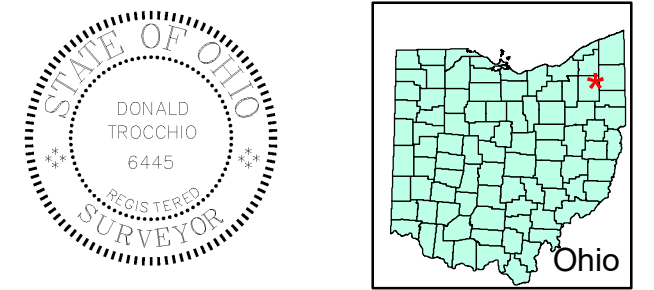
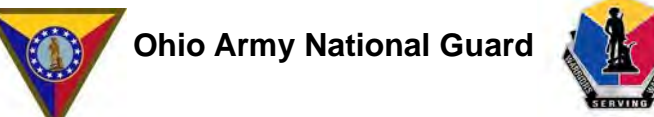
Detail Sheet Callout	Detail Sheet Repair Callout
----------------------	-----------------------------

SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



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US Army Corps of Engineers
600 Dr. Martin Luther King Jr. Place
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Louisville District

Projection Datum is NAD83, Ohio State Plane Rectangular Grid, North Zone

0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet

Camp Ravenna JMTC
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FIGURE 1 INDEX MAP

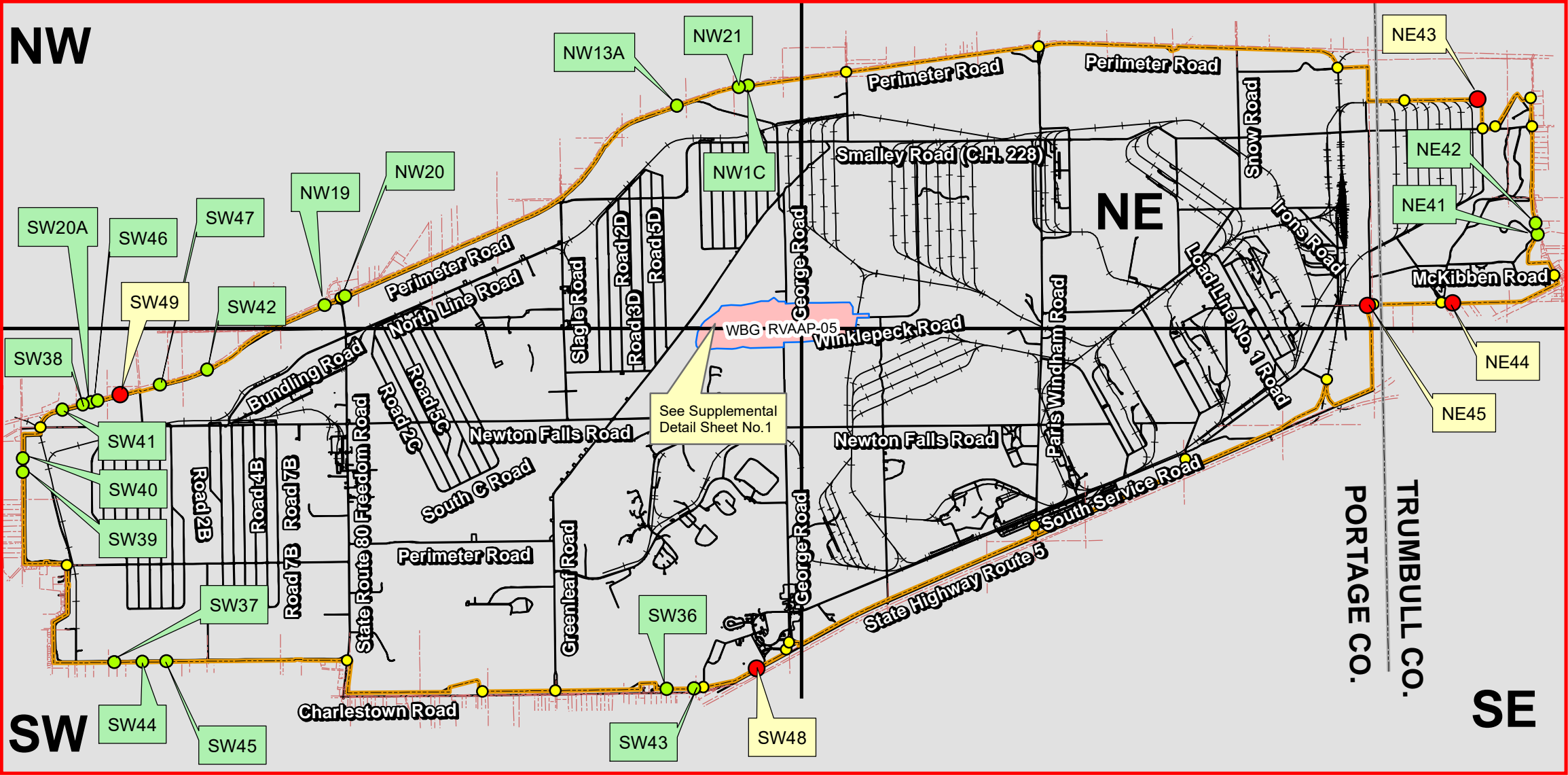


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

- Opening in fence (2'≥) and/or fabric missing/damaged (5 Locations)
- Repaired (20 Locations)
- Gates (26 locations for reference only, no detail sheets)
All gates appear to be maintained and are in working order

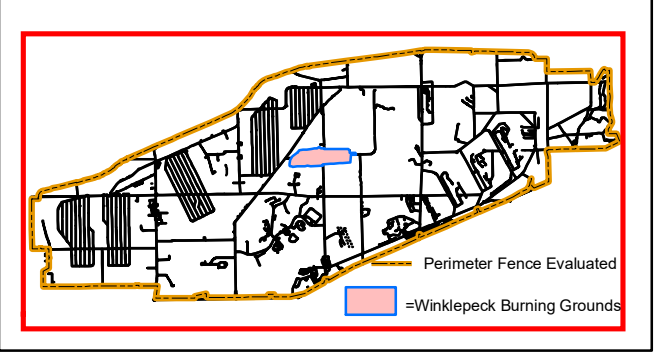
— Perimeter Fence Evaluated (29.6 miles)

Detail Sheet
Callout

Detail Sheet
Repair Callout

SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

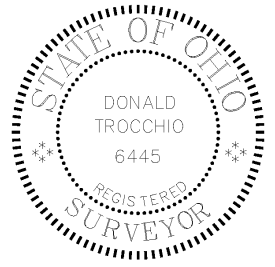
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



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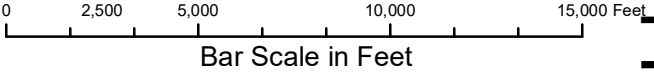
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FIGURE 1 INDEX MAP

Appendix D

Final FY 2017 Second Quarter Land Use Control Inspection for RVAAP-05 Winklepeck Burning Grounds

Final
FY 2017 Second Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-13-C-0031

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

April 12, 2017

Final
FY 2017 Second Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

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Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

April 12, 2017



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

April 28, 2017

Mr. Mark Leeper, P.G., MBA
Cleanup and Restoration Branch
ARNG Directorate
Environmental Programs Division
111 South George Mason Drive
Arlington, VA 22204

Re: **US Army Ravenna Ammunition Plt RVAAP
Remediation Response
Project records
Remedial Response
Portage County
267000859029**

Subject: Approval of the "Final FY 2017 Second Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds, at the Former Ravenna Army Ammunition Plant, Ravenna, Ohio," Dated April 12, 2017

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) has received and reviewed the document entitled, "*Final FY 2017 Second Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*," dated April 12, 2017. This document, received by Ohio EPA's NEDO on April 14, 2017, was prepared for the U.S. Army Corps of Engineers (USACE) Louisville District, by Vista Sciences Corporation.

This document was reviewed by personnel from Ohio EPA's DERR. Pursuant to the Director's Findings and Orders paragraph 39 (b), the response to Ohio EPA comments are satisfactory and the document is approved in its final format. If you have any questions or concerns, please do not hesitate to contact me at (330) 963-1235.

Sincerely,

Nicholas Roope
Site Coordinator
Division of Environmental Response and Revitalization

NCR/nvr

cc: Craig Coombs, USACE, Louisville District
Katie Tait/Kevin Sedlak, Camp Ravenna Environmental Office, Newton Falls
Shreffler/Harris, Camp Ravenna Environmental Office, Vista Sciences, Newton Falls

ec: Bob Princic, Ohio EPA, NEDO, DERR
Tom Schneider, Ohio EPA, SWDO, DERR



Document Distribution

for the

Final FY 2017 Second Quarter Land Use Control Inspection,
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Name/Organization	Number of Printed Copies	Number of Electronic Copies
Mark Leeper, ARNG-IED	0	1
Kevin Sedlak, ARNG – IED, Camp Ravenna	0	0
Katie Tait, OHARNG – Camp Ravenna	0	0
Nicholas Roope, Ohio EPA Project Manager – NEDO-DERR	1	3
Bob Princic, Ohio EPA, NEDO-DERR	0	Transmittal letter
Tom Schneider, Ohio EPA, DERR	0	Transmittal letter
Jay Trumble, USACE – Louisville District	0	1
Craig Coombs, USACE – Louisville District	0	Transmittal letter
Bob Guthrie, Management Solutions, LLC	0	Transmittal letter
Gail Harris, AR Manager – Camp Ravenna	2	2

AR = Administrative Record

ARNG = Army National Guard

CO = Central Office

DERR = Division of Environmental Response and Revitalization

EPA = Environmental Protection Agency

IED = Installation Environmental Division

NEDO = Northeast District Office

OHARNG = Ohio Army National Guard

USACE = U.S. Army Corps of Engineers

LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARNG-IED	Army National Guard - Installation Environmental Division
bgs	below ground surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
FWGWMPP	Facility-Wide Ground Water Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
IRP	Installation Restoration Program
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
MK	Mark
MRS	Munitions Response Site
MSG	Master Sergeant
Ohio EPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard
PS	Professional Surveyor
PMP	Property Management Plan
RVAAP	Ravenna Army Ammunition Plant
SOP	Standard Operating Procedure
UXO	Unexploded Ordnance
WBG	Winklepeck Burning Grounds

**Camp Ravenna Joint Military Training Center (Camp Ravenna) /
Former Ravenna Army Ammunition Plant (RVAAP)
Quarterly Land Use Control (LUC) Inspection Form
RVAAP-05 Winklepeck Burning Grounds**

In accordance with the Camp Ravenna/former RVAAP Property Management Plan (PMP) dated August 2012 and Appendix A-1, an inspection of RVAAP-05 Winklepeck Burning Grounds (WBG) was conducted by Don Trocchio on January 9 – 12, 17 – 19, 23 – 26 and 30, 2017.

The quarterly inspections required by the PMP include the following:

- Review of LUC training and documentation as applicable to WBG.
- Evaluation of the Camp Ravenna perimeter fence to ensure that it is maintained in a manner that is protective and effective control and deters trespassers.
- Evaluation of activities at WBG to ensure that all activities executed within WBG are in compliance with Ohio Army National Guard (OHARNG) range safety regulations/standard operation procedure (SOP), established digging restrictions, and established exposure limits. All digging, intrusive activities, or excavation on the WBG Area of Concern (AOC) outside of the Unexploded Ordnance (UXO)/ Munitions and Explosives of Concern (MEC)-cleared areas within the Mark (MK) 19 Grenade Machinegun Range is prohibited with the following exceptions:
 - Routine maintenance of roads, ditches, culverts and activities listed in A-1.4 of the PMP (maintenance of targetry and associated lifting mechanisms, range maintenance activities including removal of practice rounds, vegetation management, compatible natural resource management activities, nuisance wildlife control, drainage maintenance, wetland delineation, grassland management, scientific research and sampling activities);
 - Ground surface repairs by authorized range personnel in support of authorized range activities; and
 - Digging along target array areas by authorized range personnel to a depth of 1 foot below ground surface (bgs).
 - Subsurface investigations and remedial activities will be allowed in specified areas provided these activities strictly follow an approved Work Plan. The Work Plan must list (among other things) UXO/MEC clearance procedures.

This shall also include evaluation of required range signage. The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations.

- Evaluation of groundwater activities to ensure that any groundwater activities are being conducted in a manner consistent with established LUCs. Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:
 1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent Facility-Wide Sampling and Analysis Plan (FWSAP) as part of the AOC-specific Installation Restoration Program (IRP) or Facility-Wide Ground Water Monitoring Program Plan (FWGWMPP).
 2. The abandonment and replacement of monitoring wells damaged by activities conducted on Camp Ravenna and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio Environmental Protection Agency (Ohio EPA) guidance, the most recent FWSAP, and applicable Ohio Administrative Code requirements.

LUC deficiencies or inconsistent land uses that are identified must be reported and identified on the quarterly inspection form/report. These deficiencies must also be reported immediately to the Army, along with suggestions on how to remedy the deficiencies.

Review of LUCs – Management/Effectiveness/Corrective Action

1. AOC Map

Is the AOC map current with respect to AOC boundaries, land activities, and prescribed LUCs?

The AOC map was reviewed on January 9, 2017 by Don Trocchio, Professional Surveyor (PS), and it is current with respect to AOC boundaries, land activities and prescribed LUCs.

2. Camp Ravenna Perimeter Fence

Is the Camp Ravenna perimeter fence and associated gates being maintained in order to be an effective and protective control and deter trespassers?

The perimeter fence is currently being maintained by OHARNG staff to ensure it is an effective and protective land use control. Attachment 1, Figure 1 Index Map and Summary Table, and associated Detail Sheets present the newly damaged fence area (SW44) and photographs of areas that were repaired during the last (FY 2017 1st) quarter, but after the last (1st) quarter's inspection had occurred (SW20A, SW39, SW40, SW41, SW42, and SW43). Repaired callout SW44 was reported as being repaired after the 2nd quarter perimeter fence inspection had occurred (see Attachment 2, Callout Repair Log). Photograph of this repaired area will be provided in the FY 2017 3rd Quarter LUC Inspection report.

3. Activities and Land Use

a.) This AOC is restricted from residential land use. Has residential use occurred? Have other land use changes occurred?

Based on an interview with OHARNG Range Control Staff (Master Sergeant [MSG] Rex Hufenbach) on January 23, 2017 at the Camp Ravenna Headquarters Building, no residential land use has occurred. Additionally, there has been no change in land use at the AOC since the previous inspection.

b.) What activities have occurred at WBG since the last inspection?

The WBG/MK19 Range is normally used for training purposes (i.e., MK19 Range firing/activities), but has not been operational since the last inspection. A removal action to address contaminated soils to achieve Commercial/Industrial use at the WBG/MK19 Range is currently being conducted. The removal action is slated to be completed in March 2017. Digging at several former burning pads is occurring during the removal action. (See Supplemental Detail Sheet No. 1).

Four groundwater monitoring wells were re-sampled in January 2017 in the WBG/Mark 19 Range. All activities are in accordance with designated LUCs/restrictions.

c.) Are activities (digging, range maintenance etc.) at WBG being conducted in compliance with OHARNG range safety regulations/SOP and established digging restrictions?

Based on an interview with MSG Rex Hufenbach on January 23, 2017, all activities within WBG are being conducted in compliance with OHARNG Range Safety Regulations/SOP and established digging restrictions. All activities are in accordance with those set forth in the PMP.

A surface and subsurface remedial action that involves excavation is currently ongoing at the MK19 range. The remedial action is based on an approved Remedial Design and is being conducted in order to achieve Industrial/Commercial Use standards in the affected areas.

- d.) Is the required range signage in place and functional? The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations. If not, describe what corrective actions will be undertaken?

MSG Rex Hufenbach stated all signage is placed at 200-meter intervals.

- e.) Groundwater: Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:

1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent FWSAP as part of the AOC-specific IRP or FWGWMPP.
2. The abandonment and replacement of monitoring wells damaged by Installation activities, and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio EPA guidance, the most recent FWSAP and applicable Ohio Administrative Code requirements.

- f.) Have any groundwater activities been conducted and, if yes, are they within the established control parameters?

Groundwater is sampled on a semi-annual basis under the FWGWMPP. During an interview on January 23, 2017 with Kevin Sedlak (Restoration Project Manager, Army National Guard Installation Environmental Division [ARNG-IED]), stated that all Ground Water Monitoring activity is conducted in accordance with the FWGWMPP and the parameters for groundwater monitoring as set forth in the PMP, Appendix A-1. Four groundwater monitoring wells were resampled within the WBG/MK19 Range in January 2017. The next FWGWMPP sampling event is currently scheduled for April 2017.

4. Inspections and Reporting

- a.) Inspections are required on a quarterly basis. Are quarterly inspections being completed?

Quarterly Inspections have been completed for FYs 2013, 2014, 2015 and 2016. This is the second Quarterly Inspection to be conducted for FY 2017. All Quarterly Inspections for FYs 2013, 2014, 2015 and 2016 and 2017 were conducted in accordance with the approved PMP dated August 2012.

- b.) An annual report is required. Has the annual report been completed and submitted?

The Final FY 2015 Annual Report was submitted on January 27, 2016 and approved on March 15, 2016. The Draft FY 2016 Annual Report was submitted to the Ohio EPA for review on December 27, 2016.

5. Training (as applicable to WBG)

- a.) Was LUC training (specific to WBG) being conducted as applicable? Describe the training (content/who attended/who provided/documentation of training).

LUC training is provided annually to all Camp Ravenna staff and tenant units at Camp Ravenna. The LUC training is typically provided by Katie Tait and/or Tim Morgan, Camp Ravenna-Environmental. The training provides an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/Munitions Response Sites (MRS), and specific restrictions for WBG. Using units also receive an in-brief prior to firing on the range. Using units and tenant units at Camp Ravenna are not allowed down range. Environmental contractors who access WBG are also provided with an in-brief which informs them of the LUCs/restrictions at the AOC. They must read and sign the in-brief form. Training materials and rosters are on file in the Camp Ravenna Environmental Office. LUC training specific to WBG was held on February 23 and 25, 2016 for Camp Ravenna

units/staff. Training will be conducted for additional Camp Ravenna staff and contractors on an as-needed basis.

b.) If training was not provided, explain why and what corrective actions were initiated?

N/A

6. Description of any observed/noted LUC violation(s):

The Camp Ravenna perimeter fence had one hole in the fence fabric that was observed and documented in this report. This area was assigned the call-out number SW44. See Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspection and attached Detail Sheets.

7. Date of Notification of LUC violation (if applicable):

The Army was notified via e-mail on January 10, 2017 of the new fence defect (SW44) discovered during the 2nd Quarter FY 2017 facility perimeter fence evaluation. (See Attachment 1, Figure 1 Index Map and Summary Table, and associated detail sheet).

8. Description of any corrective actions taken to remedy observed LUC violation(s) or recommended corrective actions:

The perimeter fence defect SW44 was reported as being repaired after the 2nd Quarter inspection had been conducted. This repair was made after the 2nd Quarter inspection and a photograph of this repair will be presented in the FY 2017 3rd Quarter LUC report.

Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspections shows photographs of previous fence deficiencies (SW20A, SW39, SW40, SW41, SW42 and SW43) that were repaired during the first quarter of FY 2017, but after the first quarter inspection had been conducted.


These efforts of the OHARNG staff to repair the identified deficiencies in the fence have improved the condition of the fence since the last inspection (See Attachment 1, FY 2017 Callout/Repair Table).

9. Additional Notes/Comments:

As requested by the Ohio EPA, WBG photographs taken during the 2nd Quarter LUC Inspection are included with this report (Attachment 2, Supplemental Detail Sheet No. 1).

Original Inspection Completed by:

Signature:



Printed Name: Don Trocchio

Title: Professional Surveyor

Organization: Vista Sciences Corporation

Date: January 30, 2017

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**FY 2017 Second Quarter
Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 1

Figure 1 Index Map

Camp Ravenna Perimeter Fence Reference System

FY 2017 Callout/Repair Summary Table

Detailed Quadrant Maps

Figure 1 Index Map

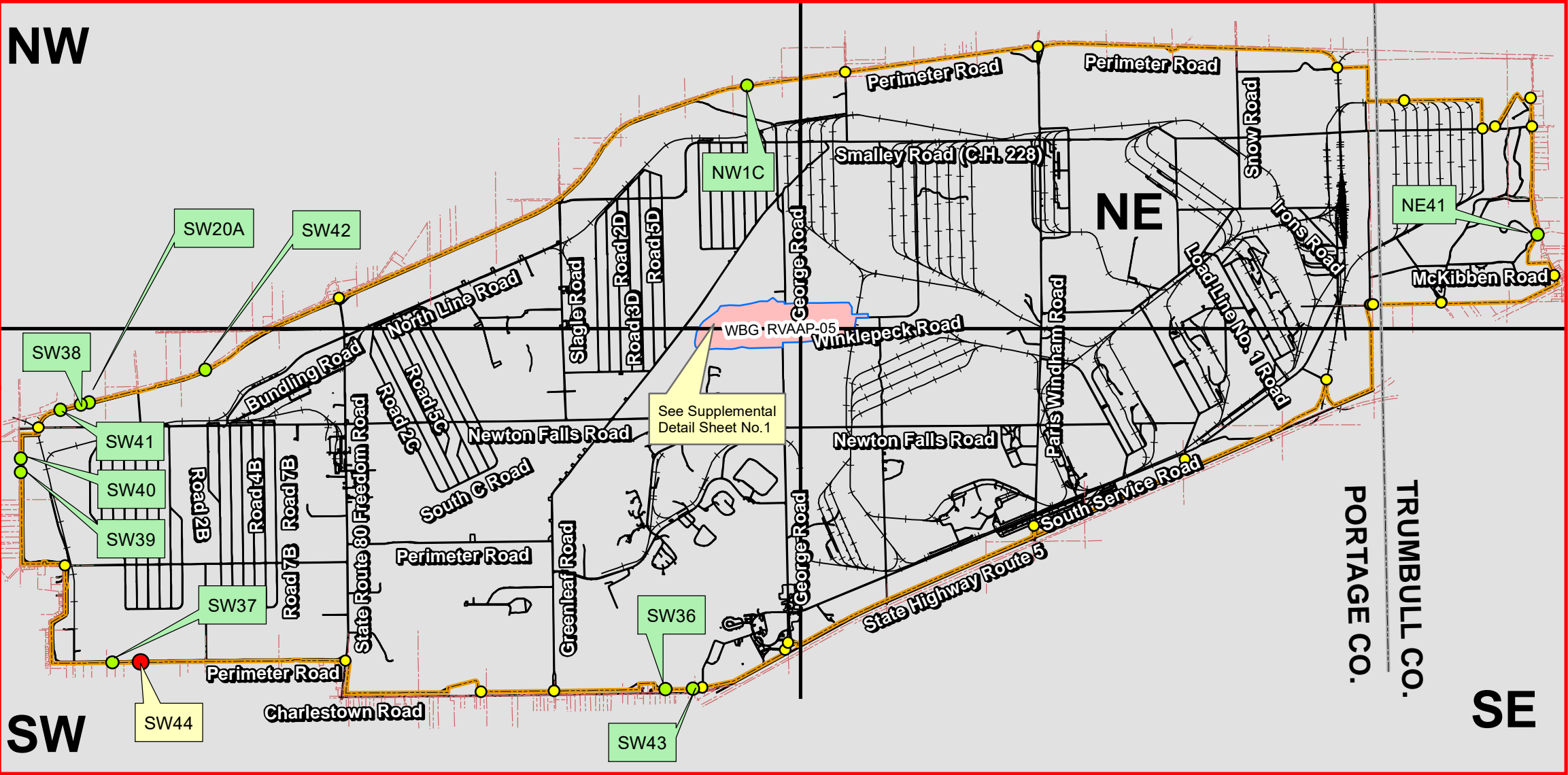


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

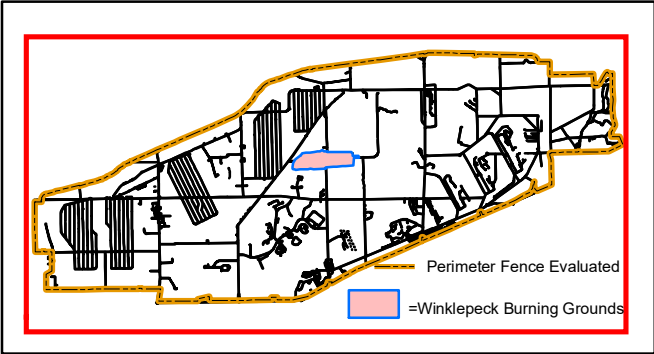
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- Repaired (11 Locations)
- Gates (26 locations for reference only, no detail sheets)
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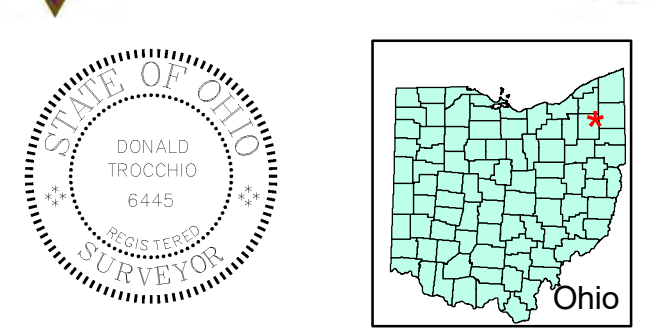
Detail Sheet Callout	Detail Sheet Repair Callout
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SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

