



A Subsidiary of GZA

Known for excellence.  
Built on trust.



## PRELIMINARY SITE INVESTIGATION REPORT

### ILLINOIS ROUTE 47 FROM UNION/FOSTER ROAD TO HAWTHORNE WAY, HUNTLEY-WOODSTOCK, MCHENRY COUNTY, IL

<b>IDOT Job No.:</b> D-91-103-16	<b>PTB:</b> 178-008 / H&H-1
<b>Project Job No.:</b> P-91-101-07	<b>Work Order No.:</b> 025A
<b>District:</b> 1	<b>BDE Sequence No.:</b> 14677B
<b>County:</b> McHenry	<b>Requesting Agency:</b> DOH
<b>Municipality:</b> Huntley, Woodstock	<b>Contract No.:</b> 62A80
<b>Route:</b> FAP 326	<b>Section No.:</b> Not Listed
<b>Marked:</b> IL 47	<b>ISGS PESA No.:</b> 1789V2
<b>Street:</b> S. Eastwood Avenue	<b>Letting Date:</b> January 17, 2020
<b>From To/At:</b> Union/Foster Road To Hawthorne Way	<b>Final PSI Completion:</b> October 11, 2019

Date: December 3, 2019

File No. 81.0220509.48

#### **Huff & Huff, A Subsidiary of GZA**

915 Harger Road | Oak Brook, IL 60523  
630-648-9100

GZA has 31 Offices Nationwide  
[www.huffnhuff.com](http://www.huffnhuff.com) [www.gza.com](http://www.gza.com)



A Subsidiary of GZA



December 3, 2019

Via IDOT Extranet

Kari Smith, P.E.  
Economic Analysis Coordinator  
Illinois Department of Transportation, District One  
Bureau of Design  
201 West Center Court  
Schaumburg, Illinois 60196-1096

Re: Preliminary Site Investigation Report

**IDOT Job No.:** D-91-103-16  
**Project Job No.:** P-91-101-07  
**District:** 1  
**County:** McHenry  
**Municipality:** Huntley, Woodstock  
**Route:** FAP 326  
**Marked:** IL 47  
**Street:** S. Eastwood Avenue  
**From To/At:** Union/Foster Road  
To Hawthorne Way

**PTB:** 178-008 / H&H-1  
**Work Order No.:** 025A  
**BDE Sequence No.:** 14677B  
**Requesting Agency:** DOH  
**Contract No.:** 62A80  
**Section No.:** Not Listed  
**ISGS PESA No.:** 1789V2  
**Letting Date:** January 17, 2020  
**Final PSI Completion:** October 11, 2019

- GEOTECHNICAL
- ENVIRONMENTAL
- ECOLOGICAL
- WATER
- CONSTRUCTION MANAGEMENT

915 Harger Road  
Suite 330  
Oak Brook, IL 60523  
T: 630.684.9100  
F: 630.684.9120  
www.huffnhuff.com  
www.gza.com

Dear Ms. Smith,

Huff & Huff, Inc., a subsidiary of GZA GeoEnvironmental, Inc. (H&H) is pleased to submit this *Preliminary Site Investigation (PSI) Report* for the above referenced Project based on a review of the Site Inspection Letter Report (SILR) (ISGS PESA # 3751) dated May 28, 2019. A revised PESA response form was not prepared because IDOT has stated that construction limits and excavation quantities have not changed for this project.

The scope and depth of this study are consistent with those proposed in the Final Revised Work Plan, dated April 12, 2019, and accepted by the Illinois Department of Transportation, District One on April 15, 2019. The field observations and results reported herein are considered sufficient in detail and scope to form an informed and professional opinion as to the obvious potential environmental hazards along the Project Area.

If you have any questions or comments, please do not hesitate to contact us at 630-684-9100.

Very truly yours,

HUFF & HUFF, INC.

Jill Connolly  
Project Manager

Jeremy Reynolds, P.G.  
Associate Principal

Shane Cuplin, P.G.  
Consultant Reviewer

Attachments: PTB 178-008 WO-025A Revised Final PSI Report



**TABLE OF CONTENTS**

**GLOSSARY OF ACRONYMS**..... **V**

**1.0 INTRODUCTION** ..... **1**

**2.0 BACKGROUND INFORMATION**..... **4**

    2.1 PROJECT DESCRIPTION..... 4

    2.2 SITE GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS ..... 5

**3.0 FIELD INVESTIGATION PROCEDURES**..... **6**

    3.1 SOIL SAMPLING METHODOLOGY ..... 6

**4.0 INVESTIGATION RESULTS** ..... **11**

    4.1 REFERENCE CONCENTRATIONS ..... 11

        4.1.1 Soil Reference Concentrations – Construction Areas..... 11

        4.1.2 Soil Reference Concentrations – Acquisition Areas..... 12

        4.1.3 Hazardous Waste Reference Concentrations..... 12

    4.2 FIELD OBSERVATIONS ..... 13

    4.3 AGRICULTURAL LAND (ISGS SITE 3751-2 (NO. 1789V2-98)) ..... 13

        4.3.1 Analytical Results ..... 13

        4.3.2 Nature and Extent of COCs ..... 13

            4.3.2.1 Soil..... 14

            4.3.2.2 Groundwater..... 16

    4.4 RESIDENCES (ISGS SITE NO. 3751-1 (1789V2-99)) ..... 16

        4.4.1 Analytical Results ..... 16

        4.4.2 Nature and Extent of COCs ..... 17

            4.4.2.1 Soil..... 17

            4.4.2.2 Groundwater..... 19

    4.5 VACANT LAND (ISGS SITE NO. 3751-3 (1789V2-101))..... 19

        4.5.1 Analytical Results ..... 19

        4.5.2 Nature and Extent of COCs ..... 19

            4.5.2.1 Soil..... 20

            4.5.2.2 Groundwater..... 21

    4.6 KISHWAUKEE RIVER (ISGS SITE NO. 3751-4 (1789V2-102))..... 21

        4.6.1 Analytical Results ..... 21

        4.6.2 Nature and Extent of COCs ..... 21

            4.6.2.1 Soil..... 22

            4.6.2.2 Groundwater..... 23

    4.7 BRIDGE (ISGS SITE NO. 3751-5 (1789V2-103))..... 23

        4.7.1 Analytical Results ..... 23

        4.7.2 Nature and Extent of COCs ..... 23

            4.7.2.1 Soil..... 24

            4.7.2.2 Groundwater..... 25

    4.8 AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-104))..... 25



**TABLE OF CONTENTS**

4.8.1	Analytical Results .....	25
4.8.2	Nature and Extent of COCs .....	25
4.8.2.1	Soil.....	26
4.8.2.2	Groundwater.....	27
4.9	OZINGA CONCRETE (ISGS SITE NO. 3751-6 (1789VS-105)).....	27
4.9.1	Analytical Results .....	27
4.9.2	Nature and Extent of COCs .....	28
4.9.2.1	Soil.....	28
4.9.2.2	Groundwater.....	30
4.10	RESIDENCE (ISGS SITE NO. 3751-7 (1789V2-106)).....	30
4.10.1	Analytical Results .....	30
4.10.2	Nature and Extent of COCs .....	31
4.10.2.1	Soil.....	31
4.10.2.2	Groundwater.....	33
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>52</b>
5.1	AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-98)).....	52
5.1.1	Conclusions .....	52
5.1.2	Recommendations.....	53
5.2	RESIDENCES (ISGS SITE NO. 3751-1 (1789V2-99)).....	53
5.2.1	Conclusions .....	53
5.2.2	Recommendations.....	54
5.3	VACANT LAND (ISGS SITE NO. 3751-3 (1789V2-101)).....	54
5.3.1	Conclusions .....	54
5.3.2	Recommendations.....	55
5.4	KISHWAUKEE RIVER (ISGS SITE NO. 3751-4 (1789V2-102)).....	55
5.4.1	Conclusions .....	55
5.4.2	Recommendations.....	55
5.5	BRIDGE (ISGS SITE NO. 3751-5 (1789V2-103)).....	56
5.5.1	Conclusions .....	56
5.5.2	Recommendations.....	56
5.6	AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-104)).....	56
5.6.1	Conclusions .....	56
5.6.2	Recommendations.....	57
5.7	OZINGA CONCRETE (ISGS SITE NO. 3751-6 (1789V2-105)).....	57
5.7.1	Conclusions .....	57
5.7.2	Recommendations.....	58
5.8	RESIDENCE (ISGS SITE NO. 3751-7 (1789V2-106)).....	59
5.8.1	Conclusions .....	59
5.8.2	Recommendations.....	59



**TABLE OF CONTENTS**

**6.0 PREVENTION OF ACCELERATED CONTAMINANT MIGRATION .....62**

6.1 SOURCE REDUCTION/ELIMINATION ..... 62

6.2 LIMITED RESTRICTIVE BARRIERS ..... 62

6.3 STORM WATER RUNOFF CONTROLS..... 62

**7.0 ENDORSEMENTS .....63**

**TABLES**

TABLE 1-1 PESA SITE NUMBERS..... 2

TABLE 3-1 SOIL SAMPLING SUMMARY ..... 10

TABLE 4-1 PID SOIL SCREENING RESULTS ..... 40

TABLE 4-2.1 COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE CONCENTRATIONS–  
 ORGANICS ..... 41

TABLE 4-2.2 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– ORGANICS ..... 42

TABLE 4-2.3 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– ORGANICS ..... 43

TABLE 4-2.4 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– ORGANICS ..... 44

TABLE 4-2.5 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– ORGANICS ..... 45

TABLE 4-3.1 COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE CONCENTRATIONS–  
 INORGANICS..... 46

TABLE 4-3.2 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– INORGANICS ..... 47

TABLE 4-3.3 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– INORGANICS ..... 48

TABLE 4-3.4 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– INORGANICS ..... 49

TABLE 4-3.5 (CONTINUED) COMPARISON OF DETECTED CONSTITUENTS TO APPLICABLE REFERENCE  
 CONCENTRATIONS– INORGANICS ..... 50

TABLE 4-4 ESTIMATED CONSTRUCTION MANAGEMENT COSTS..... 51

TABLE 5-1 SUMMARY OF NON-SPECIAL WASTE VOLUME CALCULATIONS ..... 61



**TABLE OF CONTENTS**

**FIGURES**

FIGURE 1-1 SITE LOCATION MAP ..... 3  
 FIGURE 3-1.1 SOIL BORING LOCATION MAP ..... 8  
 FIGURE 3-1.2 SOIL BORING LOCATION MAP (CONTINUED)..... 9  
 FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL..... 34  
 FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL – EXCEEDANCES TABLE (1 OF 2) ..... 35  
 FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL – EXCEEDANCES TABLE (2 OF 2) ..... 36  
 FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL..... 37  
 FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL – EXCEEDANCES TABLE (1 OF 2) ..... 38  
 FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL – EXCEEDANCES TABLE (2 OF 2) ..... 39

**APPENDICES**

APPENDIX A Site Inspection Letter Report (SILR) (ISGS PESA # 3751)  
 ISGS PESA Excerpts  
 IDOT Work Order 25A Request  
 APPENDIX B Boring Logs  
 APPENDIX C Table C-1.1 Comprehensive Comparison of Constituents to Applicable Ref Concentrations – Organics (VOCs)  
 Table C-1.2 Comprehensive Comparison of Constituents to Applicable Ref Concentrations – Organics (SVOCs)  
 Table C-2 Comprehensive Comparison of Constituents to Applicable Reference Concentrations – Inorganics  
 Laboratory Analytical Reports  
 APPENDIX D LPC-663 CCDD Documents



### GLOSSARY OF ACRONYMS

<b>bgs</b>	below ground surface
<b>BDE</b>	Bureau of Design and Environment
<b>CCDD</b>	Clean Construction or Demolition Debris
<b>COC</b>	Contaminants of Concern
<b>ft</b>	feet
<b>H&amp;H</b>	Huff & Huff, Inc., a Subsidiary of GZA GeoEnvironmental, Inc.
<b>IAC</b>	Illinois Administrative Code
<b>IDOT</b>	Illinois Department of Transportation
<b>IEPA</b>	Illinois Environmental Protection Agency
<b>ISGS</b>	Illinois State Geological Survey
<b>m</b>	meters
<b>MAC</b>	Maximum Allowable Concentration
<b>MSA</b>	Metropolitan Statistical Area
<b>PESA</b>	Preliminary Environmental Site Assessment
<b>PID</b>	Photoionization Detector
<b>PNA</b>	Polynuclear Aromatic Hydrocarbons
<b>PSI</b>	Preliminary Site Investigation
<b>QAP</b>	Quality Assurance Plan
<b>QAQC</b>	quality assurance / quality control
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>REC</b>	Recognized Environmental Condition
<b>ROW</b>	Right of Way
<b>SOP</b>	standard operating procedure
<b>SPLP</b>	synthetic precipitation leaching procedure
<b>SRO</b>	Soil Remediation Objective
<b>s.u.</b>	standard units (soil pH)
<b>SVOC</b>	semi-volatile organic compound
<b>TACO</b>	Tiered Approach to Corrective Action Objectives
<b>TCLP</b>	toxicity characteristic leaching procedure
<b>USEPA</b>	United States Environmental Protection Agency
<b>USFO</b>	Uncontaminated Soil Fill Operation
<b>VOC</b>	volatile organic compound



## 1.0 INTRODUCTION

This Preliminary Site Investigation (PSI) report was prepared for Illinois Department of Transportation (IDOT) District One pursuant to Work Order 25A, which was issued to Huff & Huff, Inc., a Subsidiary of GZA GeoEnvironmental, Inc. (H&H) under IDOT Work Order Agreement for Consultant Services, Contract Job No. PTB 178-008, Statewide Hazardous Waste Investigations. The Project Area is comprised of Illinois Route 47 (Eastwood Drive) [IL 47] from Union/Foster Road to Hawthorne Way located approximately 7.5 miles north of I-90. The proposed improvements include roadway realignment, channel excavation, a compensatory storage area, and wildlife crossing culverts. The Project Area is depicted on Figure 1-1. The referenced figures and tables are presented at the end of each respective Section within this report.

The purpose of the PSI is to:

- Determine, to the degree possible pursuant to this scope of work, the nature and extent of subsurface contamination within the soil of the Project Area. This determination specifically includes those areas in which subsurface excavation activities will be completed in support of construction activities.
- Develop an approach, including approximate volume estimates and associated cost estimates, for the proper handling and/or disposal of contaminated soil that is likely to be encountered during the proposed construction activities within the existing and/or proposed IDOT ROW.
- Assess the potential for further or continued contamination of existing IDOT property caused by the migration of contaminants from adjacent properties to the Project Area.
- Assess the potential for the release of contaminants resulting from the proposed construction activities within the Project Area.
- Generate the data necessary to evaluate the potential for construction workers on site to be exposed to contaminants.
- Prepare a preliminary site investigation report presenting the findings of the investigation, conclusions, and recommendations addressing all the above-referenced objectives.

A *Preliminary Environmental Site Assessment (PESA)* (ISGS PESA # 1789V2) for the Project Area was conducted by ISGS on August 17, 2016 to evaluate the Project Area for RECs. A *Site Inspection Letter Report (SILR)* (ISGS PESA # 3751) was prepared for this project on May 28, 2019. According to IDOT, the construction limits, areas of planned excavation, and excavation quantities for this project have not changed. Excerpts from these documents are included in Appendix A for reference. The Work Order request document from IDOT, also included in Appendix A, lists the areas and depths of planned excavation activities along the Project Area in relation to the identified Recognized Environmental Conditions (RECs). This Work Order request document indicates that excavation is planned within the IDOT ROW adjacent to three (3) of the identified REC sites. Based on standard IDOT practices, all District One roadway projects require characterization of all soil that is planned for excavation during the Project. This includes soil associated with properties that were determined to contain de minimis conditions only or determined not to contain RECs or de minimis conditions. The Work Order request document indicates additional excavation planned adjacent to five (5) non-REC sites. Therefore, a total of eight (8) sites are documented within this report.





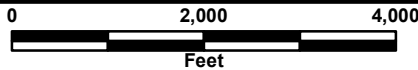
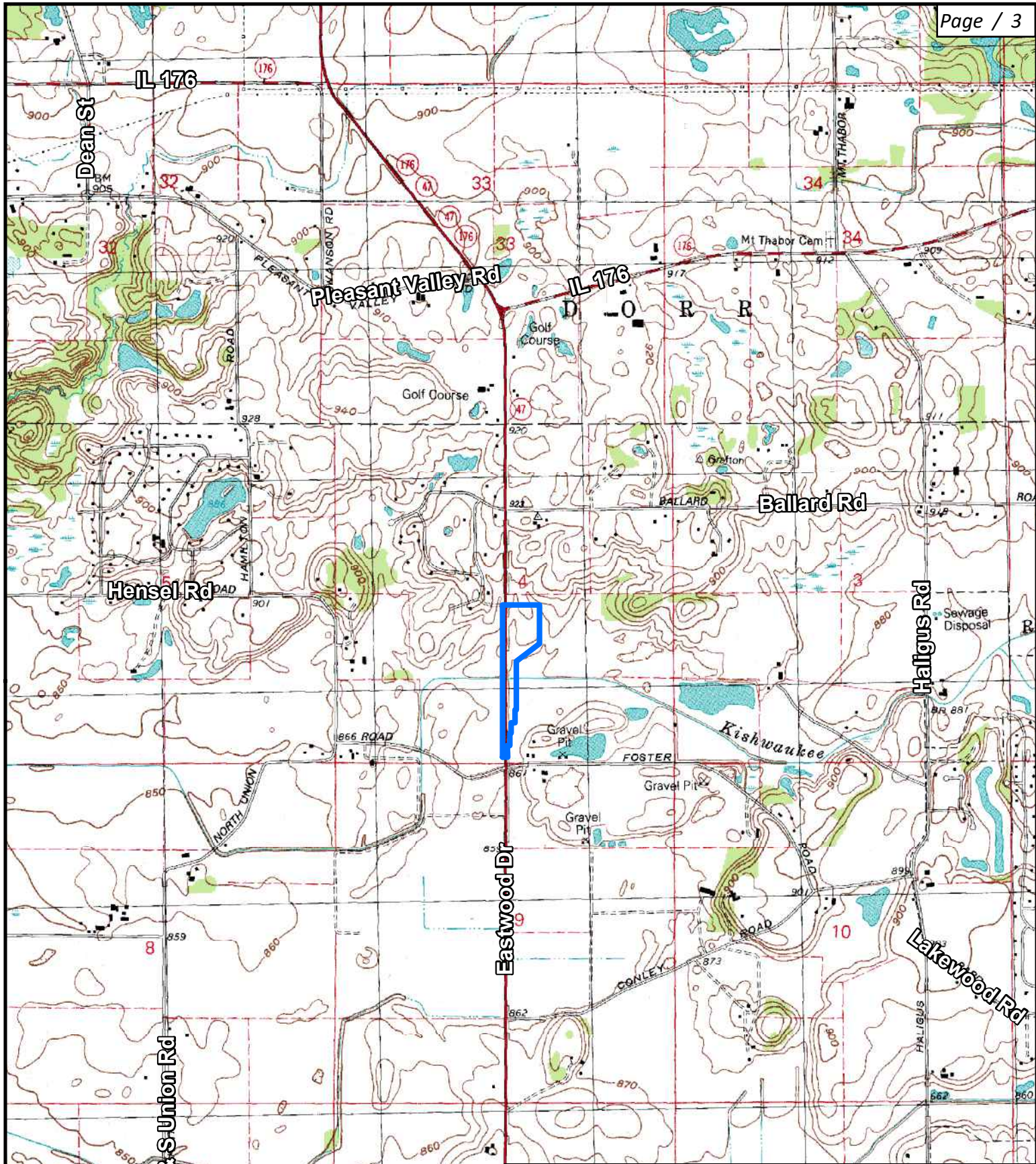
H&H and GSG Consultants, Inc. conducted the fieldwork for the investigation, and traffic control services were provided by MCC Traffic. Boring logs are included in Appendix B. STAT Analysis Corporation provided the laboratory analysis services. The laboratory analytical report is included in Appendix C.

This report utilizes the Tiered Approach to Corrective Action Objectives (TACO) from 35 Illinois Administrative Code (IAC) Part 742, as well as the Maximum Allowable Concentrations (MAC) list for Clean Construction or Demolition Debris (CCDD) facility disposal for the comparison of analytical results to determine areas of soil management, including estimated costs and quantities. The results were also used to generate Form LPC 663 for CCDD disposal of soils which achieve the MAC list objectives, included in Appendix D of this document. Based on the analytical results, LPC 663 forms were prepared for (1) unrestricted acceptance of soils at any CCDD/Uncontaminated Soil Fill Operation (USFO) facility and (2) acceptance of soils at a CCDD/USFO facility within a Metropolitan Statistical Area (MSA) county including Chicago.

**TABLE 1-1 PESA SITE NUMBERS**

Comparison of the PESA site numbers used in the PSI report from the previous PESA with ISGS Report #1789V2 (dated August 17, 2016), and the corresponding PESA site numbers in the updated SILR with ISGS Report #3751 (dated May 28, 2019).

<b>PESA Site Numbers in Previous PESA Report (ISGS Report #1789V2)</b>	<b>Corresponding PESA Site Numbers in SILR (ISGS Report #3751)</b>
98	2
99	1
101	3
102	4
103	5
104	2
105	6
106	7



Topo Source: INHS/USGS 7.5-minute DRG, Lombard 1:24,000 Quadrangle, 1998

**Legend**

**Approx. Project Limits**

**Huff & Huff, Inc.**

Figure 1-1  
 Site Location Map  
 IDOT WO# 25A, IL Route 47  
 Union Road to Hawthorne Way  
 Huntley and Woodstock  
 McHenry County, IL



## 2.0 BACKGROUND INFORMATION

IDOT provided relevant background data and information, which was used to develop and carry out the PSI scope of work, as detailed in the Work Plan for this project. This includes information describing proposed IDOT construction activities and key findings of previous investigations. A brief project description, as well as a description of the site geological and hydrogeological conditions encountered, are provided below. Additional background information is included in Appendix A.

### 2.1 PROJECT DESCRIPTION

ISGS PESA Report No. 1789V2 evaluated the Project Area for RECs. The Work Order request document from IDOT lists the areas and depths of planned excavation activities along the Project Area in relation to the identified RECs. This Work Order request document indicates that excavation is planned within the IDOT ROW adjacent three (3) of the identified REC sites. Based on standard IDOT practices, all District One roadway projects require characterization of all soil that is planned for excavation during the Project. This includes soil associated with properties that were determined to contain de minimis conditions only or determined not to contain RECs or de minimis conditions. The Work Order request document indicates that excavation is planned within the IDOT ROW adjacent to five (5) additional sites not identified as RECs. Therefore, an additional five (5) sites that have the potential of impacting the proposed construction activities were investigated, for a total of eight (8) sites that are documented within this report. These eight (8) properties are listed below:

ISGS Site No.	Estimated Volume of Excavation (cu yd)	Max. Depth of Excavation (ft)	Name or Address	Type of Work	REC? (y/n)
3751-2 (1789V2-98)	31,155	10.9	Agricultural land, 6100-7000 blocks of S. IL 47, unincorporated Grafton Township	Roadway Realignment, Compensatory Storage Area, Channel Excavation, Temporary Pavement	N
3751-1 (1789V2-99)	546	1.8	Residences, 11500-11516 Ballard Road, 11605-11703 Hawthorne Way, and 6363-6521 Suttdale Road, unincorporated Grafton Township	Roadway Realignment, Temporary Pavement	N
3751-3 (1789V2-101)	58	1.5	Vacant land, 6600 block of S. IL 47, unincorporated Grafton Township	Roadway Realignment, Temporary Pavement	N
3751-4 (1789V2-102)	130	2.5	Kishwaukee River, 6800 block of S. IL 47, unincorporated Grafton Township	Channel Excavation	Y
3751-5 (1789V2-103)	407	3.5	Bridge, 6800 block of S. IL 47, unincorporated Grafton Township	Channel Excavation	N



ISGS Site No.	Estimated Volume of Excavation (cu yd)	Max. Depth of Excavation (ft)	Name or Address	Type of Work	REC? (y/n)
3751-2 (1789V2-104)	5,610	10.6	Agricultural land, 7000-8300 blocks of S. IL 47, unincorporated Grafton Township	Temporary Pavement, Roadway Realignment, Wildlife Crossing Culvert	N
3751-6 (1789V2-105)	20,780	13.3	Ozinga Concrete, 10950 Foster Road, unincorporated Grafton Township	Roadway Realignment, Wildlife Crossing Culvert, Channel Excavation	Y
3751-7 (1789V2-106)	10,989	10.8	Residence, 7090 S. IL 47, unincorporated Grafton Township	Temporary Pavement, Roadway Realignment	Y

Excerpts from the ISGS PESA Report are included in Appendix A for reference.

## 2.2 SITE GEOLOGICAL AND HYDROGEOLOGICAL CONDITIONS

Soils along the project ROW consist mainly of silty clay loams.

A former sand and gravel pit is located at the northeast corner of IL 47 and Foster Road, approximately 215 m (700 ft) east of IL 47 and 30 m (100 ft) north of Foster Road. According to aerial photographs, this pit began operations sometime between 1962 and 1967; by the time of the 2005 aerial photograph, the pit appeared to be no longer active. A current sand and gravel pit is in operation in the southeast quadrant of IL 47 and Foster Road at Site 1789V2-108. According to aerial photographs, this pit started in the eastern half of that site between 1980 and 1988.

The Kishwaukee River crosses IL 47 at two locations. The first location is approximately 226 m (740 ft) south of Cobblestone Way; surficial drainage in the project area north of this crossing and between the second crossing is generally in a south to southwest direction. The second crossing is approximately 400 m (1312 ft) north of Foster Road; in the area south of this crossing, drainage direction is generally to the northwest. However, in the part of the project area that is urbanized, most surficial runoff will be controlled by the storm sewer system; such systems typically are designed to follow natural drainage patterns. In addition, drainage ditches run on either side of IL 47 and IL 176 in less urban areas of the project route. Ditch systems are typically designed to follow natural drainage patterns.

Neither the near surface nor the shallow unconfined groundwater flow direction was specifically determined for this project but are anticipated to generally mimic local topography. During subsurface testing for ISGS #1789 in January of 2009, no water was encountered in boreholes completed to depths of up to 8 ft.



### 3.0 FIELD INVESTIGATION PROCEDURES

The PSI field activities for this Project included the collection of soil samples adjacent to the eight (8) subject properties where excess soil was planned to be generated as a result of the proposed modifications to the existing roadway, according to the PESA Response Form. The work conducted for this investigation was completed in accordance with standard operating procedures (SOPs) for field investigations included in the IDOT-approved work plan for Work Order 25. GSG Consultants, Inc. was contracted to provide drilling services for this project under the direct supervision of a H&H field geologist. STAT Analysis Corporation located in Chicago, Illinois performed sample analyses. Section 3.1 summarizes the procedures for the soil sampling activities.

#### 3.1 SOIL SAMPLING METHODOLOGY

A total of forty (40) borings were advanced adjacent to the eight (8) subject properties. Below is a list of borings completed for each subject property:

- The following 15 borings were completed for ISGS Site No. 3751-2 (1789V2-98): 1789V2-98-01, 1789V2-98-02, 1789V2-98-03, 1789V2-98-04, 1789V2-98-05, 1789V2-98-06, 1789V2-98-07, 1789V2-98-08, 1789V2-98-09, 1789V2-98-10, 1789V2-98-11, 1789V2-98-12, 1789V2-98-13, 1789V2-98-14, and 1789V2-98-15.
- The following 4 borings were completed for ISGS Site No. 3751-1 (1789V2-99): 1789V2-99-01, 1789V2-99-02, 1789V2-99-03, and 1789V2-99-04.
- The following 1 boring was completed for ISGS Site No. 3751-3 (1789V2-101): 1789V2-101-01.
- The following 1 boring was completed for ISGS Site No. 3751-4 (1789V2-102): 1789V2-102-01.
- The following 1 boring was completed for ISGS Site No. 3751-5 (1789V2-103): 1789V2-103-01.
- The following 6 borings were completed for ISGS Site No. 3751-2 (1789V2-104): 1789V2-104-01, 1789V2-104-02, 1789V2-104-03, 1789V2-104-04, 1789V2-104-05, and 1789V2-104-06.
- The following 5 borings were completed for ISGS Site No. 3751-6 (1789V2-105): 1789V2-105-01, 1789V2-105-02, 1789V2-105-03, 1789V2-105-04, and 1789V2-105-05.
- The following 7 borings were completed for ISGS Site No. 3751-7 (1789V2-106): 1789V2-106-01, 1789V2-106-02, 1789V2-106-03, 1789V2-106-04, 1789V2-106-05, 1789V2-106-06, and 1789V2-106-07.

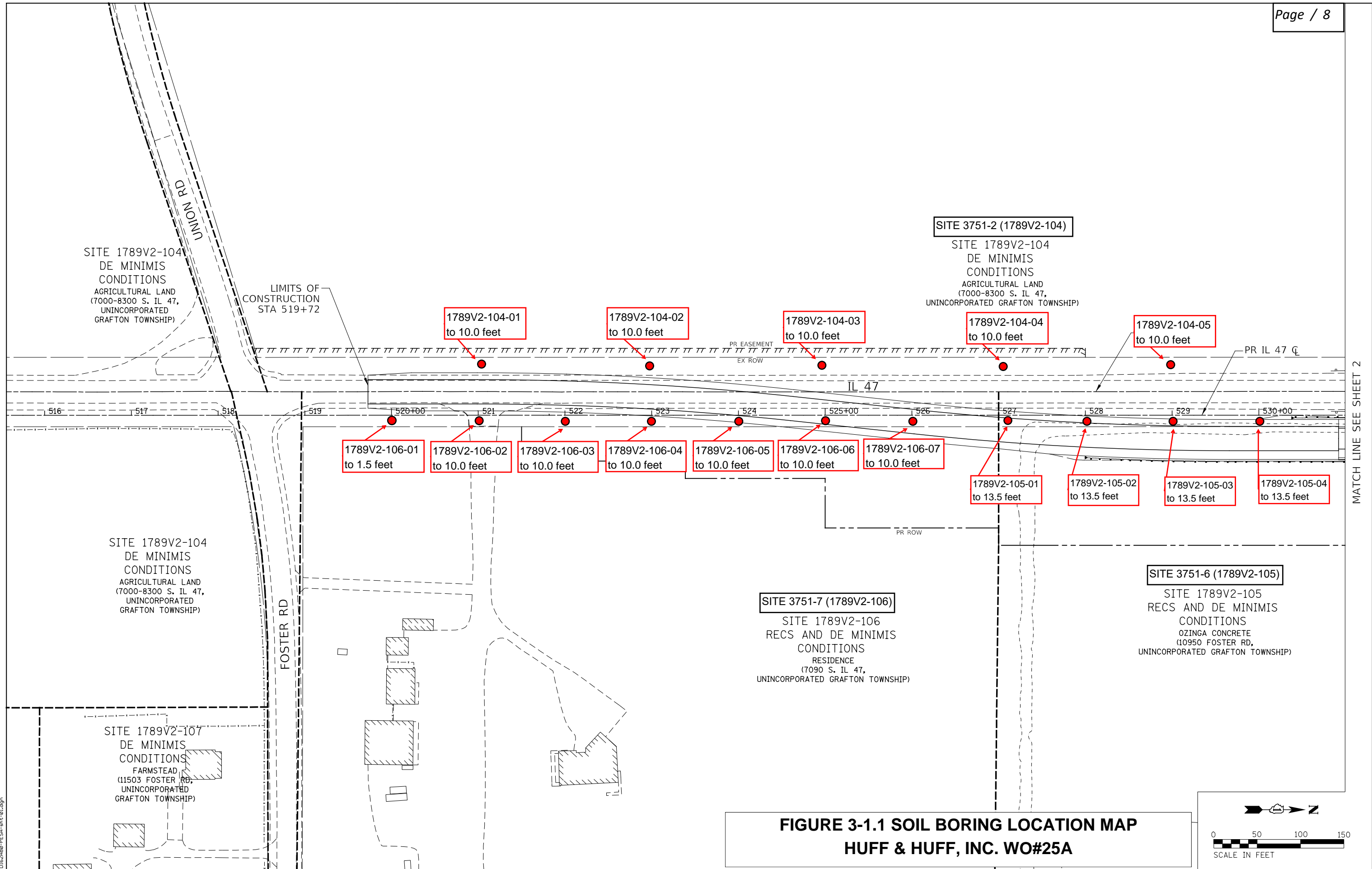
Soil boring locations are depicted on Figures 3-1.1 and Figure 3-1.2. Soil boring logs are included in Appendix B. Drilling was performed on September 3, 4, and 5, 2019, using a GeoProbe® track rig equipped with a 2-inch inside diameter sampler with disposable plastic liners. The rationale used to determine the sampling frequency and the sample intervals was in accordance with the IDOT-approved scope of work outlined in the Final Revised Work Plan dated April 12, 2019 and approved on April 15, 2019. Field investigation procedures (i.e., drilling procedures, soil sampling procedures, subsurface characterization, and field screening protocols) were performed in accordance with the approved SOPs.