Camp Ravenna
Joint Military Training Center



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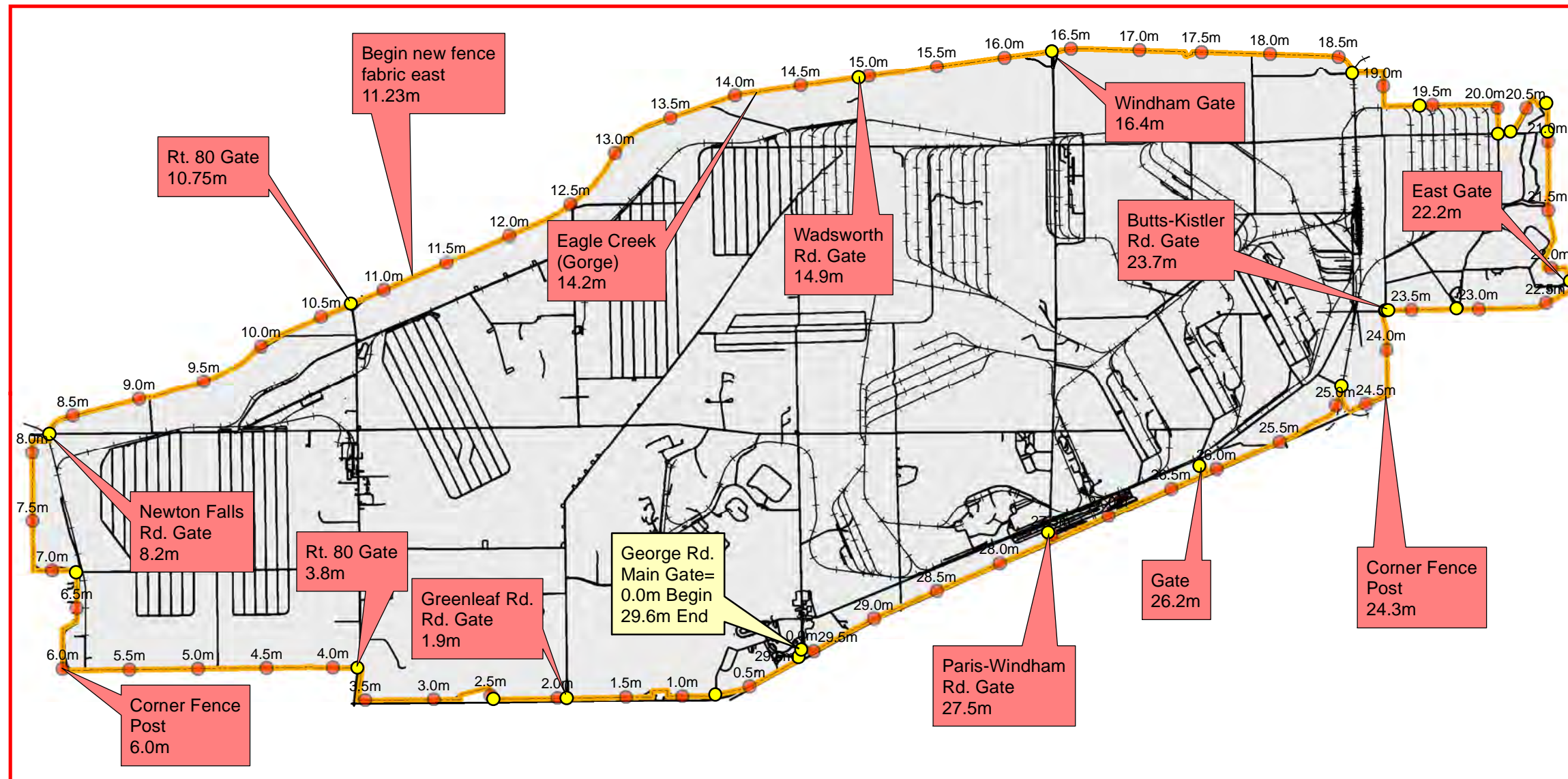
Projection Datum is NAD83, Ohio State Plane Rectangular Grid, North Zone

0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet

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FIGURE 1 INDEX MAP

Camp Ravenna Perimeter Fence Reference System

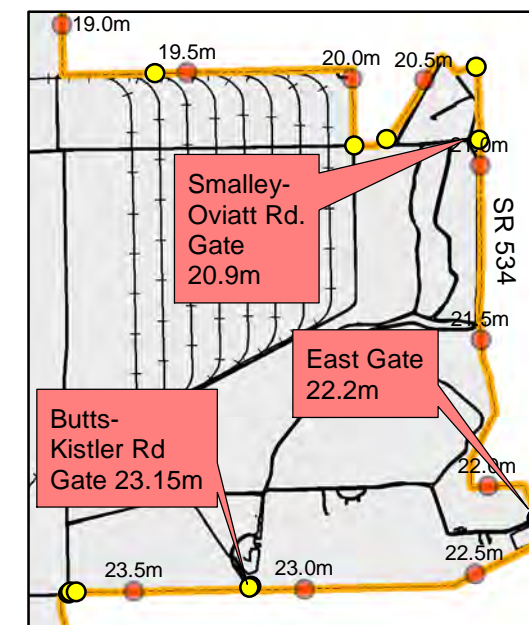


CAMP RAVENNA PERIMETER FENCE REFERENCE SYSTEM

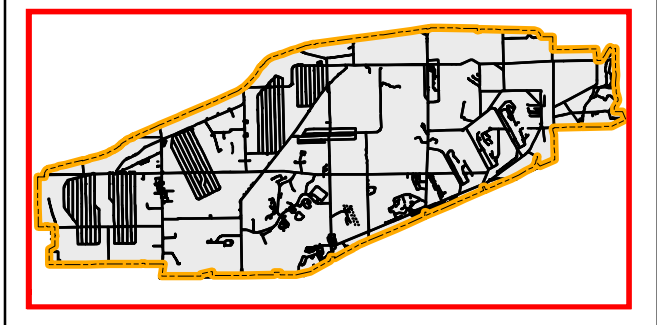
East Gate Detail Inset

Mile 20.0

Half Mile 24.5



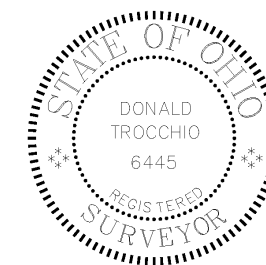
Camp Ravenna Joint Military Training Center



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Ohio Army National Guard



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0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet



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MGRS 17T NF01946150 (NAD83)

FY 2017 Callout/Repair Summary Table

FY 2017 2nd QUARTER CALLOUT/REPAIR SUMMARY TABLE
Camp Ravenna Joint Military Training Center 2nd Qtr FY2017 LUC Inspection

CALLOUT	DATE	COMMENTS	REPAIR DATE (if reported)	US Survey Ft		Perimeter Mile
				NORTHING	EASTING	Marker
FY 2017 2nd Quarter Callout						
SW44	1/9/2017	poacher hole		549366	2332961	5.4
Repairs of Previous Quarter's Callouts						
NE41	7/21/2016	tree blow down on fence	unknown	565895	2386901	
NW1C	7/19/2016	poacher hole	unknown	571637	2356382	
SW20A	11/17/2016	former repair needs reattached	11/29/2016	559398	2330974	8.7
SW36	11/14/2016	poacher hole	unknown	548328	2353232	
SW37	11/15/2016	poacher hole at bottom of fence	unknown	549355	2331868	
SW38	11/17/2016	poacher hole	unknown	559324	2330662	
SW39	11/16/2016	former repair needs reattached	11/18/2016	556697	2328342	7.8
SW40	11/16/2016	poacher hole	11/18/2016	557238	2328338	7.9
SW41	11/17/2016	poacher hole	11/29/2016	559117	2329861	8.5
SW42	11/17/2016	poacher hole	11/29/2016	560658	2335468	9.6
SW43	11/23/2016	poacher hole	12/6/2016	548341	2354290	0.8

Repaired 1st Quarter

Repaired 2nd Quarter

Repaired 3rd Quarter

Repaired 4th Quarter

NE (Northeast) Quadrant

(No Detail Sheets for FY 2017 2nd Quarter LUC Inspection Report)

NW (Northwest) Quadrant

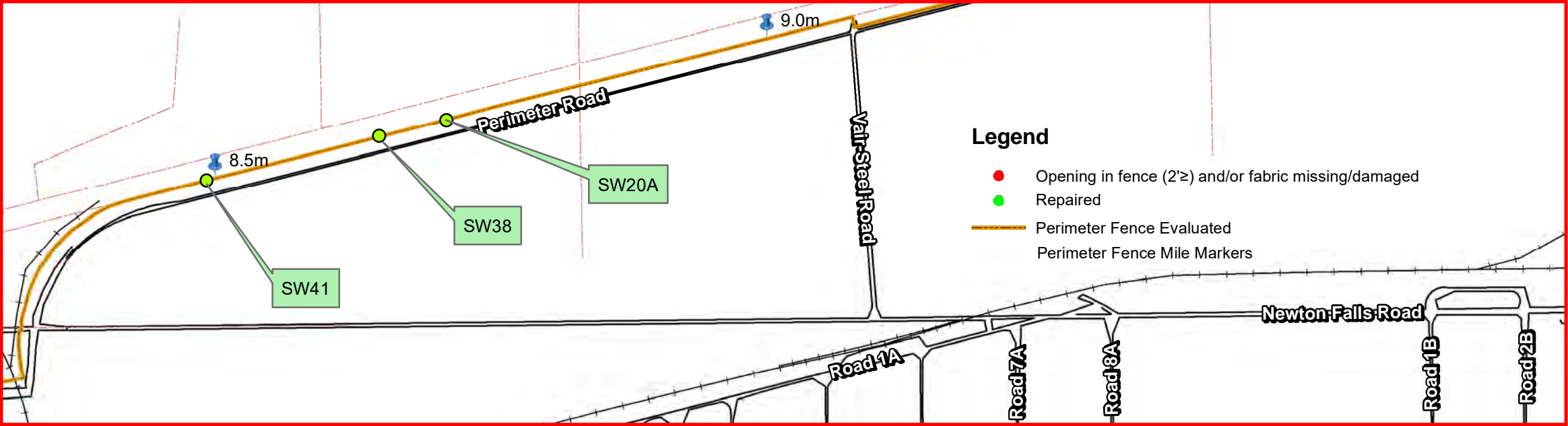
(No Detail Sheets for FY 2017 2nd Quarter LUC Inspection Report)

SE (Southeast) Quadrant

(No Detail Sheets for FY 2017 2nd Quarter LUC Inspection Report)

SW (Southwest) Quadrant

DETAIL SHEET FOR SW20A



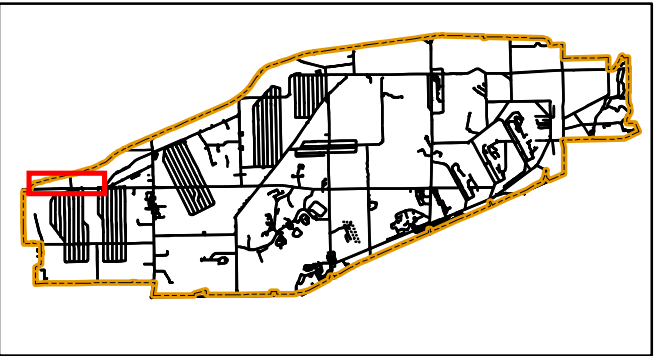
LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

Repair photo SW20A dated 01/11/2017

PHOTO SW20A discovered 11/17/2016



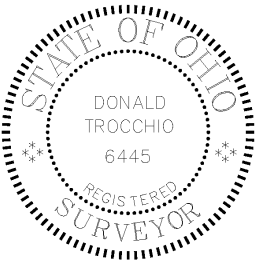
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



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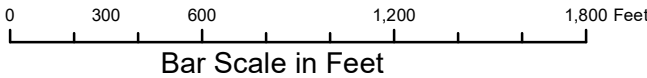
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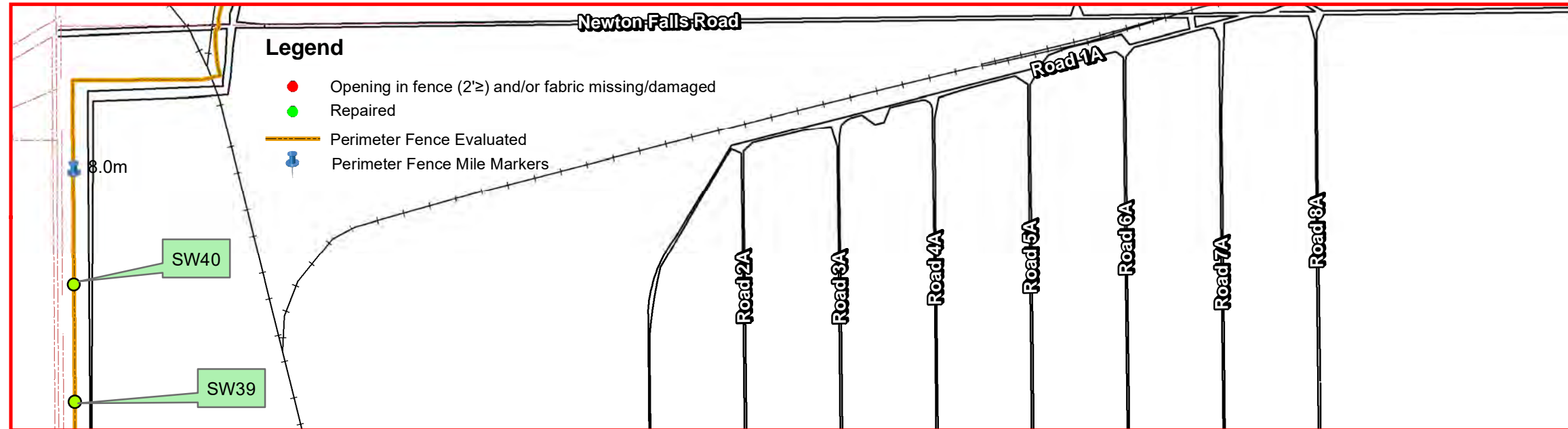
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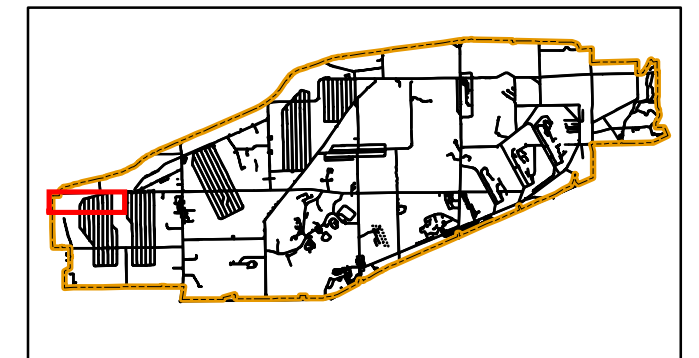
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DETAIL SHEET FOR SW20A

DETAIL SHEET FOR SW39



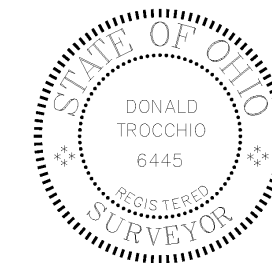
Camp Ravenna Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017 PERIMETER FENCE INSPECTION

Repair photo SW39 dated 01/11/2017

PHOTO SW39 discovered 11/16/2016



Produced in January 2017 for:



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Plane Rectangular Grid, North Zone

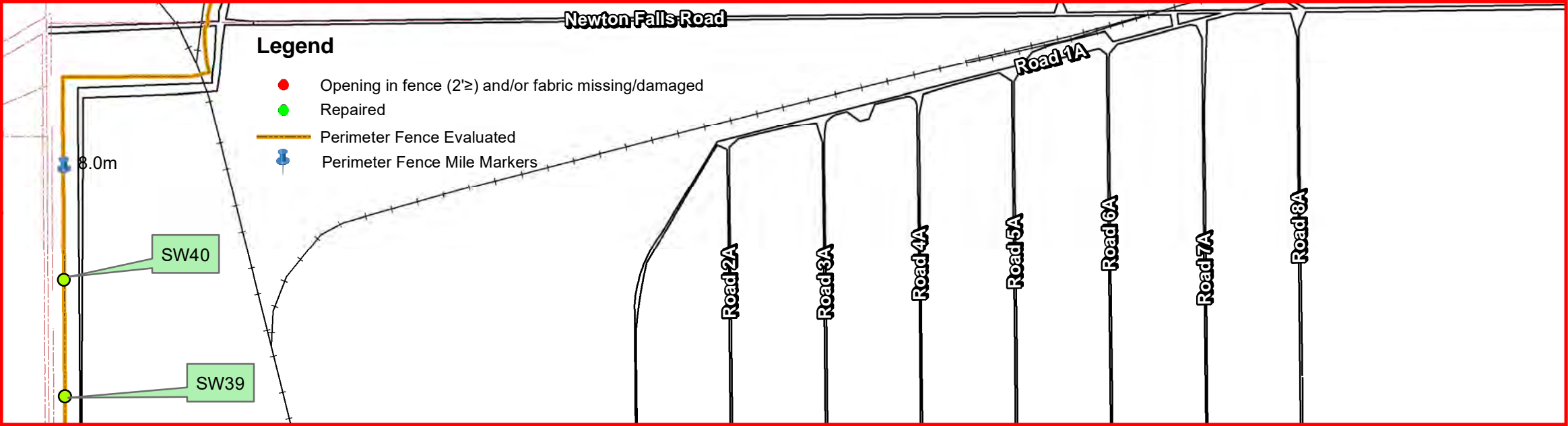
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Bar Scale in Feet



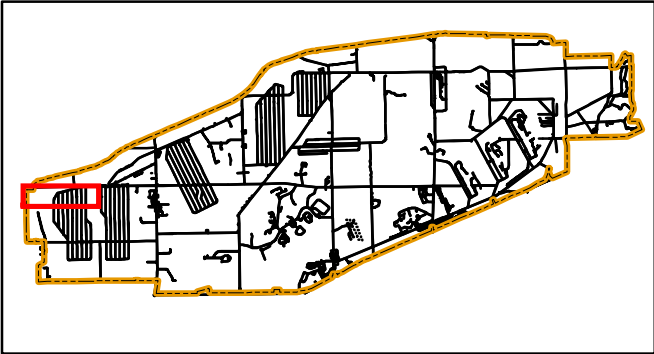
Camp Ravenna JMTc
1438 State Route 534 SW
Newton Falls, OH 44444
Don Trocchio, PS
don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

DETAIL SHEET FOR SW39

DETAIL SHEET FOR SW40



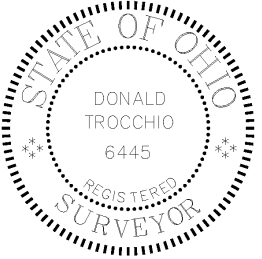
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

Repair photo SW40 dated 01/11/2017



PHOTO SW40 discovered 11/16/2016



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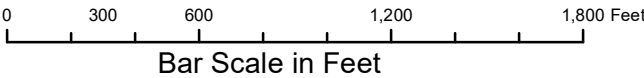
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Louisville District



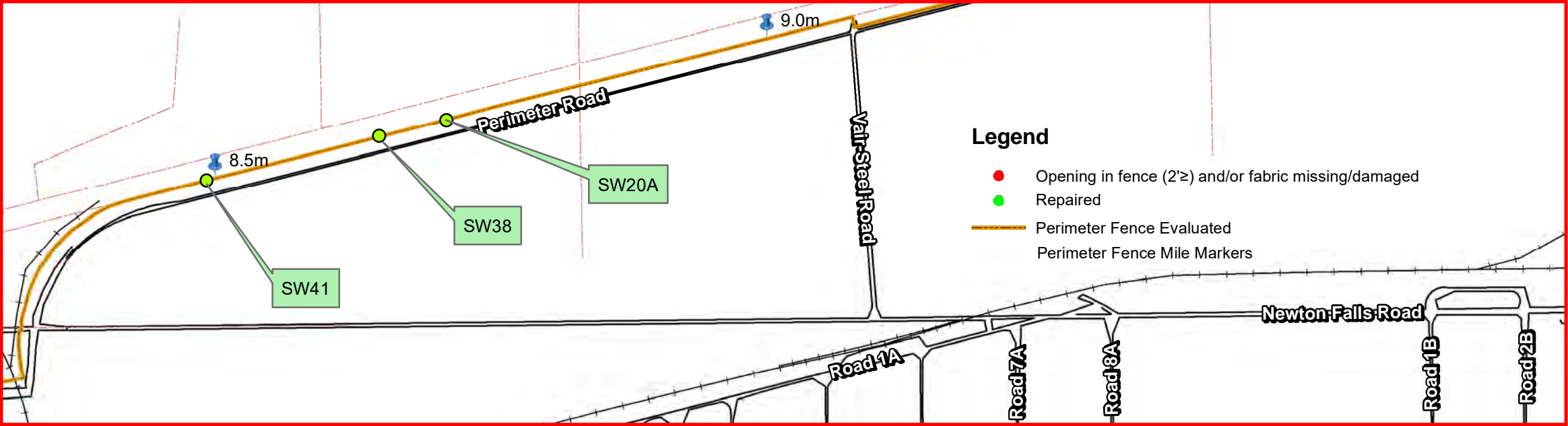
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DETAIL SHEET FOR SW40

DETAIL SHEET FOR SW41



LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

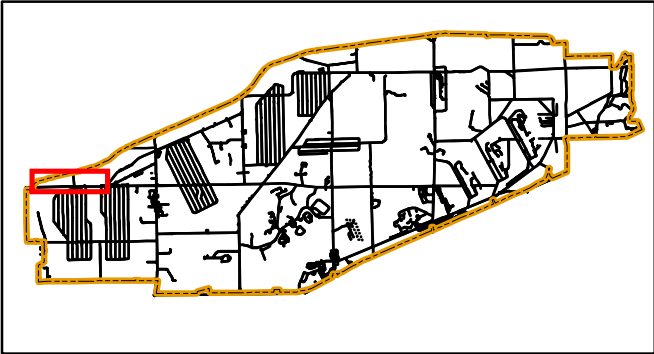
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PHOTO SW41 discovered 11/17/2016



Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



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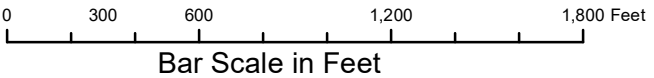
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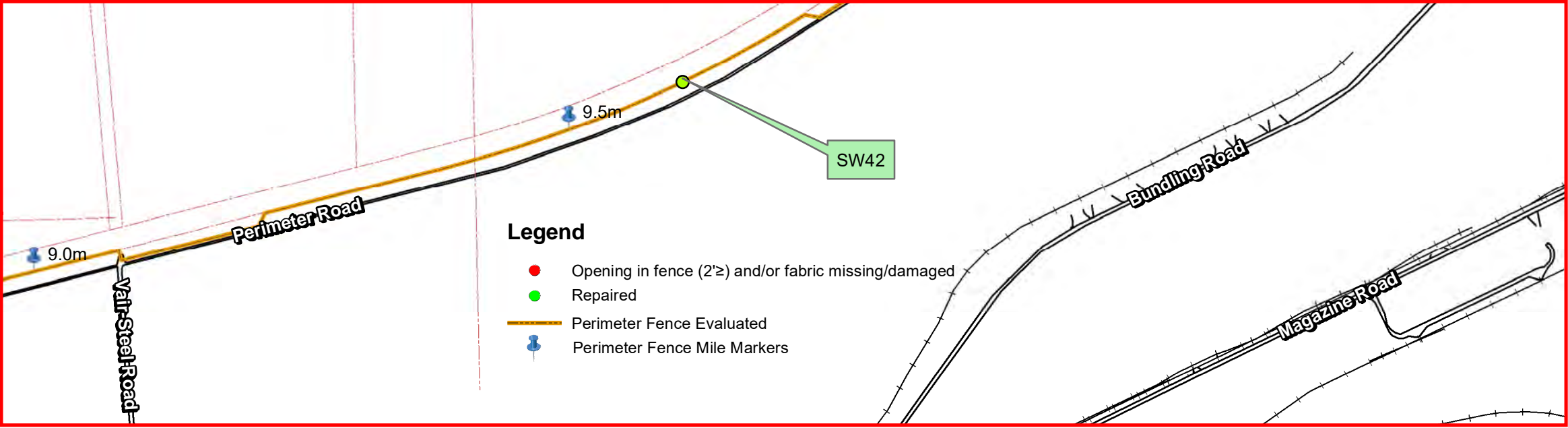
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Plane Rectangular Grid, North Zone



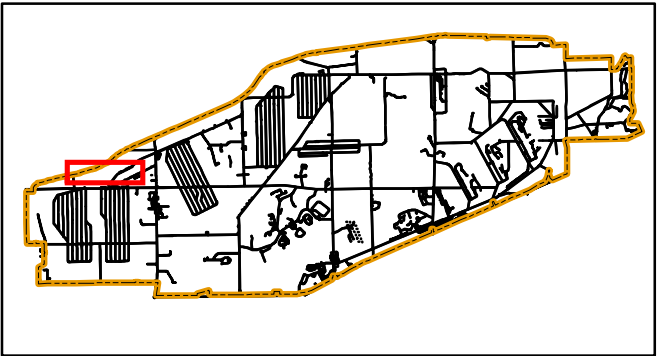
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DETAIL SHEET FOR SW41

DETAIL SHEET FOR SW42



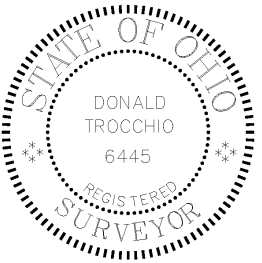
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Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Ohio

LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

Repair photo SW42 dated 01/11/2017



PHOTO SW42 discovered 11/17/2016



Produced in January 2017 for:



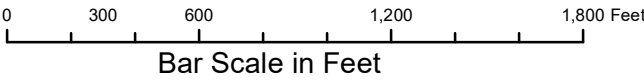
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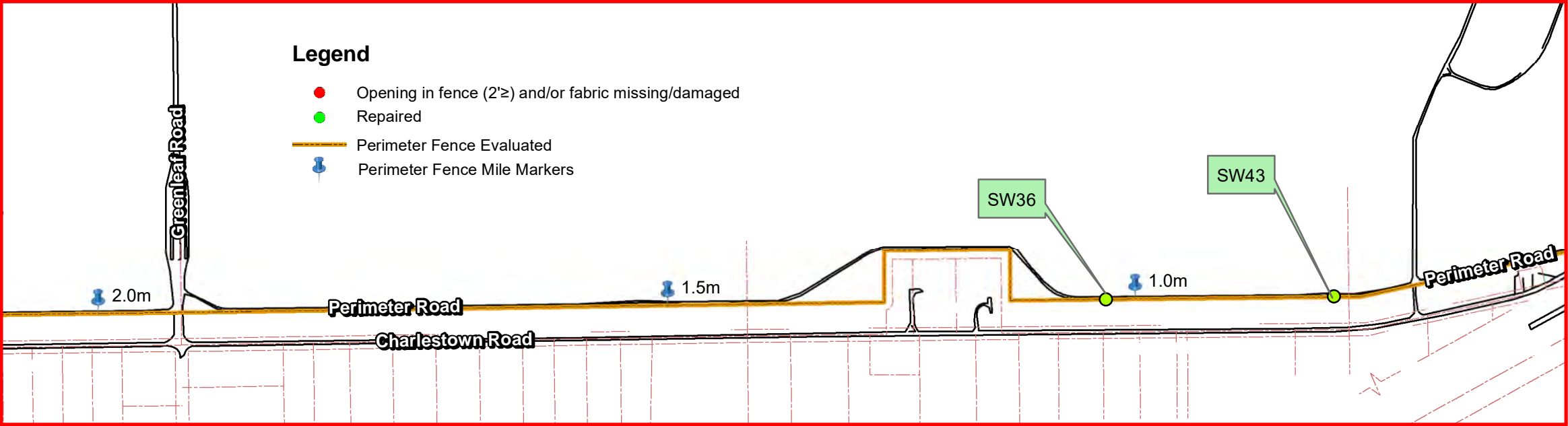
Projection Datum is NAD83, Ohio State
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DETAIL SHEET FOR SW42

DETAIL SHEET FOR SW43



LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

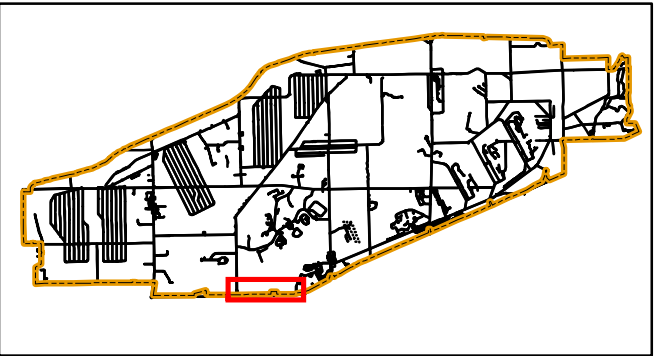
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PHOTO SW43 discovered 11/23/2016



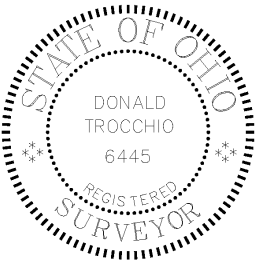
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Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



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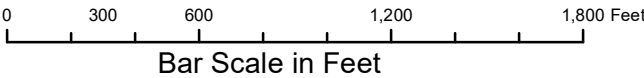
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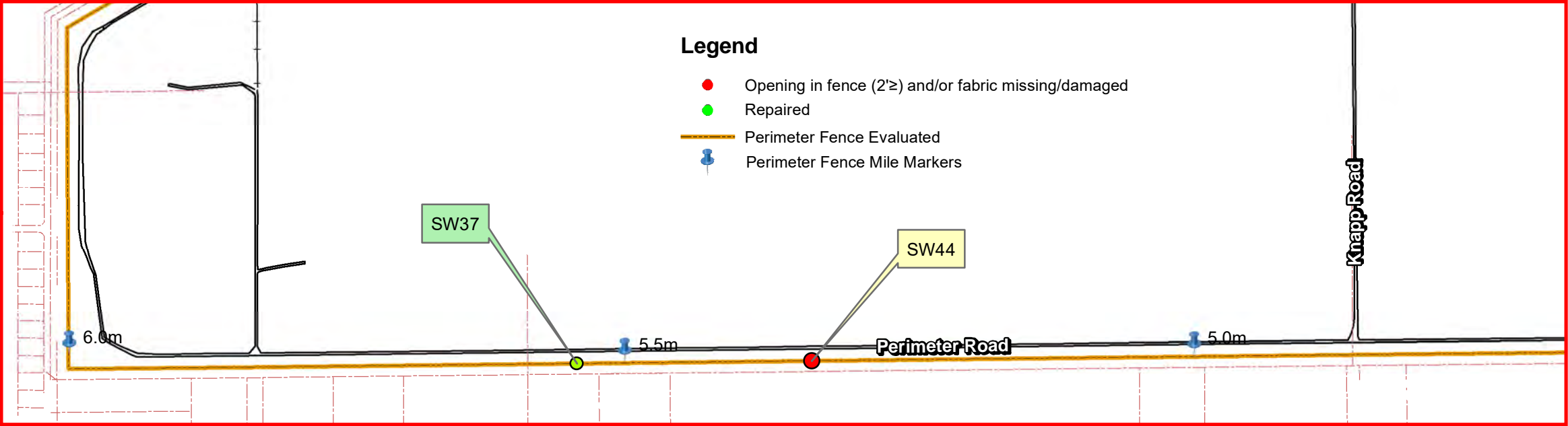
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DETAIL SHEET FOR SW43

DETAIL SHEET FOR SW44



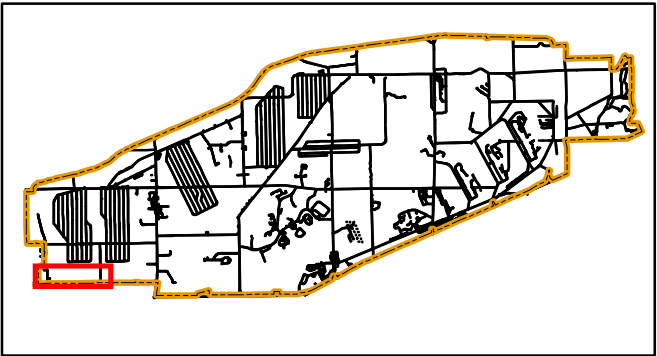
LAND USE CONTROL (LUC) INSPECTION 2nd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW44 discovered 01/09/2017

SW44 was reported as repaired on 01/13/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 3rd Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



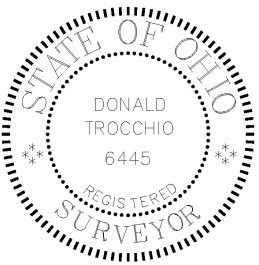
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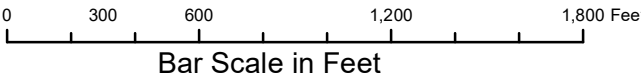
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DETAIL SHEET FOR SW44

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**Quarterly Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 2

Supplemental Detail Sheet No. 1

Callout Repair Log

Supplemental Detail Sheet No. 1

SUPPLEMENTAL DETAIL SHEET NO.1

LAND USE CONTROL (LUC) INSPECTION

PERIMETER FENCE INSPECTION

2nd QUARTER FY2017

PHOTO NO.2 1/26/2017



PHOTO NO.4 1/26/2017



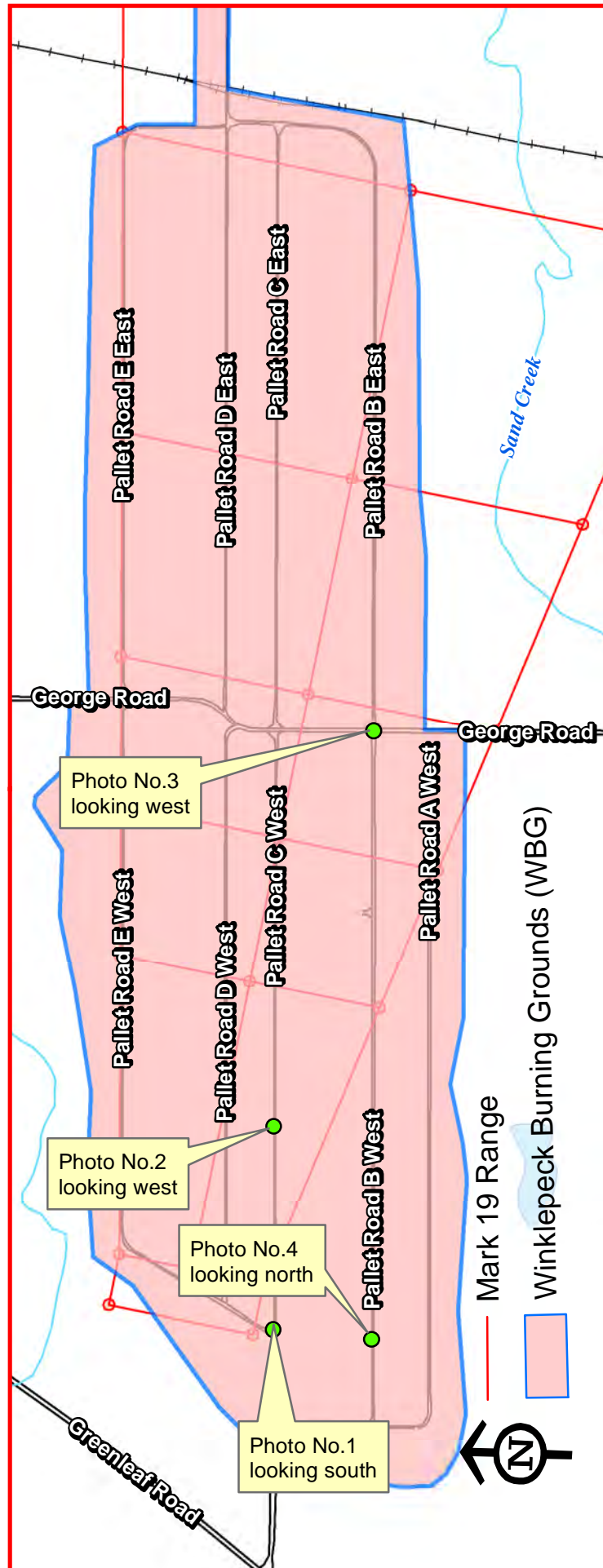
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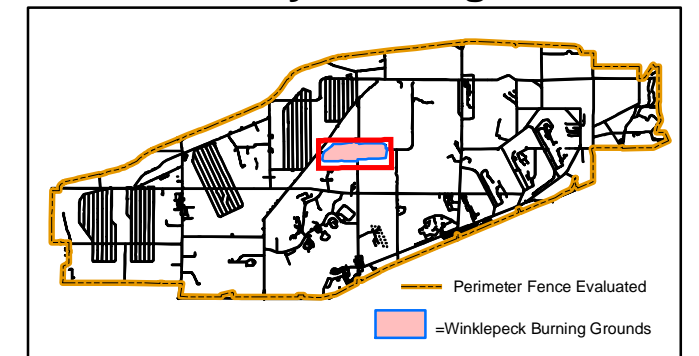
PHOTO NO.3 1/26/2017



PHOTO IMAGES WITHIN THE
WINKLEPECK BURNING GROUNDS (RVAAP-05)



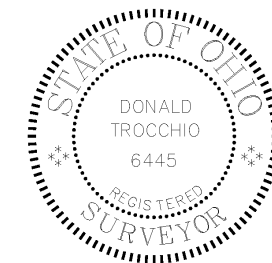
Camp Ravenna Joint Military Training Center



Portage & Trumbull County LOCATOR MAP



Ohio Army National Guard



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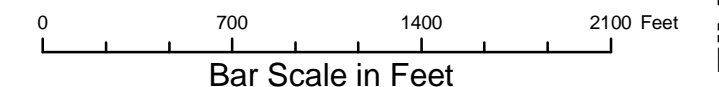


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SUPPLEMENTAL DETAIL SHEET NO.1

Callout Repair Log

[illegible]

Appendix E

Final FY 2017 Third Quarter Land Use Control Inspection for RVAAP-05 Winklepeck Burning Grounds

Final
FY 2017 Third Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-13-C-0031

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

June 27, 2017

Final
FY 2017 Third Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-13-C-0031

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

June 27, 2017



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

July 27, 2017

**Re: US Army Ravenna Ammunition Plt RVAAP
Remediation Response
Project records
Remedial Response
Portage County
267000859029**

Mr. Mark Leeper, P.G., MBA
Chief (Acting)
Cleanup and Restoration Branch
ARNG Directorate
Environmental Programs Division
111 South George Mason Drive
Arlington, VA 22204

Re: Approval of the "Final FY 2017 Third Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds" – Camp Ravenna Joint Military Training Center at the Former Ravenna Army Ammunition Plant in Portage and Trumbull Counties, Ohio, Dated June 27, 2017 (Work Activity No. 267000859029)

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) has received and reviewed the document entitled, "*Final FY 2017 Third Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*," dated June 27, 2017. This document, received by Ohio EPA's NEDO on June 28, 2017, was prepared for the U.S. Army Corps of Engineers (USACE) Louisville District, by Vista Sciences Corporation.

This document was reviewed by personnel from Ohio EPA's DERR. Pursuant to the Director's Findings and Orders paragraph 39 (b), the response to Ohio EPA comments are satisfactory and the document is approved in its final format. If you have any questions or concerns, please do not hesitate to contact me at (330) 963-1235.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicholas Roope", is written over a horizontal line.

Nicholas Roope
Site Coordinator
Division of Environmental Response and Revitalization

NCR/nvr

cc: Craig Coombs, USACE, Louisville District Gail Harris, Vista Sciences Corp.
Rebecca Schreffler, Vista Sciences Corp. Katie Tait, OHARNG, RTLS
Kevin Sedlak, ARNG

ec: Rod Beals, NEDO, DERR Bob Princic, NEDO, DERR
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for the

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RVAAP-05 Winklepeck Burning Grounds

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Portage and Trumbull Counties, Ohio

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Bob Princic, Ohio EPA, NEDO-DERR	0	Transmittal letter
Tom Schneider, Ohio EPA, DERR	0	Transmittal letter
Jay Trumble, USACE – Louisville District	0	1
Craig Coombs, USACE – Louisville District	0	Transmittal letter
Bob Guthrie, Management Solutions, LLC	0	Transmittal letter
Gail Harris, AR Manager – Camp Ravenna	2	1

AR = Administrative Record

ARNG = Army National Guard

CO = Central Office

DERR = Division of Environmental Response and Revitalization

EPA = Environmental Protection Agency

IED = Installation Environmental Division

NEDO = Northeast District Office

OHARNG = Ohio Army National Guard

USACE = U.S. Army Corps of Engineers

LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARNG-IED	Army National Guard - Installation Environmental Division
bgs	below ground surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
FWGWMPP	Facility-Wide Ground Water Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
IRP	Installation Restoration Program
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
MK	Mark
MRS	Munitions Response Site
MSG	Master Sergeant
Ohio EPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard
PS	Professional Surveyor
PMP	Property Management Plan
RVAAP	Ravenna Army Ammunition Plant
SOP	Standard Operating Procedure
UXO	Unexploded Ordnance
WBG	Winklepeck Burning Grounds

**Camp Ravenna Joint Military Training Center (Camp Ravenna) /
Former Ravenna Army Ammunition Plant (RVAAP)
Quarterly Land Use Control (LUC) Inspection Form
RVAAP-05 Winklepeck Burning Grounds**

In accordance with the Camp Ravenna/former RVAAP Property Management Plan (PMP) dated August 2012 and Appendix A-1, an inspection of RVAAP-05 Winklepeck Burning Grounds (WBG) was conducted by Don Trocchio on April 10 – 13, 17 – 20, 24 – 27 and May 1, 2017.

The quarterly inspections required by the PMP include the following:

- Review of LUC training and documentation as applicable to WBG.
- Evaluation of the Camp Ravenna perimeter fence to ensure that it is maintained in a manner that is protective and effective control and deters trespassers.
- Evaluation of activities at WBG to ensure that all activities executed within WBG are in compliance with Ohio Army National Guard (OHARNG) range safety regulations/standard operation procedure (SOP), established digging restrictions, and established exposure limits. All digging, intrusive activities, or excavation on the WBG Area of Concern (AOC) outside of the Unexploded Ordnance (UXO)/ Munitions and Explosives of Concern (MEC)-cleared areas within the Mark (MK) 19 Grenade Machinegun Range is prohibited with the following exceptions:
 - Routine maintenance of roads, ditches, culverts and activities listed in A-1.4 of the PMP (maintenance of targetry and associated lifting mechanisms, range maintenance activities including removal of practice rounds, vegetation management, compatible natural resource management activities, nuisance wildlife control, drainage maintenance, wetland delineation, grassland management, scientific research and sampling activities);
 - Ground surface repairs by authorized range personnel in support of authorized range activities; and
 - Digging along target array areas by authorized range personnel to a depth of 1 foot below ground surface (bgs).
 - Subsurface investigations and remedial activities will be allowed in specified areas provided these activities strictly follow an approved Work Plan. The Work Plan must list (among other things) UXO/MEC clearance procedures.

This shall also include evaluation of required range signage. The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations.

- Evaluation of groundwater activities to ensure that any groundwater activities are being conducted in a manner consistent with established LUCs. Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:
 1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent Facility-Wide Sampling and Analysis Plan (FWSAP) as part of the AOC-specific Installation Restoration Program (IRP) or Facility-Wide Ground Water Monitoring Program Plan (FWGWMPP).
 2. The abandonment and replacement of monitoring wells damaged by activities conducted on Camp Ravenna and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio Environmental Protection Agency (Ohio EPA) guidance, the most recent FWSAP, and applicable Ohio Administrative Code requirements.

LUC deficiencies or inconsistent land uses that are identified must be reported and identified on the quarterly inspection form/report. These deficiencies must also be reported immediately to the Army, along with suggestions on how to remedy the deficiencies.

Review of LUCs – Management/Effectiveness/Corrective Action

1. AOC Map

Is the AOC map current with respect to AOC boundaries, land activities, and prescribed LUCs?

The AOC map was reviewed on April 10, 2017 by Don Trocchio, Professional Surveyor (PS), and it is current with respect to AOC boundaries, land activities and prescribed LUCs.

2. Camp Ravenna Perimeter Fence

Is the Camp Ravenna perimeter fence and associated gates being maintained in order to be an effective and protective control and deter trespassers?

The perimeter fence is currently being maintained by OHARNG staff to ensure it is an effective and protective land use control. Attachment 1, Figure 1 Index Map and Summary Table, and associated Detail Sheets present the eight newly damaged fence areas (SW45, SW46, SW47, NW13A, NW19, NW20, NW21, and NE42) and a photograph of an area that was repaired during the last (FY 2017 2nd) quarter, but after the last (2nd) quarter's inspection had occurred (SW44). Repaired callouts SW45, SW46, SW47, NW19, NW20 and NW21 were reported as being repaired after the 3rd quarter perimeter fence inspection had occurred (see Attachment 2, Callout Repair Log). Photograph of these repaired areas will be provided in the FY 2017 4th Quarter LUC Inspection report.

3. Activities and Land Use

a.) This AOC is restricted from residential land use. Has residential use occurred? Have other land use changes occurred?

Based on an interview with OHARNG Range Control Staff (Master Sergeant [MSG] Rex Hufenbach) on April 19, 2017 at the Camp Ravenna Headquarters Building, no residential land use has occurred. Additionally, there has been no change in land use at the AOC since the previous inspection.

b.) What activities have occurred at WBG since the last inspection?

The WBG/MK19 Range is used for training purposes (i.e., MK19 Range firing/activities). A removal action consisting of digging contaminated soils at several former burning pads in order to achieve Commercial/Industrial use at the WBG/MK19 Range is currently being completed. (See Supplemental Detail Sheet No. 1).

Groundwater monitoring wells were sampled in the WBG/Mark 19 Range in April 2017 as part of a FWGWMPP sampling event. All activities are in accordance with designated LUCs/restrictions.

c.) Are activities (digging, range maintenance etc.) at WBG being conducted in compliance with OHARNG range safety regulations/SOP and established digging restrictions?

Based on an interview with MSG Rex Hufenbach on April 19, 2017, all activities within WBG are being conducted in compliance with OHARNG Range Safety Regulations/SOP and established digging restrictions. All activities are in accordance with those set forth in the PMP.

A surface and subsurface remedial action that involves excavation is currently being completed at several former burning pads in the MK19 range. The remedial action is based on an approved Remedial Design and is being conducted in order to achieve Industrial/Commercial Use standards in the affected areas.

- d.) Is the required range signage in place and functional? The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations. If not, describe what corrective actions will be undertaken?

MSG Rex Hufenbach stated all signage is placed at 200-meter intervals.

- e.) Groundwater: Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:

1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent FWSAP as part of the AOC-specific IRP or FWGWMPP.
2. The abandonment and replacement of monitoring wells damaged by Installation activities, and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio EPA guidance, the most recent FWSAP and applicable Ohio Administrative Code requirements.

- f.) Have any groundwater activities been conducted and, if yes, are they within the established control parameters?

Groundwater is sampled on a semi-annual basis under the FWGWMPP. Kevin Sedlak (Restoration Project Manager, Army National Guard Installation Environmental Division [ARNG-IED]) stated during a May 1, 2017 interview that all Ground Water Monitoring activity is conducted in accordance with the FWGWMPP and the parameters for groundwater monitoring as set forth in the PMP, Appendix A-1. Groundwater monitoring wells were sampled and static water levels measured within the WBG/MK19 Range in April 2017. The next FWGWMPP sampling event is currently scheduled for October 2017.

4. Inspections and Reporting

- a.) Inspections are required on a quarterly basis. Are quarterly inspections being completed?

Quarterly Inspections have been completed for FYs 2013, 2014, 2015 and 2016. This is the third Quarterly Inspection to be conducted for FY 2017. All Quarterly Inspections for FYs 2013, 2014, 2015 and 2016 and 2017 were conducted in accordance with the approved PMP dated August 2012.

- b.) An annual report is required. Has the annual report been completed and submitted?

The Final FY 2016 Annual Report was submitted on February 15, 2017 and approved on March 13, 2017.

5. Training (as applicable to WBG)

- a.) Was LUC training (specific to WBG) being conducted as applicable? Describe the training (content/who attended/who provided/documentation of training).

LUC training is provided annually to all Camp Ravenna staff and tenant units at Camp Ravenna. The LUC training is typically provided by Katie Tait and/or Tim Morgan, Camp Ravenna-Environmental. The training provides an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/Munitions Response Sites (MRS), and specific restrictions for WBG. Using units also receive an in-brief prior to firing on the range. Using units and tenant units at Camp Ravenna are not allowed down range. Environmental contractors who access WBG are also provided with an in-brief which informs them of the LUCs/restrictions at the AOC. They must read and sign the in-brief form. Training materials and rosters are on file in the Camp Ravenna Environmental Office. LUC training specific to WBG was held on April 13 and 18, 2017 for Camp Ravenna

units/staff. Training will be conducted for additional Camp Ravenna staff and contractors on an as-needed basis.

b.) If training was not provided, explain why and what corrective actions were initiated?

N/A

6. Description of any observed/noted LUC violation(s):

The Camp Ravenna perimeter fence had eight holes in the fence fabric that was observed and documented in this report. These areas were assigned call-out numbers SW45, SW 46, SW47, NW19, NW20, NW13A, NW21 and NE42. See Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspection and attached Detail Sheets.

7. Date of Notification of LUC violation (if applicable):

The Army was notified via e-mails on April 12 (Notice No. 1 SW45), April 13 (Notice No. 2 SW46), April 18 (Notice No. 3 SW47 and NW19), April 19 (Notice No. 4 NW20 and NW13A), April 20 (Notice No. 5 NW21) and April 26 (Notice No. 6 NE42) 2017 of the eight new fence defects discovered during the 3rd Quarter FY 2017 facility perimeter fence evaluation. (See Attachment 1, Figure 1 Index Map and Summary Table, and associated detail sheets).

8. Description of any corrective actions taken to remedy observed LUC violation(s) or recommended corrective actions:

The perimeter fence defects SW45, SW46, SW47, NW19, NW20 and NW21 were reported as being repaired after the 3rd Quarter inspection had been conducted. These repairs were made after the 3rd Quarter inspection and photographs of these repairs will be presented in the FY 2017 4th Quarter LUC report.

Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspections shows photographs of a previous fence deficiency (SW44) that was repaired during the second quarter of FY 2017, but after the second quarter inspection had been conducted.

These efforts of the OHARNG staff to repair the identified deficiencies in the fence have improved the condition of the fence since the last inspection (See Attachment 1, FY 2017 Callout/Repair Table).

9. Additional Notes/Comments:

As requested by the Ohio EPA, WBG photographs taken during the 3rd Quarter LUC Inspection are included with this report (Attachment 2, Supplemental Detail Sheet No. 1).

Original Inspection Completed by:

Signature:



Printed Name: Don Trocchio

Title: Professional Surveyor

Organization: Vista Sciences Corporation

Date: May 1, 2017

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**FY 2017 Third Quarter
Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 1

Figure 1 Index Map

Camp Ravenna Perimeter Fence Reference System

FY 2017 Callout/Repair Summary Table

Detailed Quadrant Maps

Figure 1 Index Map

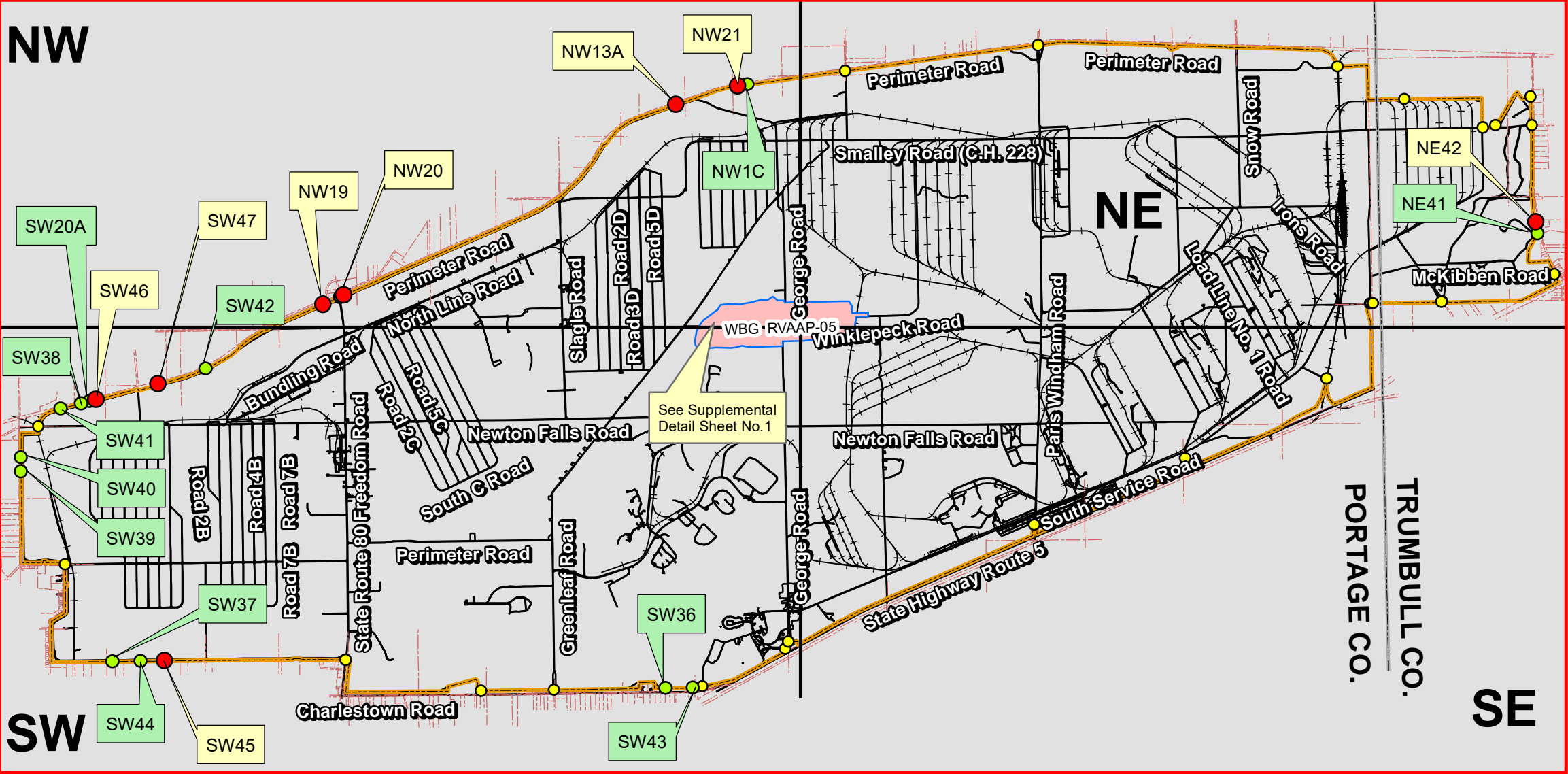


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

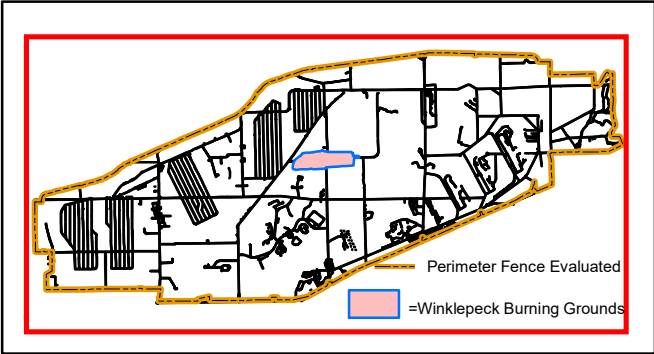
- Opening in fence (2'≥) and/or fabric missing/damaged (8 Locations)
- Repaired (12 Locations)
- Gates (26 locations for reference only, no detail sheets)
All gates appear to be maintained and are in working order