Soil borings were continuously sampled using appropriately decontaminated stainless-steel samplers. Disposable plastic liners were used at each location. Each soil core recovered was field screened with a photo-ionization detector (PID) equipped with a 10.6 eV lamp using headspace-screening procedures. Soil samples were collected from soil borings for analysis based on IDOT guidelines as described in the approved PSI Work Plan. The depth intervals selected for sample analysis and borehole spacing were based on the anticipated maximum depth of excavation and the proposed construction activity at the subject properties. Based on current and historic land use identified at each property, as well as standard IDOT procedures, soil samples were analyzed for the following constituents: volatile organic compounds

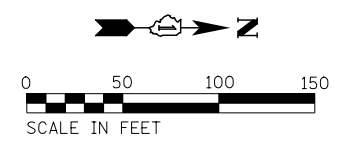


(VOCs), semi-volatile organic compounds (SVOCs), total metals, toxicity characteristic leaching procedure (TCLP) and synthetic precipitation leaching procedure (SPLP) metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH.

A total of eight (8) quality assurance / quality control (QA/QC) field duplicate soil samples were collected and analyzed for the same parameters as their respective investigative samples. Soil samples were maintained under chain of custody and appropriately preserved until delivery to STAT Analysis Corporation for analysis. Refer to Table 3-1 for the soil sampling summary which includes a list of borings completed for each subject property, the soil samples collected (including the identification of field duplicates), the ISGS findings associated with each of the identified sites, road and approximate stationing information, and the laboratory analytical testing conducted. Groundwater was not identified during the investigation activities.



**FIGURE 3-1.1 SOIL BORING LOCATION MAP**  
**HUFF & HUFF, INC. WO#25A**



**KNIGHT**  
 Engineers & Architects

USER NAME = wvsierling	DESIGNED - DGB	REVISED -
PLOT SCALE = 1:1100	DRAWN - DGB	REVISED -
PLOT DATE = 1/9/2019	CHECKED - JCM	REVISED -
	DATE - JANUARY 9, 2019	REVISED -

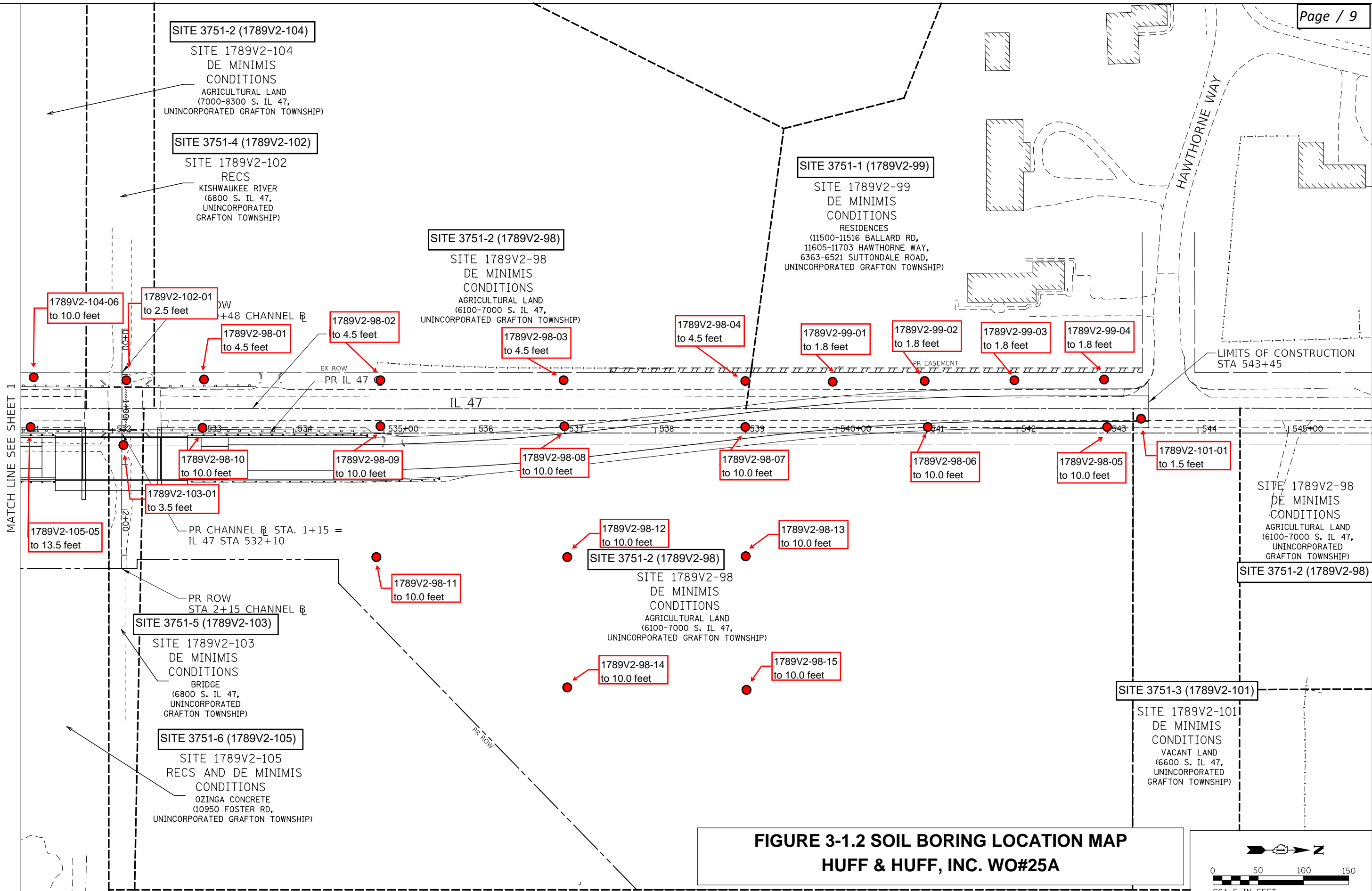
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PESA SITES**  
**ILLINOIS ROUTE 47**  
 SCALE: 1" = 100' SHEET 1 OF 2 SHEETS STA. 515+50 TO STA. 531+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(105XB)B-R	MCHENRY	15	1
CONTRACT NO. 62A80				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

FILE NAME = D:\22A80-PESA-sht-01.dgn

MATCH LINE SEE SHEET 2



**FIGURE 3-1.2 SOIL BORING LOCATION MAP  
HUFF & HUFF, INC. WO#25A**

FILE NAME : D:\22A80-PESA-sht-02.dgn

**KNIGHT**  
Engineers & Architects

USER NAME : wvsrling	DESIGNED - DGB	REVISED -
PLOT SCALE = 1:100	DRAWN - DGB	REVISED -
PLOT DATE = 1/9/2019	CHECKED - JCM	REVISED -
	DATE - JANUARY 9, 2019	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PESA SITES  
ILLINOIS ROUTE 47**  
SCALE: 1" = 100' SHEET 2 OF 2 SHEETS STA. 531+00 TO STA. 546+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(105XB)B-R	MCHENRY	15	2
CONTRACT NO. 62A80				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



**TABLE 3-1 Soil Sampling Summary**  
**Illinois Route 47 from Union/Foster Road to Hawthorne Way**  
**Huntley and Woodstock, McHenry County, Illinois**  
**BDE Sequence No.: 14677B**  
**PTB: 178-008 / H&H-1, Work Order No.: 025A**

Boring ID	Max. Depth (ft)	Soil Sample Interval (ft)	Number of Soil Borings	Number of Soil Samples Per Boring	Excavation Area (ISGS Site No.)	ISGS REC Yes / No - Basis	Proximal to Other nearby Excavations (ISGS Site No.)	Road / Approx. Stationing	Groundwater Sample	SOIL ANALYSES <sup>2/</sup>						
										Soil pH	22 Total Metals	TCLP and SPLP Metals (8 RCRA Metals plus Be, Co, Cu, Fe, Mn, Ni, and Pb)	VOCs	SVOCs	Duplicate (Depth-ft)	
1789V2-98-01	4.5	(0-4.5)	15	1	3751-2 (1789V2-98)	No	1789V2-99, 1789V2-101, 1789V2-102, 1789V2-103	IL RT 47 533+00, 15 Left	0	X	X	X	X	X	Dup-02	
1789V2-98-02	4.5	(0-4.5)		1						IL RT 47 535+00, 15 Left	X	X	X	X	X	
1789V2-98-03	4.5	(0-4.5)		1						IL RT 47 537+00, 15 Left	X	X	X	X	X	Dup-01
1789V2-98-04	4.5	(0-4.5)		1						IL RT 47 539+00, 15 Left	X	X	X	X	X	
1789V2-98-05	10	(0-5) (5-10)		2						IL RT 47 543+00, 15 Right	X	X	X	X	X	
1789V2-98-06	10	(0-5) (5-10)		2						IL RT 47 541+00, 15 Right	X	X	X	X	X	Dup-08 (5-10)
1789V2-98-07	10	(0-5) (5-10)		2						IL RT 47 539+00, 15 Right	X	X	X	X	X	
1789V2-98-08	10	(0-5) (5-10)		2						IL RT 47 537+00, 15 Right	X	X	X	X	X	
1789V2-98-09	10	(0-5) (5-10)		2						IL RT 47 535+00, 15 Right	X	X	X	X	X	
1789V2-98-10	10	(0-5) (5-10)		2						IL RT 47 533+00, 15 Right	X	X	X	X	X	
1789V2-98-11	10	(0-5) (5-10)		2						IL RT 47 535+00, 165 Right	X	X	X	X	X	
1789V2-98-12	10	(0-5) (5-10)		2						IL RT 47 537+00, 165 Right	X	X	X	X	X	
1789V2-98-13	10	(0-5) (5-10)		2						IL RT 47 539+00, 165 Right	X	X	X	X	X	
1789V2-98-14	10	(0-5) (5-10)		2						IL RT 47 537+00, 315 Right	X	X	X	X	X	
1789V2-98-15	10	(0-5) (5-10)		2						IL RT 47 539+00, 315 Right	X	X	X	X	X	
1789V2-99-01	1.8	(0-1.8)	4	1	3751-1 (1789V2-99)	No	1789V2-98, 1789V2-101	IL RT 47 540+00, 15 Left	0	X	X	X	X	X		
1789V2-99-02	1.8	(0-1.8)		1						IL RT 47 541+00, 15 Left	X	X	X	X	X	
1789V2-99-03	1.8	(0-1.8)		1						IL RT 47 542+00, 15 Left	X	X	X	X	X	
1789V2-99-04	1.8	(0-1.8)		1						IL RT 47 543+00, 15 Left	X	X	X	X	X	
1789V2-101-01	1.5	(0-1.5)	1	1	3751-3 (1789V2-101)	No	1789V2-98, 1789V2-99	IL RT 47 543+40, 10 Right	0	X	X	X	X	X		
1789V2-102-01	2.5	(0-2.5)	1*	1	3751-4 (1789V2-102)	Yes - Non-attainable water quality	1789V2-98, 1789V2-103, 1789V2-104, 1789V2-105	IL RT 47 532+00, 15 Left	0	X	X	X	X	X		
1789V2-103-01	3.5	(0-3.5)	1*	1	3751-5 (1789V2-103)	No	1789V2-98, 1789V2-102, 1789V2-104, 1789V2-105	IL RT 47 532+00, 25 Right	0	X	X	X	X	X		
1789V2-104-01	10	(0-5) (5-10)	6	2	3751-2 (1789V2-104)	No	1789V2-102, 1789V2-103, 1789V2-105, 1789V2-106	IL RT 47 521+00, 15 Left	0	X	X	X	X	X		
1789V2-104-02	10	(0-5) (5-10)		2						IL RT 47 523+00, 15 Left	X	X	X	X	X	Dup-04 (5-10)
1789V2-104-03	10	(0-5) (5-10)		2						IL RT 47 525+00, 15 Left	X	X	X	X	X	
1789V2-104-04	10	(0-5) (5-10)		2						IL RT 47 527+00, 15 Left	X	X	X	X	X	
1789V2-104-05	10	(0-5) (5-10)		2						IL RT 47 529+00, 15 Left	X	X	X	X	X	
1789V2-104-06	10	(0-5) (5-10)		2						IL RT 47 531+00, 15 Left	X	X	X	X	X	Dup-03 (5-10)
1789V2-105-01	13.5	(0-5) (5-10) (10-13.5)	5	3	3751-6 (1789V2-105)	Yes - Former dumping; AST; fill; evidence of chemical use; potential ACM and lead paint	1789V2-102, 1789V2-103, 1789V2-104, 1789V2-106	IL RT 47 527+00, 15 Right	0	X	X	X	X	X		
1789V2-105-02	13.5	(0-5) (5-10) (10-13.5)		2						IL RT 47 528+00, 15 Right	X	X	X	X	X	
1789V2-105-03	13.5	(0-5) (5-10) (10-13.5)		3						IL RT 47 529+00, 15 Right	X	X	X	X	X	Dup-07 (10-13.5)
1789V2-105-04	13.5	(0-5) (5-10) (10-13.5)		3						IL RT 47 530+00, 15 Right	X	X	X	X	X	
1789V2-105-05	13.5	(0-5) (5-10) (10-13.5)		3						IL RT 47 531+00, 15 Right	X	X	X	X	X	
1789V2-106-01	1.5	(0-1.5)	7	1	3751-7 (1789V2-106)	Yes - Former dumping; potential ACM and lead paint	1789V2-104, 1789V2-105	IL RT 47 520+00, 15 Right	0	X	X	X	X	X		
1789V2-106-02	10	(0-5) (5-10)		2						IL RT 47 521+00, 15 Right	X	X	X	X	X	
1789V2-106-03	10	(0-5) (5-10)		2						IL RT 47 522+00, 15 Right	X	X	X	X	X	Dup-05 (5-10)
1789V2-106-04	10	(0-5) (5-10)		2						IL RT 47 523+00, 15 Right	X	X	X	X	X	
1789V2-106-05	10	(0-5) (5-10)		2						IL RT 47 524+00, 15 Right	X	X	X	X	X	
1789V2-106-06	10	(0-5) (5-10)		2						IL RT 47 525+00, 15 Right	X	X	X	X	X	
1789V2-106-07	10	(0-5) (5-10)		2						IL RT 47 526+00, 15 Right	X	X	X	X	X	Dup-06 (0-5)

Total # of Soil Borings 38

Strikethrough indicates proposed borings which could not be completed

\* Indicates sediment grab sample collected from the Kishwaukee River.



## 4.0 INVESTIGATION RESULTS

This section presents a discussion of the investigation results obtained from the PSI completed in support of the proposed improvements along of IL-47 from Union/Foster Road to Hawthorne Way. The proposed improvements include roadway realignment, channel excavation, a compensatory storage area, and wildlife crossing culverts. The proposed maximum depth of excavation is 13.5 ft bgs.

Section 4.1 presents the screening criteria used to evaluate the data. Field observations, including headspace-screening PID results, sample collection rationale, and geological and hydrogeological information are summarized in Section 4.2. This information is detailed on Table 4-1 and on the soil boring logs presented in Appendix B.

The discussion for each property is included in Section 4.3 and summarizes the soil sampling analytical results. Analytical results were reviewed and validated in accordance with applicable United States Environmental Protection Agency (USEPA) *Guidance for Data Quality Objective Process* procedures. STAT Analysis Corporation provided an analytical quality control summary package with the analytical report, included in Appendix C, and H&H performed data validation in accordance with the Consultant Quality Assurance Plan (QAP) and the IDOT-approved Work Plan for the Project. Appendix D contains the Illinois Environmental Protection Agency (IEPA) LPC-663 Forms, Uncontaminated Soil Certifications, for portions of the Project Area where soil may be managed to a Clean Construction or Demolition Debris (CCDD) or Uncontaminated Soil Fill Operation (USFO). The PESA Response Form with excavation volumes for the identified ISGS Sites associated with the Project Area is included in Appendix A for reference. This PSI Report incorporates the volumes provided by IDOT for the Project. All quantities presented are rounded up to the next whole number (in cubic yards).

### 4.1 REFERENCE CONCENTRATIONS

#### 4.1.1 Soil Reference Concentrations – Construction Areas

An evaluation of the nature and extent of the contaminants of concern (COC), based on the results of this PSI, is also contained in the discussion. This includes a description and comparison of detected constituents to applicable environmental standards, used herein as reference concentrations. Soil analytical results were compared to the concentrations presented in the table titled *Summary of Maximum Allowable Concentrations (MACs) of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regulated Fill Operations*, dated August 27, 2012. This table, referred to as the MAC table, is incorporated under Title 35 of the Illinois Administrative Code (IAC), Part 1100, Subpart F.

Soil analytical results from TCLP and SPLP analyses were compared to the Soil Component of the Groundwater Ingestion Exposure Route Values for Class I Groundwater, presented in Title 35, IAC, Part 742: Tiered Approach to Corrective Action Objectives (TACO), Appendix B, Table A: Tier 1 Soil Remediation Objectives (SROs) for Residential Properties.

A constituent in soil is considered to be a COC if it exceeds the most stringent value listed in the MAC table. However, the constituent may be further evaluated by comparing soil sample extraction results (TCLP/SPLP), as indicated on the MAC Table. The constituent is considered a COC if the total concentration exceeds the most-stringent MAC Table value and both the TCLP and SPLP concentrations exceed the TACO SRO for the Soil Component of the Groundwater Ingestion Exposure Route. Additionally, if only the TCLP and SPLP concentrations exceed the TACO SRO for the Soil Component of the Groundwater Exposure Route for a given constituent, the contaminant is considered a COC.

Furthermore, based on guidance from IDOT, soil is not considered suitable for management to a CCDD/USFO if headspace readings in the soil boring are above background levels. Background levels for headspace readings are considered to be



less than 1.0 PID units, which are given in parts per million (ppm) for the PID unit used for this Project (MiniRae 3000 with a 10.6 eV lamp).

#### 4.1.2 Soil Reference Concentrations – Acquisition Areas

Soil located within proposed acquisition areas will be evaluated by comparing soil analytical results to the lowest applicable Tier 1 SROs for residential properties presented in Appendix C, Table A of TACO. The following outlines the approach to identifying COCs:

- Constituents with concentrations exceeding the Tier 1 SROs for the inhalation and/or ingestion exposure pathways will be considered COCs.
- A polynuclear aromatic hydrocarbon (PNA) constituent which has a background value listed in Appendix A, Table H of TACO, which is greater than the most stringent SRO in Appendix B, Table A of TACO, is considered a COC if the background value for the applicable area is exceeded.
- Inorganic and ionizing organic constituent concentrations will be compared against the pH-specific SROs for Class I groundwater presented in Appendix B, Table C of TACO, as applicable. A constituent that has a pH-specific SRO will be considered a COC if its total concentration exceeds the pH-specific SRO, and both the TCLP and SPLP concentrations exceed the TACO SRO for the Soil Component of the Groundwater Ingestion Exposure Route.
- If an inorganic constituent does not have a pH-specific SRO (e.g., total chromium), or if the sample pH is outside of the range of pH values provided (4.5 to 9.0 standard units), the SPLP and TCLP concentrations will be used to evaluate the Soil Component of the Groundwater Ingestion Exposure Route. Inorganic constituents will be considered COCs if both SPLP and TCLP concentrations exceed the SRO, and the total concentration exceeds the appropriate background value listed in Appendix A, Table G of TACO.

For the purposes of this report, only constituent results with one or more detection are presented in the embedded tables within the document narrative. Refer to Appendix C for comprehensive analytical summary Tables C-1.1, C-1.2, and C-2, which compare the results for all analytical results to applicable reference concentrations for inorganic and organic constituents, respectively.

Tables 4-2 and 4-3 present the soil analytical data for organic and inorganic constituents, respectively, and compare the detected constituents to reference concentrations. Figures 4-1.1 through 4-1.6 depict the boring locations and the extent of potentially impacted soil that may impact proposed construction activities during this Project. As the MAC Table includes provisions to evaluate select constituents against background values, Figures 4-1.1 through 4-1.6 identify soil that is considered to be non-special waste and soil that may be managed by a CCDD/USFO.

#### 4.1.3 Hazardous Waste Reference Concentrations

The TCLP metals analytical results for soil are also screened against the values listed in 35 IAC, Part 721, Identification of Listing of Hazardous Waste, Section 721.124, Toxicity Characteristic. Soil in the vicinity of a boring with one or more TCLP metals with concentrations exceeding the Toxicity Characteristic reference concentrations will be considered a characteristic hazardous waste. None of the TCLP metals were found to exceed the hazardous waste reference criteria.



## 4.2 FIELD OBSERVATIONS

Headspace measurements using a PID were collected from each sample interval. Table 4-1 presents the soil PID screening results for each soil boring, along with the planned construction excavation depths and sample collection depth. Headspace screening data are also presented on the soil boring logs presented in Appendix B. The highest headspace reading for this Project was 0.9 ppm, indicating background levels (<1.0 ppm).

Detailed field observations and geological descriptions were recorded by a H&H field geologist during the PSI and are included on the boring logs provided in Appendix B. Subsurface material encountered in the borings advanced adjacent to the subject properties generally includes silty clay soil types with varying quantities of trace gravel. Saturated conditions were not encountered at any of the properties investigated.

## 4.3 AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-98))

The investigative soil samples collected within the IDOT right-of-way were collected from within the proposed maximum depth of excavation of approximately 10 ft bgs.

### 4.3.1 Analytical Results

#### **Soil Analytical Results**

A total of fifteen (15) soil borings were advanced at this location. The fifteen (15) soil borings were advanced to a maximum total depth of approximately 10 ft bgs based on the design plans provided in the PESA Response Form. The soil samples were analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- Two (2) VOCs, acetone and toluene, were detected in the soil borings adjacent to the subject property.
- Eight (8) SVOCs were detected in the soil borings adjacent to the subject property.
- A total of nineteen (19) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of seven (7) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of twelve (12) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured ranged from 7.51 to 9.38 standard units (s.u.) in the soil borings adjacent to the subject property.

#### **Groundwater Analytical Results**

A groundwater evaluation was not conducted adjacent to non-REC sites.

### 4.3.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the agricultural land (ISGS Site No. 3751-2 (1789V2-98)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of



potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.

#### 4.3.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total arsenic was detected at a concentration exceeding its reference concentration in four (4) soil borings.
- Total chromium was detected at a concentration exceeding its reference concentration in seven (7) soil borings.
- Total cobalt was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total iron was detected at a concentration exceeding its reference concentration in twelve (12) soil borings.
- Total manganese was detected at a concentration exceeding its reference concentration in six (6) soil borings.
- Total selenium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP lead was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP manganese was detected at a concentration exceeding its reference concentration in all fifteen (15) soil borings.
- SPLP chromium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- SPLP iron was detected at a concentration exceeding its reference concentration in thirteen (13) soil borings.
- SPLP lead was detected at a concentration exceeding its reference concentration in two (2) soil borings.
- SPLP manganese was detected at concentrations exceeding its reference concentration in five (5) soil borings.
- SPLP nickel was detected at concentrations exceeding its reference concentration in one (1) soil boring.
- Soil pH was detected at a level outside the required pH range of 6.25 to 9.0 in five (5) soil borings.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. This COC condition was met for total arsenic; total, TCLP, and SPLP manganese; and TCLP and SPLP lead adjacent to the subject property.

#### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to the agricultural land (ISGS Site No. 3751-2 (1789V2-98)) roadway realignment, compensatory storage area, channel excavation, and temporary pavement.

Soil in the vicinity of borings 1789V2-98-01, 1789V2-98-04, 1789V2-98-05, and 1789V2-98-06, as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of borings 1789V2-98-02, 1789V2-98-08, 1789V2-98-10, 1789V2-98-12, and 1789V2-98-14, as depicted with **blue** hatching on Figure 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.



Soil in the vicinity of borings 1789V2-98-03, 1789V2-98-11, and 1789V2-98-13, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Soil in the vicinity of borings 1789V2-98-07 and 1789V2-98-15 as depicted with **purple** hatching on Figure 4-1.2, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

Soil in the vicinity of boring 1789V2-98-09 as depicted with **orange** hatching on Figure 4-1.2 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).

Based on the information provided by the IDOT PESA Response Form, a total of approximately 31,155 CY of soil will be excavated during construction activities from Site 3751-2 (1789V2-98).

The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-2 (1789V2-98) is approximately 1,704 CY within the IDOT ROW and approximately 506 CY outside of the IDOT ROW, for a total of 2,210 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$353,930, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specification provided by District One, acquisition of a ROW partial take and temporary easement is anticipated adjacent to Site 3751-2 (1789V2-98). Soil from this area would require management as non-special waste, as detailed in Table 4-4. Therefore, the total estimated remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$68,537, as detailed in Table 4-4.

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

#### **Management of Excavated Soil**

Soil in the vicinity of borings 1789V2-98-01, 1789V2-98-04, 1789V2-98-05, and 1789V2-98-06, as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of borings 1789V2-98-02, 1789V2-98-08, 1789V2-98-10, 1789V2-98-12, and 1789V2-98-14, as depicted with **blue** hatching on Figure 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.



Soil in the vicinity of borings 1789V2-98-03, 1789V2-98-11, and 1789V2-98-13, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Soil in the vicinity of borings 1789V2-98-07 and 1789V2-98-15, as depicted with **purple** hatching on Figure 4-1, may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”.

Based on the concentration of arsenic above the reference concentration within the maximum excavation depth, the soil in the vicinity of boring 1789V2-98-09, as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS 5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities.

#### 4.3.2.2 Groundwater

A groundwater evaluation was not conducted adjacent to non-REC sites.

#### 4.4 RESIDENCES (ISGS SITE NO. 3751-1 (1789V2-99))

The investigative soil samples collected adjacent to the residential buildings were collected from within the proposed maximum depth of excavation of 2 ft bgs.

##### 4.4.1 Analytical Results

#### **Soil Analytical Results**

A total of four (4) soil borings were advanced at this location to evaluate to soil conditions at Site 3751-1 (1789V2-99) (1789V2-99-01, 1789V2-99-02, 1789V2-99-03, and 1789V2-99-04). The four (4) soil borings were advanced to a maximum total depth of 2 ft bgs based on the design plans provided in the PESA Response Form. The soil samples were analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- Two (2) VOCs, acetone and toluene, were detected in the soil borings adjacent to the subject property.
- A total of ten (10) SVOCs were detected in the soil borings adjacent to the subject property.
- A total of eighteen (18) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of six (6) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of thirteen (13) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured ranged from 8.41 to 9.32 standard units (s.u.) in the soil borings adjacent to the subject property.



## Groundwater Analytical Results

A groundwater evaluation was not conducted adjacent to non-REC sites.

### 4.4.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the residences (ISGS Site No. 3751-1 (1789V2-99)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.

#### 4.4.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Benzo(a)pyrene was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total arsenic was detected at a concentration exceeding its reference concentration in two (2) soil borings.
- Total chromium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total iron was detected at a concentration exceeding its reference concentration in three (3) soil borings.
- Total manganese was detected at a concentration exceeding its reference concentration in two (2) soil borings.
- Total selenium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP manganese was detected at a concentration exceeding its reference concentration in all four (4) soil borings.
- SPLP iron, lead, and manganese were detected at concentrations exceeding their reference concentration in each of the four (4) soil borings.
- SPLP arsenic, beryllium, chromium, and selenium were detected at concentrations exceeding their reference concentration in one (1) soil boring.
- Soil pH was detected at a level outside the required pH range of 6.25 to 9.0 in three (3) soil borings.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was met for total arsenic and for total, TCLP, and SPLP manganese adjacent to the subject property.

## IDOT Construction Activities Within Impacted Soil Areas

Proposed IDOT construction activity adjacent to the residential buildings (ISGS Site No. 3751-1 (1789V2-99)) includes roadway realignment and temporary pavement.

Soil in the vicinity of boring 1789V2-99-01, as depicted with **orange** hatching on Figure 4-1.2 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).





Soil in the vicinity of borings 1789V2-99-02, 1789V2-99-04, and 1789V2-98-04 (located on the property adjacent to the subject property), as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of boring 1789V2-99-03, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.

Based on the information provided by the IDOT PESA Response Form, a total of approximately 546 CY of soil will be excavated during construction activities adjacent to Site 3751-1 (1789V2-99).

The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-1 (1789V2-99) is approximately 478 CY within the IDOT ROW and approximately 30 CY outside of the IDOT ROW, for a total of 508 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$42,626, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specification provided by District One, acquisition of a ROW partial take and temporary easement is anticipated adjacent to Site 3751-1 (1789V2-99). Soil from this area would require management as non-special waste, as detailed in Table 4-4. Therefore, the total estimated remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$555 as detailed in Table 4-4.

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

#### **Management of Excavated Soil**

Based on the concentration of arsenic above the reference concentrations within the maximum excavation depth, the soil in the vicinity of boring 1789V2-99-01, as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS 5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities.

Soil in the vicinity of borings 1789V2-99-02, 1789V2-99-04, and 1789V2-98-04 (located on the property adjacent to the subject property), as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of boring 1789V2-99-03, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago



and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.

#### 4.4.2.2 Groundwater

A groundwater evaluation was not conducted adjacent to non-REC sites.

#### 4.5 VACANT LAND (ISGS SITE NO. 3751-3 (1789V2-101))

The investigative soil sample collected adjacent to the vacant land was collected from within the proposed maximum depth of excavation of 1.5 ft bgs.

#### 4.5.1 Analytical Results

##### **Soil Analytical Results**

One (1) soil boring was advanced at this location to evaluate to soil conditions at Site 3751-3 (1789V2-101) (1789V2-101-01). The one (1) soil boring was advanced to a maximum total depth of 1.5 ft bgs based on the design plans provided in the PESA Response Form. The soil sample was analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- A total of fifteen (15) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of two (2) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of eight (8) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured was 7.83 standard units (s.u.) in the soil borings adjacent to the subject property.

##### **Groundwater Analytical Results**

A groundwater evaluation was not conducted adjacent to non-REC sites.

#### 4.5.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the vacant land (ISGS Site No. 3751-3 (1789V2-101)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.



#### 4.5.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total iron was detected at a concentration exceeding its reference concentration in the one (1) soil boring.
- SPLP iron and lead were detected at concentrations exceeding their reference concentrations in the one (1) soil boring.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was not met for the metals detected adjacent to the subject property.

#### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to the vacant land (ISGS Site No. 3751-3 (1789V2-101)) includes roadway realignment and temporary pavement.

Soil in the vicinity of boring 1789V2-101-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Based on the information provided by the IDOT PESA Response Form, a total of approximately 58 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-3 (1789V2-101).

No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work within the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$1,098, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specifications provided by District One, acquisition of additional ROW or easements is not anticipated adjacent to ISGS Site 3751-3 (1789V2-101).

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

#### **Management of Excavated Soil**

Soil in the vicinity of boring 1789V2-101-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.



#### 4.5.2.2 Groundwater

A groundwater evaluation was not conducted adjacent to non-REC sites.

#### 4.6 KISHWAUKEE RIVER (ISGS SITE NO. 3751-4 (1789V2-102))

The investigative sediment sample collected adjacent to the Kishwaukee River was collected from within the proposed maximum depth of excavation of 2.5 ft bgs.