— Perimeter Fence Evaluated (29.6 miles)

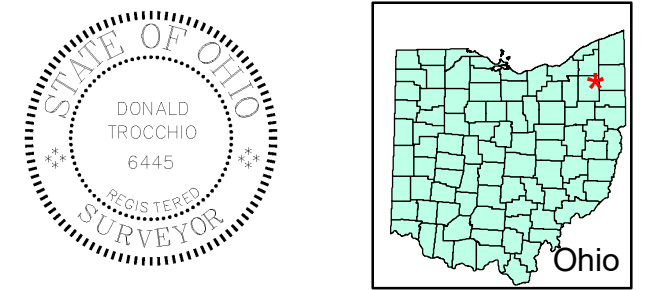
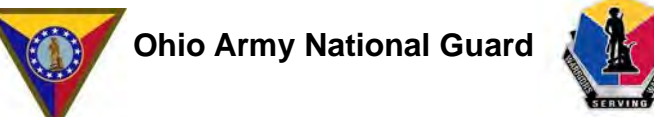
Detail Sheet Callout	Detail Sheet Repair Callout
----------------------	-----------------------------

SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Produced in April 2017 for:

US Army Corps of Engineers
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202

Louisville District

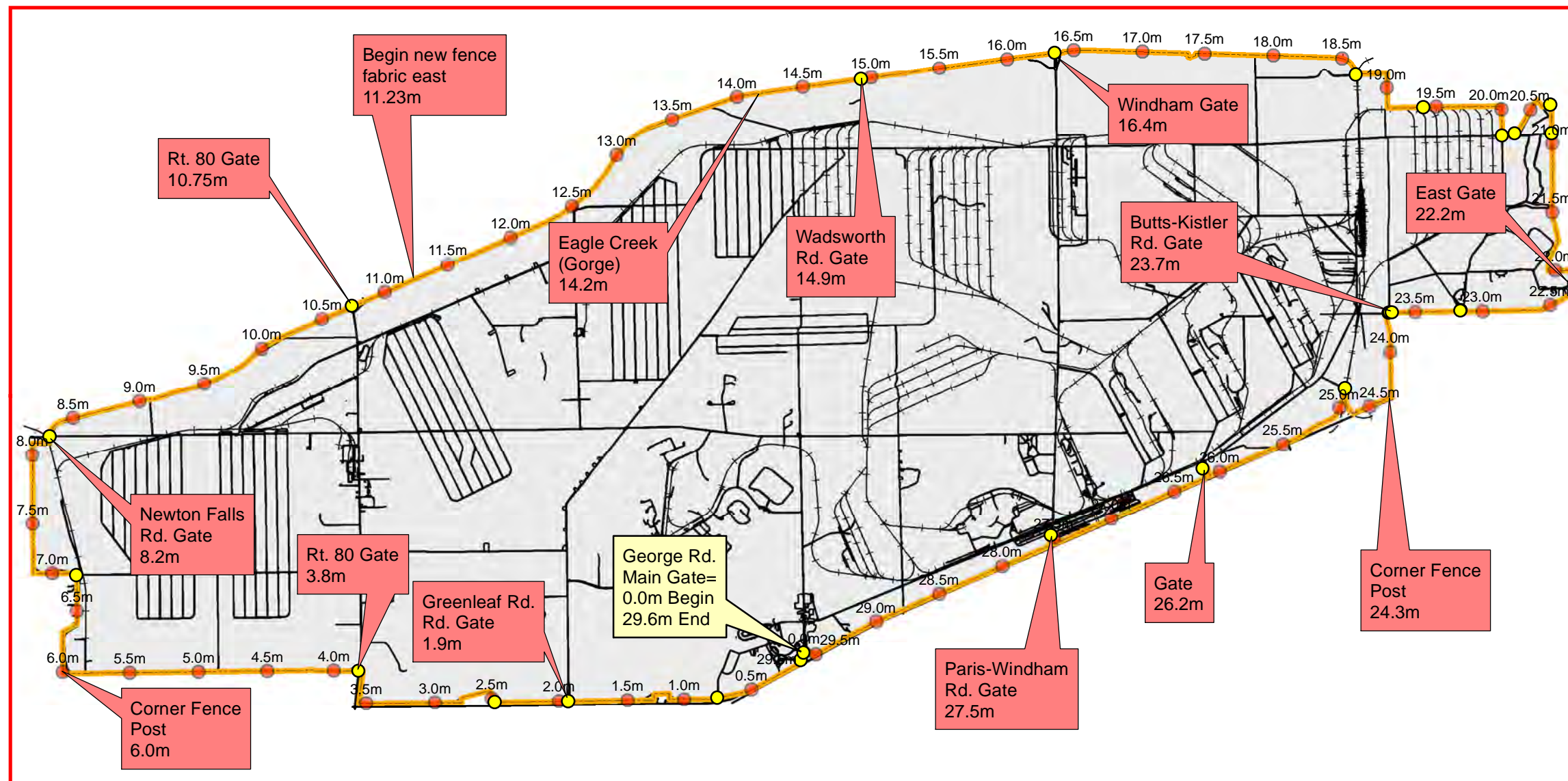
Projection Datum is NAD83, Ohio State Plane Rectangular Grid, North Zone

0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet

Camp Ravenna JMTC
1438 State Route 534 SW
Newton Falls, OH 44444
Don Trocchio, PS
don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

FIGURE 1 INDEX MAP

Camp Ravenna Perimeter Fence Reference System

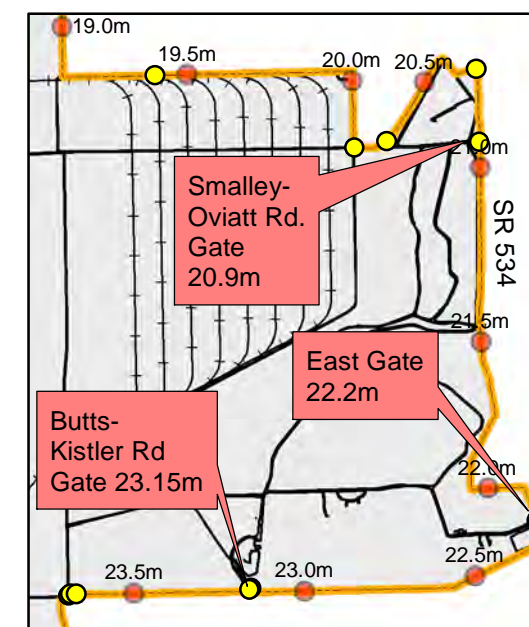


CAMP RAVENNA PERIMETER FENCE REFERENCE SYSTEM

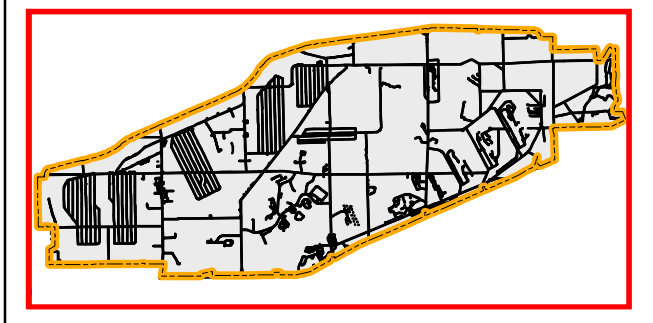
East Gate Detail Inset

Mile 20.0

Half Mile 24.5



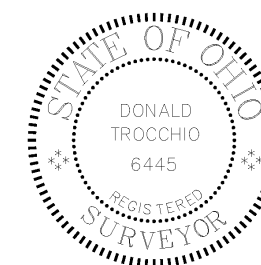
Camp Ravenna Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



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US Army Corps of Engineers

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Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone

0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet



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1438 State Route 534 SW
Newton Falls, OH 44444
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MGRS 17T NF01946150 (NAD83)

FY 2017 Callout/Repair Summary Table

FY 2017 3rd QUARTER CALLOUT/REPAIR SUMMARY TABLE
Camp Ravenna Joint Military Training Center 3rd Qtr FY2017 LUC Inspection

CALLOUT	DATE	COMMENTS	REPAIR DATE (if reported)	US Survey Ft		Perimeter Mile Marker
				NORTHING	EASTING	
FY 2017 3rd Quarter Callout						
SW45	4/11/2017	poacher hole	4/20/2017	549378	2333892	5.10
SW46	4/12/2017	poacher hole	4/20/2017	559469	2331227	8.75
SW47	4/17/2017	poacher hole	4/20/2017	560076	2333638	9.25
NW19	4/17/2017	poacher hole	4/20/2017	563158	2340004	10.60
NW20	4/18/2017	poacher hole	4/20/2017	563501	2340794	10.75
NW13A	4/18/2017	poacher hole		570866	2353636	13.65
NW21	4/19/2017	tree blow down on fence	4/20/2017	571584	2356026	14.10
NE42	4/25/2017	tree blow down on fence		566320	2386837	21.60
Repairs of Previous Quarter's Callouts						
SW36	11/14/2016	poacher hole	unknown	548328	2353232	1.01
SW37	11/15/2016	poacher hole at bottom of fence	unknown	549355	2331868	
SW38	11/17/2016	poacher hole	unknown	559324	2330662	
NE41	11/28/2016	tree blow down on fence	unknown	565895	2386901	
NW1C	11/22/2016	poacher hole	unknown	571637	2356382	
SW39	11/16/2016	former repair needs reattached	11/18/2016	556697	2328342	7.80
SW40	11/16/2016	poacher hole	11/18/2016	557238	2328338	7.90
SW41	11/17/2016	poacher hole	11/29/2016	559117	2329861	8.50
SW20A	11/17/2016	former repair needs reattached	11/29/2016	559398	2330974	8.70
SW42	11/17/2016	poacher hole	11/29/2016	560658	2335468	9.60
SW43	11/23/2016	poacher hole	12/6/2016	548341	2354290	0.80
SW44	1/9/2017	poacher hole	1/13/2017	549366	2332961	5.40

Repaired 1st Quarter

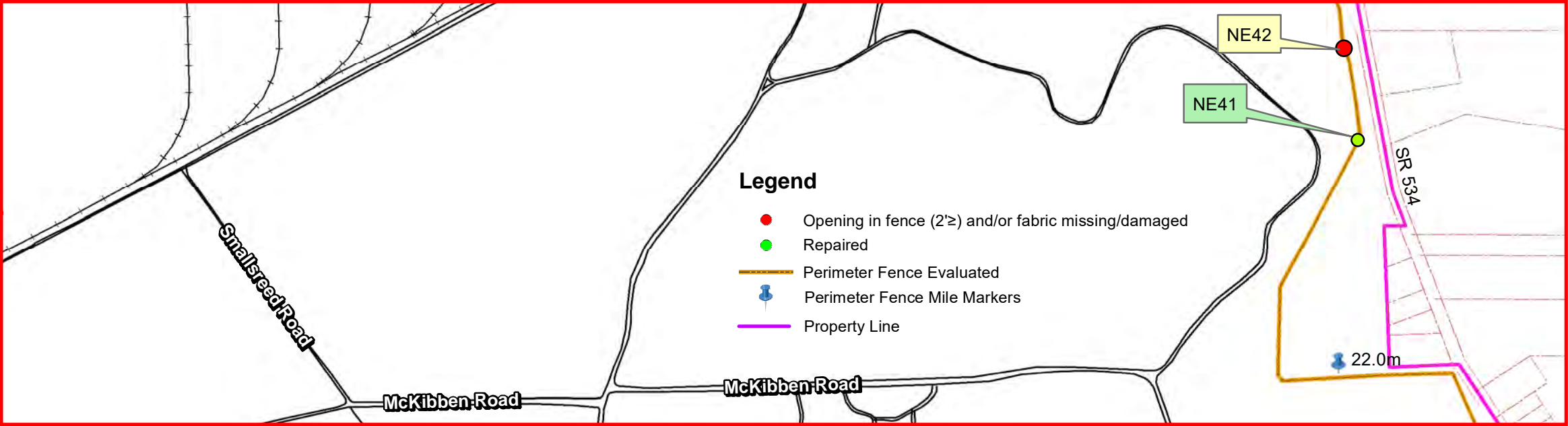
Repaired 2nd Quarter

Repaired 3rd Quarter

Repaired 4th Quarter

NE (Northeast) Quadrant

DETAIL SHEET FOR NE42

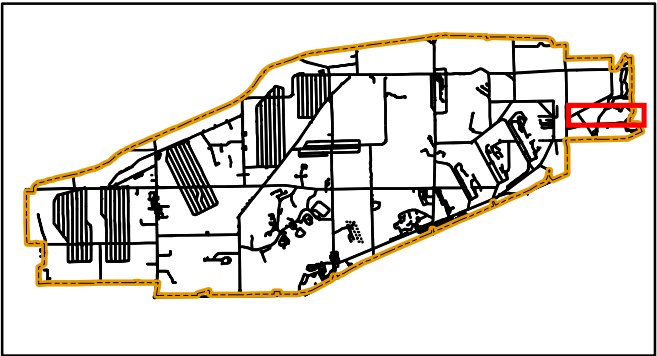


LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NE42 discovered 4/25/2017



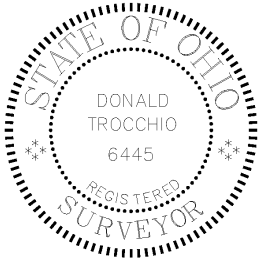
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



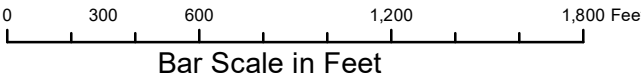
**US Army Corps of
Engineers**

600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202

Louisville District



Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone

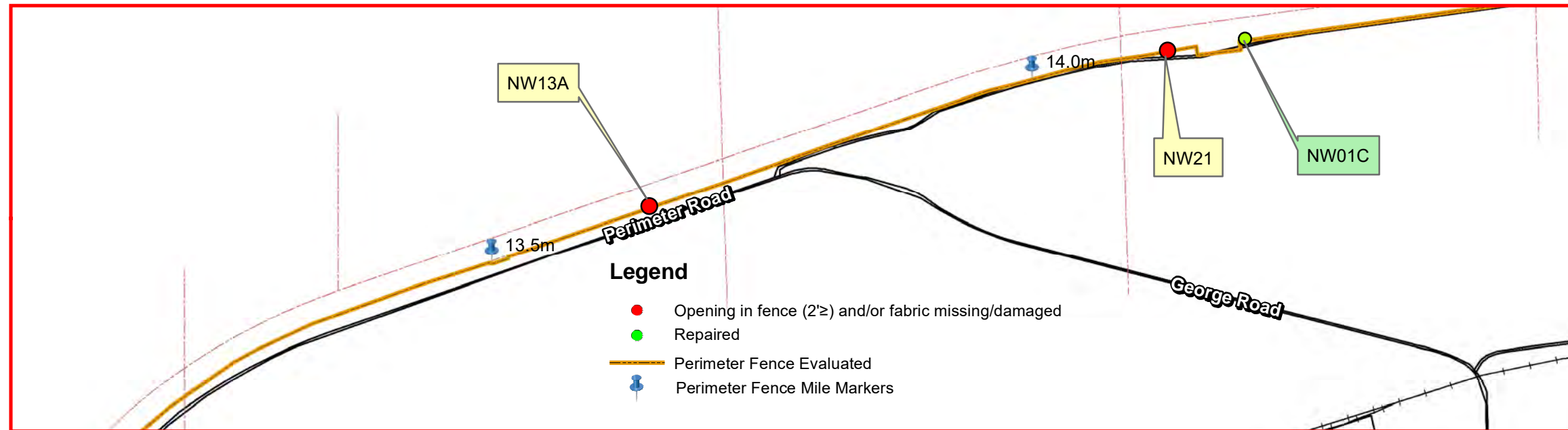


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DETAIL SHEET FOR NE42

NW (Northwest) Quadrant

DETAIL SHEET FOR NW13A (Repeat)



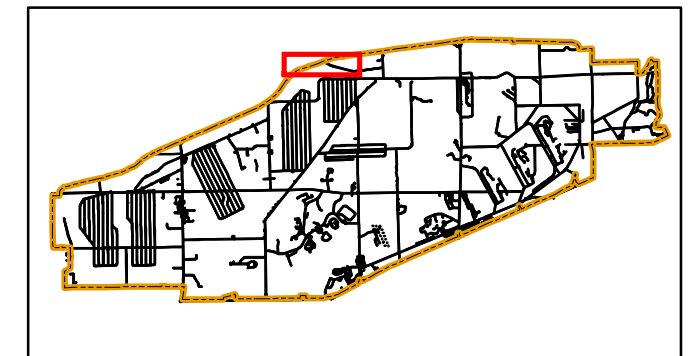
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017 PERIMETER FENCE INSPECTION

PHOTO NW13A discovered 04/18/2017

NW13A was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



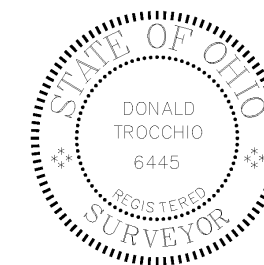
Camp Ravenna Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



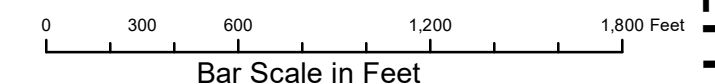
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Louisville District



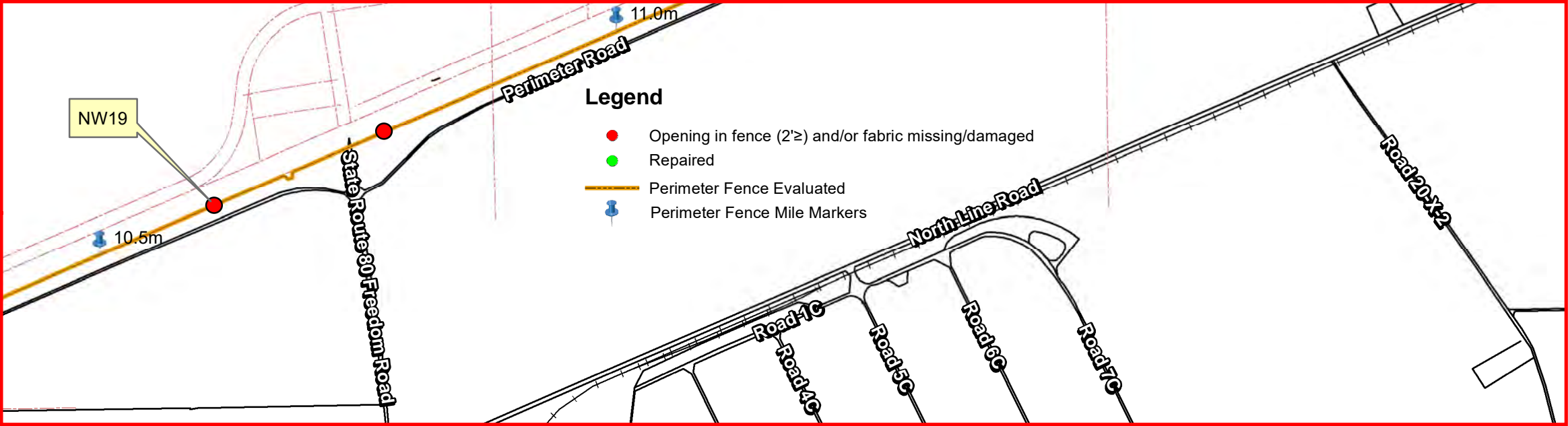
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR NW13A

DETAIL SHEET FOR NW19



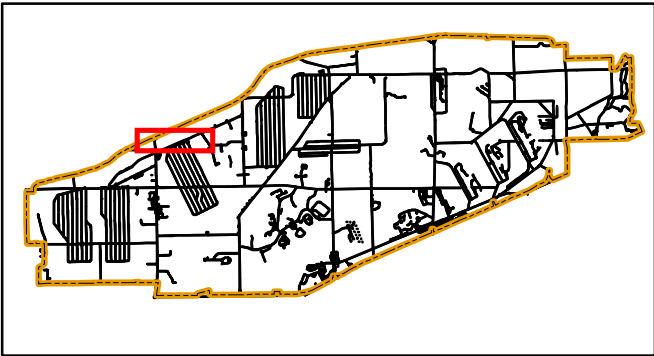
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NW19 discovered 04/17/2017

NW19 was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



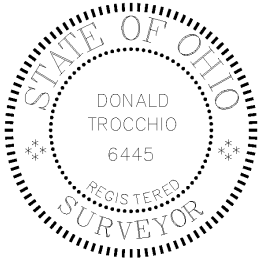
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



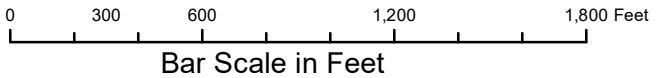
**US Army Corps of
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Louisville District



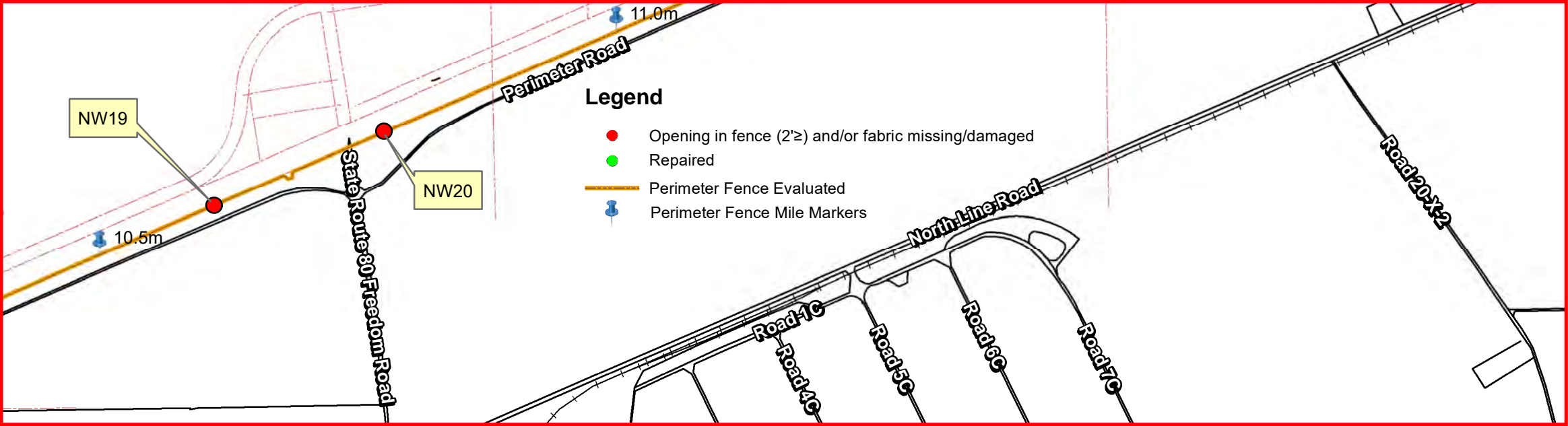
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR NW19

DETAIL SHEET FOR NW20



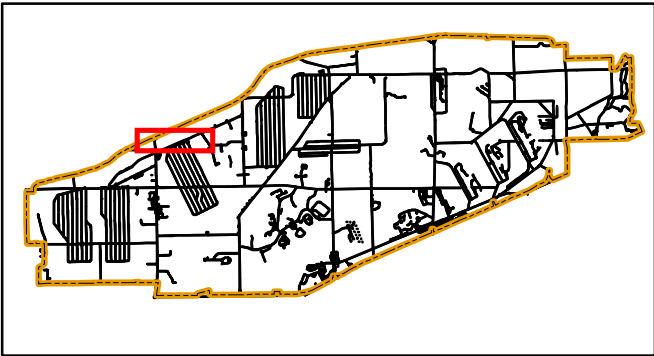
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NW20 discovered 04/18/2017

NW20 was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds.



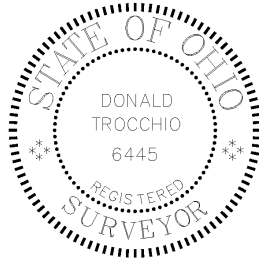
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



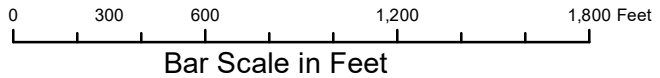
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Louisville District



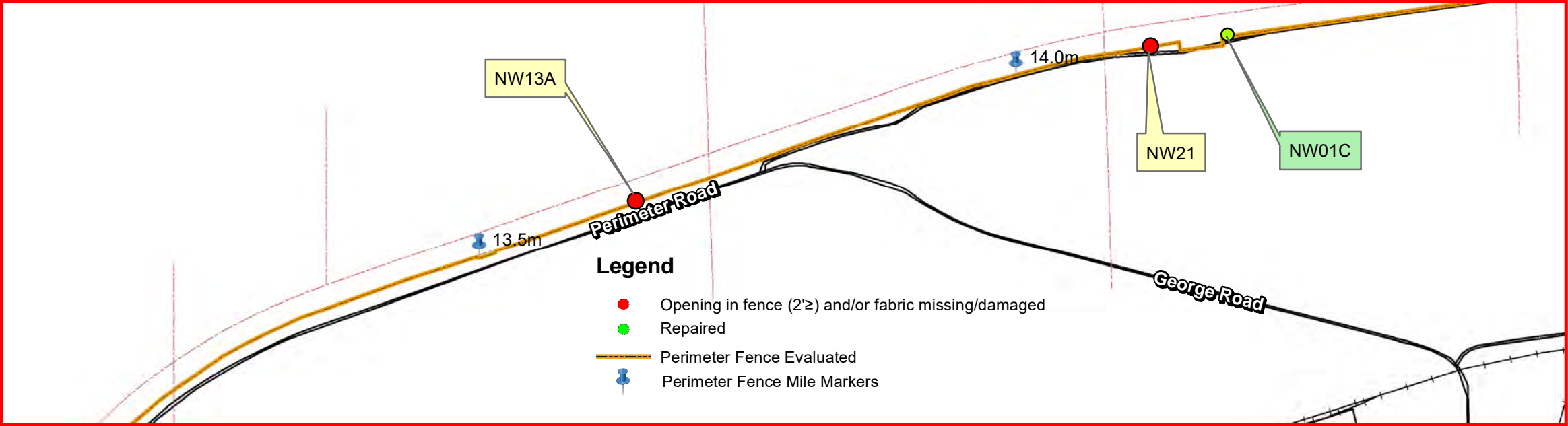
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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don.trocchio@vistasciences.com
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DETAIL SHEET FOR NW20

DETAIL SHEET FOR NW21

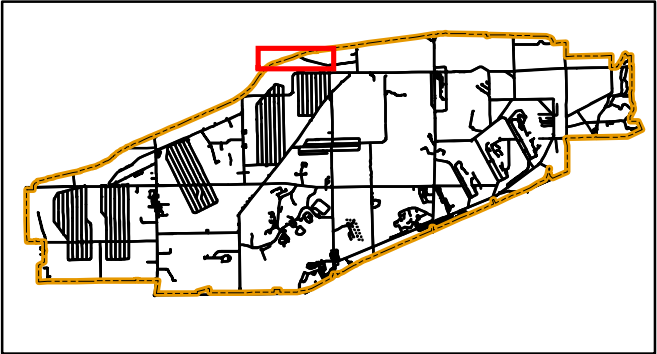


LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NW21 discovered 04/19/2017



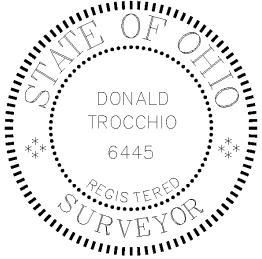
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



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Louisville District



Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone

0 300 600 1,200 1,800 Feet
Bar Scale in Feet



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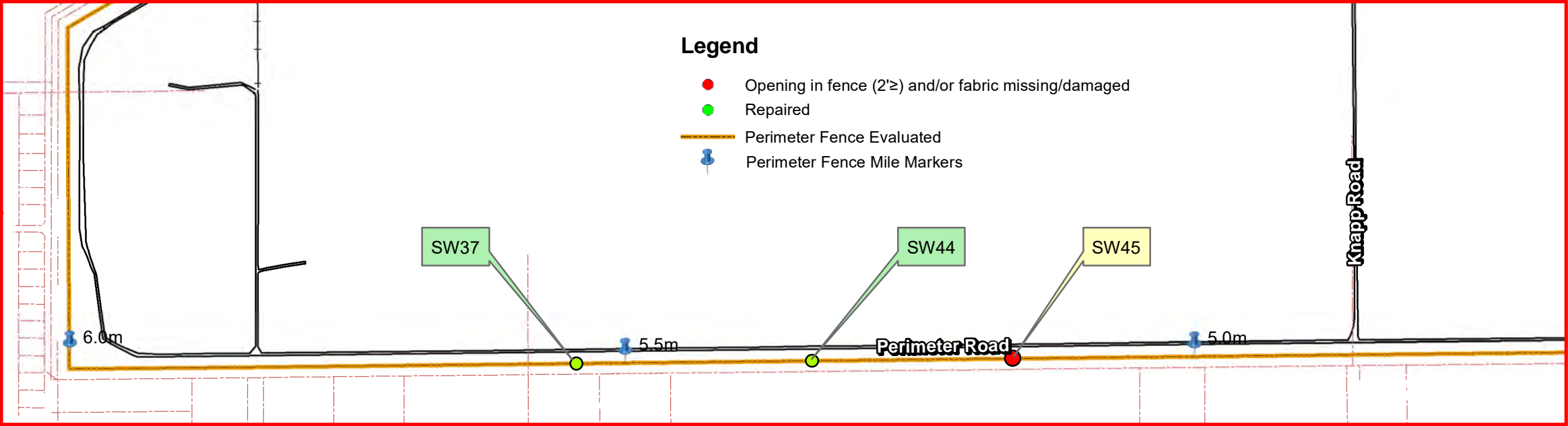
DETAIL SHEET FOR NW21

SE (Southeast) Quadrant

(No Detail Sheets for FY 2017 3rd Quarter LUC Inspection Report)

SW (Southwest) Quadrant

DETAIL SHEET FOR SW44



LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

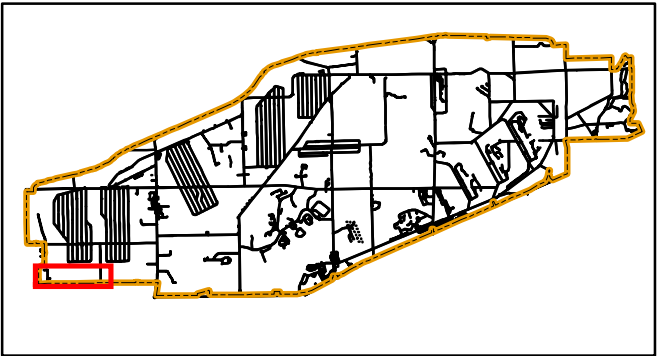
Repair photo SW44 dated 04/11/2017



PHOTO SW44 discovered 01/09/2017



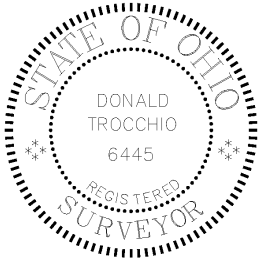
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



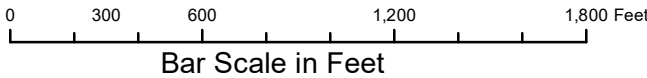
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Louisville District



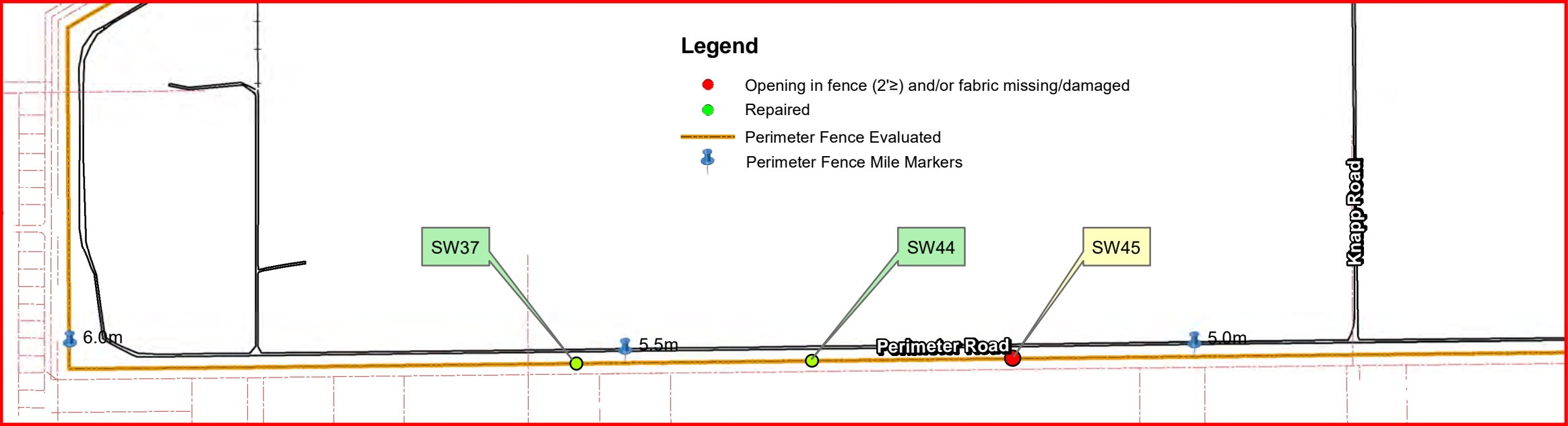
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR SW44

DETAIL SHEET FOR SW45



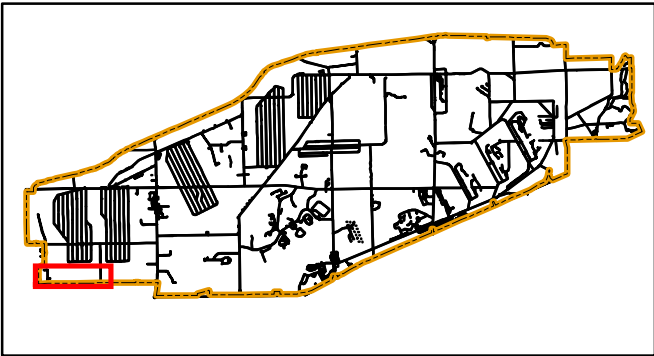
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW45 discovered 04/11/2017

SW45 was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



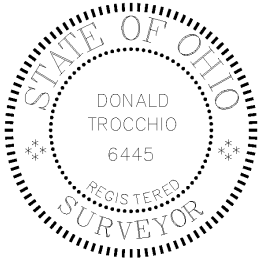
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



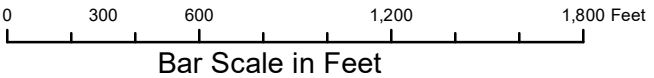
**US Army Corps of
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Louisville District



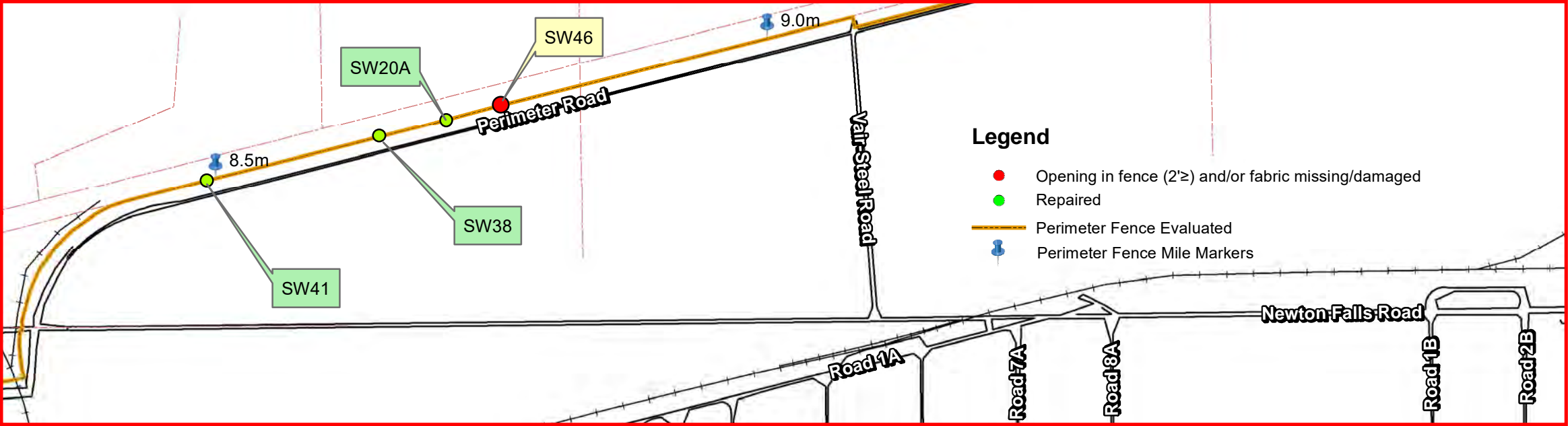
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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MGRS 17T NF01946150 (NAD83)

DETAIL SHEET FOR SW45

DETAIL SHEET FOR SW46



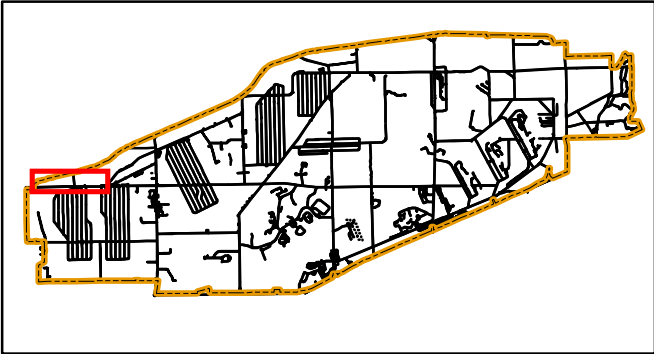
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW46 discovered 04/12/2017

SW46 was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



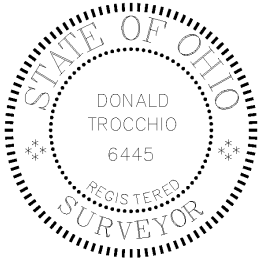
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



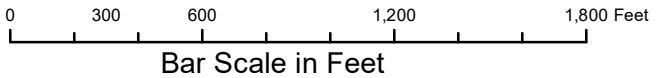
US Army Corps of Engineers

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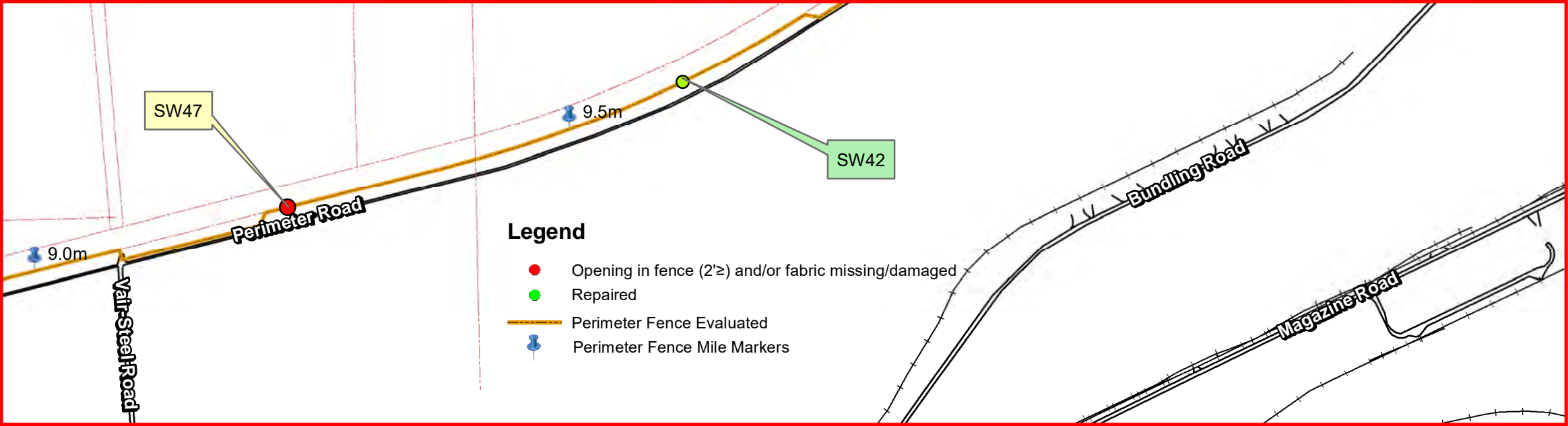
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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1438 State Route 534 SW
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don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

DETAIL SHEET FOR SW46

DETAIL SHEET FOR SW47



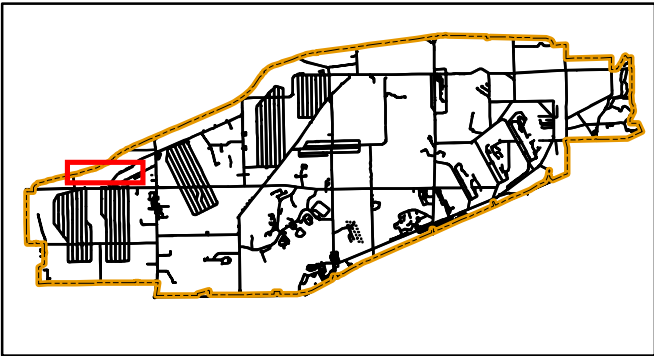
LAND USE CONTROL (LUC) INSPECTION 3rd QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW47 discovered 04/17/2017

SW47 was reported as repaired on 04/20/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 4th Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*.



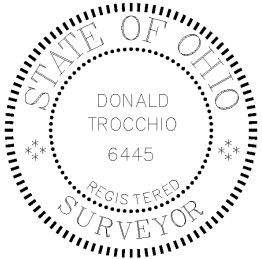
Camp Ravenna
Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:



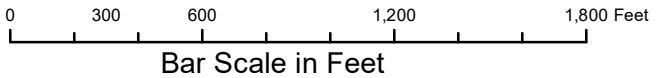
**US Army Corps of
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600 Dr. Martin Luther King Jr. Place
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Louisville District



Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

DETAIL SHEET FOR SW47

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**Quarterly Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 2

Supplemental Detail Sheet No. 1

Callout Repair Log

Supplemental Detail Sheet No. 1

SUPPLEMENTAL DETAIL SHEET NO.1

LAND USE CONTROL (LUC) INSPECTION

PERIMETER FENCE INSPECTION

3rd QUARTER FY2017

PHOTO NO.2 4/27/2017



PHOTO NO.4 4/27/2017



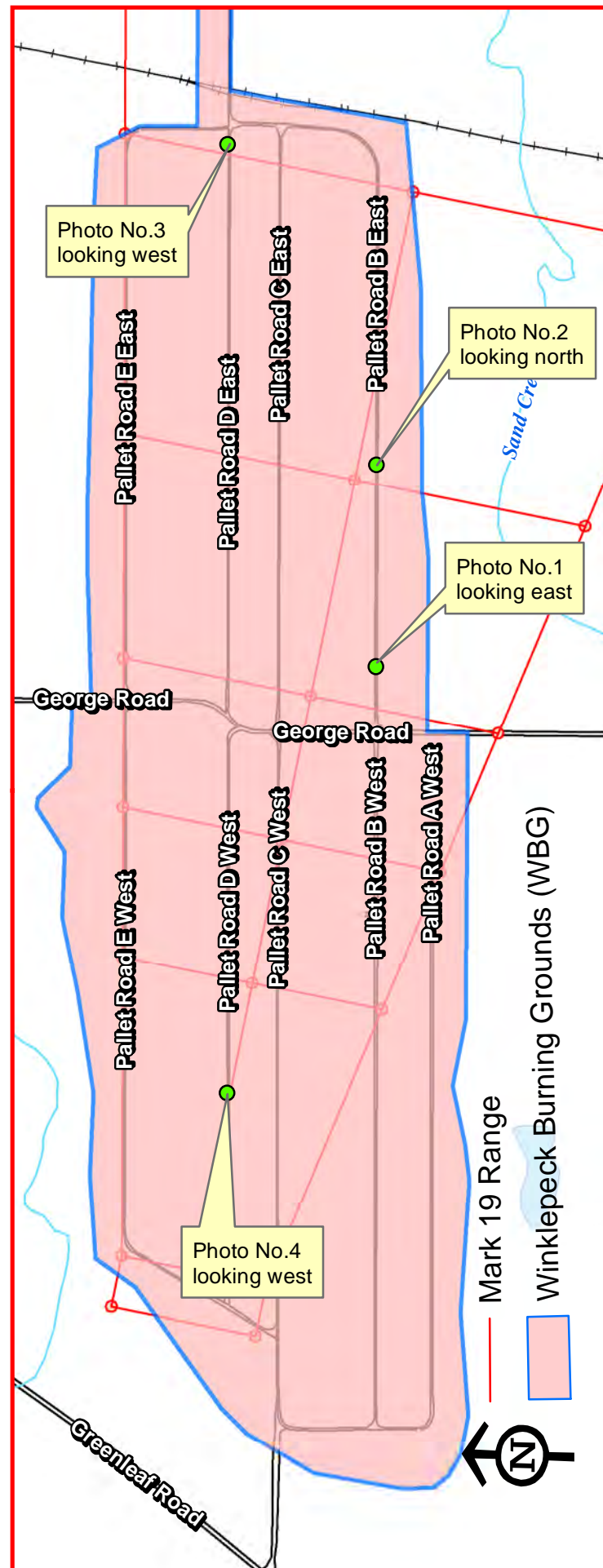
PHOTO No.1 4/27/2017



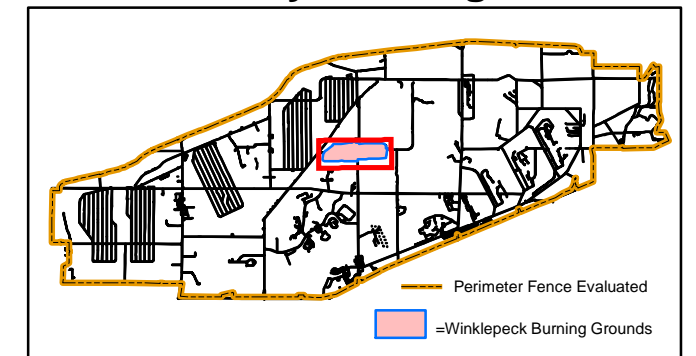
PHOTO NO.3 4/27/2017



PHOTO IMAGES WITHIN THE
WINKLEPECK BURNING GROUNDS (RVAAP-05)



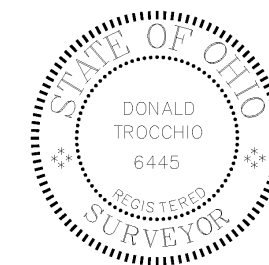
Camp Ravenna Joint Military Training Center



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in April 2017 for:

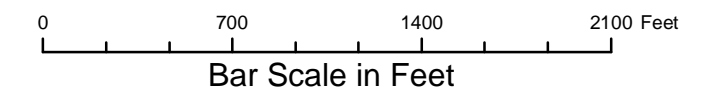


US Army Corps of Engineers

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Louisville District

Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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1438 State Route 534 SW
Newton Falls, OH 44444
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MGRS 17T NF01946150 (NAD83)

SUPPLEMENTAL DETAIL SHEET NO.1

Callout Repair Log

PER REQUESTS 20 APRIL 2017

[illegible]

Appendix F

Final FY 2017 Fourth Quarter Land Use Control Inspection for RVAAP-05 Winklepeck Burning Grounds

Final
FY 2017 Fourth Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-13-C-0031

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

May 21, 2018

Final
FY 2017 Fourth Quarter Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Contract No. W912QR-13-C-0031

Prepared for:



U.S. Army Corps of Engineers
Louisville District

Prepared by:



600 E. Montana Ave.
Las Cruces, NM 88001

May 21, 2018



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

June 5, 2018

LTC James Crowley
ARNG-IED
ARNG Directorate
111 South George Mason Drive
Arlington, VA 22204

Re: US Army Ravenna Ammunition Plt RVAAP
Remediation Response
Project records
Remedial Response
Portage County
267000859029

Subject: Approval of the "Final FY 2017 Fourth Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds" – Camp Ravenna Joint Military Training Center at the Former Ravenna Army Ammunition Plant in Portage and Trumbull Counties, Ohio, Dated May 21, 2018 (Work Activity No. 267000859029)

Dear LTC Crowley:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) has received and reviewed the document entitled, "*Final FY 2017 Fourth Quarter Land Use Control Inspection, RVAAP-05 Winklepeck Burning Grounds*," dated June 27, 2017. This document, received by Ohio EPA's NEDO on May 21, 2018, was prepared for the U.S. Army Corps of Engineers (USACE) Louisville District, by Vista Sciences Corporation.

This document was reviewed by personnel from Ohio EPA's DERR. Pursuant to the Director's Findings and Orders paragraph 39 (b), the response to Ohio EPA comments are satisfactory and the document is accepted in its final format. If you have any questions or concerns, please do not hesitate to contact me at (330) 963-1235.

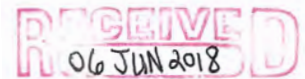
Sincerely,

Nicholas Roope
Site Coordinator
Division of Environmental Response and Revitalization

NCR/nvp

cc: Craig Coombs, USACE, Louisville District
Shreffler/Harris, Camp Ravenna Environmental Office, Vista Sciences

ec: Mark Johnson, Ohio EPA, NEDO DERR
Bob Princic, Ohio EPA, NEDO DERR
Tom Schneider, Ohio EPA, SWDO DERR
Katie Tait/Kevin Sedlak, Camp Ravenna Environmental Office



Document Distribution

for the

Final FY 2017 Fourth Quarter Land Use Control Inspection,
RVAAP-05 Winklepeck Burning Grounds

Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

Name/Organization	Number of Printed Copies	Number of Electronic Copies
Kevin Sedlak, ARNG – IED, Camp Ravenna	0	0
Katie Tait, OHARNG – Camp Ravenna	0	0
Nicholas Roope, Ohio EPA Project Manager – NEDO-DERR	1	3
Mark Johnson, Ohio EPA, NEDO-DERR		Transmittal letter
Bob Princic, Ohio EPA, NEDO-DERR	0	Transmittal letter
Tom Schneider, Ohio EPA, DERR	0	Transmittal letter
Nathaniel Peters, USACE – Louisville District	0	1
Craig Coombs, USACE – Louisville District	0	Transmittal letter
Susan Oliver, Management Solutions, LLC	0	Transmittal letter
Gail Harris, AR Manager – Camp Ravenna	1	1

AR = Administrative Record

ARNG = Army National Guard

CO = Central Office

DERR = Division of Environmental Response and Revitalization

EPA = Environmental Protection Agency

IED = Installation Environmental Division

NEDO = Northeast District Office

OHARNG = Ohio Army National Guard

USACE = U.S. Army Corps of Engineers

LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARNG-IED	Army National Guard - Installation Environmental Division
bgs	below ground surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
FWGWMPP	Facility-Wide Ground Water Monitoring Program Plan
FWSAP	Facility-Wide Sampling and Analysis Plan
IRP	Installation Restoration Program
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
MK	Mark
MRS	Munitions Response Site
MSG	Master Sergeant
Ohio EPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard
PS	Professional Surveyor
PMP	Property Management Plan
RVAAP	Ravenna Army Ammunition Plant
SOP	Standard Operating Procedure
UXO	Unexploded Ordnance
WBG	Winklepeck Burning Grounds

**Camp Ravenna Joint Military Training Center (Camp Ravenna) /
Former Ravenna Army Ammunition Plant (RVAAP)
Quarterly Land Use Control (LUC) Inspection Form
RVAAP-05 Winklepeck Burning Grounds**

In accordance with the Camp Ravenna/former RVAAP Property Management Plan (PMP) dated August 2012 and Appendix A-1, an inspection of RVAAP-05 Winklepeck Burning Grounds (WBG) was conducted by Don Trocchio on July 10-13, 17-20, and 24-27, 2017.