##### 4.6.1 Analytical Results

###### **Soil Analytical Results**

One (1) soil boring was advanced at this location to evaluate soil conditions at Site 3751-4 (1789V2-102) (1789V2-102-01). The one (1) soil boring was advanced to a maximum total depth of 2.5 ft bgs based on the design plans provided in the PESA Response Form. The soil sample was analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- A total of eleven (11) SVOCs were detected in the soil boring adjacent to the subject property.
- A total of fifteen (15) metals were detected (via total analysis method) in the soil boring adjacent to the subject property.
- A total of five (5) metals were detected (via TCLP method analysis) in the soil boring adjacent to the subject property.
- A total of three (3) metals were detected (via SPLP method analysis) in the soil boring adjacent to the subject property.
- The pH values measured was 7.57 standard units (s.u.) in the soil boring adjacent to the subject property.

###### **Groundwater Analytical Results**

ISGS PESA Report No. 1789V2 identified this property as a REC site. As this location was the Kishwaukee River, a sediment sample was collected and analyzed from within the proposed maximum depth of excavation to represent site conditions. Groundwater was not encountered at this property at the proposed maximum depth of excavation of 2.5 ft bgs adjacent to this site; therefore, a groundwater evaluation was not conducted.

##### 4.6.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the Kishwaukee River (ISGS Site No. 3751-4 (1789V2-102)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.



#### 4.6.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Benzo(a)pyrene was detected at a concentration exceeding its reference concentration in the sediment sample.
- Total iron was detected at a concentration exceeding its reference concentration in the sediment sample.
- TCLP manganese was detected at a concentration exceeding its reference concentration in the sediment sample.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was not met for the metals detected adjacent to the subject property.

#### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to the Kishwaukee River (ISGS Site No. 3751-4 (1789V2-102)) includes channel excavation.

Soil in the vicinity of boring 1789V2-102-01, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.

Based on the information provided by the IDOT PESA Response Form, a total of approximately 130 CY of soil will be excavated during construction activities adjacent to Site 3751-4 (1789V2-102).

No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$1,530, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specifications provided by District One, acquisition of additional ROW or easements is not anticipated adjacent to ISGS Site 3751-4 (1789V2-102).

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

#### **Management of Excavated Soil**

Soil in the vicinity of boring 1789V2-102-01, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago



and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.

#### 4.6.2.2 Groundwater

ISGS PESA Report No. 1789V2 identified this property as a REC site. As this location was the Kishwaukee River, a sediment sample was collected and analyzed from within the proposed maximum depth of excavation to represent site conditions. Groundwater was not encountered at this property at the proposed maximum depth of excavation of 2.5 ft bgs adjacent to this site; therefore, a groundwater evaluation was not conducted.

#### 4.7 BRIDGE (ISGS SITE NO. 3751-5 (1789V2-103))

The investigative sediment sample collected adjacent to the Bridge was collected from within the proposed maximum depth of excavation of 3.5 ft bgs.

##### 4.7.1 Analytical Results

#### **Soil Analytical Results**

One (1) soil boring was advanced at this location to evaluate to soil conditions at Site 3751-5 (1789V2-103) (1789V2-103-01). The one (1) soil boring was advanced to a maximum total depth of 3.5 ft bgs based on the design plans provided in the PESA Response Form. The soil sample was analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- A total of fifteen (15) metals were detected (via total analysis method) in the soil boring adjacent to the subject property.
- A total of five (5) metals were detected (via TCLP method analysis) in the soil boring adjacent to the subject property.
- A total of three (3) metals were detected (via SPLP method analysis) in the soil boring adjacent to the subject property.
- The pH values measured was 7.34 standard units (s.u.) in the soil boring adjacent to the subject property.

#### **Groundwater Analytical Results**

A groundwater evaluation was not conducted adjacent to non-REC sites.

##### 4.7.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the Bridge (ISGS Site No. 3751-5 (1789V2-103)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.



#### 4.7.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total iron was detected at a concentration exceeding its reference concentration in the sediment sample.
- TCLP manganese was detected at a concentration exceeding its reference concentration in the sediment sample.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was not met for the metals detected adjacent to the subject property.

#### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to the Bridge (ISGS Site No. 3751-5 (1789V2-103)) includes channel excavation.

Soil in the vicinity of boring 1789V2-103-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Based on the information provided by the IDOT PESA Response Form, a total of approximately 407 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-5 (1789V2-103).

No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$3,192, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specifications provided by District One, a ROW partial take is anticipated adjacent to ISGS Site 3751-5 (1789V2-103). No soil from this area will require management as non-special waste, as detailed in Table 4-4. Therefore, the total remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$0, as detailed in Table 4-4.

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

#### **Management of Excavated Soil**

Soil in the vicinity of boring 1789V2-103-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.



#### 4.7.2.2 Groundwater

A groundwater evaluation was not conducted adjacent to non-REC sites.

#### 4.8 AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-104))

The investigative soil samples collected adjacent to the agricultural land were collected from within the proposed maximum depth of excavation of 10 ft bgs.

##### 4.8.1 Analytical Results

###### **Soil Analytical Results**

A total of six (6) soil borings were advanced at this location to evaluate to soil conditions at Site 3751-2 (1789V2-104) (1789V2-104-01, 1789V2-104-02, 1789V2-104-03, 1789V2-104-04, 1789V2-104-05, and 1789V2-104-06). The six (6) soil borings were advanced to a maximum total depth of 10 ft bgs based on the design plans provided in the PESA Response Form. The soil samples were analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- A total of two (2) VOCs were detected in the soil borings adjacent to the subject property.
- A total of eight (8) SVOCs were detected in the soil borings adjacent to the subject property.
- A total of nineteen (19) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of eight (8) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of thirteen (13) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured ranged from 7.12 to 9.06 standard units (s.u.) in the soil borings adjacent to the subject property.

###### **Groundwater Analytical Results**

A groundwater evaluation was not conducted adjacent to non-REC sites.

##### 4.8.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the agricultural land (ISGS Site No. 3751-2 (1789V2-104)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.





#### 4.8.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the agricultural land indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total chromium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total iron was detected at a concentration exceeding its reference concentration in five (5) soil borings.
- Total lead was detected at a concentration exceeding its reference concentration in two (2) soil borings.
- Total manganese was detected at a concentration exceeding its reference concentration in three (3) soil borings.
- Total selenium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP manganese was detected at concentrations exceeding its reference concentration in each of the six (6) soil borings.
- SPLP iron and lead were detected at concentrations exceeding their reference concentrations in each of the six (6) soil borings.
- SPLP manganese was at concentrations exceeding its reference concentration in five (5) soil borings.
- Soil pH was detected at a level outside the required pH range of 6.25 to 9.0 in one (1) soil boring.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was met for TCLP and SPLP manganese adjacent to the subject property.

#### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to the agricultural land (ISGS Site No. 3751-2 (1789V2-104)) includes temporary pavement, roadway realignment, and a wildlife cross culvert.

Soil in the vicinity of borings 1789V2-104-01 and 1789V2-104-04, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Soil in the vicinity of borings 1789V2-104-02, 1789V2-104-05, and 1789V2-104-06, as depicted with **blue** hatching on Figure 4-1.1 and 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.

Soil in the vicinity of boring 1789V2-104-03, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

Based on the information provided by the IDOT PESA Response Form, a total of approximately 5,610 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-2 (1789V2-104).

No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$34,410, as detailed in Table 4-4.



## Potential IDOT Property Acquisition – Soil Remediation Cost

Based on a review of IDOT construction plans and specification provided by District One, acquisition of a temporary easement is anticipated adjacent to Site 3751-2 (1789V2-104). Soil from this area would not require management as non-special waste, as detailed in Table 4-4. Therefore, the total estimated remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$0, as detailed in Table 4-4.

## Comparison of Soil Concentrations with Construction Worker Reference Concentrations

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

## Management of Excavated Soil

Soil in the vicinity of borings 1789V2-104-01 and 1789V2-104-04, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.

Soil in the vicinity of borings 1789V2-104-02, 1789V2-104-05, and 1789V2-104-06, as depicted with **blue** hatching on Figure 4-1.1 and 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.

Soil in the vicinity of boring 1789V2-104-03, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

### 4.8.2.2 Groundwater

A groundwater evaluation was not conducted adjacent to non-REC sites.

### 4.9 OZINGA CONCRETE (ISGS SITE NO. 3751-6 (1789VS-105))

The investigative soil samples collected adjacent to Ozinga Concrete were collected from within the proposed maximum depth of excavation of 13.5 ft bgs.

#### 4.9.1 Analytical Results

### Soil Analytical Results

A total of five (5) soil borings were advanced at this location to evaluate to soil conditions at Site 3751-6 (1789V2-105) (1789V2-105-01, 1789V2-105-02, 1789V2-105-03, 1789V2-105-04, and 1789V2-105-05). The five (5) soil borings were advanced to a maximum total depth of 13.5 ft bgs based on the design plans provided in the PESA Response Form. The soil samples were analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:



- A total of one (1) SVOC was detected in the soil borings adjacent to the subject property.
- A total of seventeen (17) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of six (6) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of ten (10) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured ranged from 7.70 to 9.52 standard units (s.u.) in the soil borings adjacent to the subject property.

### **Groundwater Analytical Results**

ISGS PESA Report No. 1789V2 identified this property as a REC site. However, saturated conditions were not encountered at this property at the proposed maximum depth of excavation of 13.5 ft bgs adjacent to this site. Therefore, a groundwater evaluation was not conducted.

#### **4.9.2 Nature and Extent of COCs**

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to Ozinga Concrete (ISGS Site No. 3751-6 (1789V2-105)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.

##### **4.9.2.1 Soil**

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total arsenic was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total iron was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total selenium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP and SPLP manganese was detected at concentrations exceeding its reference concentrations in each of the five (5) soil borings.
- SPLP iron and lead were detected at concentrations exceeding their reference concentrations in each of the five (5) soil borings.
- Soil pH was detected at a level outside the required pH range of 6.25 to 9.0 in four (4) soil borings.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was met for total arsenic; and for TCLP and SPLP manganese adjacent to the subject property.



### **IDOT Construction Activities Within Impacted Soil Areas**

Proposed IDOT construction activity adjacent to Ozinga Concrete (ISGS Site No. 3751-6 (1789V2-105)) roadway realignment, wildlife cross culvert installation, and channel excavation.

Soil in the vicinity of boring 1789V2-105-01, as depicted with **orange** hatching on Figure 4-1.1 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).

Soil in the vicinity of borings 1789V2-105-02, 1789V2-105-03, and 1789V2-105-05, as depicted with **yellow** hatching on Figure 4-1.1 and 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of boring 1789V2-105-04, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil boring may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

Based on the information provided by the IDOT PESA Response Form, a total of approximately 20,780 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-6 (1789V2-105).

The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-6 (1789V2-105) is approximately 5,960 CY within the IDOT ROW and approximately 8,940 CY outside of the IDOT ROW, for a total of 14,900 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$1,243,430, as detailed in Table 4-4.

### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specification provided by District One, acquisition of a ROW partial take is anticipated adjacent to Site 3751-6 (1789V2-105). Soil from this area would require management as non-special waste, as detailed in Table 4-4. Therefore, the total estimated remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$54,751 as detailed in Table 4-4.

### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.

### **Management of Excavated Soil**

Based on the concentration of arsenic above the reference concentrations within the maximum excavation depth, the soil in the vicinity of boring 1789V2-105-01, as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS



5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities.

Soil in the vicinity of borings 1789V2-105-02, 1789V2-105-03, and 1789V2-105-05, as depicted with **yellow** hatching on Figure 4-1.1 and 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of boring 1789V2-105-04, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil boring may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

#### 4.9.2.2 Groundwater

ISGS PESA Report No. 1789V2 identified this property as a REC site. However, saturated conditions were not encountered at this property at the proposed maximum depth of excavation of 13.5 ft bgs adjacent to this site; therefore, a groundwater evaluation was not conducted.

#### 4.10 RESIDENCE (ISGS SITE NO. 3751-7 (1789V2-106))

The investigative soil samples collected adjacent to the Residence were collected from within the proposed maximum depth of excavation of approximately 10 ft bgs.

##### 4.10.1 Analytical Results

#### **Soil Analytical Results**

A total of seven (7) soil borings were advanced at this location to evaluate to soil conditions at Site 3751-7 (1789V2-106) (1789V2-106-01, 1789V2-106-02, 1789V2-106-03, 1789V2-106-04, 1789V2-106-05, 1789V2-106-06, and 1789V2-106-07). The seven (7) soil borings were advanced to a maximum total depth of 10 ft bgs based on the design plans provided in the PESA Response Form. The soil samples were analyzed for VOCs, SVOCs, total metals, TCLP and SPLP metals (8 RCRA plus Be, Co, Cu, Fe, Mn, Ni, and Zn), and soil pH. Analytical data summary tables presenting detected constituents analyzed and their corresponding results are presented in Tables 4-2 and 4-3. Constituents detected in the soil borings advanced adjacent to this property include organics and inorganics, as listed below:

- A total of two (2) VOCs were detected in the soil borings adjacent to the subject property.
- A total of ten (10) SVOCs were detected in the soil borings adjacent to the subject property.
- A total of seventeen (17) metals were detected (via total analysis method) in the soil borings adjacent to the subject property.
- A total of seven (7) metals were detected (via TCLP method analysis) in the soil borings adjacent to the subject property.
- A total of ten (10) metals were detected (via SPLP method analysis) in the soil borings adjacent to the subject property.
- The pH values measured ranged from 7.05 to 9.51 standard units (s.u.) in the soil borings adjacent to the subject property.



## Groundwater Analytical Results

ISGS PESA Report No. 1789V2 identified this property as a REC site. However, saturated conditions were not encountered at this property at the proposed maximum depth of excavation of approximately 10 ft bgs adjacent to this site. Therefore, a groundwater evaluation was not conducted.

### 4.10.2 Nature and Extent of COCs

H&H evaluated the soil analytical data to determine whether reference concentrations were exceeded adjacent to the residence (ISGS Site No. 3751-7 (1789V2-106)). Soil with constituents exceeding applicable environmental regulations was classified as being potentially impacted. Depending upon the contaminants of concern, management of potentially impacted soil on site, off site to a CCDD/USFO, or off site as a non-special waste is considered for soil that will be generated during construction activities. Costs for off-site CCDD/USFO management and non-special waste management and disposal have been included as appropriate. A discussion of the criteria used in this analysis is contained in the following subsections.

#### 4.10.2.1 Soil

An evaluation of the analytical results from the soil samples collected adjacent to the subject property indicates the presence of organic and inorganic constituents. As summarized on Tables 4-2 and 4-3, the following constituents were detected at concentrations exceeding their respective reference concentrations:

- Total arsenic was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total chromium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total iron was detected at a concentration exceeding its reference concentration in three (3) soil borings.
- Total lead was detected at a concentration exceeding its reference concentration in two (2) soil borings.
- Total manganese was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- Total mercury was detected at a concentration exceeding the remediation objective for construction workers in one (1) soil boring.
- Total selenium was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- TCLP lead was detected at a concentration exceeding its reference concentrations in three (3) soil borings.
- TCLP manganese was detected at a concentration exceeding its reference concentration in each of the seven (7) soil borings.
- TCLP nickel was detected at a concentration exceeding its reference concentration in one (1) soil boring.
- SPLP iron was detected at a concentration exceeding its reference concentration in five (5) soil borings.
- SPLP lead was detected at a concentration exceeding its reference concentration in six (6) soil borings.
- SPLP manganese was detected at a concentration exceeding its reference concentration in four (4) soil borings.

In order for a metal to be considered a COC, the total, TCLP, and SPLP results, or the TCLP and SPLP results (with the exception of arsenic, magnesium, and vanadium) must be found to exceed their reference concentrations in a given sample. The COC condition was met for total, TCLP, and SPLP lead and manganese adjacent to the subject property.

## IDOT Construction Activities Within Impacted Soil Areas



Proposed IDOT construction activity adjacent to the Residence (ISGS Site No. 3751-7 (1789V2-106)) includes temporary pavement and roadway realignment.

Soil in the vicinity of borings 1789V2-106-01, 1789V2-106-02, 1789V2-106-05, and 1789V2-106-07, as depicted with **yellow** hatching on Figure 4-1.1, exceeded soil reference concentrations. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).

Soil in the vicinity of borings 1789V2-106-03 and 1789V2-105-01 (on the property adjacent to the subject property), as depicted with **orange** hatching on Figure 4-1.1 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of these soil borings may be managed off site as non-special waste (a(5)).

Soil in the vicinity of borings 1789V2-106-04 and 1789V2-106-06, as depicted with **purple** hatching on Figure 4-1.1, have a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of these soil borings may be managed on-site as fill material or managed and disposed off-site as "uncontaminated soil". This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

Based on the information provided by the IDOT PESA Response Form, a total of approximately 10,989 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-7 (1789V2-106).

The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-7 (1789V2-106) is approximately 5,634 CY within the IDOT ROW and approximately 2,274 CY outside of the IDOT ROW, for a total of 7,908 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$660,284, as detailed in Table 4-4.

#### **Potential IDOT Property Acquisition – Soil Remediation Cost**

Based on a review of IDOT construction plans and specification provided by District One, acquisition of a ROW partial take is anticipated adjacent to Site 3751-7 (1789V2-106). Soil from this area would require management as non-special waste, as detailed in Table 4-4. Therefore, the total estimated remediation cost estimate for the management of soils outside the IDOT ROW is approximately \$22,075 as detailed in Table 4-4.

#### **Comparison of Soil Concentrations with Construction Worker Reference Concentrations**

Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. Total mercury was detected at a concentration slightly exceeding the construction worker objective in sample 1789V2-106-05; however, the construction worker caution for mercury is based on elemental mercury, and mercury detected in this location is likely attributed to inorganic mercury salt compounds (association with coal, specifically).

#### **Management of Excavated Soil**

Soil in the vicinity of borings 1789V2-106-01, 1789V2-106-02, 1789V2-106-05, and 1789V2-106-07, as depicted with **yellow** hatching on Figure 4-1.1, exceeded soil reference concentrations. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).



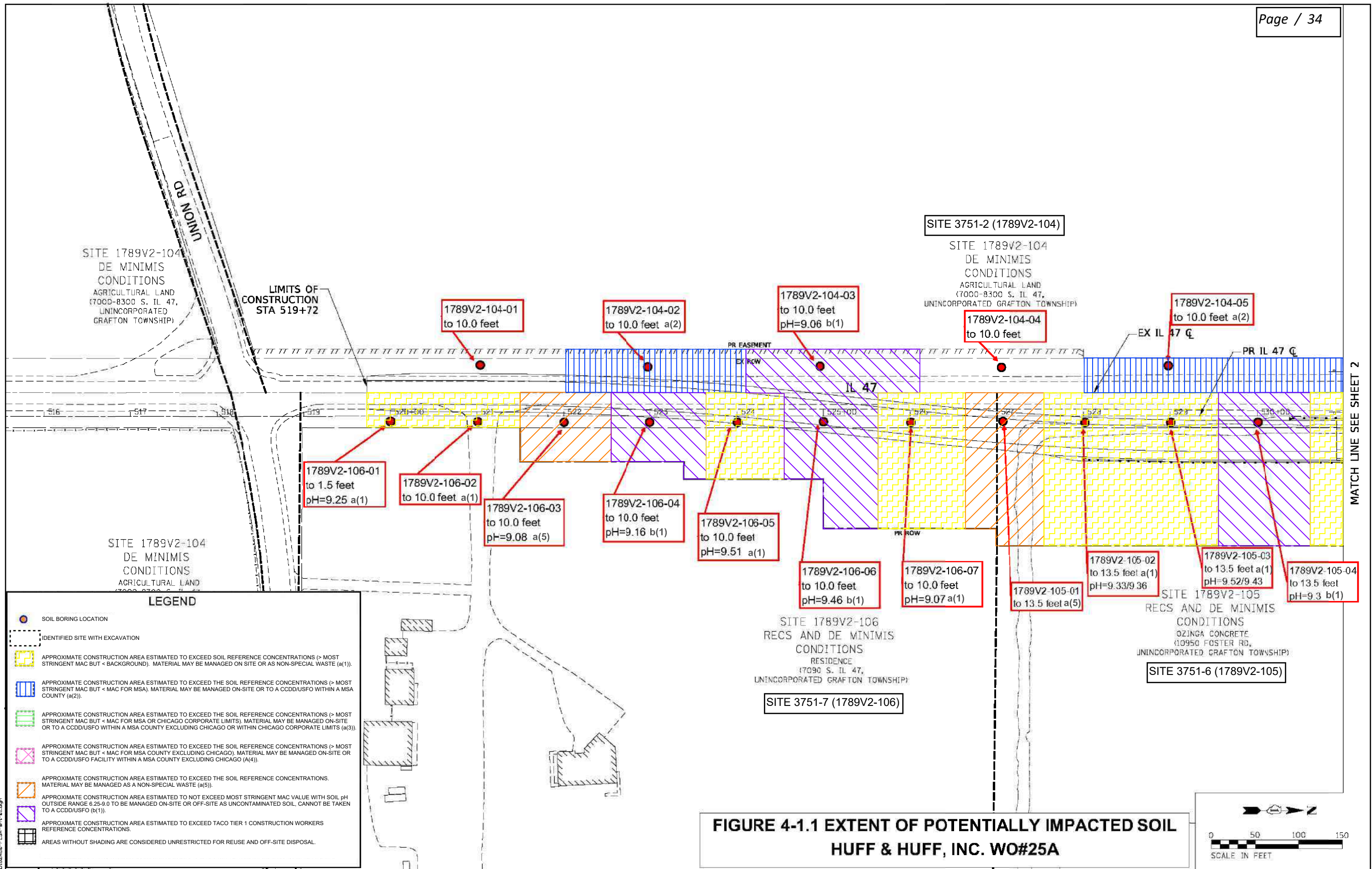
Soil in the vicinity of borings 1789V2-106-03 and 1789V2-105-01 (on the property adjacent to the subject property), as depicted with **orange** hatching on Figure 4-1.1 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of these soil borings may be managed off site as non-special waste (a(5)).

Soil in the vicinity of borings 1789V2-106-04 and 1789V2-106-06, as depicted with **purple** hatching on Figure 4-1.1, have a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of these soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).

#### 4.10.2.2 Groundwater

ISGS PESA Report No. 1789V2 identified this property as a REC site. However, saturated conditions were not encountered at this property at the proposed maximum depth of excavation of approximately 10 ft bgs adjacent to this site; therefore, a groundwater evaluation was not conducted.





**FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL**  
**HUFF & HUFF, INC. WO#25A**

<b>KNIGHT</b> Engineers & Architects	USER NAME = wjw/rlg	DESIGNED - DGB	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITES</b> <b>ILLINOIS ROUTE 47</b>	F.A.P. RTE. = 326	SECTION = 105X918-R	COUNTY = MCHENRY	TOTAL SHEETS = 15	SHEET NO. = 1		
	PLOT SCALE = 1/4"=100'	CHECKED - JCM	REVISED -			SCALE: 1" = 100'	SHEET 1 OF 2 SHEETS	STA. 515+50 TO STA. 531+00	CONTRACT NO. 62A80			
	PLOT DATE = 1/19/2019	DATE = JANUARY 9, 2019	REVISED -			FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT						

FILE NAME = DIS2A80-PESA-INT-01.dgn

## FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL -EXCEEDANCE TABLE 1 of 2

IDOT, District One  
IL-47, from Union/Foster Road to Hawthorne Way  
Huntley-Woodstock, McHenry County, Illinois  
BDE Sequence No.: 14677B  
PTB: 178-008 / H-1, Work Order No.: 025A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-104-01	1789V2-104-01	1789V2-104-02	1789V2-104-02	Dup-04 (1789V2-104-02)	1789V2-104-03	1789V2-104-03	1789V2-104-04	1789V2-104-04	1789V2-104-05	1789V2-104-05	1789V2-105-01	1789V2-105-01	1789V2-105-01	1789V2-105-02	1789V2-105-02	1789V2-105-03	1789V2-105-03	1789V2-105-03	Dup-07 (1789V2-105-03)			
				(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(10-13.5)	(0-5)	(10-13.5)	(0-5)	(5-10)	(10-13.5)	(0-5)	(5-10)	(10-13.5)	(10-13.5)
				9/4/2019	9/4/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019
				3751-2 (1789V2-104)										3751-6 (1789V2-105)												
Parameter																										
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	8.9	7.12	8.46	7.62	7.37	<b>9.06</b>	7.68	8.59	8.05	8.95	8.19	8.8	7.73	7.82	<b>9.33</b>	<b>9.36</b>	<b>9.52</b>	8.82	8.65	<b>9.43</b>			
VOCs, mg/kg	NO EXCEEDANCES																									
Total Metals, mg/kg	NO EXCEEDANCES																									
Arsenic	11.3 / 13	61	13	5.7	7.4	4.6	3.3	2.6	7.1	8.2	6.6	7.6	5.7	2.4	5.5	17	1.8	4.9	3.1	7.2	1.4	4.1	3.4			
Chromium	21	690	230	7.9	24	10	14	20	10	8.7	13	19	15	9.3	8.2	12	10	8.1	6.2	9.3	10	9.8	11			
Iron	15,000 / 15,900	---	---	12000	24000	14000	15000	16000	15000	15000	18000	24000	16000	13000	11000	8400	10000	12000	8600	18000	8700	11000	11000			
Lead	107	700	400	6.8	14	140	9.7	13	120	7.1	8.9	12	75	8.3	10	7.6	4.6	6.8	6.8	42	6.2	4.6	4.8			
Manganese	630 / 636	4,100	1600	500	160	460	840	340	530	550	730	880	540	430	390	190	280	380	260	530	240	280	300			
Mercury	0.89	0.1	10	< 0.020	<b>0.03</b>	< 0.020	<b>0.025</b>	<b>0.031</b>	< 0.022	< 0.028	<b>0.022</b>	<b>0.025</b>	< 0.019	< 0.019	< 0.019	< 0.028	< 0.019	< 0.019	< 0.019	< 0.018	< 0.020	< 0.021	< 0.020			
Nickel	100	4,100	1600	9.5	20	11	18	20	12	12	13	18	18	11	8.5	17	9.4	9.2	7.6	13	11	11	12			
Selenium	1.3	1,000	390	< 1.0	< 1.4	< 1.0	<b>2.1</b>	<b>1.4</b>	< 1.1	< 1.2	< 1.0	<b>1.1</b>	< 0.97	< 1.0	< 1.0	<b>1.4</b>	< 0.98	< 0.96	< 1.0	< 0.94	< 0.99	< 0.94	< 0.97			
TCLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																									
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Iron	5			< 0.25	< 0.25	< 0.25	<b>0.44</b>	<b>0.54</b>	< 0.25	<b>0.27</b>	< 0.25	<b>0.51</b>	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25			
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	<b>0.0052</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Manganese	0.15			<b>0.034</b>	<b>3.6</b>	<b>0.23</b>	<b>9.7</b>	<b>3.1</b>	<b>0.24</b>	<b>5.6</b>	<b>0.092</b>	<b>12</b>	<b>0.12</b>	<b>0.7</b>	<b>2.2</b>	<b>1.8</b>	<b>2</b>	<b>0.85</b>	<b>1.7</b>	<b>1.4</b>	<b>2.5</b>	<b>2.3</b>	<b>2</b>			
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020			
Nickel	0.1			< 0.010	<b>0.02</b>	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	<b>0.082</b>	<b>0.016</b>	<b>0.015</b>	<b>0.021</b>	<b>0.01</b>	< 0.010	< 0.010	<b>0.052</b>	<b>0.013</b>	< 0.010	<b>0.016</b>	<b>0.032</b>			
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
SPLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																									
Arsenic	0.05			<b>0.0054</b>	< 0.0040	<b>0.018</b>	< 0.0040	< 0.0040	<b>0.0051</b>	< 0.0040	<b>0.013</b>	< 0.0040	<b>0.0073</b>	<b>0.022</b>	<b>0.012</b>	<b>0.0062</b>	< 0.0040	<b>0.01</b>	< 0.0040	<b>0.0091</b>	< 0.0040	<b>0.0049</b>	<b>0.015</b>			
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020			
Chromium	0.1			<b>0.016</b>	<b>0.009</b>	<b>0.081</b>	<b>0.0057</b>	<b>0.01</b>	<b>0.015</b>	< 0.0040	<b>0.044</b>	<b>0.0048</b>	<b>0.035</b>	<b>0.067</b>	<b>0.026</b>	<b>0.004</b>	< 0.0040	<b>0.019</b>	< 0.0040	<b>0.022</b>	<b>0.025</b>	<b>0.012</b>	<b>0.031</b>			
Cobalt	1			< 0.0040	< 0.0040	<b>0.016</b>	< 0.0040	< 0.0040	< 0.0040	< 0.0040	<b>0.0082</b>	< 0.0040	<b>0.0043</b>	<b>0.016</b>	<b>0.0084</b>	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	<b>0.007</b>	<b>0.0054</b>	<b>0.012</b>			
Iron	5			13	6.2	44	2.4	4.5	11	0.58	39	0.91	15	54	25	2.3	0.16	20	0.56	20	22	12	34			
Lead	0.0075			<b>0.0097</b>	<b>0.0029</b>	<b>0.41</b>	< 0.0020	<b>0.0057</b>	<b>0.051</b>	< 0.0020	<b>0.023</b>	< 0.0020	<b>0.078</b>	<b>0.16</b>	<b>0.079</b>	< 0.0020	< 0.0020	<b>0.0084</b>	< 0.0020	<b>0.0083</b>	<b>0.015</b>	<b>0.0061</b>	<b>0.024</b>			
Manganese	0.15			<b>0.19</b>	<b>0.034</b>	<b>0.87</b>	<b>0.041</b>	<b>0.054</b>	<b>0.13</b>	<b>0.0093</b>	<b>0.44</b>	<b>0.036</b>	<b>0.17</b>	<b>0.54</b>	<b>0.39</b>	<b>0.015</b>	<b>0.063</b>	<b>0.19</b>	<b>0.0083</b>	<b>0.21</b>	<b>0.23</b>	<b>0.14</b>	<b>0.4</b>			
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020			
Nickel	0.1			<b>0.019</b>	<b>0.0065</b>	<b>0.077</b>	<b>0.0092</b>	<b>0.011</b>	<b>0.014</b>	<b>0.0063</b>	<b>0.032</b>	<b>0.0063</b>	<b>0.02</b>	<b>0.06</b>	<b>0.022</b>	< 0.0040	< 0.0040	<b>0.013</b>	< 0.0040	<b>0.015</b>	<b>0.022</b>	<b>0.015</b>	<b>0.034</b>			
Selenium	0.05			< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040			

--- Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

<sup>d/</sup> Soil Remediation Objective for the Groundwater Component of the Groundwater Ingestion Route, Class I Groundwater

**Bold** indicates concentration detected

Shaded values indicate concentration exceeds reference concentration

FIGURE 4-1.1 EXTENT OF POTENTIALLY IMPACTED SOIL -EXCEEDANCE TABLE 2 of 2

IDOT, District One  
 IL-47, from Union/Foster Road to Hawthorne Way  
 Huntley-Woodstock, McHenry County, Illinois  
 BDE Sequence No.: 14677B  
 PTB: 178-008 / H-1, Work Order No.: 025A