The quarterly inspections required by the PMP include the following:

- Review of LUC training and documentation as applicable to WBG.
- Evaluation of the Camp Ravenna perimeter fence to ensure that it is maintained in a manner that is protective and effective control and deters trespassers.
- Evaluation of activities at WBG to ensure that all activities executed within WBG are in compliance with Ohio Army National Guard (OHARNG) range safety regulations/standard operation procedure (SOP), established digging restrictions, and established exposure limits. All digging, intrusive activities, or excavation on the WBG Area of Concern (AOC) outside of the Unexploded Ordnance (UXO)/ Munitions and Explosives of Concern (MEC)-cleared areas within the Mark (MK) 19 Grenade Machinegun Range is prohibited with the following exceptions:
 - Routine maintenance of roads, ditches, culverts and activities listed in A-1.4 of the PMP (maintenance of targetry and associated lifting mechanisms, range maintenance activities including removal of practice rounds, vegetation management, compatible natural resource management activities, nuisance wildlife control, drainage maintenance, wetland delineation, grassland management, scientific research and sampling activities);
 - Ground surface repairs by authorized range personnel in support of authorized range activities; and
 - Digging along target array areas by authorized range personnel to a depth of 1 foot below ground surface (bgs).
 - Subsurface investigations and remedial activities will be allowed in specified areas provided these activities strictly follow an approved Work Plan. The Work Plan must list (among other things) UXO/MEC clearance procedures.

This shall also include evaluation of required range signage. The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations.

- Evaluation of groundwater activities to ensure that any groundwater activities are being conducted in a manner consistent with established LUCs. Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:
 1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent Facility-Wide Sampling and Analysis Plan (FWSAP) as part of the AOC-specific Installation Restoration Program (IRP) or Facility-Wide Ground Water Monitoring Program Plan (FWGWMPP).
 2. The abandonment and replacement of monitoring wells damaged by activities conducted on Camp Ravenna and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio Environmental Protection Agency (Ohio EPA) guidance, the most recent FWSAP, and applicable Ohio Administrative Code requirements.

LUC deficiencies or inconsistent land uses that are identified must be reported and identified on the quarterly inspection form/report. These deficiencies must also be reported immediately to the Army, along with suggestions on how to remedy the deficiencies.

Review of LUCs – Management/Effectiveness/Corrective Action

1. AOC Map

Is the AOC map current with respect to AOC boundaries, land activities, and prescribed LUCs?

The AOC map was reviewed on July 10, 2017 by Don Trocchio, Professional Surveyor (PS), and it is current with respect to AOC boundaries, land activities and prescribed LUCs.

2. Camp Ravenna Perimeter Fence

Is the Camp Ravenna perimeter fence and associated gates being maintained in order to be an effective and protective control and deter trespassers?

The perimeter fence is currently being maintained by OHARNG staff to ensure it is an effective and protective land use control. Attachment 1, Figure 1 Index Map and Summary Table, and associated Detail Sheets present the five newly damaged fence areas (SW48, SW49, NE43, NE44 and NE45) and photographs of areas that were repaired during the last (FY 2017 3rd) quarter, but after the last (3rd) quarter's inspection had occurred (NE42, NW13A, NW19, NW20, NW21, SW45, SW46 and SW47). Repaired callouts SW49, NE43, NE44 and NE45 were reported as being repaired after the 4th quarter perimeter fence inspection had occurred (see Attachment 2, Callout Repair Log). Photograph of these repaired areas will be provided in the FY 2017 Annual LUC Inspection report.

3. Activities and Land Use

a.) This AOC is restricted from residential land use. Has residential use occurred? Have other land use changes occurred?

Based on an interview with OHARNG Range Control Staff (Master Sergeant [MSG] Rex Hufenbach) on July 19, 2017 at the Camp Ravenna Headquarters Building, no residential land use has occurred. Additionally, there has been no change in land use at the AOC since the previous inspection.

b.) What activities have occurred at WBG since the last inspection?

The WBG/MK19 Range is used for training purposes (i.e., MK19 Range firing/activities). A removal action consisting of excavating contaminated soils at several former burning pads in order to achieve Commercial/Industrial use at the WBG/MK19 Range has been completed and the remediation contractor is completing restoration activities. (See Supplemental Detail Sheet No. 1).

All activities are in accordance with designated LUCs/restrictions.

c.) Are activities (excavation, range maintenance etc.) at WBG being conducted in compliance with OHARNG range safety regulations/SOP and established excavation restrictions?

Based on an interview with MSG Rex Hufenbach on July 19, 2017, all activities within WBG are being conducted in compliance with OHARNG Range Safety Regulations/SOP and established excavation restrictions. All activities are in accordance with those set forth in the PMP.

A surface and subsurface remedial action that involves excavation has been completed at several former burning pads in the MK19 range, and the contractor is completing restoration activities (seeding, removing silt fence, etc.). The remedial action was based on an approved Remedial Design and was conducted in order to achieve Industrial/Commercial Use standards in the affected areas.

- d.) Is the required range signage in place and functional? The range is required to be marked with signage in conformance with the requirements of the current Department of Army regulations. If not, describe what corrective actions will be undertaken?

MSG Rex Hufenbach stated all signage is placed at 200-meter intervals.

- e.) Groundwater: Groundwater use or extraction of groundwater located at or underlying the WBG AOC or any portion thereof is prohibited, except for the following:

1. The installation, development, purging, and sampling of new or existing monitoring wells in accordance with the most recent FWSAP as part of the AOC-specific IRP or FWGWMPP.
2. The abandonment and replacement of monitoring wells damaged by Installation activities, and wells no longer utilized as part of IRP or FWGWMPP activities, in accordance with Ohio EPA guidance, the most recent FWSAP and applicable Ohio Administrative Code requirements.

- f.) Have any groundwater activities been conducted and, if yes, are they within the established control parameters?

Groundwater is sampled on a semi-annual basis under the FWGWMPP. Kevin Sedlak (Restoration Project Manager, Army National Guard Installation Environmental Division [ARNG-IED]) stated during a July 17, 2017 interview that all Ground Water Monitoring activity is conducted in accordance with the 2017 Groundwater Addendum to the FWGWMPP and the parameters for groundwater monitoring as set forth in the PMP, Appendix A-1. The next FWGWMPP sampling event is currently scheduled for October 2017.

4. Inspections and Reporting

- a.) Inspections are required on a quarterly basis. Are quarterly inspections being completed?

Quarterly Inspections have been completed for FYs 2013, 2014, 2015 and 2016. This is the fourth Quarterly Inspection to be conducted for FY 2017. All Quarterly Inspections for FYs 2013, 2014, 2015 and 2016 and 2017 were conducted in accordance with the approved PMP dated August 2012.

- b.) An annual report is required. Has the annual report been completed and submitted?

The Final FY 2016 Annual Report was submitted on February 15, 2017 and approved on March 13, 2017.

5. Training (as applicable to WBG)

- a.) Was LUC training (specific to WBG) being conducted as applicable? Describe the training (content/who attended/who provided/documentation of training).

LUC training is provided annually to all Camp Ravenna staff and tenant units at Camp Ravenna. The LUC training is typically provided by Katie Tait and/or Tim Morgan, Camp Ravenna-Environmental. The training provides an overview of the history of the facility, the ongoing cleanup work, the location of the cleanup sites, any land use controls/restrictions on AOCs/Munitions Response Sites (MRS), and specific restrictions for WBG. Using units also receive a munitions in-brief prior to firing on the range. Using units and tenant units at Camp Ravenna are not allowed down range. Training materials and rosters are on file in the Camp Ravenna Environmental Office.

- b.) If training was not provided, explain why and what corrective actions were initiated?

N/A

6. Description of any observed/noted LUC violation(s):

The Camp Ravenna perimeter fence had five holes in the fence fabric that was observed and documented in this report. These areas were assigned call-out numbers SW48, SW49, NE43, NE44 and NE45. See Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspection and attached Detail Sheets.

7. Date of Notification of LUC violation (if applicable):

The Army was notified via e-mails on July 12 (Notice No. 1 SW48), July 13 (Notice No. 2 SW49), July 20 (Notice No. 3 NE43), July 24 (Notice No. 4 NE44), and July 25 (Notice No. 5 NE45) 2017 of the five new fence defects discovered during the 4th Quarter FY 2017 facility perimeter fence evaluation. (See Attachment 1, Figure 1 Index Map and Summary Table, and associated detail sheets).

8. Description of any corrective actions taken to remedy observed LUC violation(s) or recommended corrective actions:

The perimeter fence defects SW49, NE43, NE44, and NE45 were reported as being repaired after the 4th Quarter inspection had been conducted. These repairs were made after the 4th Quarter inspection and photographs of these repairs will be presented in the FY 2017 Annual LUC report.

Attachment 1 – Figure 1 Index Map to Facility Perimeter Fence Inspections shows photographs of previous fence deficiencies (NE42, NW13A, NW19, NW20, NW21, SW45, SW46 and SW47) that were repaired during the third quarter of FY 2017, but after the third quarter inspection had been conducted.

These efforts of the OHARNG staff to repair the identified deficiencies in the fence have improved the condition of the fence since the last inspection (See Attachment 1, FY 2017 Callout/Repair Table).

9. Additional Notes/Comments:

As requested by the Ohio EPA, WBG photographs taken during the 4th Quarter LUC Inspection are included with this report (Attachment 2, Supplemental Detail Sheet No. 1).

Original Inspection Completed by:

Signature:



Printed Name: Don Trocchio

Title: Professional Surveyor

Organization: Vista Sciences Corporation

Date: July 27, 2017

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**FY 2017 Fourth Quarter
Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 1

Figure 1 Index Map

Camp Ravenna Perimeter Fence Reference System

FY 2017 Callout/Repair Summary Table

Detailed Quadrant Maps

Figure 1 Index Map

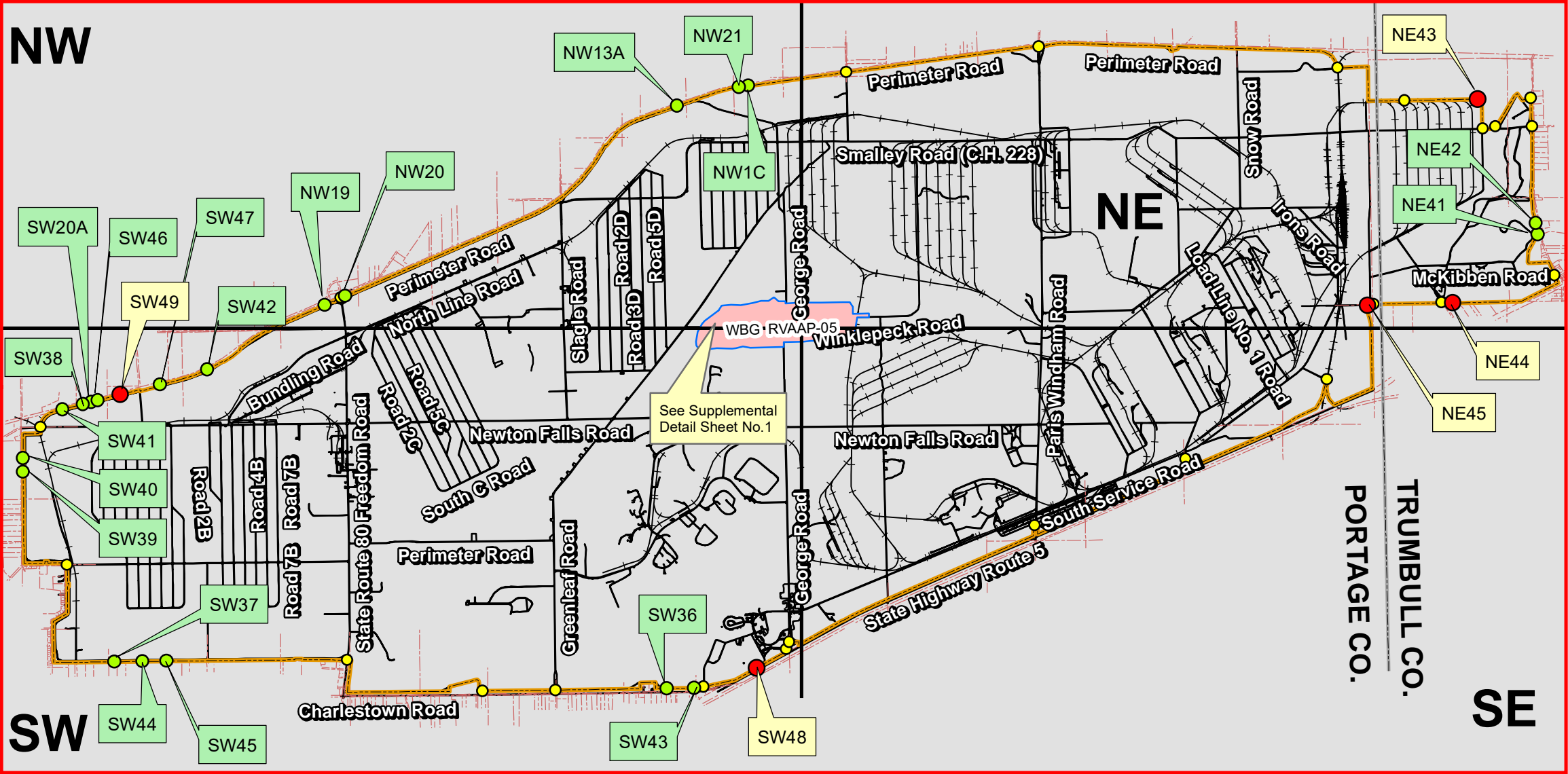


FIGURE 1 INDEX MAP TO FACILITY PERIMETER FENCE INSPECTION

Legend

LUC Inspection of Perimeter Fence

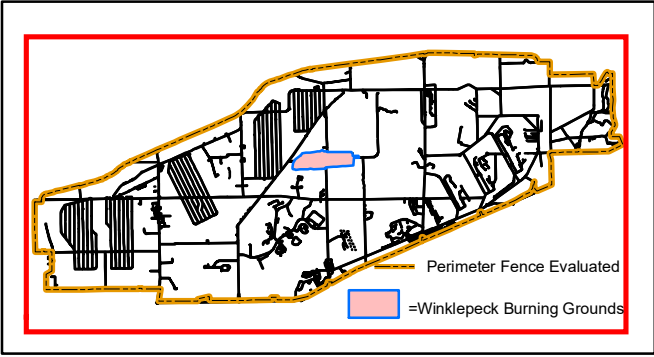
- Opening in fence (2'±) and/or fabric missing/damaged (5 Locations)
- Repaired (20 Locations)
- Gates (26 locations for reference only, no detail sheets)
All gates appear to be maintained and are in working order

— Perimeter Fence Evaluated (29.6 miles)

Detail Sheet Callout	Detail Sheet Repair Callout
-------------------------	--------------------------------

SEE ATTACHED SUMMARY TABLE AND DETAIL SHEETS FOR EACH DESIGNATED CALLOUT LOCATION

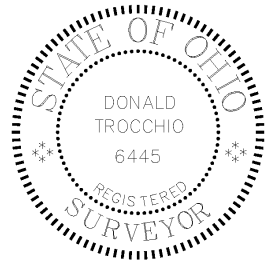
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Portage & Trumbull County
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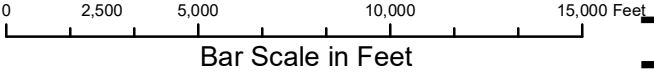
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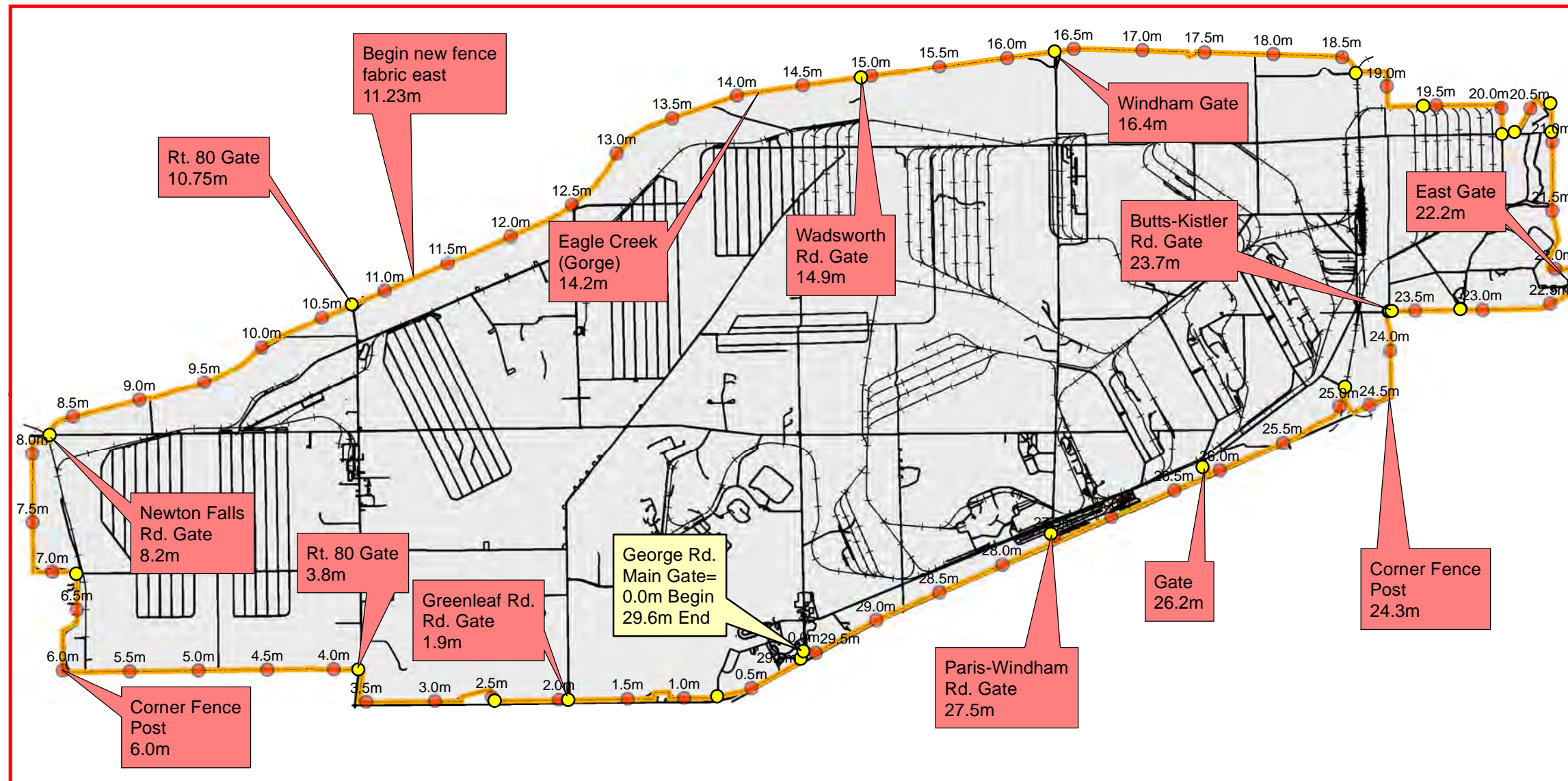
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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don.trocchio@vistasciences.com
MGRS 17T NF01946150 (NAD83)

FIGURE 1 INDEX MAP

Camp Ravenna Perimeter Fence Reference System

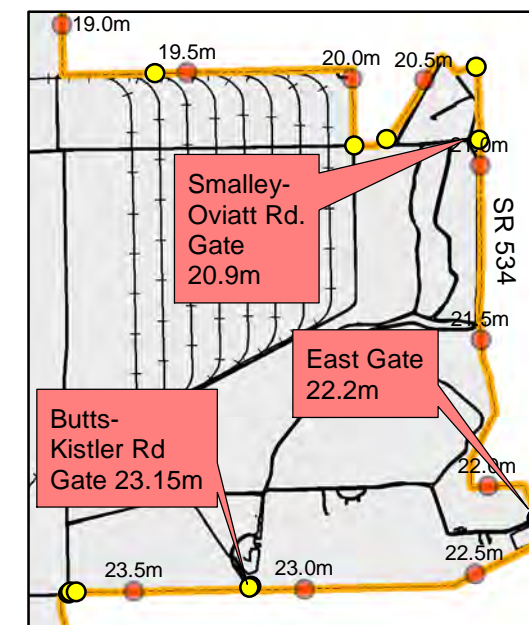


CAMP RAVENNA PERIMETER FENCE REFERENCE SYSTEM

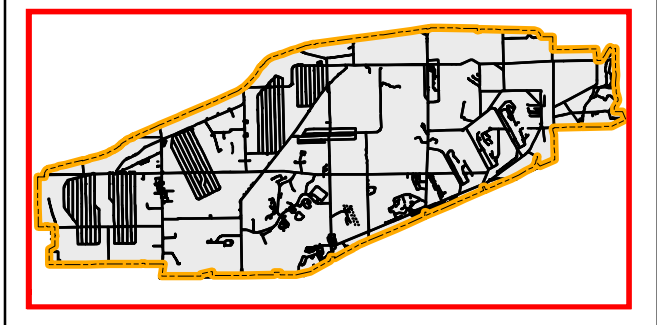
East Gate Detail Inset

Mile 20.0

Half Mile 24.5



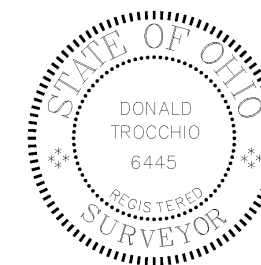
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0 2,500 5,000 10,000 15,000 Feet
Bar Scale in Feet



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FY 2017 Callout/Repair Summary Table

FY 2017 4th QUARTER CALLOUT/REPAIR SUMMARY TABLE
Camp Ravenna Joint Military Training Center 4th Qtr FY2017 LUC Inspection

CALLOUT	DATE	COMMENTS	REPAIR DATE (if reported)	US Survey Ft		Perimeter Mile
				NORTHING	EASTING	Marker
FY 2017 4th Quarter Callout						
SW48	7/11/2017	washout		549116	2356699	0.40
SW49	7/12/2017	poacher hole	8/4/2017	559690	2332105	8.90
NE43	7/19/2017	poacher hole	8/4/2017	571120	2384589	19.90
NE44	7/20/2017	tree blow down on fence	8/4/2017	563233	2383628	23.10
NE45	7/24/2017	fence fabric needs re-attached on top rail	8/4/2017	563133	2380330	23.70
Repairs of Previous Quarter's Callouts						
NW1C	11/22/2016	poacher hole	unknown	571637	2356382	
NW19	4/17/2017	poacher hole	4/20/2017	563158	2340004	10.60
NW20	4/18/2017	poacher hole	4/20/2017	563501	2340794	10.75
NW13A	4/18/2017	poacher hole	unknown	570866	2353636	13.65
NW21	4/19/2017	tree blow down on fence	4/20/2017	571584	2356026	14.10
NE42	4/25/2017	tree blow down on fence	unknown	566320	2386837	21.60
NE41	11/28/2016	tree blow down on fence	unknown	565895	2386901	
SW36	11/14/2016	poacher hole	unknown	548328	2353232	1.01
SW37	11/15/2016	poacher hole at bottom of fence	unknown	549355	2331868	
SW38	11/17/2016	poacher hole	unknown	559324	2330662	
SW39	11/16/2016	former repair needs reattached	11/18/2016	556697	2328342	7.80
SW40	11/16/2016	poacher hole	11/18/2016	557238	2328338	7.90
SW41	11/17/2016	poacher hole	11/29/2016	559117	2329861	8.50
SW20A	11/17/2016	former repair needs reattached	11/29/2016	559398	2330974	8.70
SW42	11/17/2016	poacher hole	11/29/2016	560658	2335468	9.60
SW43	11/23/2016	poacher hole	12/6/2016	548341	2354290	0.80
SW44	1/9/2017	poacher hole	1/13/2017	549366	2332961	5.40
SW45	4/11/2017	poacher hole	4/20/2017	549378	2333892	5.10
SW46	4/12/2017	poacher hole	4/20/2017	559469	2331227	8.75
SW47	4/17/2017	poacher hole	4/20/2017	560076	2333638	9.25

Repaired 1st Quarter

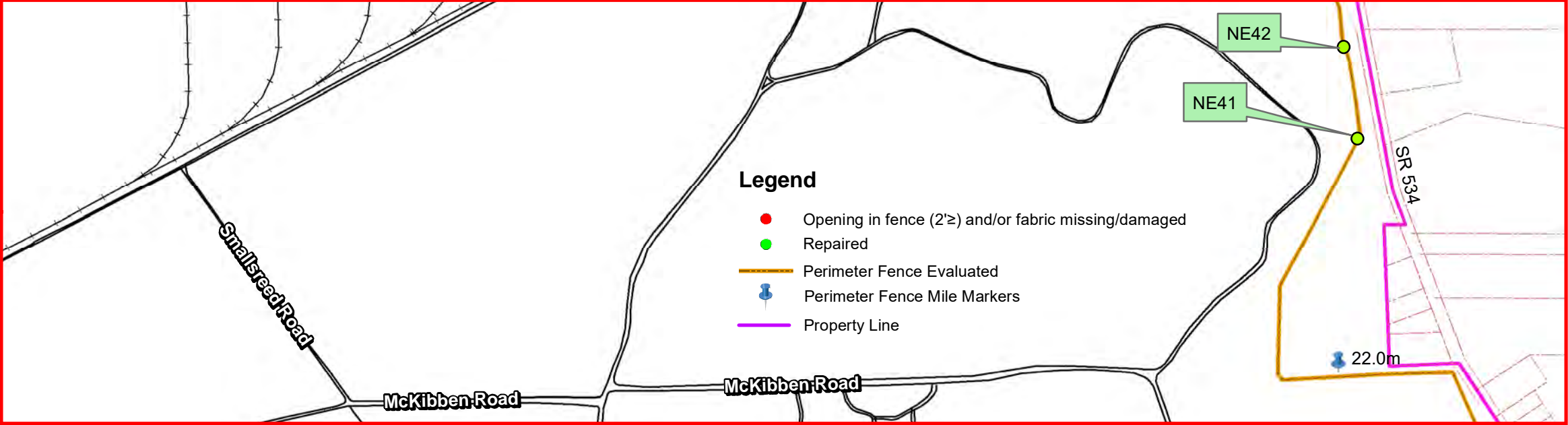
Repaired 2nd Quarter

Repaired 3rd Quarter

Repaired 4th Quarter

NE (Northeast) Quadrant

DETAIL SHEET FOR NE42



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

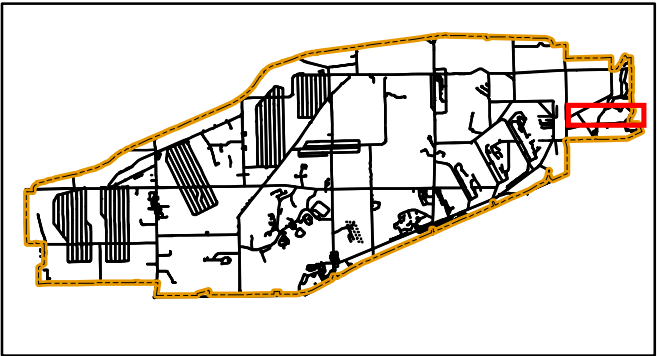
Repair photo NE42 dated 7/20/2017



PHOTO NE42 discovered 4/25/2017



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Portage & Trumbull County
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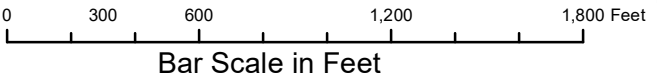
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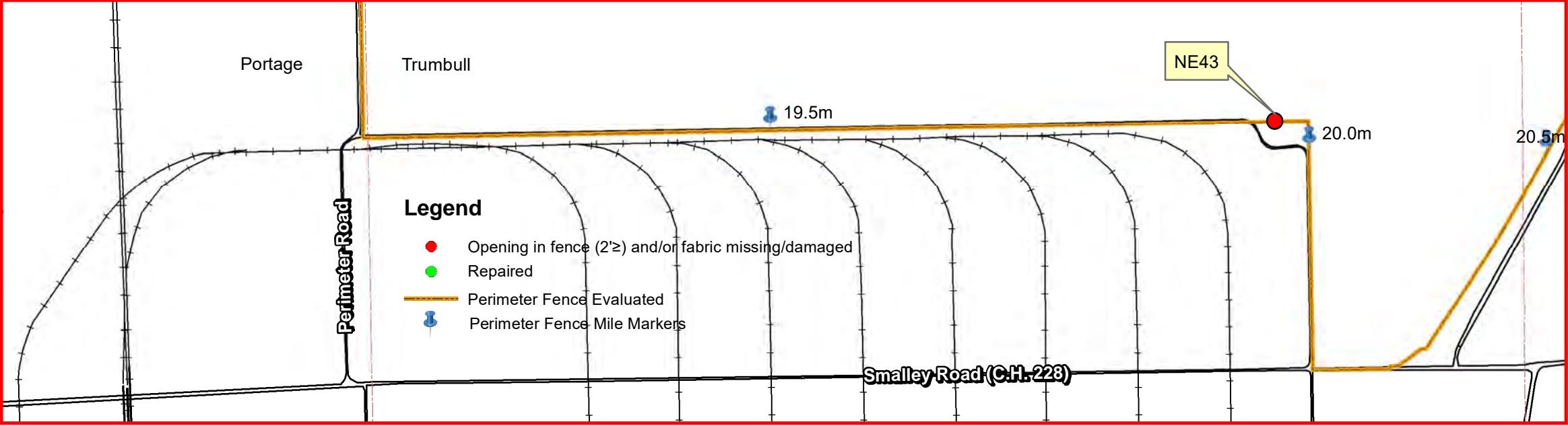
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DETAIL SHEET FOR NE42

DETAIL SHEET FOR NE43



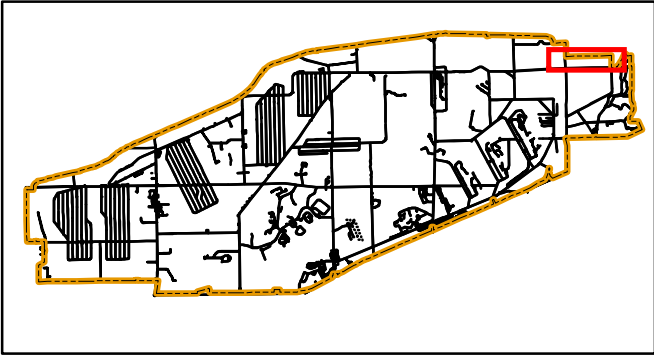
LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NE43 discovered 7/19/2017

NE43 was reported as repaired on 0X/XX/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 Annual Land Use Control Report for RVAAP-05, Winklepeck Burning Grounds*.