Boring ID	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-105-04	1789V2-105-04	1789V2-105-04	1789V2-106-01	1789V2-106-02	1789V2-106-02	1789V2-106-03	1789V2-106-03	Dup-05 (1789V2-106-03)	1789V2-106-04	1789V2-106-04	1789V2-106-05	1789V2-106-05	1789V2-106-06	1789V2-106-06	1789V2-106-07	Dup-06 (1789V2-106-07)	1789V2-106-07
				(0-5)	(5-10)	(10-13.5)	(0-1.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(5-10)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(0-5)
Sample Depth, ft	Sample Date			9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019
Excavation Area(s)	[ISGS Site No.(s)]			3751-6 (1789V2-105)					3751-7 (1789V2-106)												
Parameter																					
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	9.3	8.92	7.75	9.25	8.85	7.05	9.08	7.54	7.62	9.16	8.1	9.51	8.92	9.46	8.38	9.07	7.8	7.66
VOCs, mg/kg				NO EXCEEDANCES																	
Total Metals, mg/kg				NO EXCEEDANCES																	
Arsenic	11.3 / 13	61	13	4.9	1.5	1.9	4.4	4.9	3.9	16	6.6	9.3	4.5	3.5	8.2	4.4	1.6	3.1	6.1	3.3	6.9
Chromium	21	690	230	7.9	10	10	9.8	11	18	13	14	14	8.9	9.3	10	14	9.8	8.5	16	22	11
Iron	15,000 / 15,900	---	---	10000	8300	11000	11000	12000	13000	20000	13000	13000	11000	8400	21000	12000	6900	9400	17000	16000	15000
Lead	107	700	400	7.5	7.3	4.9	7.9	230	11	130	13	17	7.6	4.9	31	8.4	2.4	4.2	48	9.2	8.4
Manganese	630 / 636	4,100	1600	290	210	290	330	310	200	370	290	120	360	110	480	380	280	260	640	340	760
Mercury	0.89	0.1	10	< 0.017	< 0.017	< 0.017	< 0.021	< 0.022	0.037	< 0.021	0.027	< 0.023	< 0.018	0.03	< 0.019	0.11	< 0.021	< 0.019	< 0.018	< 0.016	< 0.036
Nickel	100	4,100	1600	8.3	10	12	9.9	13	21	13	13	14	9.4	11	17	10	4.4	9.4	17	8.6	19
Selenium	1.3	1,000	390	< 1.0	< 0.96	< 1.0	< 0.93	< 0.94	1.7	< 0.94	< 1.1	< 1.2	< 1.0	< 1.4	< 0.96	< 0.99	< 0.90	< 1.0	< 0.96	< 0.92	< 1.7
TCLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																				
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.015	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Iron	5			0.27	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.51	0.43	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.054	< 0.0050	0.036	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0082	< 0.0050	< 0.0050
Manganese	0.15			0.046	2.8	2.4	4.3	3.7	1.4	5.5	9.7	3.9	0.61	0.73	0.92	0.044	2.4	3.2	6.8	1.3	1.3
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Nickel	0.1			0.016	< 0.010	0.014	< 0.010	0.013	< 0.010	0.027	0.025	0.016	< 0.010	< 0.010	0.01	< 0.010	0.018	0.11	0.022	0.012	< 0.010
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
SPLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																				
Arsenic	0.05			0.02	< 0.0040	< 0.0040	0.016	0.0061	< 0.0040	0.028	0.0093	0.013	< 0.0040	< 0.0040	0.0064	0.0086	< 0.0040	< 0.0040	0.012	0.022	< 0.0040
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium	0.1			0.051	0.018	< 0.0040	0.039	0.0061	< 0.0040	0.06	0.013	0.013	< 0.0040	0.0077	0.013	0.028	0.0042	< 0.0040	0.025	0.043	< 0.0040
Cobalt	1			0.014	0.005	< 0.0040	0.011	< 0.0040	< 0.0040	0.025	0.0043	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.0057	< 0.0040	< 0.0040	0.0077	0.014	< 0.0040
Iron	5			45	16	0.18	38	6	0.81	62	9.9	9	0.35	2.3	13	17	3.2	1.3	20	49	0.47
Lead	0.0075			0.26	0.014	< 0.0020	0.028	0.085	< 0.0020	0.27	0.0098	0.0099	< 0.0020	0.0022	0.021	0.017	0.01	< 0.0020	0.076	0.03	< 0.0020
Manganese	0.15			0.34	0.14	0.03	0.6	0.059	0.0045	0.96	0.075	0.066	0.032	0.022	0.17	0.18	0.049	0.025	0.27	1	0.01
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Nickel	0.1			0.052	0.015	< 0.0040	0.033	0.0063	< 0.0040	0.069	0.0097	0.0093	< 0.0040	0.0079	0.0092	0.015	< 0.0040	< 0.0040	0.02	0.035	< 0.0040
Selenium	0.05			< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

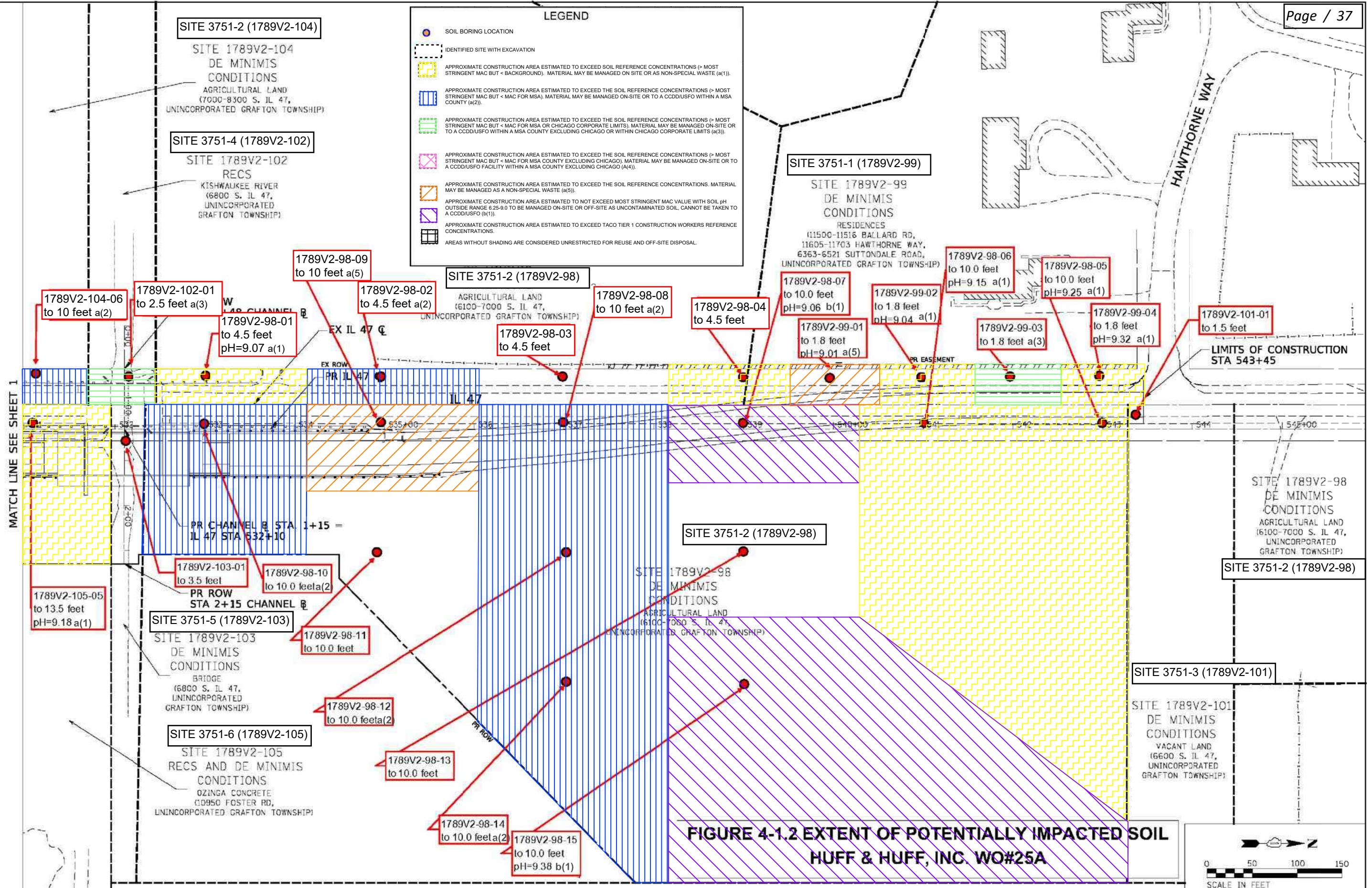
<sup>d/</sup> Soil Remediation Objective for the Groundwater Component of the Groundwater Ingestion Route, Class I Groundwater

**Bold** indicates concentration detected

**Shaded** values indicate concentration exceeds reference concentration

**LEGEND**

- SOIL BORING LOCATION
- IDENTIFIED SITE WITH EXCAVATION
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED SOIL REFERENCE CONCENTRATIONS (> MOST STRINGENT MAC BUT < BACKGROUND). MATERIAL MAY BE MANAGED ON-SITE OR AS NON-SPECIAL WASTE (a(1)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED THE SOIL REFERENCE CONCENTRATIONS (> MOST STRINGENT MAC BUT < MAC FOR MSA). MATERIAL MAY BE MANAGED ON-SITE OR TO A CCDDUSFO WITHIN A MSA COUNTY (a(2)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED THE SOIL REFERENCE CONCENTRATIONS (> MOST STRINGENT MAC BUT < MAC FOR MSA OR CHICAGO CORPORATE LIMITS). MATERIAL MAY BE MANAGED ON-SITE OR TO A CCDDUSFO WITHIN A MSA COUNTY EXCLUDING CHICAGO OR WITHIN CHICAGO CORPORATE LIMITS (a(3)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED THE SOIL REFERENCE CONCENTRATIONS (> MOST STRINGENT MAC BUT < MAC FOR MSA COUNTY EXCLUDING CHICAGO). MATERIAL MAY BE MANAGED ON-SITE OR TO A CCDDUSFO FACILITY WITHIN A MSA COUNTY EXCLUDING CHICAGO (A(4)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED THE SOIL REFERENCE CONCENTRATIONS. MATERIAL MAY BE MANAGED AS A NON-SPECIAL WASTE (a(5)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO NOT EXCEED MOST STRINGENT MAC VALUE WITH SOIL pH OUTSIDE RANGE 6.25-9.0 TO BE MANAGED ON-SITE OR OFF-SITE AS UNCONTAMINATED SOIL. CANNOT BE TAKEN TO A CCDDUSFO (b(1)).
- APPROXIMATE CONSTRUCTION AREA ESTIMATED TO EXCEED TACO TIER 1 CONSTRUCTION WORKERS REFERENCE CONCENTRATIONS.
- AREAS WITHOUT SHADING ARE CONSIDERED UNRESTRICTED FOR REUSE AND OFF-SITE DISPOSAL.



**FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL**  
HUFF & HUFF, INC. WO #25A

**PESA SITES**  
ILLINOIS ROUTE 47  
SCALE: 1" = 100' SHEET 2 OF 2 SHEETS STA. 531+00 TO STA. 546+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(105)B/B-R	MCHENRY	15	2
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 62A80	

**KNIGHT**  
Engineers & Architects

USER NAME = vzwierling  
PLOT SCALE = 1/8" = 100'  
PLOT DATE = 1/9/2019

FILE NAME = D:\248B-PESA-wt-r2.dgn

FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL -EXCEEDANCE TABLE 1 of 2

IDOT, District One
IL-47, from Union/Foster Rd to Hawthorne Way
Huntley-Woodstock, McHenry County, Illinois
BDE Sequence No.: 14677B
PTB: 178-008 / H-1, Work Order No.: 025A

Table with columns for Boring ID, Soil Reference Concentrations, Soil Remediation Objective for Construction Workers, Soil Remediation Objective for Residential Exposure, and various sample data points (Dup-02, Dup-01, Dup-08) across multiple dates. Includes rows for Laboratory soil pH, VOCs, SVOCs, and TCLP/SPLP Metals.

-- Refers to not applicable or value not available
Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.
Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.
Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.
Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.
Soil Remediation Objective for the Groundwater Component of the Groundwater Ingestion Route, Class I Groundwater
Bold indicates concentration detected
Shaded values indicate concentration exceeds reference concentration

FIGURE 4-1.2 EXTENT OF POTENTIALLY IMPACTED SOIL -EXCEEDANCE TABLE 2 of 2

IDOT, District One

IL-47, from Union/Foster Rd to Hawthorne Way

Huntley-Woodstock, McHenry County, Illinois

BDE Sequence No.: 14677B

PTB: 178-008 / H-1, Work Order No.: 025A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-98-12	1789V2-98-12	1789V2-98-13	1789V2-98-13	1789V2-98-14	1789V2-98-14	1789V2-98-15	1789V2-98-15	1789V2-99-01	1789V2-99-02	1789V2-99-03	1789V2-99-04	1789V2-101-01	1789V2-102-01	1789V2-103-01	1789V2-104-06	1789V2-104-06	Dup-03 (1789V2-104-06)	1789V2-105-05	1789V2-105-05	1789V2-105-05	
				(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-1.8)	(0-1.8)	(0-1.8)	(0-1.8)	(0-1.5)	(0-2.5)	(0-3.5)	(0-5)	(5-10)	(5-10)	(5-10)	(0-5)	(5-10)	(10-13.5)
				9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/4/2019	9/4/2019	9/4/2019	9/3/2019	9/3/2019	9/3/2019	3751-2 (1789V2-104)	3751-6 (1789V2-105)	
Parameter				NO EXCEEDANCES																					
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	7.95	8.15	8.14	8.16	8.04	7.73	7.61	9.38	9.01	9.04	8.41	9.32	7.83	7.57	7.34	7.65	8.66	8.24	9.18	8.24	7.7	
VOCs, mg/kg																									
SVOCs, mg/kg																									
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	0.064	< 0.035	0.095	< 0.038	< 0.036	0.26	< 0.092	< 0.040	< 0.037	< 0.040	< 0.037	< 0.036	< 0.036	
Total Metals, mg/kg																									
Arsenic	11.3 / 13	61	13	12	7.1	7.9	9.6	6.2	12	8.9	6	16	7	3.9	13	4.1	5.3	4.4	6.2	1.9	2.1	2.3	1.6	1.3	
Beryllium	22	410	160	1.3	0.56	0.74	0.64	< 0.50	0.78	0.62	< 0.48	< 0.47	< 0.46	< 0.47	0.88	< 0.49	< 1.0	< 1.3	< 0.55	< 0.49	< 0.52	< 0.53	< 0.46	< 0.48	
Chromium	21	690	230	38	19	24	23	18	27	20	13	11	8	23	11	12	11	9.9	10	17	13	10	8.1		
Cobalt	20	12,000	4700	22	15	15	17	13	8.1	12	12	7.2	6.2	3.6	10	5.1	5.5	5.5	5.4	3.8	6.5	5.9	4.2	3.5	
Iron	15,000 / 15,900	---	---	38000	19000	24000	25000	18000	30000	23000	15000	16000	17000	10000	30000	16000	19000	19000	31000	8300	14000	15000	9900	7500	
Lead	107	700	400	36	13	15	16	14	16	13	64	10	25	13	9.1	17	10	11	6.9	8.8	10	6.1	4.4		
Manganese	630 / 636	4,100	1600	1100	590	550	610	450	470	690	680	450	720	440	800	370	620	580	750	210	270	290	240	240	
Nickel	100	4,100	1600	44	28	33	35	26	26	17	14	13	8.8	44	12	12	11	20	10	17	15	11	8.6		
Selenium	1.3	1,000	390	1	< 1.0	< 0.98	< 0.98	< 1.0	< 1.1	< 1.1	< 0.96	< 0.92	< 0.93	< 0.94	2	< 0.99	< 2.0	< 2.5	< 1.1	< 0.96	< 1.0	< 1.0	< 0.92	< 0.95	
TCPLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																								
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Beryllium	0.004			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Cobalt	1			< 0.010	< 0.010	< 0.010	< 0.010	0.033	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.015	0.013	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Iron	5			< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.56	< 0.25	< 0.25	< 0.25	
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Manganese	0.15			2.1	0.49	0.2	0.79	3.1	0.06	0.72	1	1.4	1.4	0.72	0.75	0.016	9.7	7.6	3.3	2.9	1.5	2.2	2.4	2.6	
Nickel	0.1			0.025	0.011	< 0.010	< 0.010	0.031	< 0.010	0.014	0.01	0.018	0.012	< 0.010	0.016	< 0.010	0.01	0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014	
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
SPLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																								
Arsenic	0.05			< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.02	0.013	0.011	0.11	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.0057	0.0045	0.0058	< 0.0040	< 0.0040		
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020		
Chromium	0.1			< 0.0040	0.0041	0.0049	0.0077	< 0.0040	0.0084	0.0049	0.0053	0.043	0.034	0.028	0.31	0.014	< 0.0040	< 0.0040	0.0071	0.019	0.025	0.025	0.018	< 0.0040	
Cobalt	1			< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.013	0.0069	0.0065	0.069	0.0053	< 0.0040	< 0.0040	< 0.0040	0.0063	0.0049	0.011	0.0051	< 0.0040		
Iron	5			1.4	1.8	2.4	5.6	0.31	6.1	3.1	3.5	38	31	26	330	11	0.92	0.27	3.1	15	12	37	11	0.28	
Lead	0.0075			< 0.0020	0.0035	0.0052	0.0029	< 0.0020	0.0032	< 0.0020	0.0026	0.063	0.013	0.064	0.15	0.014	< 0.0020	< 0.0020	0.0056	0.011	0.01	0.022	0.0089	< 0.0020	
Manganese	0.15			0.006	0.0097	0.012	0.029	0.0042	0.062	0.019	0.054	0.7	0.52	0.42	2.6	0.15	0.015	0.0057	0.041	0.22	0.15	0.35	0.1	0.021	
Nickel	0.1			< 0.0040	< 0.0040	< 0.0040	0.007	< 0.0040	0.0071	< 0.0040	0.0049	0.04	0.022	0.022	0.34	0.016	< 0.0040	< 0.0040	0.017	0.021	0.024	0.029	0.015	< 0.0040	
Selenium	0.05			< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.013	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

<sup>d/</sup> Soil Remediation Objective for the Groundwater Component of the Groundwater Ingestion Route, Class I Groundwater

**Bold** indicates concentration detected

Shaded values indicate concentration exceeds reference concentration

**TABLE 4-1 PID Soil Screening Results**  
**Illinois Department of Transportation, District One**  
**Illinois Route 47 from Union/Foster Road to Hawthorne Way**  
**Huntley and Woodstock, McHenry County, Illinois**  
**BDE Sequence No.: 14677B**  
**PTB: 178-008 / H&H-1, Work Order No.: 025A**

Boring ID	Boring Depth (ft)	Sample Interval (ft)	PID Screening Result (ppm)
1789V2-98-01	4.5	(0-4.5)	0.2
1789V2-98-02	4.5	(0-4.5)	0.2
1789V2-98-03	4.5	(0-4.5)	0.1
1789V2-98-04	4.5	(0-4.5)	0.0
1789V2-98-05	10	(0-5) (5-10)	0.0/0.0
1789V2-98-06	10	(0-5) (5-10)	0.0/0.0
1789V2-98-07	10	(0-5) (5-10)	0.0/0.0
1789V2-98-08	10	(0-5) (5-10)	0.0/0.0
1789V2-98-09	10	(0-5) (5-10)	0.0/0.0
1789V2-98-10	10	(0-5) (5-10)	0.0/0.0
1789V2-98-11	10	(0-5) (5-10)	0.4/0.0
1789V2-98-12	10	(0-5) (5-10)	0.0/0.0
1789V2-98-13	10	(0-5) (5-10)	0.0/0.0
1789V2-98-14	10	(0-5) (5-10)	0.0/0.0
1789V2-98-15	10	(0-5) (5-10)	0.9/0.2
1789V2-99-01	1.8	(0-1.8)	0.1
1789V2-99-02	1.8	(0-1.8)	0.2
1789V2-99-03	1.8	(0-1.8)	0.2
1789V2-99-04	1.8	(0-1.8)	0.0
1789V2-101-01	1.5	(0-1.5)	0.0
1789V2-102-01	2.5	(0-2.5)	NA
1789V2-103-01	3.5	(0-3.5)	NA
1789V2-104-01	10	(0-5) (5-10)	0.0/0.0
1789V2-104-02	10	(0-5) (5-10)	0.1/0.0
1789V2-104-03	10	(0-5) (5-10)	0.1/0.1
1789V2-104-04	10	(0-5) (5-10)	0.2/0.0
1789V2-104-05	10	(0-5) (5-10)	0.0/0.0
1789V2-104-06	10	(0-5) (5-10)	0.0/0.0
1789V2-105-01	13.5	(0-5) (5-10) (10-13.5)	0.0/0.0/0.0
1789V2-105-02	13.5	(0-5) (5-10) (10-13.5)	0.0/NA/0.0
1789V2-105-03	13.5	(0-5) (5-10) (10-13.5)	0.0/0.0/0.0
1789V2-105-04	13.5	(0-5) (5-10) (10-13.5)	0.0/0.0/0.1
1789V2-105-05	13.5	(0-5) (5-10) (10-13.5)	0.0/0.0/0.0
1789V2-106-01	1.5	(0-1.5)	0.0
1789V2-106-02	10	(0-5) (5-10)	0.4/0.0
1789V2-106-03	10	(0-5) (5-10)	0.0/0.0
1789V2-106-04	10	(0-5) (5-10)	0.0/0.0
1789V2-106-05	10	(0-5) (5-10)	0.0/0.0
1789V2-106-06	10	(0-5) (5-10)	0.0/0.0
1789V2-106-07	10	(0-5) (5-10)	0.0/0.0

**Bold** refers to value  $\geq$  background (1.0 ppm) for PID field screening criteria

Table 4-2.1  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Organics  
 IL-83 (Busse Road), Foster Ave to Bryn Mawr Ave  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-98-01	Dup-02 (1789V2-98-01)	1789V2-98-02	1789V2-98-03	Dup-01 (1789V2-98-03)	1789V2-98-04	1789V2-98-05	1789V2-98-05	1789V2-98-06	1789V2-98-06	Dup-08 (1789V2-98-06)	1789V2-98-07	1789V2-98-07	1789V2-98-08	1789V2-98-08	1789V2-98-09
				(0-4.5)	(0-4.5)	(0-4.5)	(0-4.5)	(0-4.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)
Sample Depth, ft				9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/4/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/4/2019
Sample Date																			
Excavation Area(s)				3751-2 (1789V2-98)															
[ISGS Site No.(s)]																			
Parameter																			
VOCs, mg/kg																			
Acetone	25	100,000	70,000	< 0.080	< 0.063	< 0.090	< 0.070	< 0.070	< 0.066	< 0.059	< 0.093	< 0.073	< 0.064	< 0.070	< 0.062	< 0.066	< 0.078	< 0.085	< 0.074
Benzene	0.03	2.2	0.8	< 0.0053	< 0.0042	< 0.0060	< 0.0047	< 0.0047	< 0.0044	< 0.0040	< 0.0062	< 0.0049	< 0.0043	< 0.0047	< 0.0041	< 0.0044	< 0.0052	< 0.0057	< 0.0049
Toluene	12	42	650	< 0.0053	< 0.0042	< 0.0060	< 0.0047	< 0.0047	< 0.0044	<b>0.0052</b>	< 0.0062	< 0.0049	< 0.0043	< 0.0047	<b>0.0061</b>	< 0.0044	< 0.0052	< 0.0057	< 0.0049
SVOCs, mg/kg																			
Benzo(a)anthracene	0.9 / 1.1 / 1.8	170	0.9	< 0.035	< 0.037	<b>0.04</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.035	< 0.037	<b>0.044</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Benzo(b)fluoranthene	0.9 / 1.5 / 2.1	170	0.9	< 0.035	< 0.037	<b>0.039</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Benzo(k)fluoranthene	9	1700	9	< 0.035	< 0.037	<b>0.043</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Benzo(g,h,i)perylene	---	---	---	< 0.035	< 0.037	<b>0.04</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Chrysene	88	17000	88	< 0.035	< 0.037	<b>0.047</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Dibenz(a,h)anthracene	0.09 / 0.2 / 0.42	17	0.09	< 0.035	< 0.037	< 0.035	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Fluoranthene	3,100	82,000	3,100	< 0.035	< 0.037	<b>0.062</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Indeno(1,2,3-cd)pyrene	0.9 / 0.9 / 1.6	170	0.9	< 0.035	< 0.037	< 0.035	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Phenanthrene	---	---	---	< 0.035	< 0.037	< 0.035	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041
Pyrene	2,300	61000	2300	< 0.035	< 0.037	<b>0.051</b>	< 0.039	< 0.039	< 0.040	< 0.035	< 0.047	< 0.035	< 0.037	< 0.039	< 0.035	< 0.038	< 0.040	< 0.038	< 0.041

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

Shaded values indicate concentration exceeds reference concentration



Table 4-2.2  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Organics  
 IL-83 (Busse Road), Foster Ave to Bryn Mawr Ave  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-98-09	1789V2-98-10	1789V2-98-10	1789V2-98-11	1789V2-98-11	1789V2-98-12	1789V2-98-12	1789V2-98-13	1789V2-98-13	1789V2-98-14	1789V2-98-14	1789V2-98-15	1789V2-98-15	1789V2-99-01	1789V2-99-02	1789V2-99-03	
				(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)
				9/4/2019	9/4/2019	9/4/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/3/2019	9/3/2019	9/3/2019
				3751-2 (1789V2-98)												3751-1 (1789V2-99)				
Parameter																				
<b>VOCs, mg/kg</b>																				
Acetone	25	100,000	70,000	< 0.074	< 0.095	< 0.076	< 0.079	< 0.059	< 0.071	< 0.13	< 0.077	< 0.061	< 0.074	< 0.082	< 0.070	<b>0.26</b>	< 0.074	< 0.065	< 0.085	
Benzene	0.03	2.2	0.8	< 0.0049	< 0.0063	< 0.0051	< 0.0053	< 0.0039	< 0.0048	< 0.0089	< 0.0051	< 0.0041	< 0.0049	< 0.0055	< 0.0047	< 0.0048	< 0.0050	< 0.0043	< 0.0057	
Toluene	12	42	650	< 0.0049	< 0.0063	< 0.0051	< 0.0053	< 0.0039	< 0.0048	< 0.0089	< 0.0051	< 0.0041	< 0.0049	< 0.0055	< 0.0047	< 0.0048	< 0.0050	< 0.0043	<b>0.0076</b>	
<b>SVOCs, mg/kg</b>																				
Benzo(a)anthracene	0.9 / 1.1 / 1.8	170	0.9	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.056</b>	< 0.035	<b>0.08</b>	
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.064</b>	< 0.035	<b>0.095</b>	
Benzo(b)fluoranthene	0.9 / 1.5 / 2.1	170	0.9	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.076</b>	< 0.035	<b>0.12</b>	
Benzo(k)fluoranthene	9	1700	9	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.053</b>	< 0.035	<b>0.06</b>	
Benzo(g,h,i)perylene	---	---	---	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.066</b>	< 0.035	<b>0.095</b>	
Chrysene	88	17000	88	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.065</b>	< 0.035	<b>0.1</b>	
Dibenz(a,h)anthracene	0.09 / 0.2 / 0.42	17	0.09	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	< 0.034	< 0.035	< 0.035	
Fluoranthene	3,100	82,000	3,100	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.094</b>	< 0.035	<b>0.21</b>	
Indeno(1,2,3-cd)pyrene	0.9 / 0.9 / 1.6	170	0.9	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.052</b>	< 0.035	<b>0.065</b>	
Phenanthrene	---	---	---	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.034</b>	< 0.035	<b>0.13</b>	
Pyrene	2,300	61000	2300	< 0.039	< 0.039	< 0.039	< 0.040	< 0.036	< 0.038	< 0.038	< 0.037	< 0.037	< 0.038	< 0.039	< 0.038	< 0.037	<b>0.079</b>	< 0.035	<b>0.17</b>	

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

Shaded values indicate concentration exceeds reference concentration

Table 4-2.3  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Organics  
 IL-83 (Busse Road), Foster Ave to Bryn Mawr Ave  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-99-04	1789V2-101-01	1789V2-102-01	1789V2-103-01	1789V2-104-01	1789V2-104-01	1789V2-104-02	1789V2-104-02	Dup-04 (1789V2-104-02)	1789V2-104-03	1789V2-104-03	1789V2-104-04	1789V2-104-04	1789V2-104-05	1789V2-104-05	1789V2-104-06			
Sample Depth, ft				(0-1.8)	(0-1.5)	(0-2.5)	(0-3.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	
Sample Date				9/3/2019	9/5/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019
Excavation Area(s) [ISGS Site No.(s)]				3751-1 (1789V2-99)	3751-3 (1789V2-101)	3751-4 (1789V2-102)	3751-5 (1789V2-103)	3751-2 (1789V2-104)														
Parameter																						
VOCs, mg/kg																						
Acetone	25	100,000	70,000	<b>0.078</b>	< 0.070	< 0.32	< 0.26	< 0.067	<b>0.28</b>	< 0.081	<b>0.15</b>	<b>0.2</b>	< 0.056	<b>0.13</b>	< 0.069	< 0.062	< 0.077	< 0.094	< 0.082			
Benzene	0.03	2.2	0.8	< 0.0048	< 0.0046	< 0.021	< 0.017	< 0.0045	< 0.010	< 0.0054	< 0.0082	< 0.0073	< 0.0037	< 0.0087	< 0.0046	< 0.0041	<b>0.0058</b>	< 0.0063	< 0.0054			
Toluene	12	42	650	< 0.0048	< 0.0046	< 0.021	< 0.017	< 0.0045	< 0.010	< 0.0054	< 0.0082	< 0.0073	< 0.0037	< 0.0087	< 0.0046	< 0.0041	< 0.0052	< 0.0063	< 0.0054			
SVOCs, mg/kg																						
Benzo(a)anthracene	0.9 / 1.1 / 1.8	170	0.9	< 0.038	< 0.036	<b>0.29</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.042</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.038	< 0.036	<b>0.26</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.044</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Benzo(b)fluoranthene	0.9 / 1.5 / 2.1	170	0.9	< 0.038	< 0.036	<b>0.26</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.043</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Benzo(k)fluoranthene	9	1700	9	< 0.038	< 0.036	<b>0.19</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.038</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Benzo(g,h,i)perylene	---	---	---	< 0.038	< 0.036	<b>0.18</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.039</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Chrysene	88	17000	88	< 0.038	< 0.036	<b>0.26</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	<b>0.052</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Dibenz(a,h)anthracene	0.09 / 0.2 / 0.42	17	0.09	< 0.038	< 0.036	<b>0.078</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	< 0.036	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Fluoranthene	3,100	82,000	3,100	< 0.038	< 0.036	<b>0.61</b>	< 0.092	< 0.037	< 0.055	<b>0.04</b>	< 0.047	< 0.047	<b>0.057</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Indeno(1,2,3-cd)pyrene	0.9 / 0.9 / 1.6	170	0.9	< 0.038	< 0.036	<b>0.17</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	< 0.036	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Phenanthrene	---	---	---	< 0.038	< 0.036	<b>0.15</b>	< 0.092	< 0.037	< 0.055	< 0.036	< 0.047	< 0.047	< 0.036	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			
Pyrene	2,300	61000	2300	< 0.038	< 0.036	<b>0.5</b>	< 0.092	< 0.037	< 0.055	<b>0.037</b>	< 0.047	< 0.047	<b>0.062</b>	< 0.048	< 0.038	< 0.038	< 0.035	< 0.038	< 0.040			

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.


 Shaded values indicate concentration exceeds reference concentration

Table 4-2.4  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Organics  
 IL-83 (Busse Road), Foster Ave to Bryn Mawr Ave  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-104-06	Dup-03 (1789V2-104-06)	1789V2-105-01	1789V2-105-01	1789V2-105-01	1789V2-105-02	1789V2-105-02	1789V2-105-03	1789V2-105-03	1789V2-105-03	Dup-07 (1789V2-105-03)	1789V2-105-04	1789V2-105-04	1789V2-105-04	1789V2-105-05	1789V2-105-05	
				(5-10)	(5-10)	(0-5)	(5-10)	(10-13.5)	(0-5)	(10-13.5)	(0-5)	(5-10)	(10-13.5)	(10-13.5)	(10-13.5)	(0-5)	(5-10)	(10-13.5)	(0-5)	(5-10)
				9/3/2019	9/3/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	
				3751-2 (1789V2-104)					3751-6 (1789V2-105)											
Parameter																				
<b>VOCs, mg/kg</b>																				
Acetone	25	100,000	70,000	< 0.063	< 0.067	< 0.070	< 0.12	< 0.095	< 0.079	< 0.052	< 0.090	< 0.062	< 0.060	< 0.062	< 0.072	< 0.055	< 0.040	< 0.067	< 0.063	
Benzene	0.03	2.2	0.8	< 0.0042	< 0.0045	< 0.0047	< 0.0079	< 0.0063	< 0.0053	< 0.0035	< 0.0060	< 0.0041	< 0.0040	< 0.0041	< 0.0048	< 0.0037	< 0.0027	< 0.0045	< 0.0042	
Toluene	12	42	650	< 0.0042	< 0.0045	< 0.0047	< 0.0079	< 0.0063	< 0.0053	< 0.0035	< 0.0060	< 0.0041	< 0.0040	< 0.0041	< 0.0048	< 0.0037	< 0.0027	< 0.0045	< 0.0042	
<b>SVOCs, mg/kg</b>																				
Benzo(a)anthracene	0.9 / 1.1 / 1.8	170	0.9	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Benzo(b)fluoranthene	0.9 / 1.5 / 2.1	170	0.9	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Benzo(k)fluoranthene	9	1700	9	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Benzo(g,h,i)perylene	---	---	---	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Chrysene	88	17000	88	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Dibenz(a,h)anthracene	0.09 / 0.2 / 0.42	17	0.09	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Fluoranthene	3,100	82,000	3,100	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	<b>0.036</b>	< 0.037	< 0.036	< 0.037	< 0.036	
Indeno(1,2,3-cd)pyrene	0.9 / 0.9 / 1.6	170	0.9	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Phenanthrene	---	---	---	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	
Pyrene	2,300	61000	2300	< 0.037	< 0.040	< 0.038	< 0.050	< 0.035	< 0.034	< 0.038	< 0.035	< 0.036	< 0.037	< 0.036	< 0.036	< 0.037	< 0.036	< 0.037	< 0.036	

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

■ Shaded values indicate concentration exceeds reference concentration

Table 4-2.5  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Organics  
 IL-83 (Busse Road), Foster Ave to Bryn Mawr Ave  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-105-05	1789V2-106-01	1789V2-106-02	1789V2-106-02	1789V2-106-03	1789V2-106-03	Dup-05 (1789V2-106-03)	1789V2-106-04	1789V2-106-04	1789V2-106-05	1789V2-106-05	1789V2-106-06	1789V2-106-06	1789V2-106-07	Dup-06 (1789V2-106-07)	1789V2-106-07	
				(10-13.5)	(0-1.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)
Parameter																				
<b>VOCs, mg/kg</b>																				
Acetone	25	100,000	70,000	< 0.065	<b>0.24</b>	<b>0.076</b>	< 0.098	<b>0.28</b>	< 0.14	<b>0.1</b>	< 0.059	< 0.11	< 0.064	< 0.074	< 0.061	< 0.071	< 0.076	<b>0.074</b>	< 0.12	
Benzene	0.03	2.2	0.8	< 0.0043	< 0.0056	< 0.0048	< 0.0066	< 0.0063	< 0.0091	< 0.0069	< 0.0039	< 0.0072	< 0.0043	< 0.0050	< 0.0041	< 0.0047	< 0.0051	< 0.0048	< 0.0079	
Toluene	12	42	650	< 0.0043	< 0.0056	< 0.0048	< 0.0066	< 0.0063	<b>0.011</b>	< 0.0069	< 0.0039	< 0.0072	< 0.0043	< 0.0050	< 0.0041	< 0.0047	< 0.0051	<b>0.0049</b>	< 0.0079	
<b>SVOCs, mg/kg</b>																				
Benzo(a)anthracene	0.9 / 1.1 / 1.8	170	0.9	< 0.036	< 0.036	< 0.037	< 0.054	<b>0.039</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.058</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Benzo(a)pyrene	0.09 / 1.3 / 2.1	17	0.09	< 0.036	< 0.036	< 0.037	< 0.054	< 0.037	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.063</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Benzo(b)fluoranthene	0.9 / 1.5 / 2.1	170	0.9	< 0.036	< 0.036	< 0.037	< 0.054	<b>0.05</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.086</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Benzo(k)fluoranthene	9	1700	9	< 0.036	< 0.036	< 0.037	< 0.054	< 0.037	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.051</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Benzo(g,h,i)perylene	---	---	---	< 0.036	< 0.036	< 0.037	< 0.054	< 0.037	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.067</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Chrysene	88	17000	88	< 0.036	< 0.036	<b>0.04</b>	< 0.054	<b>0.047</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.076</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Dibenz(a,h)anthracene	0.09 / 0.2 / 0.42	17	0.09	< 0.036	< 0.036	< 0.037	< 0.054	< 0.037	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	< 0.035	< 0.036	< 0.037	< 0.034	< 0.062	
Fluoranthene	3,100	82,000	3,100	< 0.036	< 0.036	<b>0.038</b>	< 0.054	<b>0.076</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.13</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Indeno(1,2,3-cd)pyrene	0.9 / 0.9 / 1.6	170	0.9	< 0.036	< 0.036	< 0.037	< 0.054	< 0.037	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.048</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Phenanthrene	---	---	---	< 0.036	< 0.036	< 0.037	< 0.054	<b>0.052</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.055</b>	< 0.036	< 0.037	< 0.034	< 0.062	
Pyrene	2,300	61000	2300	< 0.036	< 0.036	<b>0.045</b>	< 0.054	<b>0.075</b>	< 0.041	< 0.042	< 0.036	< 0.049	< 0.035	< 0.037	<b>0.1</b>	< 0.036	< 0.037	< 0.034	< 0.062	

--- - Refers to not applicable or value not available

<sup>a/</sup> Soil reference concentrations from MAC table. Background values for MSA counties are included as applicable.

Organic Soil Reference Concentrations (XX.XX / XX.XX / XX.XX) Include the Most Stringent Values from the MAC Table / The Chicago Corporate Limit / and The MSA County Excluding Chicago Values From the MAC Table.

<sup>b/</sup> Soil Remediation Objective for Construction Workers, most stringent of the Ingestion or Inhalation exposure route.

<sup>c/</sup> Soil Remediation Objective for Residential exposure, most stringent of the Ingestion or Inhalation exposure route.

■ Shaded values indicate concentration exceeds reference concentration

Table 4.3.1  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Inorganics  
 IL-83 (Busse Road), Foster to Bryn Mawr  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-98-01	Dup-02 (1789V2- 98-01)	1789V2-98-02	1789V2-98-03	Dup-01 (1789V2- 98-03)	1789V2-98-04	1789V2-98-05	1789V2-98-05	1789V2-98-06	1789V2-98-06	Dup-08 (1789V2- 98-06)	1789V2-98-07	1789V2-98-07	1789V2-98-08	1789V2-98-08	1789V2-98-09			
				(0-4.5)	(0-4.5)	(0-4.5)	(0-4.5)	(0-4.5)	(0-4.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	
				9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/3/2019	9/4/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/4/2019
				3751-2 (1789V2-98)																		
Parameter																						
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	8.88	9.07	9	8.2	8.44	8.36	9.25	7.51	9.15	8.36	8.1	9.06	8.42	7.64	8.19	8.58			
Total Metals, mg/kg																						
Arsenic	11.3 / 13	61	13	4.8	3.2	4.7	5.5	9.5	6.1	4.3	7.7	4.6	4.2	3.6	4.4	2.7	13	4	4.3			
Barium	1,500	14,000	5,500	35	21	65	61	94	73	23	150	33	77	79	30	69	250	32	83			
Beryllium	22	410	160	< 0.47	< 0.48	< 0.48	< 0.52	0.64	< 0.53	< 0.46	0.69	< 0.45	0.67	0.6	< 0.45	0.54	1	< 0.53	< 0.54			
Cadmium	5.2	200	78	< 0.47	< 0.48	0.53	< 0.52	< 0.51	< 0.53	< 0.46	< 0.63	< 0.45	< 0.51	< 0.50	< 0.45	< 0.52	< 0.54	< 0.53	< 0.54			
Calcium	---	---	---	64000	130000	89000	85000	73000	51000	140000	12000	90000	63000	77000	140000	38000	6000	73000	45000			
Chromium	21	690	230	11	7.5	15	18	21	15	8	20	9.9	26	22	9	18	29	20	19			
Cobalt	20	12,000	4,700	5.6	4	4.9	5.6	14	8.6	3.5	5.6	4.7	8.6	10	4.2	5.9	19	12	7.8			
Copper	2,900	8,200	2,900	13	9.9	32	18	26	17	11	27	13	29	18	10	14	23	24	17			
Iron	15,000 / 15,900	---	---	13000	8600	22000	19000	26000	18000	9900	33000	12000	21000	18000	11000	14000	35000	17000	19000			
Lead	107	700	400	7.8	5.9	38	8.8	15	14	41	15	18	11	13	8.2	10	21	15	12			
Magnesium	325,000	730,000	325,000	31000	55000	42000	45000	40000	27000	63000	4200	47000	40000	45000	47000	22000	6300	44000	24000			
Manganese	630 / 636	4,100	1,600	430	280	470	330	1100	810	350	540	430	380	650	460	200	1400	330	250			
Mercury	0.89	0.1	10	< 0.018	< 0.019	< 0.019	< 0.020	< 0.023	0.031	0.026	0.04	< 0.018	0.025	< 0.021	< 0.017	< 0.018	0.079	< 0.021	< 0.021			
Nickel	100	4,100	1,600	11	9.4	13	20	41	15	7.5	16	10	26	26	9.1	16	32	29	19			
Potassium	---	---	---	410	410	370	990	1100	700	480	1000	550	1500	1300	690	1100	1300	2000	1200			
Selenium	1.3	1,000	390	< 0.92	< 0.96	< 0.96	< 1.0	< 1.0	< 1.1	< 0.92	1.6	< 0.89	< 1.0	< 0.99	< 0.91	< 1.0	< 1.1	< 1.1	< 1.1			
Silver	4.4	1,000	390	< 0.92	< 0.96	< 0.96	< 1.0	< 1.0	< 1.1	< 0.92	< 1.3	< 0.89	< 1.0	< 0.99	< 0.91	< 1.0	< 1.1	< 1.1	< 1.1			
Sodium	---	---	---	880	590	960	1200	1500	1500	490	3000	940	730	870	780	1700	1200	520	3900			
Vanadium	550	1,400	550	19	13	15	21	28	26	14	29	19	33	30	17	24	38	22	32			
Zinc	5,100	61,000	23,000	31	25	79	45	59	46	27	49	29	44	42	25	39	76	51	44			
TCLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																					
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Barium	2			0.43	0.42	0.59	0.63	0.43	0.65	0.2	0.26	0.26	0.42	0.42	0.24	0.31	0.16	0.28	0.44			
Beryllium	0.004			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Cadmium	0.005			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Cobalt	1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.033	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	< 0.010			
Copper	0.65			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Iron	5			< 0.25	< 0.25	0.44	< 0.25	3.2	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25			
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.011	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Manganese	0.15			2.1	2	0.88	1.1	2.8	17	1	0.78	1.3	0.44	0.48	1	0.85	0.83	1.5	0.11			
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020			
Nickel	0.1			< 0.010	< 0.010	0.01	0.011	0.037	0.017	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.01	< 0.010	< 0.010	0.011	< 0.010			
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Silver	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Zinc	5			< 0.050	< 0.050	0.053	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050			
SPLP Metals, mg/L	Class I Groundwater <sup>d/</sup>																					
Arsenic	0.05			0.0089	0.01	0.0069	0.0054	0.0043	0.025	0.0047	0.004	0.0065	< 0.0040	< 0.0040	0.0046	0.0042	< 0.0040	< 0.0040	0.0065			
Barium	2			0.14	0.2	0.052	0.084	0.067	0.47	0.038	0.025	0.054	0.045	0.047	0.034	0.067	0.057	0.024	0.12			
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	0.003	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020			
Cadmium	0.005			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020			
Chromium	0.1			0.049	0.062	0.018	0.029	0.03	0.11	0.013	0.0072	0.016	0.017	0.016	0.012	0.027	0.017	0.0098	0.028			
Cobalt	1			0.016	0.018	< 0.0040	0.0055	0.0043	0.05	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.0093	< 0.0040	0.0042	0.0061			
Copper	0.65			0.11	0.071	0.049	< 0.040	< 0.040	0.14	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	0.064	< 0.040	< 0.040	< 0.040			
Iron	5			40	43	14	21	15	96	10	5.6	15	12	10	17	13	6.3	19				
Lead	0.0075			0.054	0.03	0.021	0.0086	0.009	0.1	0.061	0.0031	0.015	0.0038	0.003	0.0075	0.011	0.0043	0.0049	0.0087			
Manganese	0.15			0.28	0.27	0.16	0.094	0.073	3.1	0.12	0.053	0.25	0.047	0.048	0.15	0.079	0.091	0.039	0.093			
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020			
Nickel	0.1			0.049	0.059	0.014	0.027	0.024	0.11	0.0082	0.0052	0.011	0.012	0.013	0.0077	0.026	0.011	0.011	0.022			
Selenium	0.05			< 0.0040	<																	

Table 4.3.2  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Inorganics  
 IL-83 (Busse Road), Foster to Bryn Mawr  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-98-09	1789V2-98-10	1789V2-98-11	1789V2-98-12	1789V2-98-13	1789V2-98-14	1789V2-98-15	1789V2-98-16	1789V2-98-17	1789V2-98-18	1789V2-98-19	1789V2-98-20	1789V2-98-21	1789V2-98-22	1789V2-98-23	1789V2-98-24				
				(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-1.8)	(0-1.8)	(0-1.8)
				9/4/2019	9/4/2019	9/4/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/5/2019	9/3/2019	9/3/2019
				3751-2 (1789V2-98)												3751-1 (1789V2-99)							
Parameter																							
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	8.24	8.46	8.46	7.67	8.19	7.95	8.15	8.14	8.16	8.04	7.73	7.61	<b>9.38</b>	<b>9.01</b>	<b>9.04</b>	8.41				
Total Metals, mg/kg																							
Arsenic	11.3 / 13	61	13	<b>15</b>	<b>4.2</b>	< 1.0	<b>2.9</b>	<b>1.9</b>	<b>12</b>	<b>7.1</b>	<b>7.9</b>	<b>9.6</b>	<b>6.2</b>	<b>12</b>	<b>8.9</b>	<b>6</b>	<b>16</b>	<b>7</b>	<b>3.9</b>				
Barium	1,500	14,000	5500	<b>53</b>	<b>74</b>	<b>51</b>	<b>93</b>	<b>32</b>	<b>150</b>	<b>53</b>	<b>62</b>	<b>47</b>	<b>31</b>	<b>58</b>	<b>51</b>	<b>39</b>	<b>49</b>	<b>52</b>	<b>27</b>				
Beryllium	22	410	160	<b>0.59</b>	< 0.54	< 0.51	<b>0.71</b>	< 0.46	<b>1.3</b>	<b>0.56</b>	<b>0.74</b>	<b>0.64</b>	< 0.50	<b>0.78</b>	<b>0.62</b>	< 0.48	< 0.47	< 0.46	< 0.47				
Cadmium	5.2	200	78	< 0.55	< 0.54	< 0.51	< 0.53	< 0.46	< 0.49	< 0.52	< 0.49	< 0.49	< 0.50	< 0.55	< 0.53	< 0.48	< 0.47	< 0.46	< 0.47				
Calcium	---	---	---	<b>62000</b>	<b>42000</b>	<b>31000</b>	<b>45000</b>	<b>100000</b>	<b>29000</b>	<b>75000</b>	<b>110000</b>	<b>98000</b>	<b>110000</b>	<b>7100</b>	<b>55000</b>	<b>96000</b>	<b>140000</b>	<b>42000</b>	<b>89000</b>				
Chromium	21	690	230	<b>22</b>	<b>14</b>	<b>9.8</b>	<b>25</b>	<b>11</b>	<b>38</b>	<b>19</b>	<b>24</b>	<b>23</b>	<b>18</b>	<b>27</b>	<b>20</b>	<b>13</b>	<b>13</b>	<b>11</b>	<b>8</b>				
Cobalt	20	12,000	4700	<b>14</b>	<b>6</b>	<b>4.9</b>	<b>10</b>	<b>4.8</b>	<b>22</b>	<b>15</b>	<b>15</b>	<b>17</b>	<b>13</b>	<b>8.1</b>	<b>12</b>	<b>12</b>	<b>7.2</b>	<b>6.2</b>	<b>3.6</b>				
Copper	2,900	8,200	2900	<b>21</b>	<b>20</b>	<b>9.3</b>	<b>13</b>	<b>11</b>	<b>29</b>	<b>20</b>	<b>23</b>	<b>26</b>	<b>23</b>	<b>25</b>	<b>20</b>	<b>15</b>	<b>31</b>	<b>13</b>	<b>12</b>				
Iron	15,000 / 15,900	---	---	<b>28000</b>	<b>13000</b>	<b>7300</b>	<b>19000</b>	<b>10000</b>	<b>38000</b>	<b>19000</b>	<b>24000</b>	<b>25000</b>	<b>18000</b>	<b>30000</b>	<b>23000</b>	<b>15000</b>	<b>16000</b>	<b>17000</b>	<b>10000</b>				
Lead	107	700	400	<b>12</b>	<b>9.8</b>	<b>6.4</b>	<b>16</b>	<b>7</b>	<b>36</b>	<b>13</b>	<b>15</b>	<b>16</b>	<b>14</b>	<b>16</b>	<b>16</b>	<b>13</b>	<b>64</b>	<b>10</b>	<b>25</b>				
Magnesium	325,000	730,000	325000	<b>39000</b>	<b>22000</b>	<b>17000</b>	<b>28000</b>	<b>46000</b>	<b>18000</b>	<b>36000</b>	<b>46000</b>	<b>49000</b>	<b>56000</b>	<b>6400</b>	<b>33000</b>	<b>51000</b>	<b>75000</b>	<b>25000</b>	<b>41000</b>				
Manganese	630 / 636	4,100	1600	<b>420</b>	<b>280</b>	<b>110</b>	<b>170</b>	<b>290</b>	<b>1100</b>	<b>590</b>	<b>550</b>	<b>610</b>	<b>450</b>	<b>470</b>	<b>690</b>	<b>680</b>	<b>450</b>	<b>720</b>	<b>440</b>				
Mercury	0.89	0.1	10	< 0.022	< 0.019	< 0.018	<b>0.04</b>	< 0.020	<b>0.028</b>	< 0.021	< 0.017	< 0.017	< 0.020	< 0.020	<b>0.029</b>	< 0.019	<b>0.023</b>	< 0.022	< 0.018				
Nickel	100	4,100	1600	<b>30</b>	<b>15</b>	<b>13</b>	<b>24</b>	<b>12</b>	<b>44</b>	<b>28</b>	<b>33</b>	<b>35</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>17</b>	<b>14</b>	<b>13</b>	<b>8.8</b>				
Potassium	---	---	---	<b>2000</b>	<b>630</b>	<b>470</b>	<b>1400</b>	<b>1400</b>	<b>2900</b>	<b>1800</b>	<b>2700</b>	<b>2800</b>	<b>1900</b>	<b>1500</b>	<b>1500</b>	<b>1200</b>	<b>430</b>	<b>460</b>	<b>340</b>				
Selenium	1.3	1,000	390	< 1.1	<b>1.3</b>	< 1.0	< 1.1	< 0.93	<b>1</b>	< 1.0	< 0.98	< 0.98	< 1.0	< 1.1	< 1.1	< 0.96	< 0.92	< 0.93	< 0.94				
Silver	4.4	1,000	390	< 1.1	< 1.1	< 1.0	< 1.1	< 0.93	< 0.98	< 1.0	< 0.98	< 0.98	< 1.0	< 1.1	< 1.1	< 0.96	< 0.92	< 0.93	< 0.94				
Sodium	---	---	---	<b>980</b>	<b>3600</b>	<b>1800</b>	<b>200</b>	<b>210</b>	<b>130</b>	<b>160</b>	<b>180</b>	<b>200</b>	<b>190</b>	<b>130</b>	<b>150</b>	<b>190</b>	<b>870</b>	<b>910</b>	<b>310</b>				
Vanadium	550	1,400	550	<b>26</b>	<b>22</b>	<b>17</b>	<b>35</b>	<b>16</b>	<b>47</b>	<b>23</b>	<b>28</b>	<b>26</b>	<b>19</b>	<b>42</b>	<b>30</b>	<b>20</b>	<b>18</b>	<b>20</b>	<b>14</b>				
Zinc	5,100	61,000	23000	<b>51</b>	<b>40</b>	<b>33</b>	<b>50</b>	<b>41</b>	<b>81</b>	<b>45</b>	<b>49</b>	<b>63</b>	<b>48</b>	<b>52</b>	<b>45</b>	<b>36</b>	<b>83</b>	<b>38</b>	<b>37</b>				
<b>TCLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																						
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010				
Barium	2			<b>0.53</b>	<b>0.64</b>	<b>0.8</b>	<b>0.53</b>	<b>0.24</b>	<b>0.39</b>	<b>0.4</b>	<b>0.4</b>	<b>0.28</b>	<b>0.32</b>	<b>0.19</b>	<b>0.4</b>	<b>0.27</b>	<b>0.31</b>	<b>0.29</b>	<b>0.25</b>				
Beryllium	0.004			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050				
Cadmium	0.005			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050				
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010				
Cobalt	1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	<b>0.033</b>	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010				
Copper	0.65			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10				
Iron	5			< 0.25	<b>0.32</b>	<b>0.33</b>	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25				
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050				
Manganese	0.15			<b>2.1</b>	<b>1.6</b>	<b>1.1</b>	<b>0.79</b>	<b>1.6</b>	<b>2.1</b>	<b>0.49</b>	<b>0.2</b>	<b>0.79</b>	<b>3.1</b>	<b>0.06</b>	<b>0.72</b>	<b>1</b>	<b>1.4</b>	<b>1.4</b>	<b>0.72</b>				
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020				
Nickel	0.1			<b>0.011</b>	< 0.010	<b>0.012</b>	< 0.010	< 0.010	<b>0.025</b>	<b>0.011</b>	< 0.010	< 0.010	<b>0.031</b>	< 0.010	<b>0.014</b>	<b>0.01</b>	<b>0.018</b>	<b>0.012</b>	< 0.010				
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010				
Silver	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010				
Zinc	5			< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	<b>0.065</b>	< 0.050	<b>0.066</b>				
<b>SPLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																						
Arsenic	0.05			<b>0.0051</b>	<b>0.011</b>	<b>0.0058</b>	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	<b>0.02</b>	<b>0.013</b>	<b>0.011</b>				
Barium	2			<b>0.041</b>	<b>0.22</b>	<b>0.077</b>	<b>0.032</b>	< 0.020	< 0.020	< 0.020	< 0.020	<b>0.022</b>	< 0.020	<b>0.027</b>	< 0.020	< 0.020	<b>0.13</b>	<b>0.094</b>	<b>0.099</b>				
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020				
Cadmium	0.005			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020				
Chromium	0.1			<b>0.012</b>	<b>0.046</b>	<b>0.022</b>	<b>0.0096</b>	< 0.0040	< 0.0040	<b>0.0041</b>	<b>0.0049</b>	<b>0.0077</b>	< 0.0040	<b>0.0084</b>	<b>0.0049</b>	<b>0.0053</b>	<b>0.043</b>	<b>0.034</b>	<b>0.028</b>				
Cobalt	1			< 0.0040	<b>0.011</b>	<b>0.0057</b>	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	< 0.0040	<b>0.013</b>	<b>0.0069</b>	<b>0.0065</b>				
Copper	0.65			< 0.040	<b>0.079</b>	<b>0.048</b>	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	<b>0.14</b>	< 0.040	< 0.040				
Iron	5			<b>10</b>	<b>30</b>	<b>13</b>	<b>7.4</b>	<b>0.87</b>	<b>1.4</b>	<b>1.8</b>	<b>2.4</b>	<b>5.6</b>	<b>0.31</b>	<b>6.1</b>	<b>3.1</b>	<b>3.5</b>	<b>38</b>	<b>31</b>	<b>26</b>				
Lead	0.0075			<b>0.0029</b>	<b>0.021</b>	<b>0.0089</b>	<b>0.0066</b>	< 0.0020	< 0.0020	<b>0.0035</b>	<b>0.0052</b>	<b>0.0029</b>	< 0.0020	<b>0.0032</b>	< 0.0020	<b>0.0026</b>	<b>0.063</b>	<					

Table 4.3.3  
 Comparison of Detected Constituents to Applicable Reference Concentrations - Inorganics  
 IL-83 (Busse Road), Foster to Bryn Mawr  
 Bensenville, DuPage County, Illinois  
 BDE Sequence No.: 19424  
 PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-99-04	1789V2-101-01	1789V2-102-01	1789V2-103-01	1789V2-104-01	1789V2-104-01	1789V2-104-01	1789V2-104-02	1789V2-104-02	Dup-04 (1789V2-104-02)	1789V2-104-03	1789V2-104-03	1789V2-104-04	1789V2-104-04	1789V2-104-05	1789V2-104-05	1789V2-104-06
				(0-1.8) 9/3/2019	(0-1.5) 9/5/2019	(0-2.5) 9/4/2019	(0-3.5) 9/4/2019	(0-5) 9/4/2019	(5-10) 9/4/2019	(0-5) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019	(5-10) 9/3/2019
Excavation Area(s) [SGS Site No.(s)]				3751-1 (1789V2-99)	3751-3 (1789V2-101)	3751-4 (1789V2-102)	3751-5 (1789V2-103)	3751-2 (1789V2-104)												
<b>Parameter</b>																				
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	9.32	7.83	7.57	7.34	8.9	7.12	8.46	7.62	7.37	9.06	7.68	8.59	8.05	8.95	8.19	7.65	
<b>Total Metals, mg/kg</b>																				
Arsenic	11.3 / 13	61	13	13	4.1	5.3	4.4	5.7	7.4	4.6	3.3	2.6	7.1	8.2	6.6	7.6	5.7	2.4	6.2	
Barium	1,500	14,000	5500	140	37	110	140	21	110	40	110	130	38	51	67	91	45	33	54	
Beryllium	22	410	160	0.88	< 0.49	< 1.0	< 1.3	< 0.50	< 0.69	< 0.50	0.62	0.88	< 0.55	< 0.63	< 0.50	0.56	< 0.49	< 0.52	< 0.55	
Cadmium	5.2	200	78	< 0.51	< 0.49	< 1.0	< 1.3	< 0.50	< 0.69	< 0.50	0.69	0.74	< 0.55	< 0.63	< 0.50	< 0.49	< 0.49	< 0.52	< 0.55	
Calcium	---	---	---	20000	110000	53000	58000	150000	15000	85000	20000	9800	100000	56000	44000	21000	77000	97000	63000	
Chromium	21	690	230	23	11	12	11	7.9	24	10	14	20	10	8.7	13	19	15	9.3	9.9	
Cobalt	20	12,000	4700	10	5.1	5.5	5.5	3.9	9.1	4.6	5.7	5.8	5	6.7	6.8	8.9	6.1	4.4	5.4	
Copper	2,900	8,200	2900	28	13	23	26	13	18	29	21	25	17	12	13	16	21	15	17	
Iron	15,000 / 15,900	---	---	30000	16000	19000	19000	12000	24000	14000	15000	16000	15000	15000	18000	24000	16000	13000	31000	
Lead	107	700	400	13	9.1	17	10	6.8	14	140	9.7	13	120	7.1	8.9	12	75	8.3	11	
Magnesium	325,000	730,000	325000	14000	47000	22000	23000	62000	8800	42000	7700	4200	46000	25000	25000	11000	37000	44000	33000	
Manganese	630 / 636	4,100	1600	800	370	620	580	500	160	460	840	340	530	550	730	880	540	430	750	
Mercury	0.89	0.1	10	0.021	< 0.019	< 0.043	< 0.052	< 0.020	0.03	< 0.020	0.025	0.031	< 0.022	< 0.028	0.022	0.025	< 0.019	< 0.019	0.026	
Nickel	100	4,100	1600	44	12	12	11	9.5	20	11	18	20	12	12	13	18	18	11	20	
Potassium	---	---	---	1200	670	770	730	480	1000	420	370	740	460	280	520	730	610	520	440	
Selenium	1.3	1,000	390	2	< 0.99	< 2.0	< 2.5	< 1.0	< 1.4	< 1.0	2.1	1.4	< 1.1	< 1.2	< 1.0	1.1	< 0.97	< 1.0	< 1.1	
Silver	4.4	1,000	390	< 1.0	< 0.99	< 2.0	< 2.5	< 1.0	< 1.4	< 1.0	< 1.2	< 1.3	< 1.1	< 1.2	< 1.0	< 0.98	< 0.97	< 1.0	< 1.1	
Sodium	---	---	---	4400	1500	400	480	930	1800	1100	2500	2200	680	1400	2000	2500	1500	1100	3500	
Vanadium	550	1,400	550	36	19	18	16	14	54	15	24	31	16	21	27	36	18	17	21	
Zinc	5,100	61,000	23000	60	33	68	78	33	55	61	45	43	58	42	44	55	55	35	63	
<b>TCLP Metals, mg/L</b>		Class I Groundwater <sup>d/</sup>																		
Arsenic		0.05		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Barium		2		0.52	0.25	0.73	0.72	0.37	0.72	0.43	0.59	0.26	0.44	0.72	0.48	0.85	0.53	0.54	0.36	
Beryllium		0.004		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Cadmium		0.005		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	
Chromium		0.1		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Cobalt		1		< 0.010	< 0.010	0.015	0.013	< 0.010	0.018	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.015	< 0.010	0.059	< 0.010	< 0.010	
Copper		0.65		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Iron		5		1.2	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.44	0.54	< 0.25	0.27	< 0.25	0.51	< 0.25	< 0.25	< 0.25	
Lead		0.0075		< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0052	< 0.0050	
Manganese		0.15		0.75	0.016	9.7	7.6	0.034	3.6	0.23	9.7	3.1	0.24	5.6	0.092	12	0.12	0.7	3.3	
Mercury		0.002		< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	
Nickel		0.1		0.016	< 0.010	0.01	0.011	< 0.010	0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.082	0.016	0.015	< 0.010	
Selenium		0.05		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Silver		0.05		0.023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.021	< 0.010	< 0.010	< 0.010	< 0.010	0.018	
Zinc		5		< 0.050	< 0.050	0.22	0.23	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.074	< 0.050	0.15	< 0.050	< 0.050	< 0.050	
<b>SPLP Metals, mg/L</b>		Class I Groundwater <sup>d/</sup>																		
Arsenic		0.05		0.11	< 0.0040	< 0.0040	< 0.0040	0.0054	< 0.0040	0.018	< 0.0040	< 0.0040	0.0051	< 0.0040	0.013	< 0.0040	0.0073	0.022	< 0.0040	
Barium		2		1.7	0.063	0.021	0.044	0.068	0.04	0.18	< 0.020	0.027	0.038	< 0.020	0.16	< 0.020	0.058	0.17	0.02	
Beryllium		0.004		0.013	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	
Cadmium		0.005		< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	
Chromium		0.1		0.31	0.014	< 0.0040	< 0.0040	0.016	0.009	0.081	0.0057	0.01	0.015	< 0.0040	0.044	0.0048	0.035	0.067	0.0071	
Cobalt		1		0.069	0.0053	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.016	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.0082	< 0.0040	0.0043	0.016	< 0.0040	
Copper		0.65		0.34	< 0.040	< 0.040	< 0.040	0.046	< 0.040	0.11	< 0.040	0.048	< 0.040	< 0.040	0.049	< 0.040	0.088	0.049		
Iron		5		330	11	0.92	0.27	13	6.2	44	2.4	4.5	11	0.58	39	0.91	15	54	3.1	
Lead		0.0075		0.15	0.014	< 0.0020	< 0.0020	0.0097	0.0029	0.41	< 0.0020	0.0057	0.051	< 0.0020	0.023	< 0.0020	0.078	0.16	0.0056	
Manganese		0.15		2.6	0.15	0.015	0.0057	0.19	0.034	0.87	0.041	0.054	0.13	0.0093	0.44	0.036	0.17	0.54	0.041	
Mercury		0.002		0.00042	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	
Nickel		0.1		0.34	0.016	< 0.0040	< 0.0040	0.019	0.0065	0.0										