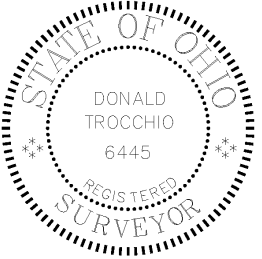
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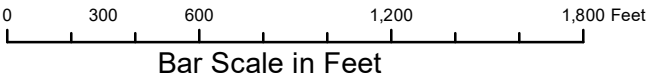
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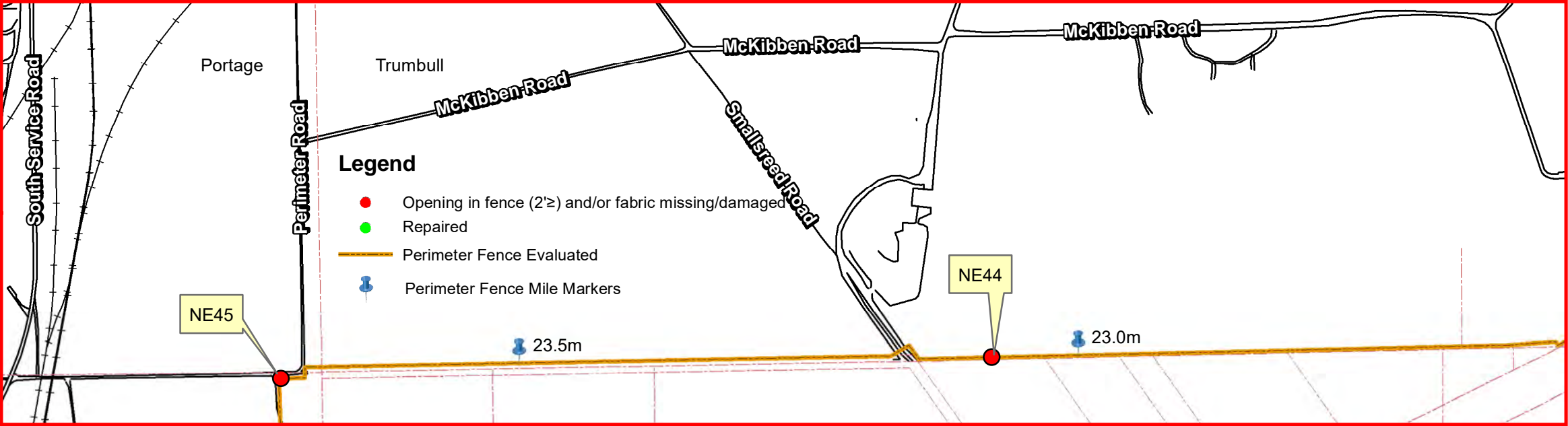
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DETAIL SHEET FOR NE43

DETAIL SHEET FOR NE44



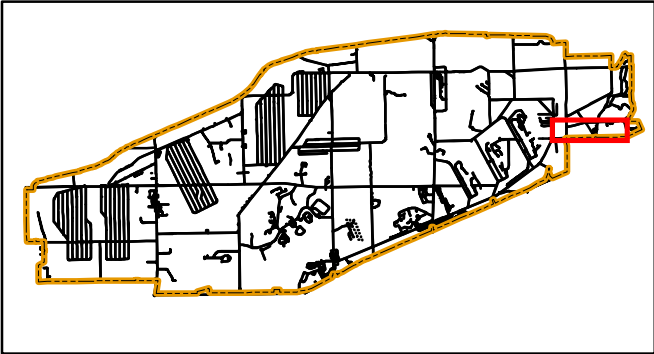
LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NE44 discovered 7/20/2017

NE44 was reported as repaired on 0X/XX/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the FY 2017 Annual Land Use Control Report for RVAAP-05, Winklepeck Burning Grounds.



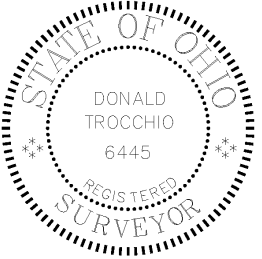
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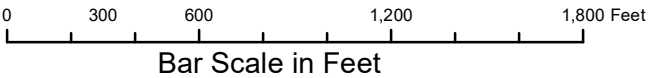
US Army Corps of Engineers

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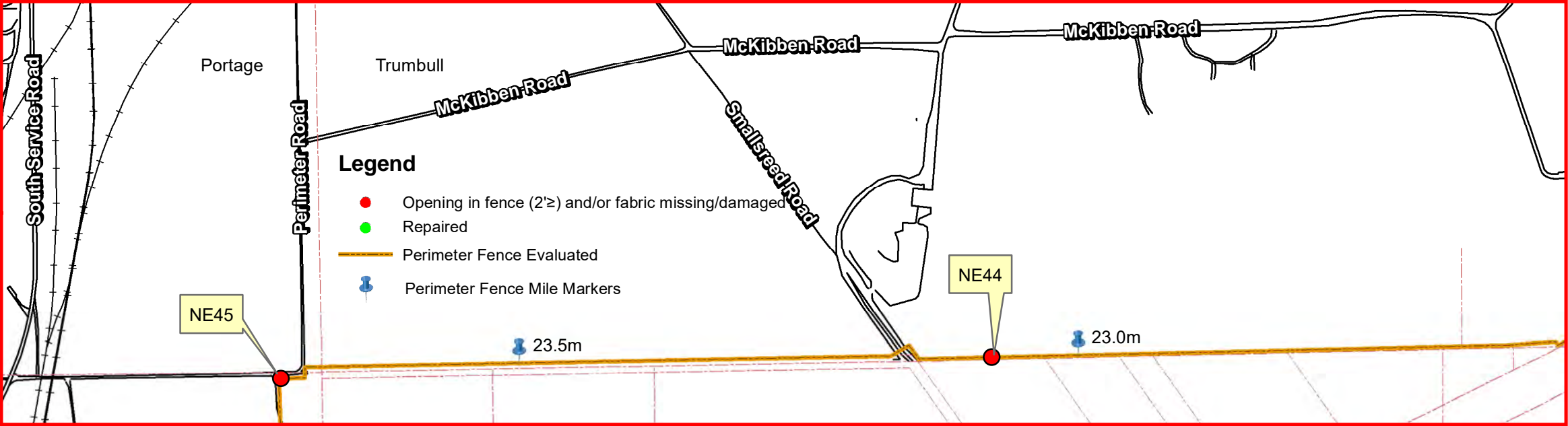
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MGRS 17T NF01946150 (NAD83)

DETAIL SHEET FOR NE44

DETAIL SHEET FOR NE45



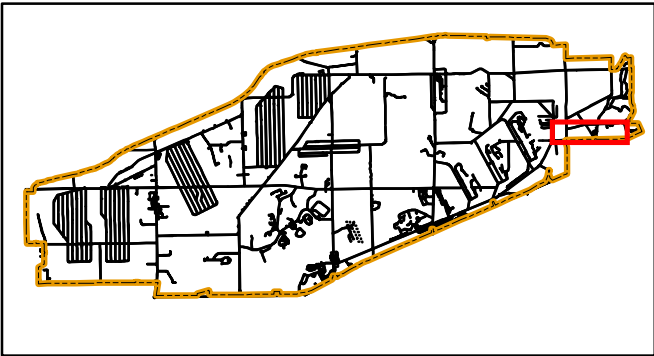
LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO NE45 discovered 7/24/2017

NE45 was reported as repaired on 0X/XX/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the *FY 2017 Annual Land Use Control Report for RVAAP-05, Winklepeck Burning Grounds*.



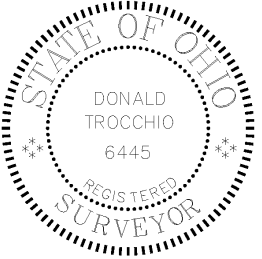
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Ohio Army National Guard



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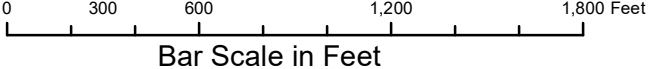
US Army Corps of Engineers

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Louisville District



Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone

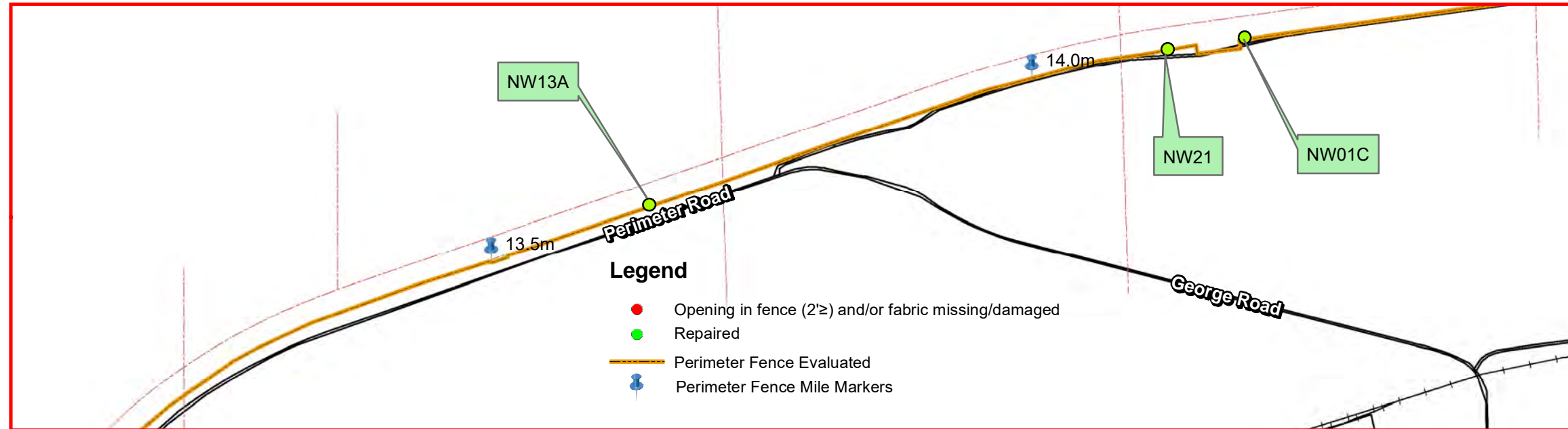


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don.trocchio@vistasciences.com
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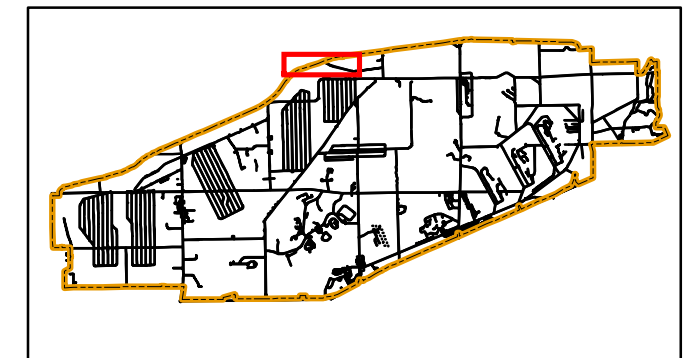
DETAIL SHEET FOR NE45

NW (Northwest) Quadrant

DETAIL SHEET FOR NW13A (Repeat)



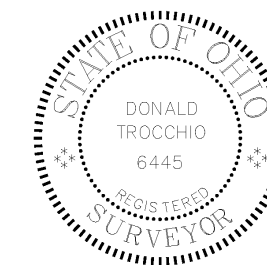
Camp Ravenna Joint Military Training Center



Portage & Trumbull County LOCATOR MAP



Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017 PERIMETER FENCE INSPECTION

Repair photo NW13A dated 7/18/2017

PHOTO NW13A discovered 04/18/2017



Produced in July 2017 for:



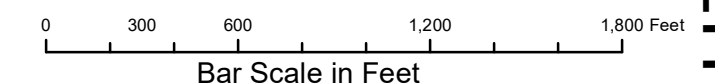
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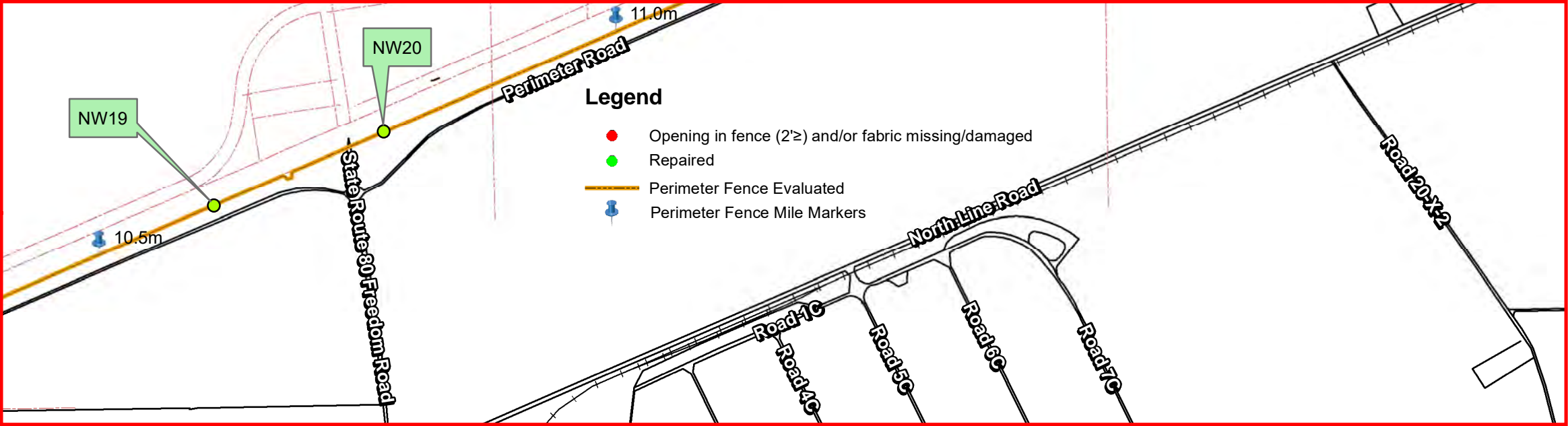
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR NW13A

DETAIL SHEET FOR NW19



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

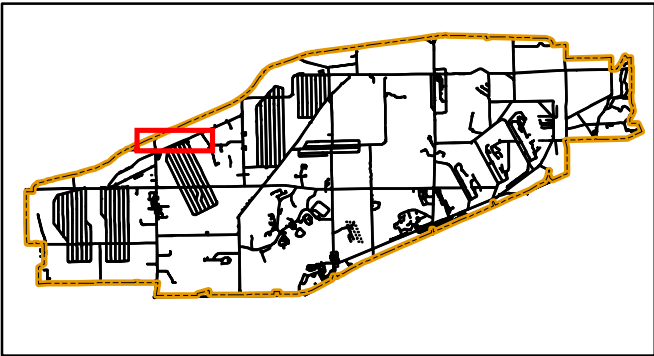
Repair photo NW19 dated 7/13/2017



PHOTO NW19 discovered 04/17/2017



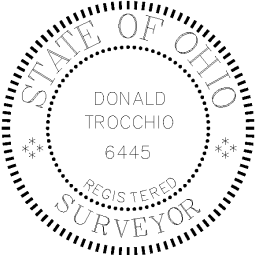
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Joint Military Training Center



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LOCATOR MAP



Ohio Army National Guard



Produced in July 2017 for:



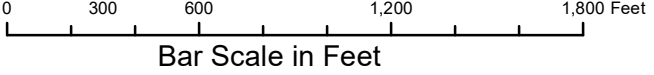
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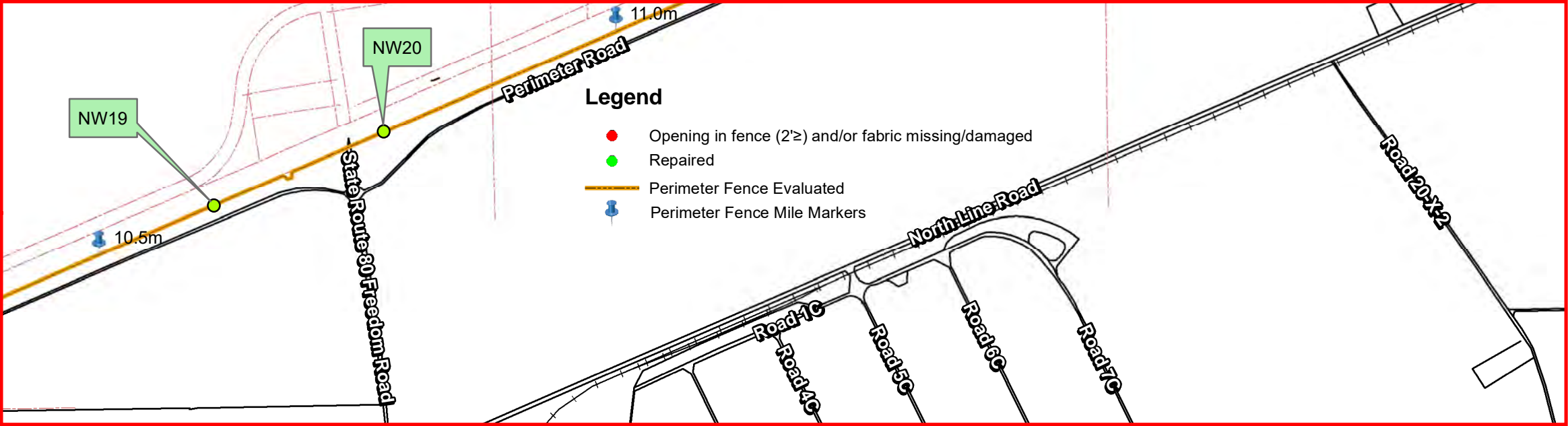
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR NW19

DETAIL SHEET FOR NW20



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

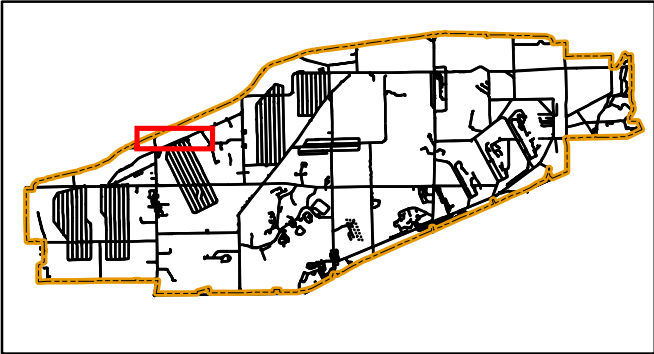
Repair photo NW20 dated 7/13/2017



PHOTO NW20 discovered 04/18/2017



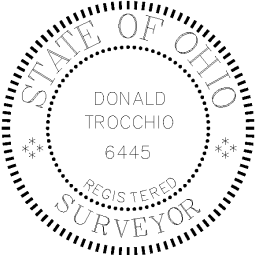
Camp Ravenna
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Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in July 2017 for:



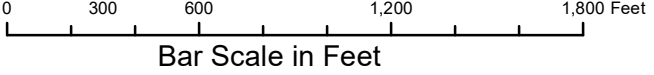
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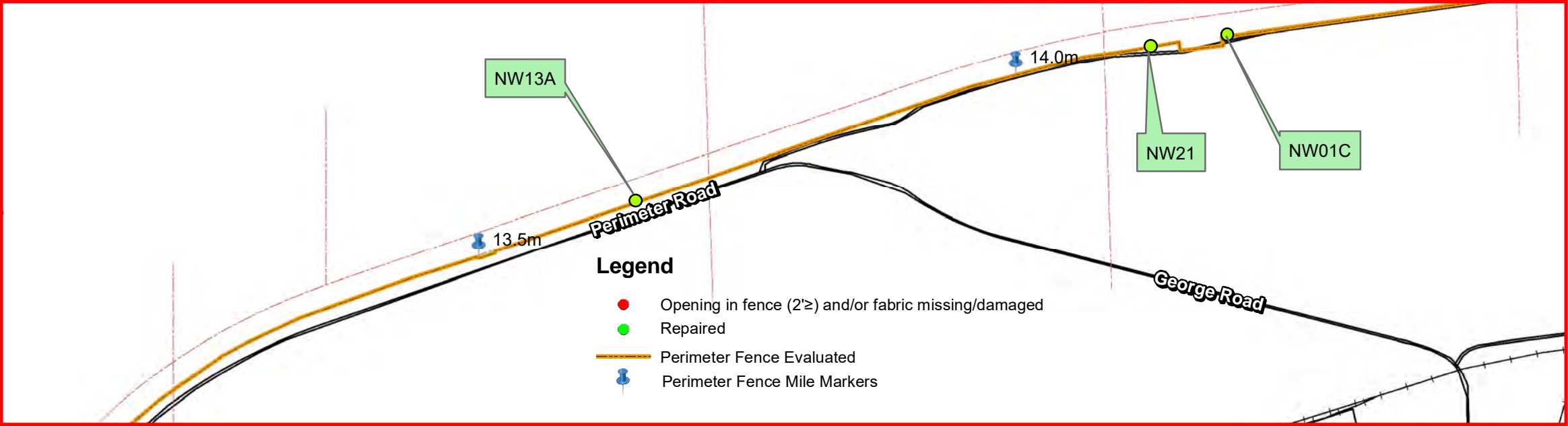
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



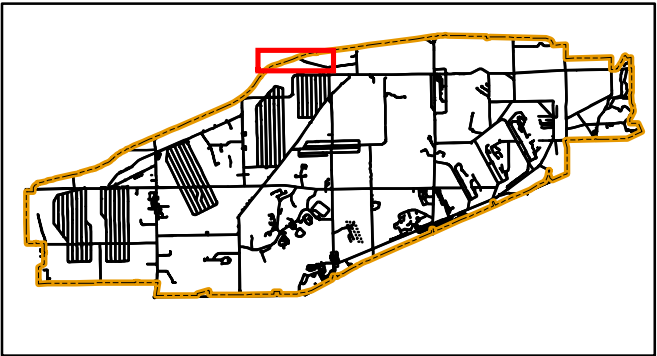
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DETAIL SHEET FOR NW20

DETAIL SHEET FOR NW21



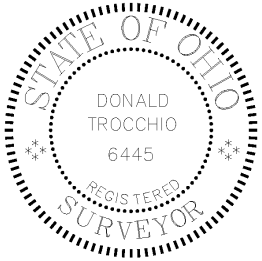
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Joint Military Training Center



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LOCATOR MAP



Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

Repair photo NW21 dated 7/18/2017

PHOTO NW21 discovered 04/19/2017



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Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone

0 300 600 1,200 1,800 Feet
Bar Scale in Feet



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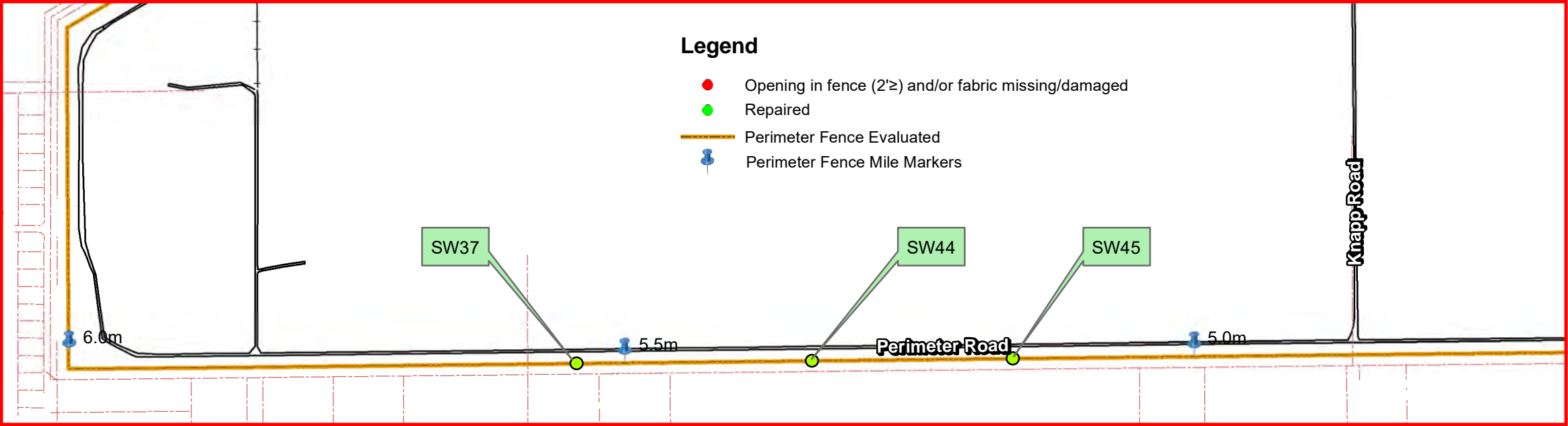
DETAIL SHEET FOR NW21

SE (Southeast) Quadrant

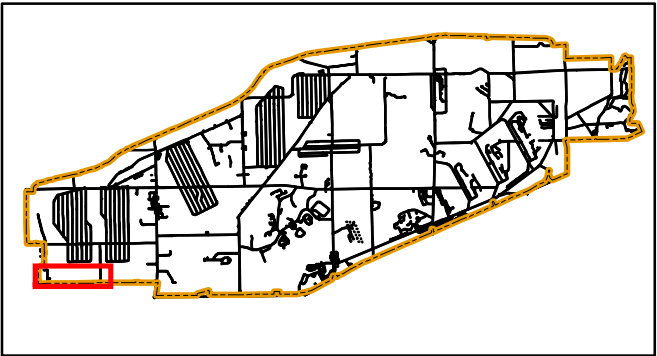
(No Detail Sheets for FY 2017 4th Quarter LUC Inspection Report)

SW (Southwest) Quadrant

DETAIL SHEET FOR SW45



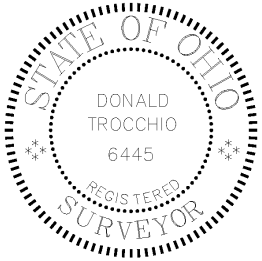
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LOCATOR MAP



Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

Repair photo SW45 dated 7/11/2017

PHOTO SW45 discovered 04/11/2017



Produced in July 2017 for:



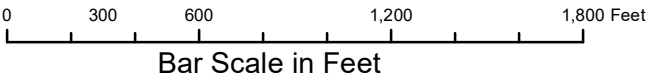
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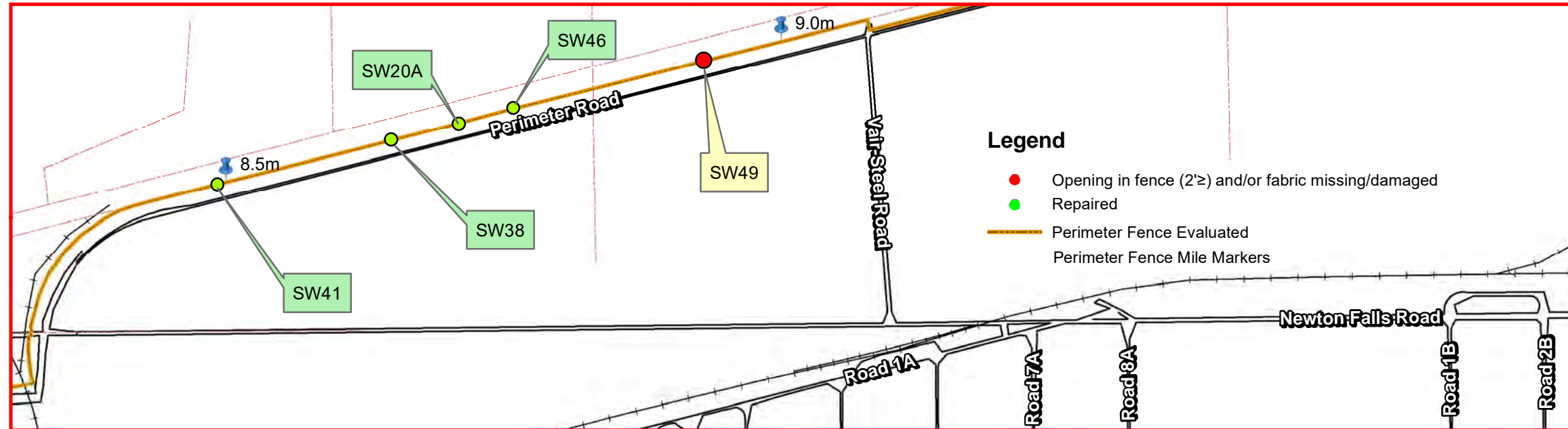
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Plane Rectangular Grid, North Zone



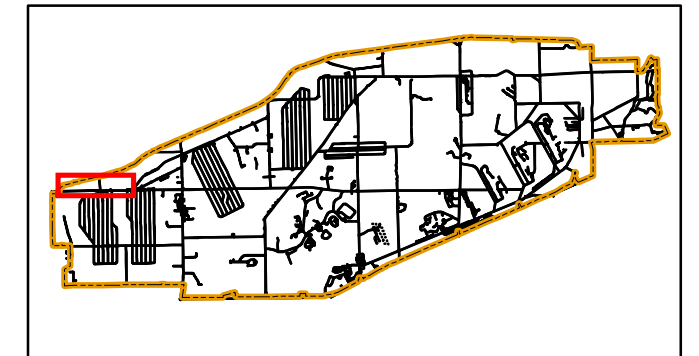
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DETAIL SHEET FOR SW45

DETAIL SHEET FOR SW46



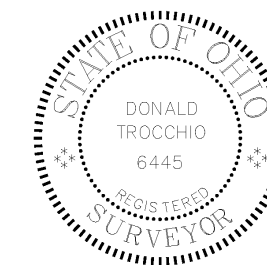
Camp Ravenna Joint Military Training Center



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Ohio Army National Guard



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017 PERIMETER FENCE INSPECTION

Repair photo SW46 dated 07/12/2017

PHOTO SW46 discovered 04/12/2017



Produced in July 2017 for:



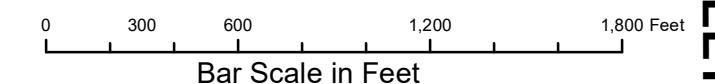
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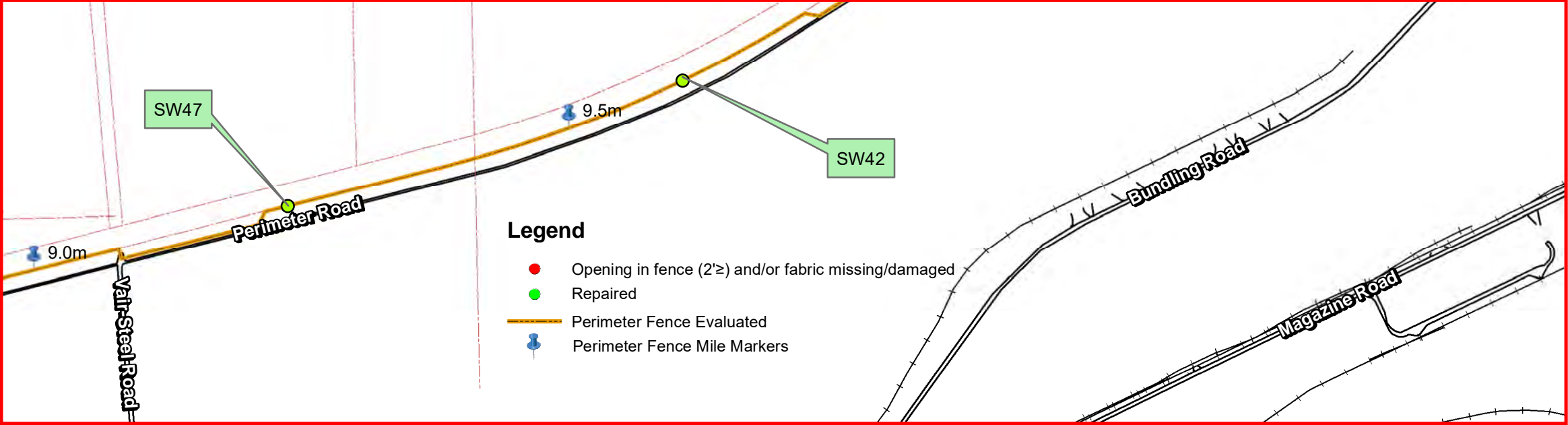
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR SW46

DETAIL SHEET FOR SW47



LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

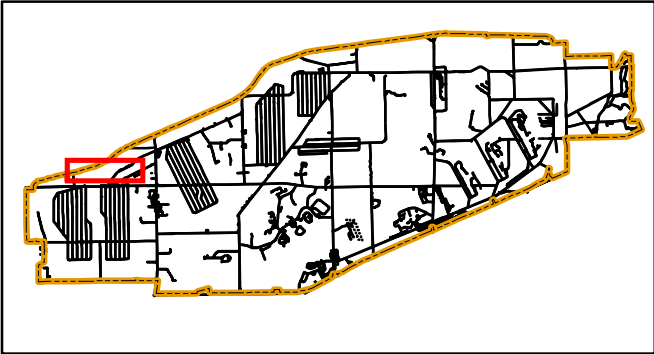
Repair photo SW47 dated 07/12/2017



PHOTO SW47 discovered 04/17/2017



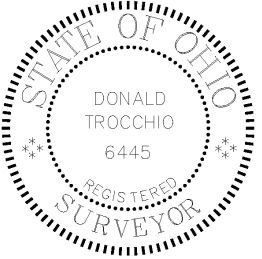
Camp Ravenna
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LOCATOR MAP



Ohio Army National Guard



Produced in July 2017 for:



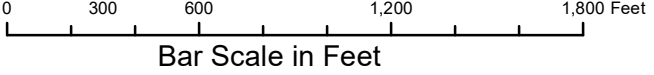
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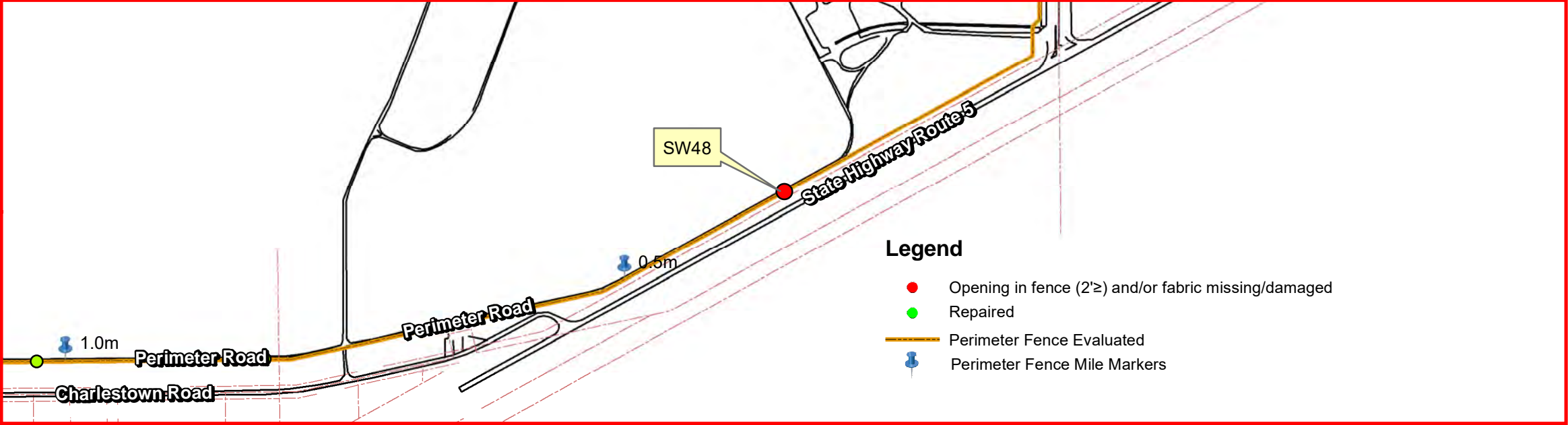
Projection Datum is NAD83, Ohio State
Plane Rectangular Grid, North Zone



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DETAIL SHEET FOR SW47

DETAIL SHEET FOR SW48

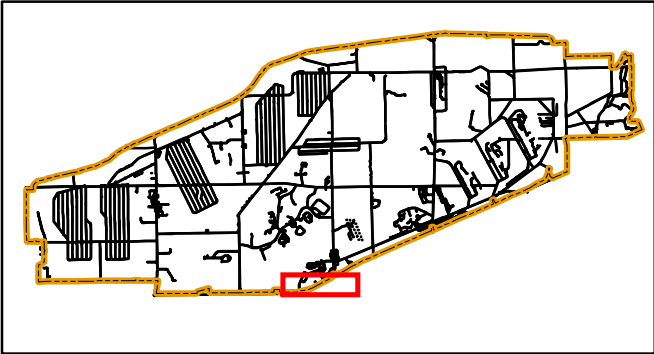


LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW48 discovered 7/11/2017



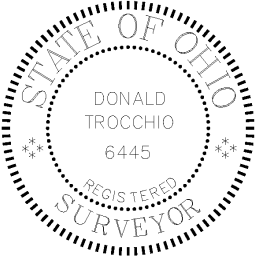
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Produced in July 2017 for:



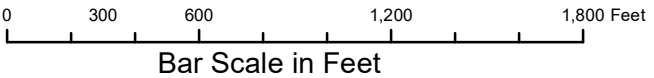
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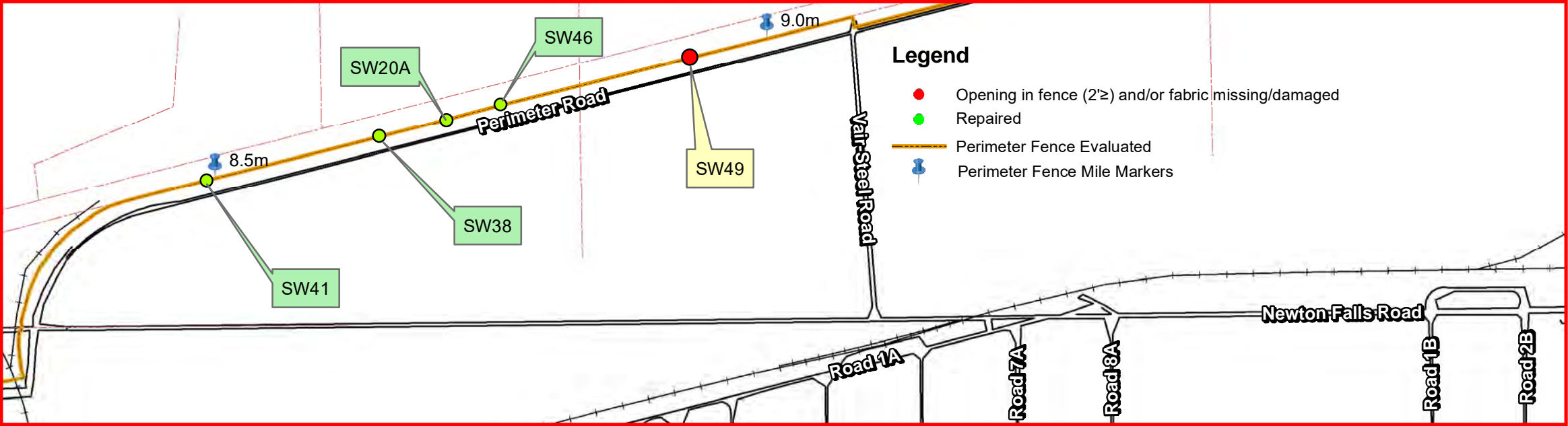
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DETAIL SHEET FOR SW48

DETAIL SHEET FOR SW49



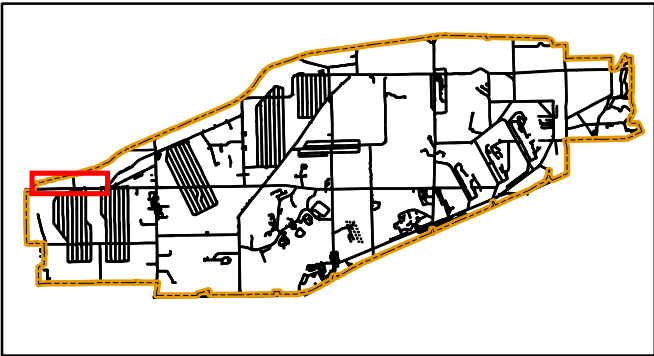
LAND USE CONTROL (LUC) INSPECTION 4th QUARTER FY2017
PERIMETER FENCE INSPECTION

PHOTO SW49 discovered 07/12/2017

NE45 was reported as repaired on 0X/XX/2017 after the perimeter fence inspection in this area. A photograph of the repair will be provided in the FY 2017 Annual Land Use Control Report for RVAAP-05, Winklepeck Burning Grounds.



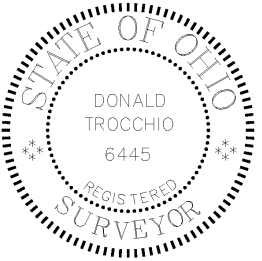
Camp Ravenna
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Ohio Army National Guard



Produced in July 2017 for:



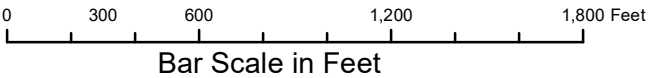
US Army Corps of Engineers

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DETAIL SHEET FOR SW49

**Camp Ravenna Joint Military Training Center
Former Ravenna Army Ammunition Plant**

**Quarterly Land Use Control Inspection
RVAAP-05 Winklepeck Burning Grounds**

ATTACHMENT 2

Supplemental Detail Sheet No. 1

Callout Repair Log

Supplemental Detail Sheet No. 1

SUPPLEMENTAL DETAIL SHEET NO.1

LAND USE CONTROL (LUC) INSPECTION

PERIMETER FENCE INSPECTION

4th QUARTER FY2017

PHOTO NO.2 7/25/2017



PHOTO NO.4 7/25/2017



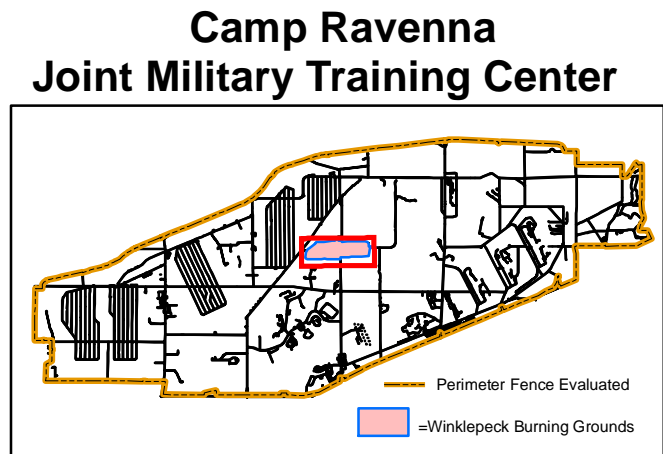
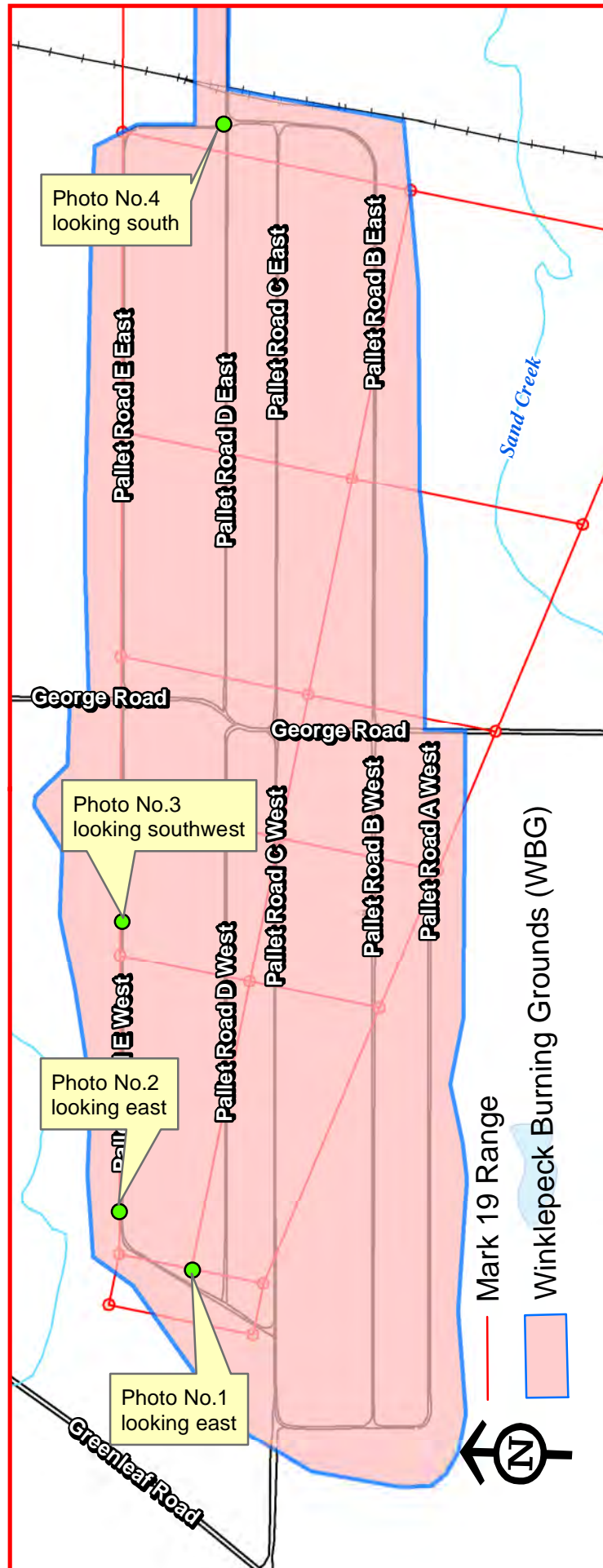
PHOTO No.1 7/25/2017



PHOTO NO.3 7/25/2017



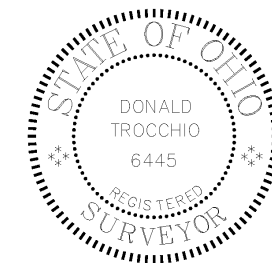
PHOTO IMAGES WITHIN THE
WINKLEPECK BURNING GROUNDS (RVAAP-05)



Portage & Trumbull County
LOCATOR MAP



Ohio Army National Guard



Produced in July 2017 for:

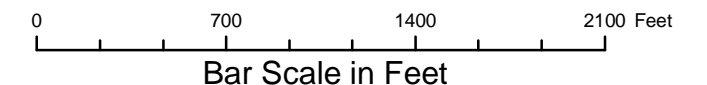


US Army Corps of Engineers

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MGRS 17T NF01946150 (NAD83)

SUPPLEMENTAL DETAIL SHEET NO.1

Callout Repair Log

[illegible]

Appendix G

RVAAP-05 Winklepeck Burning Grounds FY 2017 Perimeter Fence Defect Call Outs Identified and Repaired

FY 2017 4th QUARTER CALLOUT/REPAIR SUMMARY TABLE
Camp Ravenna Joint Military Training Center 4th Qtr FY2017 LUC Inspection

CALLOUT	DATE	COMMENTS	REPAIR DATE (if reported)	US Survey Ft		Perimeter Mile
				NORTHING	EASTING	Marker
FY 2017 4th Quarter Callout						
SW48	7/11/2017	washout		549116	2356699	0.40
SW49	7/12/2017	poacher hole	8/4/2017	559690	2332105	8.90
NE43	7/19/2017	poacher hole	8/4/2017	571120	2384589	19.90
NE44	7/20/2017	tree blow down on fence	8/4/2017	563233	2383628	23.10
NE45	7/24/2017	fence fabric needs re-attached on top rail	8/4/2017	563133	2380330	23.70
Repairs of Previous Quarter's Callouts						
NW1C	11/22/2016	poacher hole	unknown	571637	2356382	
NW19	4/17/2017	poacher hole	4/20/2017	563158	2340004	10.60
NW20	4/18/2017	poacher hole	4/20/2017	563501	2340794	10.75
NW13A	4/18/2017	poacher hole	unknown	570866	2353636	13.65
NW21	4/19/2017	tree blow down on fence	4/20/2017	571584	2356026	14.10
NE42	4/25/2017	tree blow down on fence	unknown	566320	2386837	21.60
NE41	11/28/2016	tree blow down on fence	unknown	565895	2386901	
SW36	11/14/2016	poacher hole	unknown	548328	2353232	1.01
SW37	11/15/2016	poacher hole at bottom of fence	unknown	549355	2331868	
SW38	11/17/2016	poacher hole	unknown	559324	2330662	
SW39	11/16/2016	former repair needs reattached	11/18/2016	556697	2328342	7.80
SW40	11/16/2016	poacher hole	11/18/2016	557238	2328338	7.90
SW41	11/17/2016	poacher hole	11/29/2016	559117	2329861	8.50
SW20A	11/17/2016	former repair needs reattached	11/29/2016	559398	2330974	8.70
SW42	11/17/2016	poacher hole	11/29/2016	560658	2335468	9.60
SW43	11/23/2016	poacher hole	12/6/2016	548341	2354290	0.80
SW44	1/9/2017	poacher hole	1/13/2017	549366	2332961	5.40
SW45	4/11/2017	poacher hole	4/20/2017	549378	2333892	5.10
SW46	4/12/2017	poacher hole	4/20/2017	559469	2331227	8.75
SW47	4/17/2017	poacher hole	4/20/2017	560076	2333638	9.25

Repaired 1st Quarter

Repaired 2nd Quarter

Repaired 3rd Quarter

Repaired 4th Quarter

Appendix H

Load Lines 1, 2, 3 and 4 Photographs

Load Lines 1, 2, 3 and 4 photographs



Load Line 1 south gate.



Load Line 1 field.

Load Lines 1, 2, 3 and 4 photographs



Load Line 2 south gate.



Load Line 2 field.

Load Lines 1, 2, 3 and 4 photographs



Load Line 3 south gate.



Load Line 3 field.

Load Lines 1, 2, 3 and 4 photographs



Load Line 4 south gate.



Load Line 4 field.

Appendix I

Load Line 12 Photographs

Load Line 12 photographs



Load Line 12 south gate.



Load Line 12 field.

Load Line 12 photographs



Load Line 12 field.



Load Line 12 field.