Table 4.3.4

## Comparison of Detected Constituents to Applicable Reference Concentrations - Inorganics

IL-83 (Busse Road), Foster to Bryn Mawr

Bensenville, DuPage County, Illinois

BDE Sequence No.: 19424

PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-104-06	Dup-03 (1789V2-104-06)	1789V2-105-01	1789V2-105-01	1789V2-105-01	1789V2-105-02	1789V2-105-02	1789V2-105-03	1789V2-105-03	1789V2-105-03	Dup-07 (1789V2-105-03)	1789V2-105-04	1789V2-105-04	1789V2-105-04	1789V2-105-05	1789V2-105-05
				(5-10) 9/3/2019	(5-10) 9/3/2019	(0-5) 9/4/2019	(5-10) 9/4/2019	(10-13.5) 9/4/2019	(0-5) 9/4/2019	(10-13.5) 9/4/2019	(0-5) 9/4/2019	(5-10) 9/4/2019	(10-13.5) 9/4/2019	(10-13.5) 9/4/2019	(10-13.5) 9/4/2019	(0-5) 9/4/2019	(5-10) 9/4/2019	(10-13.5) 9/4/2019	(0-5) 9/4/2019
				3751-2 (1789V2-104)				3751-6 (1789V2-105)											
Parameter																			
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	8.66	8.24	8.8	7.73	7.82	9.33	9.36	9.52	8.82	8.65	9.43	9.3	8.92	7.75	9.18	8.24
<b>Total Metals, mg/kg</b>																			
Arsenic	11.3 / 13	61	13	1.9	2.1	5.5	17	1.8	4.9	3.1	7.2	1.4	4.1	3.4	4.9	1.5	1.9	2.3	1.6
Barium	1,500	14,000	5500	44	60	24	66	25	36	8.5	36	33	20	21	19	25	26	46	40
Beryllium	22	410	160	< 0.49	< 0.52	< 0.52	< 0.64	< 0.49	< 0.48	< 0.50	< 0.48	< 0.49	< 0.47	< 0.48	< 0.50	< 0.49	< 0.50	< 0.53	< 0.46
Cadmium	5.2	200	78	< 0.49	< 0.52	< 0.52	< 0.64	< 0.49	< 0.48	< 0.50	< 0.48	< 0.49	< 0.47	< 0.48	< 0.50	< 0.49	< 0.50	< 0.53	< 0.46
Calcium	---	---	---	49000	38000	170000	35000	81000	59000	110000	62000	61000	86000	81000	94000	67000	86000	89000	60000
Chromium	21	690	230	10	17	8.2	12	10	8.1	6.2	9.3	10	9.8	11	7.9	10	10	13	10
Cobalt	20	12,000	4700	3.8	6.5	3.9	5.9	3.7	4.1	3	5.3	4.1	4.7	4.7	3.6	3.8	4.7	5.9	4.2
Copper	2,900	8,200	2900	10	12	11	15	10	14	13	14	9.2	10	12	11	6.6	11	16	11
Iron	15,000 / 15,900	---	---	8300	14000	11000	8400	10000	12000	8600	18000	8700	11000	11000	10000	8300	11000	15000	9900
Lead	107	700	400	6.9	8.8	10	7.6	4.6	6.8	6.8	42	6.2	4.6	4.8	7.5	7.3	4.9	10	6.1
Magnesium	325,000	730,000	325000	23000	21000	53000	16000	39000	26000	55000	34000	35000	41000	38000	50000	38000	40000	45000	28000
Manganese	630 / 636	4,100	1600	210	270	390	190	280	380	260	530	240	280	300	290	210	290	290	240
Mercury	0.89	0.1	10	< 0.023	< 0.019	< 0.019	< 0.028	< 0.019	< 0.019	< 0.019	< 0.018	< 0.020	< 0.021	< 0.020	< 0.017	< 0.017	< 0.017	< 0.020	0.02
Nickel	100	4,100	1600	10	17	8.5	17	9.4	9.2	7.6	13	11	11	12	8.3	10	12	15	11
Potassium	---	---	---	400	850	550	680	860	450	780	480	570	950	1200	450	670	980	840	770
Selenium	1.3	1,000	390	< 0.96	< 1.0	< 1.0	1.4	< 0.98	< 0.96	< 1.0	< 0.94	< 0.99	< 0.94	< 0.97	< 1.0	< 0.96	< 1.0	< 1.0	< 0.92
Silver	4.4	1,000	390	< 0.96	< 1.0	< 1.0	< 1.3	< 0.98	< 0.96	< 1.0	< 0.94	< 0.99	< 0.94	< 0.97	< 1.0	< 0.96	< 1.0	< 1.0	< 0.92
Sodium	---	---	---	2800	3000	1200	2900	430	1500	660	850	1300	930	1100	750	790	600	2000	1300
Vanadium	550	1,400	550	16	36	15	20	13	18	11	22	17	15	17	14	15	18	20	15
Zinc	5,100	61,000	23000	23	34	26	39	22	29	36	44	25	27	27	25	28	26	39	24
<b>TCLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																		
Arsenic	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Barium	2			0.36	0.26	0.19	0.47	0.51	0.26	0.23	0.33	0.27	0.2	0.45	0.43	0.42	0.42	0.44	0.44
Beryllium	0.004			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cadmium	0.005			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Chromium	0.1			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cobalt	1			< 0.010	< 0.010	0.011	0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Copper	0.65			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Iron	5			< 0.25	0.56	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	0.27	< 0.25	< 0.25	< 0.25	< 0.25
Lead	0.0075			< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Manganese	0.15			2.9	1.5	2.2	1.8	2	0.85	1.7	1.4	2.5	2.3	2	0.046	2.8	2.4	2.2	2.4
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Nickel	0.1			< 0.010	< 0.010	0.021	0.01	< 0.010	< 0.010	0.052	0.013	< 0.010	0.016	0.032	0.016	< 0.010	0.014	< 0.010	< 0.010
Selenium	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Silver	0.05			< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Zinc	5			< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.27	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
<b>SPLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																		
Arsenic	0.05			0.0057	0.0045	0.012	0.0062	< 0.0040	0.01	< 0.0040	0.0091	< 0.0040	0.0049	0.015	0.02	< 0.0040	< 0.0040	0.0058	< 0.0040
Barium	2			0.06	0.063	0.12	< 0.020	0.042	0.078	< 0.020	0.07	0.1	0.058	0.084	0.15	0.058	0.024	0.099	0.055
Beryllium	0.004			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Cadmium	0.005			< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Chromium	0.1			0.019	0.025	0.026	0.004	< 0.0040	0.019	< 0.0040	0.022	0.025	0.012	0.031	0.051	0.018	< 0.0040	0.025	0.018
Cobalt	1			0.0063	0.0049	0.0084	< 0.0040	< 0.0040	< 0.0040	< 0.0040	0.007	0.0054	0.012	0.014	0.005	< 0.0040	0.011	0.0051	0.0051
Copper	0.65			< 0.040	0.045	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	0.068	0.088	< 0.040	< 0.040	0.047	< 0.040
Iron	5			15	12	25	2.3	0.16	20	0.56	20	22	12	34	45	16	0.18	37	11
Lead	0.0075			0.011	0.01	0.079	< 0.0020	< 0.0020	0.0084	< 0.0020	0.0083	0.015	0.0061	0.024	0.26	0.014	< 0.0020	0.022	0.0089
Manganese	0.15			0.22	0.15	0.39	0.015	0.063	0.19	0.083	0.21	0.23	0.14	0.4	0.34	0.14	0.03	0.35	0.1
Mercury	0.002			< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020
Nickel	0.1			0.021	0.024	0.022	< 0.0040	< 0.0040	0.013	< 0									



Table 4.3.5  
Comparison of Detected Constituents to Applicable Reference Concentrations - Inorganics  
IL-83 (Busse Road), Foster to Bryn Mawr  
Bensenville, DuPage County, Illinois  
BDE Sequence No.: 19424  
PTB: 178-008 / H-1, Work Order No.: 027A

Boring ID Sample Depth, ft Sample Date Excavation Area(s) [ISGS Site No.(s)]	Soil Reference Concentrations <sup>a/</sup>	Soil Remediation Objective for Construction Workers <sup>b/</sup>	Soil Remediation Objective for Residential Exposure <sup>c/</sup>	1789V2-105-05	1789V2-106-01	1789V2-106-02	1789V2-106-02	1789V2-106-03	1789V2-106-03	Dup-05 (1789V2- 106-03)	1789V2-106-04	1789V2-106-04	1789V2-106-05	1789V2-106-05	1789V2-106-06	1789V2-106-06	1789V2-106-07	Dup-06 (1789V2- 106-07)	1789V2-106-07			
				(10-13.5)	(0-1.5)	(0-5)	(5-10)	(0-5)	(5-10)	(5-10)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(5-10)	(0-5)	(0-5)	(5-10)
				9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019	9/4/2019
				3751-7 (1789V2-106)																		
Parameter																						
Laboratory soil pH (s.u.)	6.25 - 9.0	---	---	7.7	<b>9.25</b>	8.85	7.05	<b>9.08</b>	7.54	7.62	<b>9.16</b>	8.1	<b>9.51</b>	8.92	<b>9.46</b>	8.38	<b>9.07</b>	7.8	7.66			
Total Metals, mg/kg																						
Arsenic	11.3 / 13	61	13	<b>1.3</b>	<b>4.4</b>	<b>4.9</b>	<b>3.9</b>	<b>16</b>	<b>6.6</b>	<b>9.3</b>	<b>4.5</b>	<b>3.5</b>	<b>8.2</b>	<b>4.4</b>	<b>1.6</b>	<b>3.1</b>	<b>6.1</b>	<b>3.3</b>	<b>6.9</b>			
Barium	1,500	14,000	5500	<b>18</b>	<b>38</b>	<b>47</b>	<b>87</b>	<b>31</b>	<b>81</b>	<b>92</b>	<b>24</b>	<b>85</b>	<b>35</b>	<b>35</b>	<b>16</b>	<b>13</b>	<b>89</b>	<b>26</b>	<b>180</b>			
Beryllium	22	410	160	< 0.48	< 0.47	< 0.48	< 0.75	< 0.48	< 0.56	< 0.59	< 0.50	< 0.68	< 0.48	< 0.50	< 0.45	< 0.49	< 0.49	< 0.46	< 0.85			
Cadmium	5.2	200	78	< 0.48	< 0.47	< 0.48	< 0.75	< 0.48	< 0.56	< 0.59	< 0.50	< 0.68	< 0.48	< 0.50	< 0.45	< 0.49	< 0.49	< 0.46	< 0.85			
Calcium	---	---	---	<b>74000</b>	<b>37000</b>	<b>77000</b>	<b>28000</b>	<b>82000</b>	<b>4100</b>	<b>6600</b>	<b>89000</b>	<b>9100</b>	<b>100000</b>	<b>94000</b>	<b>290000</b>	<b>84000</b>	<b>49000</b>	<b>130000</b>	<b>180000</b>			
Chromium	21	690	230	<b>8.1</b>	<b>9.8</b>	<b>11</b>	<b>18</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>8.9</b>	<b>9.3</b>	<b>10</b>	<b>14</b>	<b>9.8</b>	<b>8.5</b>	<b>16</b>	<b>22</b>	<b>11</b>			
Cobalt	20	12,000	4700	<b>3.5</b>	<b>5</b>	<b>4.9</b>	<b>6.8</b>	<b>5.1</b>	<b>7.2</b>	<b>6.6</b>	<b>4.2</b>	<b>3.3</b>	<b>6.3</b>	<b>4.5</b>	<b>0.95</b>	<b>3.8</b>	<b>8.7</b>	<b>3.3</b>	<b>7.6</b>			
Copper	2,900	8,200	2900	<b>7.7</b>	<b>13</b>	<b>16</b>	<b>20</b>	<b>20</b>	<b>11</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>17</b>	<b>14</b>	<b>8.4</b>	<b>8.7</b>	<b>15</b>	<b>15</b>	<b>15</b>			
Iron	15,000 / 15,900	---	---	<b>7500</b>	<b>11000</b>	<b>12000</b>	<b>13000</b>	<b>20000</b>	<b>13000</b>	<b>13000</b>	<b>11000</b>	<b>8400</b>	<b>21000</b>	<b>12000</b>	<b>6900</b>	<b>9400</b>	<b>17000</b>	<b>16000</b>	<b>15000</b>			
Lead	107	700	400	<b>4.4</b>	<b>7.9</b>	<b>230</b>	<b>11</b>	<b>130</b>	<b>13</b>	<b>17</b>	<b>7.6</b>	<b>4.9</b>	<b>31</b>	<b>8.4</b>	<b>2.4</b>	<b>4.2</b>	<b>48</b>	<b>9.2</b>	<b>8.4</b>			
Magnesium	325,000	730,000	325000	<b>36000</b>	<b>18000</b>	<b>39000</b>	<b>14000</b>	<b>43000</b>	<b>2100</b>	<b>2900</b>	<b>48000</b>	<b>1700</b>	<b>55000</b>	<b>52000</b>	<b>170000</b>	<b>42000</b>	<b>25000</b>	<b>59000</b>	<b>15000</b>			
Manganese	630 / 636	4,100	1600	<b>240</b>	<b>330</b>	<b>310</b>	<b>200</b>	<b>370</b>	<b>290</b>	<b>120</b>	<b>360</b>	<b>110</b>	<b>480</b>	<b>380</b>	<b>280</b>	<b>260</b>	<b>640</b>	<b>340</b>	<b>760</b>			
Mercury	0.89	0.1	10	< 0.017	< 0.021	< 0.022	<b>0.037</b>	< 0.021	<b>0.027</b>	< 0.023	< 0.018	<b>0.03</b>	< 0.019	<b>0.11</b>	< 0.021	< 0.019	< 0.018	< 0.016	< 0.036			
Nickel	100	4,100	1600	<b>8.6</b>	<b>9.9</b>	<b>13</b>	<b>9.4</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>9.4</b>	<b>11</b>	<b>17</b>	<b>10</b>	<b>4.4</b>	<b>9.4</b>	<b>17</b>	<b>8.6</b>	<b>19</b>			
Potassium	---	---	---	<b>830</b>	<b>490</b>	<b>550</b>	<b>960</b>	<b>550</b>	<b>640</b>	<b>740</b>	<b>480</b>	<b>400</b>	<b>590</b>	<b>520</b>	<b>410</b>	<b>600</b>	<b>920</b>	<b>400</b>	<b>920</b>			
Selenium	1.3	1,000	390	< 0.95	< 0.93	< 0.94	<b>1.7</b>	< 0.94	< 1.1	< 1.2	< 1.0	< 1.4	< 0.96	< 0.99	< 0.90	< 1.0	< 0.96	< 0.92	< 1.7			
Silver	4.4	1,000	390	< 0.95	< 0.93	< 0.94	< 1.5	< 0.94	< 1.1	< 1.2	< 1.0	< 1.4	< 0.96	< 0.99	< 0.90	< 1.0	< 0.96	< 0.92	< 1.7			
Sodium	---	---	---	<b>370</b>	<b>1800</b>	<b>1700</b>	<b>1500</b>	<b>930</b>	<b>1500</b>	<b>2200</b>	<b>1100</b>	<b>6600</b>	<b>940</b>	<b>1300</b>	<b>280</b>	<b>320</b>	<b>2600</b>	<b>650</b>	<b>3800</b>			
Vanadium	550	1,400	550	<b>12</b>	<b>22</b>	<b>20</b>	<b>29</b>	<b>19</b>	<b>31</b>	<b>31</b>	<b>17</b>	<b>14</b>	<b>21</b>	<b>19</b>	<b>5.3</b>	<b>18</b>	<b>30</b>	<b>15</b>	<b>17</b>			
Zinc	5,100	61,000	23000	<b>18</b>	<b>25</b>	<b>53</b>	<b>67</b>	<b>53</b>	<b>45</b>	<b>52</b>	<b>27</b>	<b>25</b>	<b>33</b>	<b>33</b>	<b>21</b>	<b>27</b>	<b>47</b>	<b>52</b>	<b>41</b>			
<b>TCLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																					
Arsenic	0.05	0.05	0.05	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	<b>0.015</b>	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Barium	2	2	2	<b>0.33</b>	<b>0.23</b>	<b>0.57</b>	<b>0.65</b>	<b>0.45</b>	<b>0.52</b>	<b>0.52</b>	<b>0.25</b>	<b>0.85</b>	<b>0.23</b>	<b>0.39</b>	<b>0.26</b>	<b>0.25</b>	<b>0.91</b>	<b>0.21</b>	<b>0.71</b>			
Beryllium	0.004	0.004	0.004	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Cadmium	0.005	0.005	0.005	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050			
Chromium	0.1	0.1	0.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Cobalt	1	1	1	< 0.010	<b>0.016</b>	<b>0.033</b>	<b>0.011</b>	< 0.010	<b>0.027</b>	<b>0.048</b>	<b>0.033</b>	< 0.010	< 0.010	< 0.010	< 0.010	<b>0.011</b>	<b>0.034</b>	<b>0.028</b>	< 0.010			
Copper	0.65	0.65	0.65	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Iron	5	5	5	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	<b>0.51</b>	<b>0.43</b>	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25			
Lead	0.0075	0.0075	0.0075	< 0.0050	< 0.0050	<b>0.054</b>	< 0.0050	<b>0.036</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	<b>0.0082</b>	< 0.0050	< 0.0050			
Manganese	0.15	0.15	0.15	<b>2.6</b>	<b>4.3</b>	<b>3.7</b>	<b>1.4</b>	<b>5.5</b>	<b>9.7</b>	<b>3.9</b>	<b>0.61</b>	<b>0.73</b>	<b>0.92</b>	<b>0.044</b>	<b>2.4</b>	<b>3.2</b>	<b>6.8</b>	<b>1.3</b>	<b>1.3</b>			
Mercury	0.002	0.002	0.002	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020	< 0.00020			
Nickel	0.1	0.1	0.1	<b>0.014</b>	< 0.010	<b>0.013</b>	< 0.010	<b>0.027</b>	<b>0.025</b>	<b>0.016</b>	< 0.010	< 0.010	<b>0.01</b>	< 0.010	<b>0.018</b>	<b>0.11</b>	<b>0.022</b>	<b>0.012</b>	< 0.010			
Selenium	0.05	0.05	0.05	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Silver	0.05	0.05	0.05	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
Zinc	5	5	5	< 0.050	< 0.050	<b>0.1</b>	< 0.050	< 0.050	<b>0.15</b>	<b>0.14</b>	< 0.050	< 0.050	< 0.050	< 0.050	<b>0.099</b>	<b>0.2</b>	< 0.050	< 0.050	< 0.050			
<b>SPLP Metals, mg/L</b>	Class I Groundwater <sup>d/</sup>																					
Arsenic	0.05	0.05	0.05	< 0.0040	<b>0.016</b>	<b>0.0061</b>	< 0.0040	<b>0.028</b>	<b>0.0093</b>	<b>0.013</b>	< 0.0040	< 0.0040	<b>0.0064</b>	<b>0.0086</b>	< 0.0040	< 0.0040	<b>0.012</b>	<b>0.022</b>	< 0.0040			
Barium	2	2	2	< 0.020	<b>0.11</b>	< 0.020	< 0.020	<b>0.19</b>	<b>0.046</b>	<b>0.039</b>	< 0.020	< 0.020	<b>0.043</b>	<b>0.086</b>	< 0.020	< 0.020	<b>0.095</b>	<b>0.16</b>	< 0.020			
Beryllium	0.004	0.004	0.004	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020			
Cadmium	0.005	0.005	0.005	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020	< 0.0020			
Chromium	0.1	0.1	0.1	< 0.0040	<b>0.039</b>	<b>0.0061</b>	< 0.0040	<b>0.06</b>	<b>0.013</b>	<b>0.013</b>	< 0.0040	<b>0.0077</b>	<b>0.013</b>	<b>0.028</b>	<b>0.0042</b>	< 0.0040	<b>0.025</b>	<b>0.043</b>				

**Table 4-4  
Estimated Construction Management Costs  
Illinois Department of Transportation, District One  
Illinois Route 47 from Union/Foster Road to Hawthorne Way  
Huntley and Woodstock, McHenry County, Illinois  
BDE Sequence No.: 14677B  
PTB: 178-008 / H&H-1, Work Order No.: 025A**

Estimated Construction Management Costs	Est. Vol. of Excavation (CY)	Estimated Non-Special Waste Volume In Existing IDOT ROW (Construction) (CY)*	Estimated Non-Special Waste Volume Outside of Existing IDOT ROW (Construction) (CY)*	Estimated Non-Special Waste Disposal Volume In Areas of Land Acquisition (Remediation) (CY)*	Disposal, Plans & Reports, and Disposal Analysis Costs for Construction	Disposal, Plans & Reports, and Disposal Analysis Costs for Remediation	Unit	Unit Cost (\$)	Total Construction Mgmt Cost (\$)	Total Land Acquisition Cost (\$)
3751-2 (1789V2-98)	31,155									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		1704.0	506.0	914	165,750	68,537	CY	75	\$ 353,930.00	\$ 68,536.95
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					187,680	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					500	0	Lump Sum			
3751-1 (1789V2-99)	546									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		478.0	30.0	7	38,100	555	CY	75	\$ 42,626.00	\$ 555.00
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					4,026	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					500	0	Lump Sum			
3751-3 (1789V2-101)	58									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		0.0	0.0	0.0	0	0	CY	75	\$ 1,098.00	\$ -
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					1,098	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					0	0	Lump Sum			
3751-4 (1789V2-102)	130									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		0.0	0.0	0.0	0	0	CY	75	\$ 1,530.00	\$ -
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					1,530	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					0	0	Lump Sum			
3751-5 (1789V2-103)	407									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		0.0	0.0	0.0	0	0	CY	75	\$ 3,192.00	\$ -
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					3,192	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					0	0	Lump Sum			
3751-2 (1789V2-104)	5,610									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		0.0	0.0	0.0	0	0	CY	75	\$ 34,410.00	\$ -
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					34,410	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					0	0	Lump Sum			
3751-6 (1789V2-105)	20,780									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		5960.0	8940.0	730	1,117,500	54,751	CY	75	\$ 1,243,430.00	\$ 54,750.75
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					125,430	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					500	0	Lump Sum			
3751-7 (1789V2-106)	10,989									
<b>Non-Special Waste Disposal<sup>1,4</sup></b>		5634.0	2274.0	294	593,100	22,075	CY	75	\$ 660,284.00	\$ 22,075.13
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>					66,684	0				
<b>Soil Disposal Analysis<sup>3</sup></b>					500	0	Lump Sum			
<b>Total Estimated Volume of Excavation</b>	<b>69,675</b>									
<b>Total Non-Special Waste Disposal Volumes<sup>1,4</sup></b>		<b>13,776</b>	<b>11,750</b>	<b>1,946</b>			cu yd	75	\$ 1,914,450.00	\$ 145,917.83
<b>Special Waste Plans &amp; Reports<sup>2</sup></b>									\$ 424,050.00	\$ -
<b>Soil Disposal Analysis<sup>3</sup></b>		1					Lump sum		\$ 2,000.00	\$ -
<b>Total Estimated Cost for Non-Special Waste Disposal</b>									<b>\$ 2,340,500.00</b>	<b>\$ 145,917.83</b>
<b>Total Estimated Cost (rounded to the nearest 100)</b>									<b>\$2,340,500</b>	<b>\$145,900</b>

**Assumptions:**

\* Refers to the approximate volume of soil planned for landfill disposal as non-special waste. The volume of soil planned for CCDD/CSFO disposal is not presented in this table.

The total non-special waste disposal volumes in areas of construction were estimated for areas of planned construction with the ROW and for areas of planned construction within areas of land acquisition based on PSI soil boring results/locations; the design details, locations (stationing), and accompanying quantity calculations (when provided) in the design plans; and the design details, locations (stationing), and accompanying quantity calculations (when provided) in the PESA Response Form.

The non-special waste disposal/remediation volumes in areas of land acquisition were calculated based on the area to be acquired for permanent/temporary easements or ROW acquisition where no construction was planned.

<sup>1</sup> Excavation, transportation, and disposal cost are based on 50 mile distance to permitted facility. Truck capacity is 13 cubic yards.

<sup>2</sup> Special waste plans assume the following documents and costs are required: - 1) Site health and safety plan at \$1,300; 2) site contamination operation plan at \$1,300; 3) Erosion control plan at \$1,300; 4) one final report at \$2,100 for a report total of \$6,000. For cost estimating purposes, this cost is divided equally across all Sites with soil excavation planned (\$6000/8 sites = \$750 per Site). Labor, expenses, and equipment for air monitoring /field oversight is estimated at \$1,200 per day and is calculated separately for each site using an excavation and loading rate assumption of 200 CY per day as follows, \$1,200 per day x (31,155 CY (estimated volume of excavation) /200 (CY per day) ) = \$186,930.

<sup>3</sup> Soil sampling and analysis is property specific and is based on the identified contaminants of concern. It is assumed that one representative sample will be collected for disposal parameters. The estimated analytical costs (\$500 per sample) include the laboratory analytical fee for the parameters listed below. For cost estimating purposes, this cost is included for each Site with non-special waste disposal. The laboratory analytical methods for soil disposal analysis are as follows:

TCLP Metals - EPA Methods 1311 for extraction, 6010B, and 7470A.

TCLP (organics) - EPA Methods 1311 for extraction; 8260B VOCs; 8270C SVOCs; 8081A pesticides; 8151A herbicides

PCBs - EPA Method 8082

Reactive sulfide and cyanide - EPA Method 7.3.4.2/9034 and 7.3.3.2/9014, respectively.

pH - EPA Method 9040B/9045C

Flashpoint - EPA Method 1010

Paint Filter - EPA Method 9095A

<sup>4</sup> This volume of waste should be managed to a Non-Special Waste Landfill.



## 5.0 CONCLUSIONS AND RECOMMENDATIONS

This section contains conclusions and recommendations based on the findings of the PSI of eight (8) properties that were identified where excess soil will be generated as a result of the proposed modifications to IL-47 from Union/Foster Road to Hawthorne Way. The proposed improvements include roadway realignment, channel excavation, a compensatory storage area, and wildlife crossing culverts. Additional discussion regarding the prevention of accelerated contaminant migration is also presented.

### 5.1 AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-98))

#### 5.1.1 Conclusions

- A total of fifteen (15) soil borings were advanced at this location. The fifteen (15) soil borings were advanced using a GeoProbe<sup>®</sup> to a maximum total depth of approximately 10 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of borings 1789V2-98-01, 1789V2-98-04, 1789V2-98-05, and 1789V2-98-06, as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of borings 1789V2-98-02, 1789V2-98-08, 1789V2-98-10, 1789V2-98-12, and 1789V2-98-14, as depicted with **blue** hatching on Figure 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of borings 1789V2-98-03, 1789V2-98-11, and 1789V2-98-13, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of borings 1789V2-98-07 and 1789V2-98-15 as depicted with **purple** hatching on Figure 4-1.2, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- Soil in the vicinity of boring 1789V2-98-09 as depicted with **orange** hatching on Figure 4-1.2 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 31,155 CY of soil will be excavated during construction activities from Site 3751-2 (1789V2-98).
- The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-2 (1789V2-98) is approximately 1,704 CY within the IDOT ROW and approximately 506 CY outside of the IDOT ROW, for a total of 2,210 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional



analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$353,930, as detailed in Table 4-4.

### 5.1.2 Recommendations

- Soil in the vicinity of borings 1789V2-98-01, 1789V2-98-04, 1789V2-98-05, and 1789V2-98-06, as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of borings 1789V2-98-02, 1789V2-98-08, 1789V2-98-10, 1789V2-98-12, and 1789V2-98-14, as depicted with **blue** hatching on Figure 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of borings 1789V2-98-03, 1789V2-98-11, and 1789V2-98-13, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of borings 1789V2-98-07 and 1789V2-98-15 as depicted with **purple** hatching on Figure 4-1.2, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- Soil in the vicinity of boring 1789V2-98-09 as depicted with **orange** hatching on Figure 4-1.2 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

## 5.2 RESIDENCES (ISGS SITE NO. 3751-1 (1789V2-99))

### 5.2.1 Conclusions

- A total of four (4) soil borings were advanced using a GeoProbe<sup>®</sup> at this location to evaluate to soil conditions at Site 3751-1 (1789V2-99) (1789V2-99-01, 1789V2-99-02, 1789V2-99-03, and 1789V2-99-04). The four (4) soil borings were advanced to a maximum total depth of 2 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of boring 1789V2-99-01, as depicted with **orange** hatching on Figure 4-1.2 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).
- Soil in the vicinity of borings 1789V2-99-02, 1789V2-99-04, and 1789V2-98-04 (located on the property adjacent to the subject property), as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).



- Soil in the vicinity of boring 1789V2-99-03, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 546 CY of soil will be excavated during construction activities adjacent to Site 3751-1 (1789V2-99).
- The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-1 (1789V2-99) is approximately 478 CY within the IDOT ROW and approximately 30 CY outside of the IDOT ROW, for a total of 508 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$42,626, as detailed in Table 4-4.

#### 5.2.2 Recommendations

- Based on the concentration of arsenic above the reference concentrations within the maximum excavation depth, the soil in the vicinity of boring 1789V2-99-01, as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS 5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities
- Soil in the vicinity of borings 1789V2-99-02, 1789V2-99-04, and 1789V2-98-04 (located on the property adjacent to the subject property), as depicted with **yellow** hatching on Figure 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of boring 1789V2-99-03, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

#### 5.3 VACANT LAND (ISGS SITE NO. 3751-3 (1789V2-101))

##### 5.3.1 Conclusions

- One (1) soil boring was advanced at this location to evaluate to soil conditions at Site 3751-3 (1789V2-101) (1789V2-101-01). The one (1) soil boring was advanced to a maximum total depth of 1.5 ft bgs based on the design plans provided in the PESA Response Form.



- Soil in the vicinity of boring 1789V2-101-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 58 CY of soil will be excavated during construction activities adjacent to ISGS Site 1789V2-101.
- No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work within the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$1,098, as detailed in Table 4-4.

### 5.3.2 Recommendations

- Soil in the vicinity of boring 1789V2-101-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

## 5.4 KISHWAUKEE RIVER (ISGS SITE NO. 3751-4 (1789V2-102))

### 5.4.1 Conclusions

- One (1) soil boring was advanced at this location with a hand auger to evaluate to soil conditions at Site 3751-4 (1789V2-102) (1789V2-102-01). The one (1) soil boring was advanced to a maximum total depth of 2.5 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of boring 1789V2-102-01, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 130 CY of soil will be excavated during construction activities adjacent to Site 3751-4 (1789V2-102).
- No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$1,530, as detailed in Table 4-4.

### 5.4.2 Recommendations

- Soil in the vicinity of boring 1789V2-102-01, as depicted with **green** hatching on Figure 4-1.2, exceeded a reference concentration, is greater than the most stringent MAC value, and achieved the MAC for MSA counties excluding Chicago and achieved the MAC for Chicago corporate limits. This material may be managed on site or off site to a



CCDD/USFO facility within an MSA County including Chicago (a(3)) using the attached LPC-663 form in Appendix D.

- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

## 5.5 BRIDGE (ISGS SITE NO. 3751-5 (1789V2-103))

### 5.5.1 Conclusions

- One (1) soil boring was advanced at this location using a hand auger to evaluate to soil conditions at Site 3751-5 (1789V2-103) (1789V2-103-01). The one (1) soil boring was advanced to a maximum total depth of 3.5 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of boring 1789V2-103-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 407 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-5 (1789V2-103).
- No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$3,192, as detailed in Table 4-4.

### 5.5.2 Recommendations

- Soil in the vicinity of boring 1789V2-103-01 achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

## 5.6 AGRICULTURAL LAND (ISGS SITE NO. 3751-2 (1789V2-104))

### 5.6.1 Conclusions

- A total of six (6) soil borings were advanced at this location using a GeoProbe® to evaluate to soil conditions at Site 3751-2 (1789V2-104) (1789V2-104-01, 1789V2-104-02, 1789V2-104-03, 1789V2-104-04, 1789V2-104-05, and 1789V2-104-06). The six (6) soil borings were advanced to a maximum total depth of 10 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of borings 1789V2-104-01 and 1789V2-104-04, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.



- Soil in the vicinity of borings 1789V2-104-02, 1789V2-104-05, and 1789V2-104-06, as depicted with **blue** hatching on Figure 4-1.1 and 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of boring 1789V2-104-03, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 5,610 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-2 (1789V2-104).
- No soil from this area will require management as non-special waste, as detailed in Table 4-4. Field monitoring and oversight is required for all soil excavation work with the project construction limits, therefore, the total construction cost estimate for the management of soils is approximately \$34,410, as detailed in Table 4-4.

#### 5.6.2 Recommendations

- Soil in the vicinity of borings 1789V2-104-01 and 1789V2-104-04, achieves the MACs, is considered unrestricted, and may be managed on site or off site, including disposal at a CCDD/USFO facility using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of borings 1789V2-104-02, 1789V2-104-05, and 1789V2-104-06, as depicted with **blue** hatching on Figure 4-1.1 and 4-1.2, exceeded soil reference concentrations, is greater than the most stringent MAC value, and achieved the MAC for MSA counties. This material may be managed on site or off site to a CCDD/USFO facility within an MSA County (a(2)) using the attached LPC-663 form in Appendix D.
- Soil in the vicinity of boring 1789V2-104-03, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1))
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

#### 5.7 OZINGA CONCRETE (ISGS SITE NO. 3751-6 (1789V2-105))

##### 5.7.1 Conclusions

- A total of five (5) soil borings were advanced at this location using a GeoProbe<sup>®</sup> to evaluate to soil conditions at Site 3751-6 (1789V2-105) (1789V2-105-01, 1789V2-105-02, 1789V2-105-03, 1789V2-105-04, and 1789V2-105-05). The five (5) soil borings were advanced to a maximum total depth of 13.5 ft bgs based on the design plans provided in the PESA Response Form.





- Soil in the vicinity of boring 1789V2-105-01, as depicted with **orange** hatching on Figure 4-1.1 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of this soil boring may be managed off site as non-special waste (a(5)).
- Soil in the vicinity of borings 1789V2-105-02, 1789V2-105-03, and 1789V2-105-05, as depicted with **yellow** hatching on Figure 4-1.1 and 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of boring 1789V2-105-04, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil boring may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- No constituents were detected at the subject property at levels exceeding the TACO Tier 1 remediation objectives for the Construction Worker exposure route.
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 20,780 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-6 (1789V2-105).
- The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-6 (1789V2-105) is approximately 5,960 CY within the IDOT ROW and approximately 8,940 CY outside of the IDOT ROW, for a total of 14,900 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$1,243,430, as detailed in Table 4-4.

#### 5.7.2 Recommendations

- Based on the concentration of arsenic above the reference concentrations within the maximum excavation depth, the soil in the vicinity of boring 1789V2-105-01, as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS 5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities.
- Soil in the vicinity of borings 1789V2-105-02, 1789V2-105-03, and 1789V2-105-05, as depicted with **yellow** hatching on Figure 4-1.1 and 4-1.2, exceeded a reference concentration. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of boring 1789V2-105-04, as depicted with **purple** hatching on Figure 4-1.1, has a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of this soil boring may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.



## 5.8 RESIDENCE (ISGS SITE NO. 3751-7 (1789V2-106))

### 5.8.1 Conclusions

- A total of seven (7) soil borings were advanced at this location using a GeoProbe® to evaluate to soil conditions at Site 3751-7 (1789V2-106) (1789V2-106-01, 1789V2-106-02, 1789V2-106-03, 1789V2-106-04, 1789V2-106-05, 1789V2-106-06, and 1789V2-106-07). The seven (7) soil borings were advanced to a maximum total depth of 10 ft bgs based on the design plans provided in the PESA Response Form.
- Soil in the vicinity of borings 1789V2-106-01, 1789V2-106-02, 1789V2-106-05, and 1789V2-106-07, as depicted with **yellow** hatching on Figure 4-1.1, exceeded soil reference concentrations. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Soil in the vicinity of borings 1789V2-106-03 and 1789V2-105-01 (on the property adjacent to the subject property), as depicted with **orange** hatching on Figure 4-1.1 is considered impacted, exceeding soil reference concentrations. Soil in the vicinity of these soil borings may be managed off site as non-special waste (a(5)).
- Soil in the vicinity of borings 1789V2-106-04 and 1789V2-106-06, as depicted with **purple** hatching on Figure 4-1.1, have a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of these soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- Tables 4-2 and 4-3 contain a comparison of detected constituents to the most conservative of the TACO Tier 1 Construction Worker ingestion or inhalation values. Total mercury was detected at a concentration slightly exceeding the construction worker objective in sample 1789V2-106-05; however, the construction worker caution for mercury is based on elemental mercury, and mercury detected in this location is likely attributed to inorganic mercury salt compounds (association with coal, specifically).
- Based on the information provided by the IDOT PESA Response Form, a total of approximately 10,989 CY of soil will be excavated during construction activities adjacent to ISGS Site 3751-7 (1789V2-106).
- The total estimated volume of soil requiring management as non-special waste adjacent to Site 3751-7 (1789V2-106) is approximately 5,634 CY within the IDOT ROW and approximately 2,274 CY outside of the IDOT ROW, for a total of 7,908 CY. Special Waste Plans and Reports and field monitoring/oversight will be required, and additional analytical testing will be necessary to characterize the material for landfill disposal as non-special waste. The total construction cost estimate for the management of soils is approximately \$660,284, as detailed in Table 4-4.

### 5.8.2 Recommendations

- Soil in the vicinity of borings 1789V2-106-01, 1789V2-106-02, 1789V2-106-05, and 1789V2-106-07, as depicted with **yellow** hatching on Figure 4-1.1, exceeded soil reference concentrations. Soil in the vicinity of these soil borings may be managed on site as fill material or managed off site as non-special waste (a(1)).
- Based on the concentration of arsenic above the reference concentrations within the maximum excavation depth, the soil in the vicinity of borings 1789V2-106-03 and 1789V2-105-01 (on the property adjacent to the subject property), as depicted with **orange** hatching, may be managed off site as non-special waste, providing that a “non-special waste certification” is submitted by the generator according to the conditions in 415 ILCS 5/22.48 and 415 ILCS 4/3.475. The property history and available analytical data indicate a “non-special waste certification” can be applied to soil anticipated to be excavated adjacent to and within these properties during construction activities.



- Soil in the vicinity of borings 1789V2-106-04 and 1789V2-106-06, as depicted with **purple** hatching on Figure 4-1.1, have a soil pH outside the allowable range for CCDD disposal (6.25 to 9.0). Soil in the vicinity of these soil borings may be managed on-site as fill material or managed and disposed off-site as “uncontaminated soil”. This excavated soil cannot be taken to a CCDD/USFO facility due to soil pH readings outside of the allowable range (b(1)).
- No further investigation activities are recommended for this property for the purpose of this construction project. However, in the event additional construction activities are planned for this property outside the existing construction limits, additional investigation may be warranted.

**Table 5-1**  
**Summary of Non-Special Waste Volume Calculations**  
**Illinois Department of Transportation, District One**  
**Illinois Route 47 from Union/Foster Road to Hawthorne Way**  
**Huntley and Woodstock, McHenry County, Illinois**  
**BDE Sequence No.: 14677B**  
**PTB: 178-008 / H&H-1, Work Order No.: 025A**

Site No.	Est. Vol. of Excavation (CY)	Non-Special Waste Volume, (CY) <sup>1</sup>		
		In Existing IDOT ROW (Construction)	Outside of existing IDOT ROW (Construction)	Areas of Land Acquisition (Remediation estimate)
3751-2 (1789V2-98)	31,155	1,704	506	914
3751-1 (1789V2-99)	546	478	30	7
3751-3 (1789V2-101)	58	0	0	0
3751-4 (1789V2-102)	130	0	0	0
3751-5 (1789V2-103)	407	0	0	0
3751-2 (1789V2-104)	5,610	0	0	0
3751-6 (1789V2-105)	20,780	5,960	8,940	730
3751-7 (1789V2-106)	10,989	5,634	2,274	294
<b>Total:</b>	<b>69,675</b>	<b>13,776</b>	<b>11,750</b>	<b>1,946</b>
<b>Total Non-Special Waste Volume:</b>		<b>25,526</b>		<b>1,946</b>

<sup>1</sup> Refers to the approximate volume of soil planned for landfill disposal as non-special waste. The volume of soil planned for CCDD/CSFO disposal is not presented in this table.

The total non-special waste disposal volumes in areas of construction were estimated for areas of planned construction with the ROW and for areas of planned construction within areas of land acquisition based on PSI soil boring results/locations; the design details, locations (stationing), and accompanying quantity calculations (when provided) in the design plans; and the design details, locations (stationing), and accompanying quantity calculations (when provided) in the PESA Response Form.

The non-special waste disposal/remediation volumes in areas of land acquisition were calculated based on the area to be acquired for permanent/temporary easements or ROW acquisition where no construction was planned.



## **6.0 PREVENTION OF ACCELERATED CONTAMINANT MIGRATION**

Potentially impacted soils may exist outside the limits of the project ROW near the Project Area. Therefore, potential methods to prevent the accelerated migration of contaminants were evaluated. Specific actions that may be implemented include source reduction/elimination, limited restrictive barriers, and storm water runoff controls. These actions are evaluated in the following subsections.

### **6.1 SOURCE REDUCTION/ELIMINATION**

Reduction and/or elimination of the source of apparent contamination will ultimately reduce and/or prevent the further migration of contamination. The source of organics and/or inorganics adjacent to the properties could be associated with fill materials; however, this is unknown. Thus, the specific source cannot be determined definitively based on available information; therefore, source reduction/elimination is not recommended.

### **6.2 LIMITED RESTRICTIVE BARRIERS**

Backfill materials installed surrounding pipe and/or utility lines can provide a pathway for accelerated contaminant migration. Placement of limited restrictive barriers between contaminated material and backfill would minimize or prevent such accelerated migration. Based on the proposed construction activities and analytical results, the placement of a limited restrictive barrier (i.e., an engineered barrier), is not recommended at the subject properties.

### **6.3 STORM WATER RUNOFF CONTROLS**


There is a potential for storm water to become contaminated through contact with soil in excavations or through contact with soil that has been excavated at the properties. To minimize the potential for storm water to come into contact with potentially impacted soil, all potentially impacted soil should be managed as rapidly as possible.


The USEPA has developed and implemented specific regulations regarding the control of storm water runoff associated with construction activities (40 CFR 122). Recommended measures that could be used include, but are not limited to, the placement of protective tarps or barriers over inactive excavations and/or associated excavated soil to reduce the volume of storm water that comes into contact with contaminants. Storm water that enters and collects in any excavations can be pumped into secured containers and subsequently disposed. Alternatively, if the schedule of IDOT construction activities is feasible, or if the sequence of activities can be modified allowing the accumulated storm water in an excavation area to recede into the ground, this time will minimize or eliminate the need to manage and dispose of the water off site as a special (non-Resource Conservation & Recovery Act [RCRA]) waste.




## 7.0 ENDORSEMENTS

The scope and depth of this study are consistent with those proposed in the Final Work Plan, dated April 12, 2019, and accepted by the Illinois Department of Transportation, District One on April 16, 2019. The field observations and results reported herein are considered sufficient in detail and scope to form an informed and professional opinion as to the obvious potential environmental hazards along the Project Area. This assessment is complete and is believed to be accurate. Huff & Huff, Inc. cannot guarantee or warrant that the information provided is fully representative of all conditions across the entire Project Area.

Author:  Date December 3, 2019  
Jill M. Connolly, Project Manager

Consultant Reviewer:  Date December 3, 2019  
Shane Cuplin, P.G.,  
Consultant Reviewer  
State of Illinois License # 196.001279

Principal:  Date December 3, 2019  
Jeremy J. Reynolds, P.G., Associate Principal  
State of Illinois License # 196.001170

**APPENDIX A**

**ISGS PESA Excerpts**

**IDOT Work Order 25A Request**

**IDOT Sequence #:** 14677B  
**IDOT Job #:** P91-101-07

**ISGS: 1789V2**  
**IDOT District #: 1**

**PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT**

**FINAL REPORT**

**DATE:** August 17, 2016

**IDOT DESIGN DATE:** December 31, 2013

**SURVEY TARGET DATE:** October 6, 2016

**DATE REQUEST RECEIVED:** April 6, 2016

**LOCATION:** FAP 326 (IL 47), Reed Road to US 14, Huntley, Woodstock, and unincorporated Dorr and Grafton Townships, McHenry County; Huntley and Woodstock quadrangles (USGS 7.5-minute topographic maps), T43N, R7E, Sections 4, 9, 16, 21, and 28; T44N, R7E, Sections 16, 17, 20, 21, 28, 29, 32, and 33.





### EXECUTIVE SUMMARY

This report presents the results of an environmental site assessment for the improvements to IL 47 from south of Reed Road in Huntley to north of US 14 in Woodstock, McHenry County. This report was prepared on behalf of the Illinois Department of Transportation (IDOT) by the Illinois State Geological Survey (ISGS).

The following sites were examined for this project. The tables below list sites along the project for which recognized environmental conditions (RECs)\* were identified for each address or address range (Table 1); sites along the project for which only de minimis conditions were identified (Table 2); sites along the project for which no RECs or de minimis conditions were identified (Table 3); and sites adjoining but not on the project that were identified on environmental databases (Table 4). Further investigation of sites with RECs may be desired.

**Table 1. The following sites along the project were determined to contain RECs:**

Property name IDOT parcel #	ISGS site #	REC(s), including de minimis conditions	Regulatory database(s)	Land use
Commercial building NA	1789V2-3	Former USTs with a documented release; potential UST(s); former monitoring wells; former AST; evidence of former chemical use; transformer; potential ACM and lead paint	RCRA, BOL, UST, LUST, IEMA	Commercial
Benoy Motors NA	1789V2-4	Former UST with a documented release; potential UST(s); AST; evidence of chemical use; VOCs; presence on SRP; transformer; potential ACM and lead paint	RCRA, BOL, UST, LUST, IEMA, SRP	Commercial
IDOT maintenance facility #117 NA	1789V2-7	USTs; former USTs with documented releases; potential UST(s); monitoring wells; former monitoring wells; evidence of chemical use; former dumping; road salt; transformers; potential ACM and lead paint	RCRA, BOL, UST, LUST, IEMA	Transportation

ROW NA	1789V2-8	Former monitoring well; transformer	None	Transportation
Commercial building NA	1789V2-9	Potential former chemical use; presence on BOL; potential UST(s); SVOCs; VOCs; metals; transformers; potential ACM and lead paint	BOL	Commercial
Commercial building NA	1789V2-10	Potential UST(s); potential former chemical use; presence on BOL; former AST; former drums; former chemical container; transformer; potential ACM and lead paint	BOL	Commercial
Commercial building NA	1789V2-11	AST; potential UST(s); potential chemical use; transformer; potential ACM and lead paint	None	Commercial
Commercial building NA	1789V2-13	Former UST; potential UST(s); potential former chemical use; transformers; potential ACM and lead paint	UST	Commercial
Mobil gasoline station NA	1789V2-14	USTs; evidence of chemical use; spill; transformers; potential ACM and lead paint	BOL, UST, IEMA	Commercial
Woodstock Power Equipment NA	1789V2-15	Drums; potential UST(s); evidence of chemical use; potential ACM and lead paint	BOL	Commercial
Woodstock Powersports NA	1789V2-16	Potential UST(s); potential chemical use; transformer; potential ACM and lead paint	None	Commercial
Auto Zone NA	1789V2-18	Evidence of chemical use; potential ACM and lead paint	BOL	Commercial

Reichert Chevrolet NA	1789V2-21	Former USTs; potential UST(s); evidence of chemical use; transformer; potential ACM and lead paint	RCRA, BOL, UST	Commercial
Arrow Aluminum Castings NA	1789V2-22	Evidence of chemical use; former dumping; metals; potential ACM and lead paint	BOL	Industrial
Commercial building NA	1789V2-23	ASTs; former UST; potential UST(s); drums; solid waste; evidence of former chemical use; potential chemical use; transformer; potential ACM and lead paint	RCRA, BOL, UST	Industrial
Commercial building NA	1789V2-24	Potential former chemical use; metals; potential ACM and lead paint	None	Industrial
T&K Tools & Manufacturing NA	1789V2-25	Potential chemical use; metals; potential ACM and lead paint	None	Industrial
Commercial building NA	1789V2-26	Potential UST(s); evidence of chemical use; transformers; potential ACM and lead paint	RCRA, BOL	Commercial
Tim's Excavating NA	1789V2-27	ASTs; former ASTs; drums; potential UST(s); evidence of chemical use; chemical container; spill; metals; potential ACM and lead paint	BOL	Commercial
Advantage Transmissions NA	1789V2-30	Potential UST(s); evidence of former chemical use; potential chemical use; transformer; potential ACM and lead paint	BOL	Commercial

Vacant land NA	1789V2-31	Fill; likely past pesticide and/or herbicide use	None	Vacant
Kishwaukee River NA	1789V2-34	Non-attainment of water quality; metals	None	River
AdvanTech Plastics NA	1789V2-35	Evidence of chemical use; metals; transformers; potential ACM and lead paint	RCRA, BOL	Industrial
American Packaging Machinery NA	1789V2-36	Potential chemical use; transformer; potential ACM and lead paint	None	Industrial
Vacant land NA	1789V2-48	Former dumping	BOL	Vacant
Residence NA	1789V2-53	Former dumping; transformer; potential past pesticide and/or herbicide presence; potential ACM and lead paint	BOL	Residential
Campobello Landscaping NA	1789V2-70	AST; natural gas pipeline, transformer; potential ACM and lead paint	None	Commercial/ residential
Residence NA	1789V2-72	Former dumping; potential ACM and lead paint	BOL	Residential
The Gardens of Woodstock NA	1789V2-77	ASTs; natural gas pipeline; potential ACM and lead paint; potential pesticide and/or herbicide presence	None	Commercial
Farmstead NA	1789V2-89	AST; SVOCs; metals; transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	None	Farmstead

Crystal Woods Golf Course NA	1789V2-90	Former USTs; ASTs; evidence of chemical use; transformer; potential ACM and lead paint	BOL	Recreational
Craig Woods Golf Course NA	1789V2-93	Former AST; SVOCs; metals; transformer; potential ACM and lead paint	None	Recreational
Commercial buildings NA	1789V2-96	Former AST; former dumping; transformer; potential past pesticide and/or herbicide presence; potential ACM and lead paint	BOL	Commercial
Kishwaukee River NA	1789V2-102	Non-attainment of water quality	None	River
Ozinga Concrete NA	1789V2-105	Former dumping; AST; fill; evidence of chemical use; potential ACM and lead paint	BOL	Commercial
Residence NA	1789V2-106	Former dumping; potential ACM and lead paint	BOL	Residential
Beverly Materials NA	1789V2-108	AST; potential ACM and lead paint	BOL	Industrial
Commercial building NA	1789V2-129	Potential former chemical use; natural gas pipeline; transformer; potential ACM and lead paint	None	Commercial

**Table 2. The following sites along the project were determined to contain de minimis conditions only:**

Property name IDOT parcel #	ISGS site #	De minimis condition(s)	Land use
Commercial building NA	1789V2-1	Transformers; potential ACM and lead paint	Commercial

Brown & Company CPAs NA	1789V2-2	Potential ACM and lead paint	Commercial
Fifth Third Bank NA	1789V2-5	Transformer; potential ACM and lead paint	Commercial
Quality Inn NA	1789V2-6	Transformer; potential ACM and lead paint	Commercial
Super 8 Motel NA	1789V2-12	Transformers; potential ACM and lead paint	Commercial
Vacant land NA	1789V2-17	Likely past pesticide and/or herbicide use	Vacant
Pizza Hut NA	1789V2-19	Transformer; potential ACM and lead paint	Commercial
Red Dot Self-Storage NA	1789V2-20	Potential ACM and lead paint	Commercial
Porkies Pig Roast NA	1789V2-28	Transformer; potential ACM and lead paint	Commercial
Vacant land NA	1789V2-29	Likely past pesticide and/or herbicide use	Vacant
Vacant land NA	1789V2-32	Likely past pesticide and/or herbicide use	Vacant
Residential building NA	1789V2-33	Potential ACM	Residential
Residence NA	1789V2-37	Potential ACM and lead paint	Residential
Residences NA	1789V2-38	Transformer; potential ACM and lead paint	Residential
Agricultural land NA	1789V2-39	Transformer; likely pesticide and/or herbicide use	Agricultural
Vacant land NA	1789V2-40	Likely past pesticide and/or herbicide use	Vacant
Vacant land NA	1789V2-41	Likely past pesticide and/or herbicide use	Vacant
Agricultural building NA	1789V2-42	Potential pesticide and/or herbicide presence; potential ACM and lead paint	Agricultural

Residence NA	1789V2-43	Potential ACM and lead paint	Residential
Agricultural land NA	1789V2-44	Likely pesticide and/or herbicide use	Agricultural
Vacant land NA	1789V2-45	Likely past pesticide and/or herbicide use	Vacant
Commercial buildings NA	1789V2-46	Transformers; potential ACM and lead paint; potential former pesticide and/or herbicide presence	Commercial
Residence NA	1789V2-47	Transformer; potential ACM and lead paint	Residential
Residence NA	1789V2-49	Transformer; potential ACM and lead paint	Residential
Vacant land NA	1789V2-50	Likely past pesticide and/or herbicide use	Vacant
Vacant land NA	1789V2-51	Likely past pesticide and/or herbicide use	Vacant
Agricultural buildings NA	1789V2-52	Transformer; potential ACM and lead paint; potential pesticide and/or herbicide presence	Agricultural
Vacant land NA	1789V2-54	Likely past pesticide and/or herbicide use	Vacant
Whispering Winds Kennel NA	1789V2-55	Potential ACM and lead paint	Commercial/ residential
Running Acres NA	1789V2-56	Transformer; potential ACM and lead paint	Residential
Residence NA	1789V2-57	Potential ACM and lead paint	Residential
Eddie's Landscaping & Supplies NA	1789V2-58	Transformer; potential ACM and lead paint	Commercial
Residence NA	1789V2-59	Potential ACM and lead paint	Residential
Agricultural land NA	1789V2-60	Transformer; likely pesticide and/or herbicide use	Agricultural

Vacant land NA	1789V2-61	Potential past pesticide and/or herbicide presence	Vacant
Vacant land NA	1789V2-63	Natural gas pipeline; transformers; likely past pesticide and/or herbicide use	Vacant
New Life Christian Center NA	1789V2-64	Natural gas pipeline; transformer; potential ACM and lead paint	Church
Farmstead NA	1789V2-65	Transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	Farmstead
Kolze Garden Center NA	1789V2-66	Potential ACM and lead paint; potential pesticide and/or herbicide presence	Commercial
Agricultural land NA	1789V2-67	Natural gas pipeline; likely pesticide and/or herbicide use	Agricultural
ComEd TSS 141 NA	1789V2-68	Transformers; potential ACM and lead paint	Utility
Vacant land NA	1789V2-69	Natural gas pipelines	Vacant
Residence NA	1789V2-71	Potential ACM and lead paint	Residential
Residences NA	1789V2-73	Potential ACM and lead paint	Residential
Residences NA	1789V2-74	Transformer; potential ACM and lead paint	Residential
Vacant land NA	1789V2-75	Likely past pesticide and/or herbicide use	Vacant
Agricultural land NA	1789V2-76	Likely pesticide and/or herbicide use	Agricultural use
Farmstead NA	1789V2-79	Transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	Farmstead
Residences NA	1789V2-80	Transformers; potential ACM and lead paint	Residential
Residence NA	1789V2-81	Potential ACM and lead paint	Residential



Vacant land NA	1789V2-82	Likely past pesticide and/or herbicide use	Vacant
Agricultural land NA	1789V2-83	Natural gas pipeline; transformer; likely pesticide and/or herbicide use	Agricultural
Residence NA	1789V2-84	Transformer; potential ACM	Residential
Residence NA	1789V2-85	Transformer; potential ACM and lead paint	Residential
Farmstead NA	1789V2-86	Potential pesticide and/or herbicide presence; potential ACM	Farmstead
Residence NA	1789V2-87	Potential ACM and lead paint	Residential
Agricultural land NA	1789V2-88	Transformer; likely pesticide and/or herbicide use	Agricultural
Residences NA	1789V2-91	Transformer; potential ACM and lead paint	Residential
Vacant land NA	1789V2-92	Likely past pesticide and/or herbicide use	Vacant
Residence NA	1789V2-94	Potential ACM and lead paint	Residential
Vacant land NA	1789V2-95	Likely past pesticide and/or herbicide use	Vacant
Beyond Stable Farms NA	1789V2-97	Transformer; likely past pesticide and/or herbicide use; potential ACM and lead paint	Commercial/ residential
Agricultural land NA	1789V2-98	Likely pesticide and/or herbicide use	Agricultural use
Residences NA	1789V2-99	Transformers; potential ACM and lead paint	Residential
Farmstead NA	1789V2-100	Transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	Farmstead
Vacant land NA	1789V2-101	Likely past pesticide and/or herbicide use	Vacant
Bridge NA	1789V2-103	Potential ACM	Transportation

Agricultural land NA	1789V2-104	Likely pesticide and/or herbicide use	Agricultural
Farmstead NA	1789V2-107	Transformers; potential pesticide and/or herbicide presence; potential ACM and lead paint	Farmstead
Vacant land NA	1789V2-109	Likely past pesticide and/or herbicide use	Vacant
Agricultural land NA	1789V2-110	Transformers; likely pesticide and/or herbicide use	Agricultural
Agricultural building NA	1789V2-111	Transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	Agricultural
Residence NA	1789V2-112	Transformer; potential past pesticide and/or herbicide presence; potential ACM and lead paint	Residential
Farmstead NA	1789V2-113	Transformer; potential pesticide and/or herbicide presence; potential ACM and lead paint	Farmstead
Vacant land NA	1789V2-114	Potential past pesticide and/or herbicide presence	Vacant
Agricultural land NA	1789V2-115	Transformers; potential pesticide and/or herbicide presence	Agricultural
The Horse Palace NA	1789V2-116	Potential ACM and lead paint	Commercial/ residential
Vacant land NA	1789V2-117	Potential past pesticide and/or herbicide presence	Vacant
Ryland Homes construction office NA	1789V2-118	Transformer; potential past pesticide/herbicide presence; potential ACM and lead paint	Commercial
Commonwealth Edison substation NA	1789V2-119	Transformers; potential ACM and lead paint	Utility
Vacant land NA	1789V2-120	Potential past pesticide/herbicide presence	Vacant
Vacant land NA	1789V2-122	Transformer; likely past pesticide and/or herbicide use	Vacant

Vacant land NA	1789V2-123	Likely past pesticide and/or herbicide use	Vacant
Agricultural land NA	1789V2-124	Transformers; likely pesticide and/or herbicide use	Agricultural
Residence NA	1789V2-125	Transformer; potential ACM and lead paint	Residential
Vacant land NA	1789V2-126	Natural gas pipeline; likely past pesticide and/or herbicide use	Vacant
Pond NA	1789V2-127	Natural gas pipeline	Pond
Residence NA	1789V2-128	Potential ACM and lead paint	Residential
Agricultural land NA	1789V2-130	Transformer; likely pesticide and/or herbicide use	Agricultural
Commercial building NA	1789V2-131	Transformer; potential ACM and lead paint	Commercial
Vacant land NA	1789V2-132	Transformer; likely past pesticide and/or herbicide use	Vacant
Walgreens NA	1789V2-133	Transformers; potential ACM and lead paint	Commercial
American Community Bank & Trust NA	1789V2-134	Transformer; potential ACM and lead paint	Commercial
Residences NA	1789V2-135	Potential ACM and lead paint	Residential
Vacant land NA	1789V2-136	Likely past pesticide and/or herbicide use	Vacant
Vacant land NA	1789V2-137	Transformer; likely past pesticide and/or herbicide use	Vacant

**Table 3. The following sites along the project were determined not to contain RECs or de minimis conditions:**

Property name IDOT parcel #	ISGS site #	Land use
Vacant land NA	1789V2-62	Vacant

Vacant land NA	1789V2-78	Vacant
Unnamed tributary to the South Branch of the Kishwaukee River NA	1789V2-121	Stream

**Table 4. The following additional sites, adjoining but not on the project, were identified on environmental databases:**

Property name	ISGS site #	Regulatory database(s)	Land use
Composites One	1789V2-A	RCRA, BOL, UST, IEMA	Commercial
Servepro	1789V2-B	RCRA, BOL	Commercial
TTI	1789V2-C	RCRA, BOL	Commercial
Powers Paint Shop	1789V2-D	RCRA, BOL	Commercial
Commercial building	1789V2-E	UST	Commercial
Pinecrest Golf Course	1789V2-F	UST, BOL	Commercial

\* For all sites:

Where REC(s) are indicated as present, a condition was noted that may be indicative of releases or potential releases of hazardous substances on, at, in, or to the site, as discussed in the text. Potential hazards were not verified by ISGS testing. Radon, biological hazards (such as mold, medical waste, or septic waste), and non-agricultural pesticides and/or herbicides may also be of concern. No further investigation concerning the presence or use of these factors was conducted for this PESA.

Where RECs are not indicated as present, radon, biological hazards (such as mold, medical waste, or septic waste), and non-agricultural pesticides and/or herbicides may still be of concern. No further investigation concerning the presence or use of these factors was conducted for this PESA.

For the purposes of this report, the following are considered to be de minimis conditions:

- Normal use of lead-based paint on exteriors and interiors of buildings and structures.
- Use of asbestos-containing materials in building construction.
- Transformers in normal use, unless the transformers were observed to be leaking, appear on an environmental regulatory list, or were otherwise determined to pose a hazard not related to normal use.
- Agricultural use of pesticides and herbicides. In addition, most land in Illinois was under agricultural use prior to its conversion to residential, industrial, or commercial development. Pesticides, both regulated and otherwise, may have been used throughout the project area

at any time. Unless specifically discussed elsewhere in this report, no information regarding past pesticide use that would be subject to enforcement action was located for this project, and such use is considered a de minimis condition.

The following data gaps exist for all PESAs:

- For residences, only areas visible from public roads are inspected.
- Interiors of buildings are not inspected.
- Interiors of agricultural areas are not inspected during growing seasons.

Radon and biological hazards are not considered in this PESA unless specifically noted.

NA = No parcel number was supplied by IDOT for this site.

Although potential natural hazards and undermining, if present, are described in this report, they are not considered as RECs or de minimis conditions for the purposes of this report, and are therefore not listed in the tables above.



# Illinois Department of Transportation

## Memorandum

---

To: Ken Eng Attn: Fawad Aqueel  
From: Anthony Quigley By: Issam Rayyan  
Subject: Preliminary Site Investigation Request  
Date: January 25, 2019

---

IL 47 (Eastwood Drive)  
From Union Rd./Foster Rd. to Hawthorne Way  
McHenry County  
P-91-101-07  
Sequence # 14677B  
ISGS # 1789V2  
Contract/Section # 62A80  
Letting Date: 8CY2019

In addition to the Special Waste Assessment Screen/Survey Request Form, please find enclosed:

- Location Map
- Plan View Drawing
- Aerial Photography
- Ground Level Photography
- Other

Please, advise us of any potential contamination present at or near the highlighted sites on the attached exhibits. Thank you for your input on this project. If you have any questions, please contact Irma Romiti-Johnson at (847)705-4122 or [irma.romiti-johnson@Illinois.gov](mailto:irma.romiti-johnson@Illinois.gov).

---

# PESA Response/Work Order

Attention: Central Office BD&E  
Environment Section  
Special Waste Unit  
Room 330

Submittal Date: 05/01/2013 Sequence No: 14677 B  
District: 1 Requesting Agency: DOH Project No:   
Contract #: Job No.: P- 91-101-07  
Counties: McHenry  
Route: FAP 326 Marked: IL 47  
Street: S. Eastwood Drive Section:   
Municipality(ies): Huntley, Woodstock Project Length: 12.875 km 8 miles  
FromTo (At): Reed Rd. to US 14  
Quadrangle: Huntley, Woodstock Township-Range-Section: T43N, R7E, T44M, R7E  
Anticipated Design Approval: 12/31/2013 Anticipated Letting Date: 8CY2019

**PESA Response** PESA Number: Submittal Date: 01/25/2019  
Action  District will not need ROW from the contaminated property  
Taken by  Avoid Site  
District:  Excavation will not exceed recommended depths  
 Further Investigation 01/25/2019  
 Other - Use Comments Section  
Comments: This PESA response is for PESA # 1789V2. The limits of Contract 62A80 are on IL 47 from Union Rd/Foster Rd to Hawthorne Way.  
Contact Person: Irma Romiti-Johnson Telephone: (847) 705-4122 ext.

**Work Order** Submittal Date: 01/25/2019  
Project Description: Additional areas identified for detention  
Survey Type:  Potential Waste Site(s)  UST-LUST  Miscellaneous and Testing  
Reason Why Site(s) Cannot Be Avoided: Roadway realignment, channel excavation, compensatory storage  
Property to be surveyed is owned by IDOT: No  
Property Owner/Tenants has been notified of future survey by certified letter:



PESA Response / PSI Work Order



District	County	Municipality	Route	Marked	Street	Project Location To/From	Work Description
1	McHenry	Lakewood	FAP 326	IL RTE 47		Union Road/Foster Road to Hawthorne Way	Realignment of IL-47 and removal of IL 47 Bridge over Kishwaukee River

Requesting Agency	IDOT Job Number	Contract Number	Section Number	BDE Sequence Number	ISGS PESA Number	Anticipated Letting Date	PS&E Date	Submission to BDE Date
DOH	D-91-023-14	62A80	(105XB)B-R	14677B	1789V2	06/14/19	03/15/19	01/09/19

Form Preparer - Title, Organization, Phone	Others Involved (Names, Title, Organization, Phone)	Additional Information
John Murillo, Project Manager, Knight E/A Inc., (312) 577-3379		

Property Identification	Site ID PESA#	BDE USE ONLY FOR RMP PROJECTS		RECs		Regulatory Issues		ROW Acquisition or Easement				Proposed Construction			Estimated Volume of Soil Excavation (CY)	Notes
		BDE Classification	BDE Notes	(Yes/No)	If Yes, describe RECs	Possible UST(s)	Regulatory Program	ROW Partial Take	ROW Full Take	Temporary Easement	Permanent Easement	Construction Activity on or adjoining (list all)	Stationing (From / To) (include off-sets)	Max Depth of Excavation (feet)		
Agricultural land, 6100 - 7000 blocks of S. IL 47, unincorporated Grafton Township	1789V2-98			No		No		Yes	No	Yes	No	+ ROADWAY REALIGNMENT (WEST SIDE)	532+46 / 539+00, LT	4.50	851.0	
												+ ROADWAY REALIGNMENT (EAST SIDE)	532+34 / 543+28, RT	9.60	8,272.0	
												+ COMPENSATORY STORAGE AREA	532+34 / 543+28, RT	10.90	21,855.0	
												+ CHANNEL EXCAVATION	532+34 / 532+55, RT	4.80	135.0	
												+ TEMPORARY PAVEMENT	544+45 / 547+03, RT	1.50	42.0	
Residences, 11500-11516 Ballard Road, 11605-11703 Hawthorne Way, and 6363-6521 Suttondale Road, unincorporated Grafton Township	1789V2-99			No		No		Yes	No	Yes	No	+ ROADWAY REALIGNMENT	539+00 / 543+45, LT	1.80	338.0	
												+ TEMPORARY PAVEMENT	543+45 / 550+12, LT	1.50	208.0	
Vacant land, 6600 block of S IL 47 unincorporated Grafton Township	1789V2-101			No		No		No	No	No	No	+ ROADWAY REALIGNMENT	543+28 / 543+45, RT	1.40	4.0	
												+ TEMPORARY PAVEMENT	543+45 / 544+45, RT	1.50	54.0	
Kishwaukee River. 6800 block of S. IL 47 unincorporated Grafton Township	1789V2-102			Yes	Non-attainment of water quality	No		No	No	No	No	+ CHANNEL EXCAVATION	531+71 / 532+46, LT	2.50	130.0	
Bridge, 6800 block of S. IL 47, unincorporated Grafton Township	1789V2-103			No		No		Yes	No	No	No	+ CHANNEL EXCAVATION	531+96 / 532+34, RT	3.50	407.0	
Agricultural land, 7000-8300 blocks of S. IL 47, unincorporated Grafton Township	1789V2-104			No		No		No	No	Yes	No	+ TEMPORARY PAVEMENT	511+75 / 519+72, LT	1.50	661.0	
												+ TEMPORARY PAVEMENT	513+81 / 518+24, RT	1.50	118.0	
												+ ROADWAY REALIGNMENT	519+72 / 531+65, LT	10.20	4,628.0	
												+ WILDLIFE CROSS CULVERT	531+21 / 531+37, LT	10.60	203.0	



Parcel Name, as identified in the PESA, (include street address when available)	Site ID PESA#	BDE Classification	BDE Notes	(Yes/No)	If Yes, describe RECs	Possible UST(s)	Regulatory Program	ROW Partial Take	ROW Full Take	Temporary Easement	Permanent Easement	Construction Activity on or adjoining (list all)	Stationing (From / To) (include off-sets)	Max Depth of Excavation (feet)	Volume of Soil Excavation (CY)	Notes
Ozinga Concrete, 10950 Foster Road, unincorporated Grafton Township	1789V2-105			Yes	Former dumping; AST; fill; evidence of chemical use; potential ACM and lead paint	No		Yes	No	No	No	+ ROADWAY REALIGNMENT	527+00 / 531+65, RT	13.30	19,939.0	
												+ WILDLIFE CROSS CULVERT	531+21 / 531+37, RT	10.60	443.0	
												+ CHANNEL EXCAVATION	531+65 / 531+96, RT	8.00	398.0	
Residence, 7090 S. IL 47, unincorporated Grafton Township	1789V2-106			Yes	Former dumping; potential ACM and lead paint	No		Yes	No	No	No	+ TEMPORARY PAVEMENT	518+95 / 519+72, RT	1.50	56.0	
												+ ROADWAY REALIGNMENT	519+72 / 527+00, RT	10.80	10,933.0	
<b>Total Estimated Yards</b>															69,675.0	

**Highway Authority Agreements (HAA) within Construction Area**

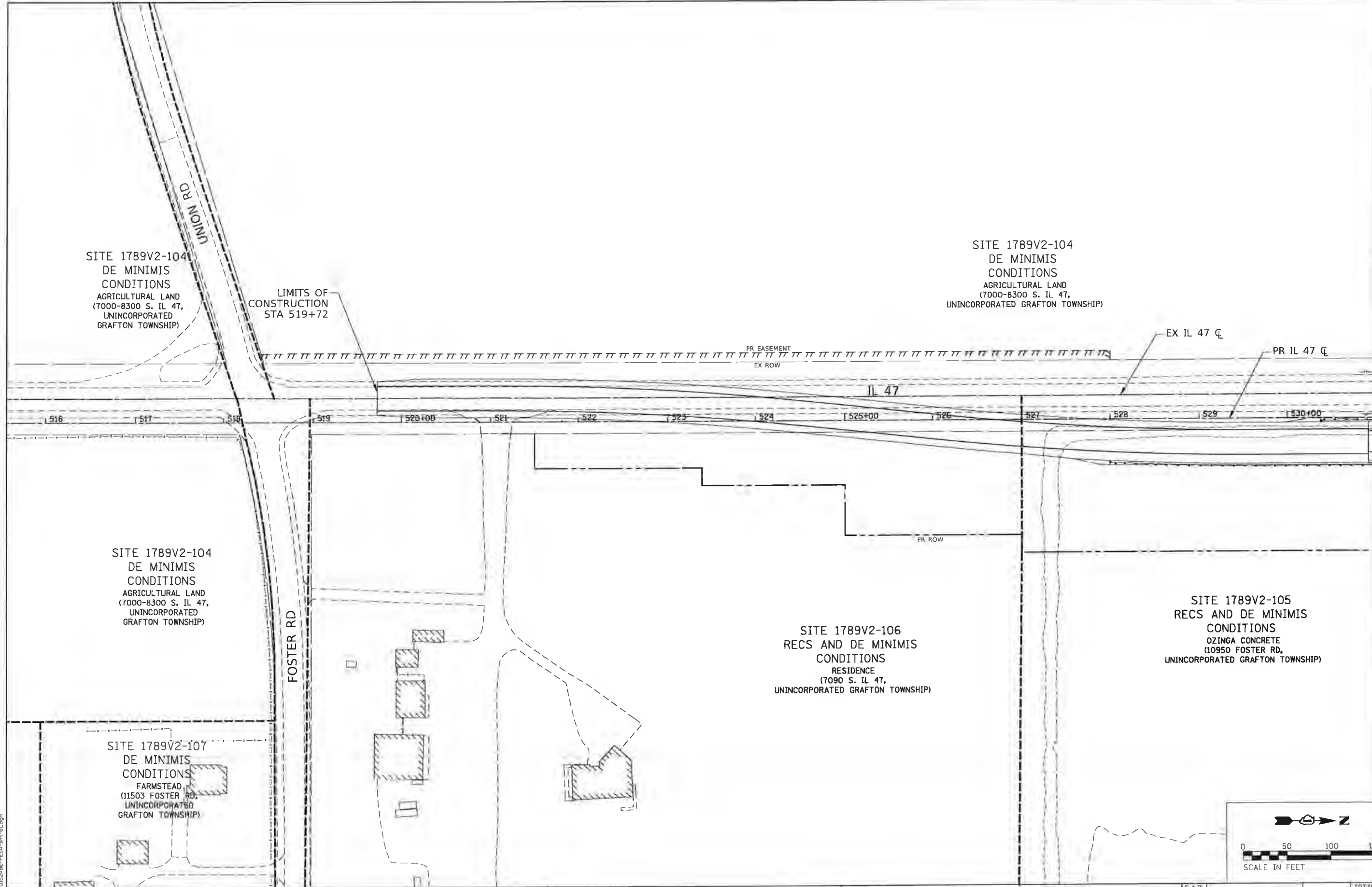
PESA Site Number	Corresponding HAA Number(s)
-	

Additional Information that could be used to help define the soil management strategy

Is the project expected to be a net  Importer  Exporter of soil?
 Estimated Volume
35,270.0

Design Contact Name  
 Matthew Rothenberg  
 Email  
 Matthew.Rothenberg@Illinois.gov  
 Phone  
 (847) 705-4230

Notes



SITE 1789V2-104  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(7000-8300 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

SITE 1789V2-104  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(7000-8300 S. IL 47,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-104  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(7000-8300 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

SITE 1789V2-106  
RECS AND DE MINIMIS  
CONDITIONS  
RESIDENCE  
(7090 S. IL 47,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-105  
RECS AND DE MINIMIS  
CONDITIONS  
OZINGA CONCRETE  
(10950 FOSTER RD,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-107  
DE MINIMIS  
CONDITIONS  
FARMSTEAD  
(11503 FOSTER RD,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

LIMITS OF  
CONSTRUCTION  
STA 519+72

PR EASEMENT  
EX ROW

EX IL 47 C

PR IL 47 C

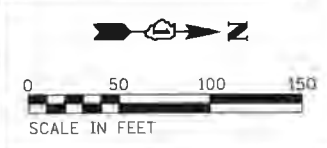
IL 47

PR ROW

FOSTER RD

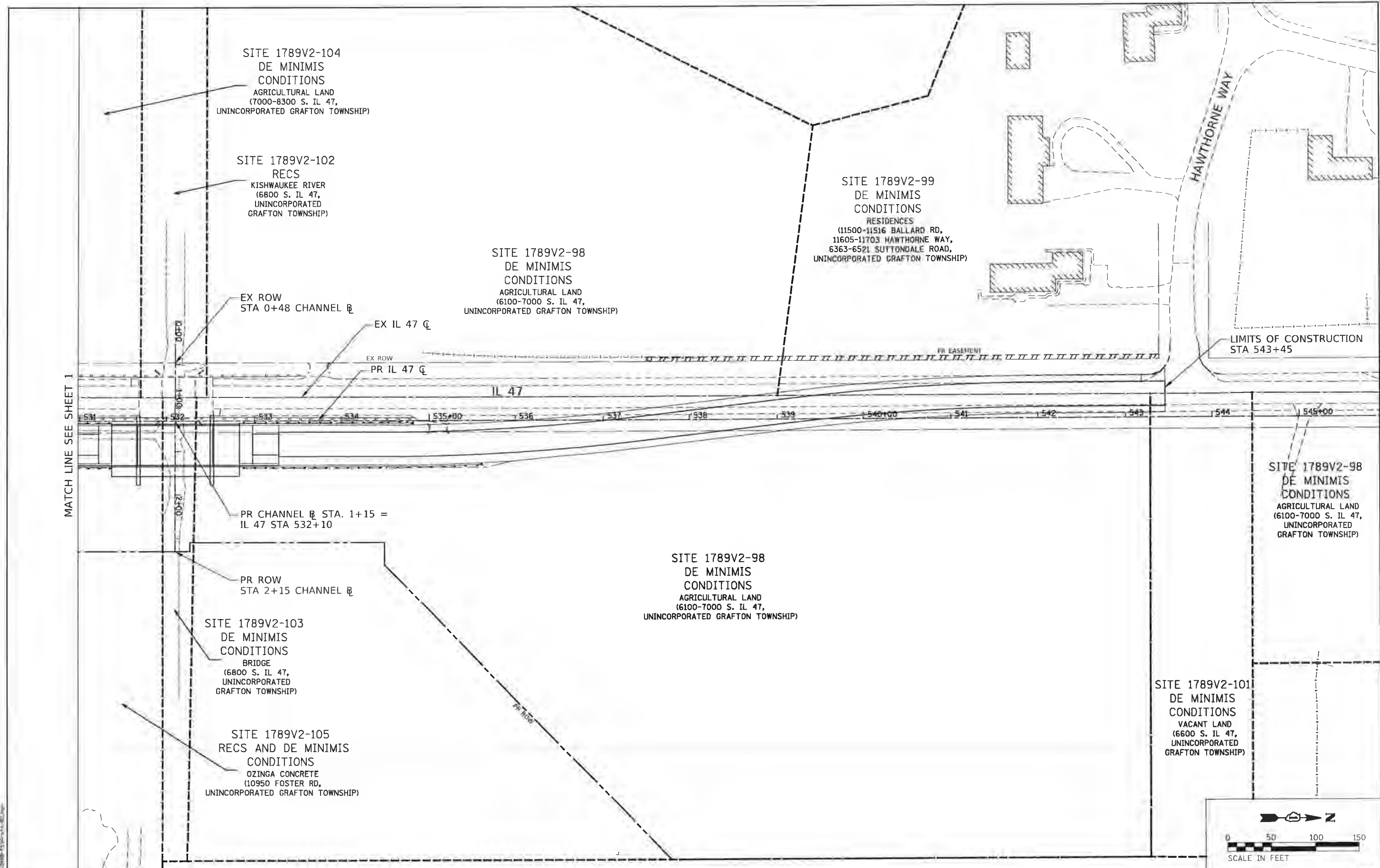
UNION RD

MATCH LINE SEE SHEET 2



FILE NAME = D:\2019\1789V2-104-107.dwg

<b>KNIGHT</b> Engineers & Architects	USER NAME = jcm	DESIGNED - DGB	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITES</b> <b>ILLINOIS ROUTE 47</b>	F.A.P. NO. 326	SECTION (105XB)B-R	COUNTY MCHENRY	TOTAL SHEETS 15	SHEET NO. 1			
	PLOT SCALE = 1:100	CHECKED - JCM	REVISED -			SCALE: 1" = 50'	SHEET 1 OF 2 SHEETS	STA. 515+50 TO STA. 531+00	FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				
	PLOT DATE = 1/9/2019	DATE - JANUARY 9, 2019	REVISED -			CONTRACT NO. 62A80							



MATCH LINE SEE SHEET 1

SITE 1789V2-104  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(7000-8300 S. IL 47,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-102  
RECS  
KISHWAUKEE RIVER  
(6800 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

SITE 1789V2-98  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(6100-7000 S. IL 47,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-99  
DE MINIMIS  
CONDITIONS  
RESIDENCES  
(11500-11516 BALLARD RD,  
11605-11703 HAWTHORNE WAY,  
6363-6521 SUTTONDALE ROAD,  
UNINCORPORATED GRAFTON TOWNSHIP)

LIMITS OF CONSTRUCTION  
STA 543+45

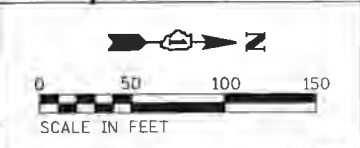
SITE 1789V2-98  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(6100-7000 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

SITE 1789V2-98  
DE MINIMIS  
CONDITIONS  
AGRICULTURAL LAND  
(6100-7000 S. IL 47,  
UNINCORPORATED GRAFTON TOWNSHIP)

SITE 1789V2-103  
DE MINIMIS  
CONDITIONS  
BRIDGE  
(6800 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)

SITE 1789V2-105  
RECS AND DE MINIMIS  
CONDITIONS  
OZINGA CONCRETE  
(10950 FOSTER RD,  
UNINCORPORATED GRAFTON TOWNSHIP)

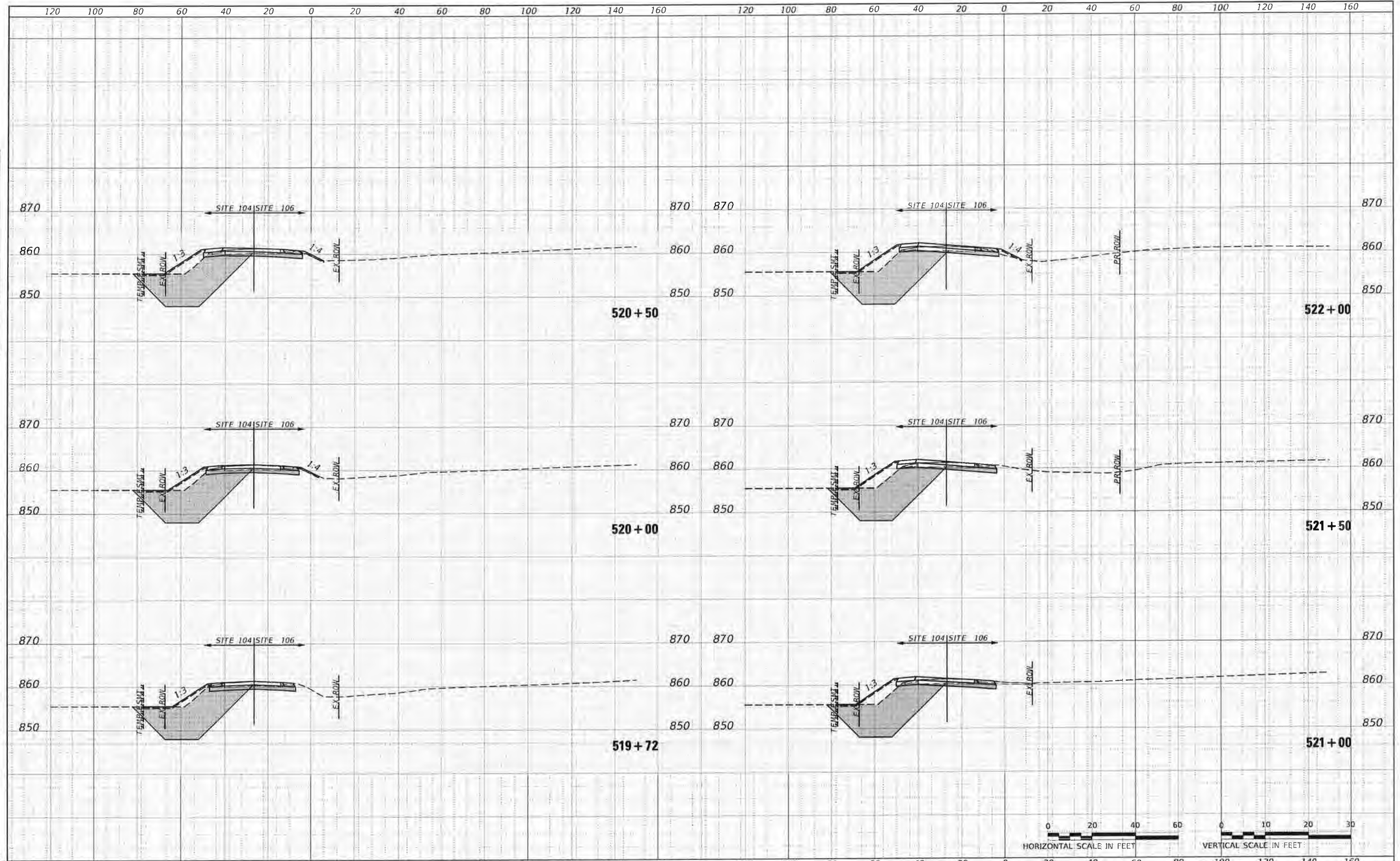
SITE 1789V2-101  
DE MINIMIS  
CONDITIONS  
VACANT LAND  
(6600 S. IL 47,  
UNINCORPORATED  
GRAFTON TOWNSHIP)



<b>KNIGHT</b> Engineers & Architects	USER NAME = wvler-ling	DESIGNED = DGB	REVISED =	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITES</b> <b>ILLINOIS ROUTE 47</b>	F.A.P. RTE. = 326	SECTION = (105XB)B-R	COUNTY = MCHENRY	TOTAL SHEETS = 15	SHEET NO. = 2			
	PLLOT SCALE = 1:100	CHECKED = JCM	REVISED =			SCALE: 1" = 50'	SHEET 2 OF 2 SHEETS	STA. 531+00 TO STA. 546+00	CONTRACT NO. 62A80				
	PLLOT DATE = 1/9/2019	DATE = JANUARY 9, 2019	REVISED =			FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT							

FINAL SURVEY	DATE
SURVEYED	
NOTED BOOK	
NOTED PLAT	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
SURVEYED	
NOTED BOOK	
NOTED PLAT	
AREAS CHECKED	
NO.	

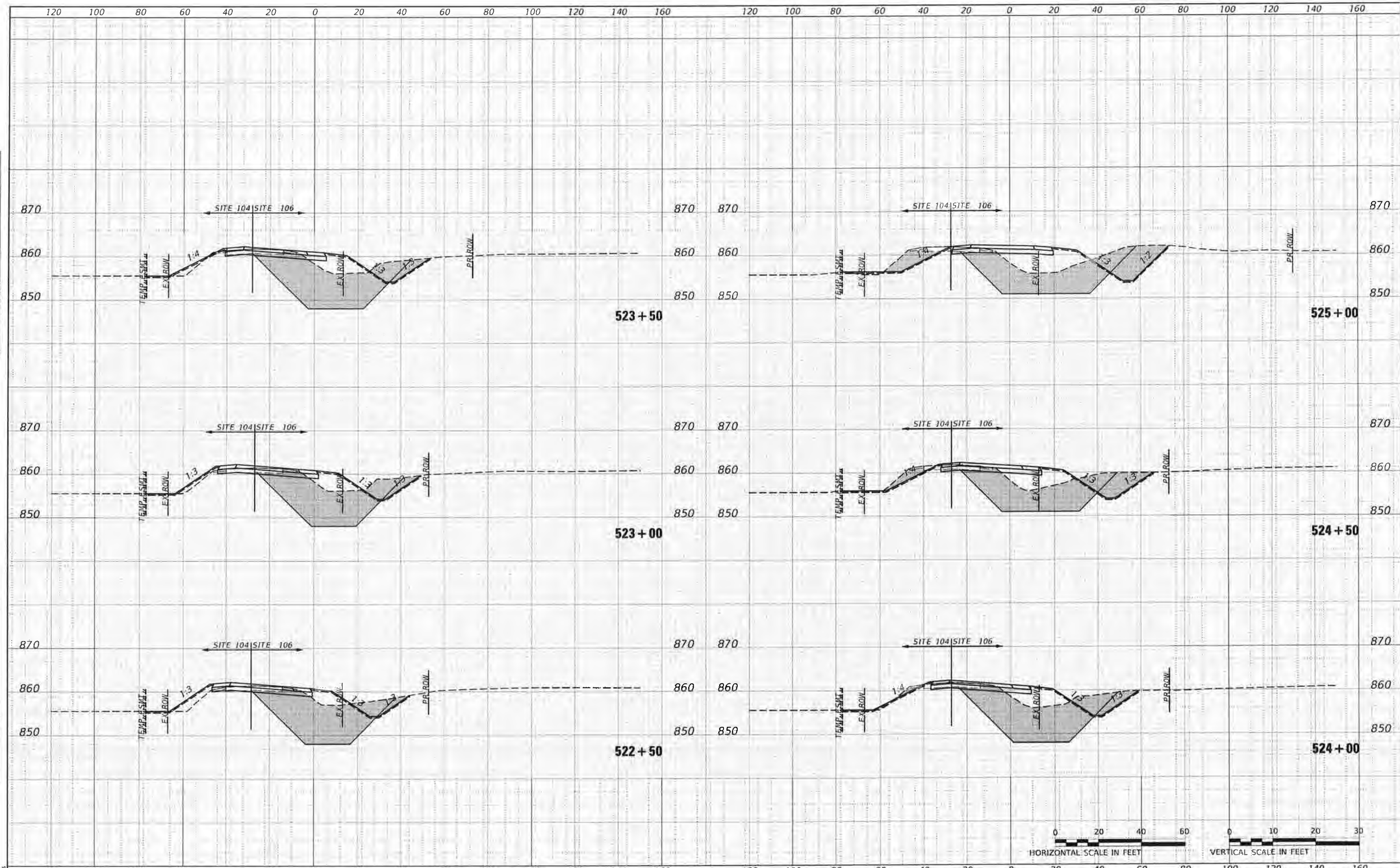


USER NAME = wvlering DESIGNED = WEV DRAWN = WEV CHECKED = JCM DATE = JANUARY 9, 2019	REVISED = REVISED = REVISED = REVISED =	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITE CROSS SECTIONS</b> <b>ILLINOIS ROUTE 47</b>	F&P RTE 326 SECTION (150X8)B-R COUNTY MCHENRY TOTAL SHEETS 15 SHEET NO. 3 CONTRACT NO. 62A80
--	--	---	---	---

SCALE: SEE SCALE SHEET 1 OF 12 SHEETS STA 519+72 TO STA 522+00 ILLINOIS FED. AID PROJECT

DATE	
BY	
FINAL SURVEY	
SUBJECT	
NOTED BOOK	
NO.	
AREAS CALCULATED	

DATE	
BY	
ORIGINAL SURVEY	
SUBJECT	
NOTED BOOK	
NO.	
AREAS CHECKED	



MODEL: SMODEL\MARIES  
FILE: MARIE\_SHEETS

USER NAME = wvicting	DESIGNED = WEV	REVISED =
	DRAWN = WEV	REVISED =
PLOT SCALE = 1:40	CHECKED = JCM	REVISED =
PLOT DATE = 1/9/2019	DATE = JANUARY 9, 2019	REVISED =

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

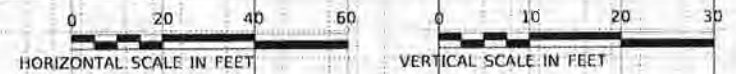
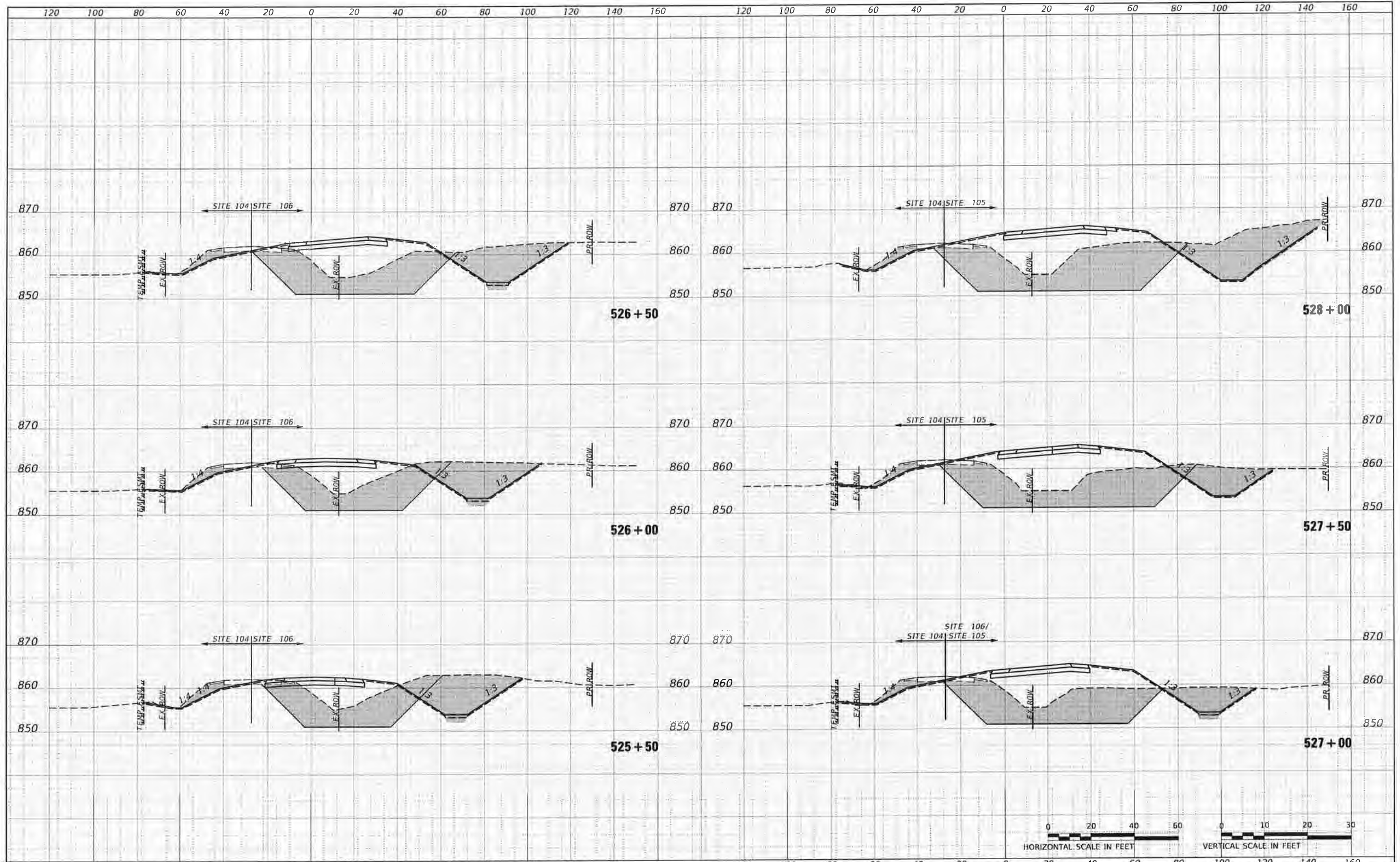
**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**

SCALE: SEE SCALE SHEET 2 OF 12 SHEETS STA 522+50 TO STA 525+00

F.A.P. RTE. 326	SECTION (150X)BIB-R	COUNTY MCHENRY	TOTAL SHEETS 15	SHEET NO. 4
				CONTRACT NO. 62AB0
ILLINOIS FED. AID PROJECT				

DATE	
NO.	
FINAL SURVEY	
TEMP. SURVEY	
NOTE BOOK	
AREA'S	
NO.	

DATE	
NO.	
ORIGINAL SURVEY	
TEMP. SURVEY	
NOTE BOOK	
AREA'S	
NO.	



MODEL: BPODELNAME  
FILE NAME: ST115

USER NAME	= waltering	DESIGNED	WEV	REVISED	
PLOT SCALE	= 1:40	DRAWN	WEV	REVISED	
PLOT DATE	= 1/9/2019	CHECKED	JCM	REVISED	
		DATE	JANUARY 9, 2019	REVISED	

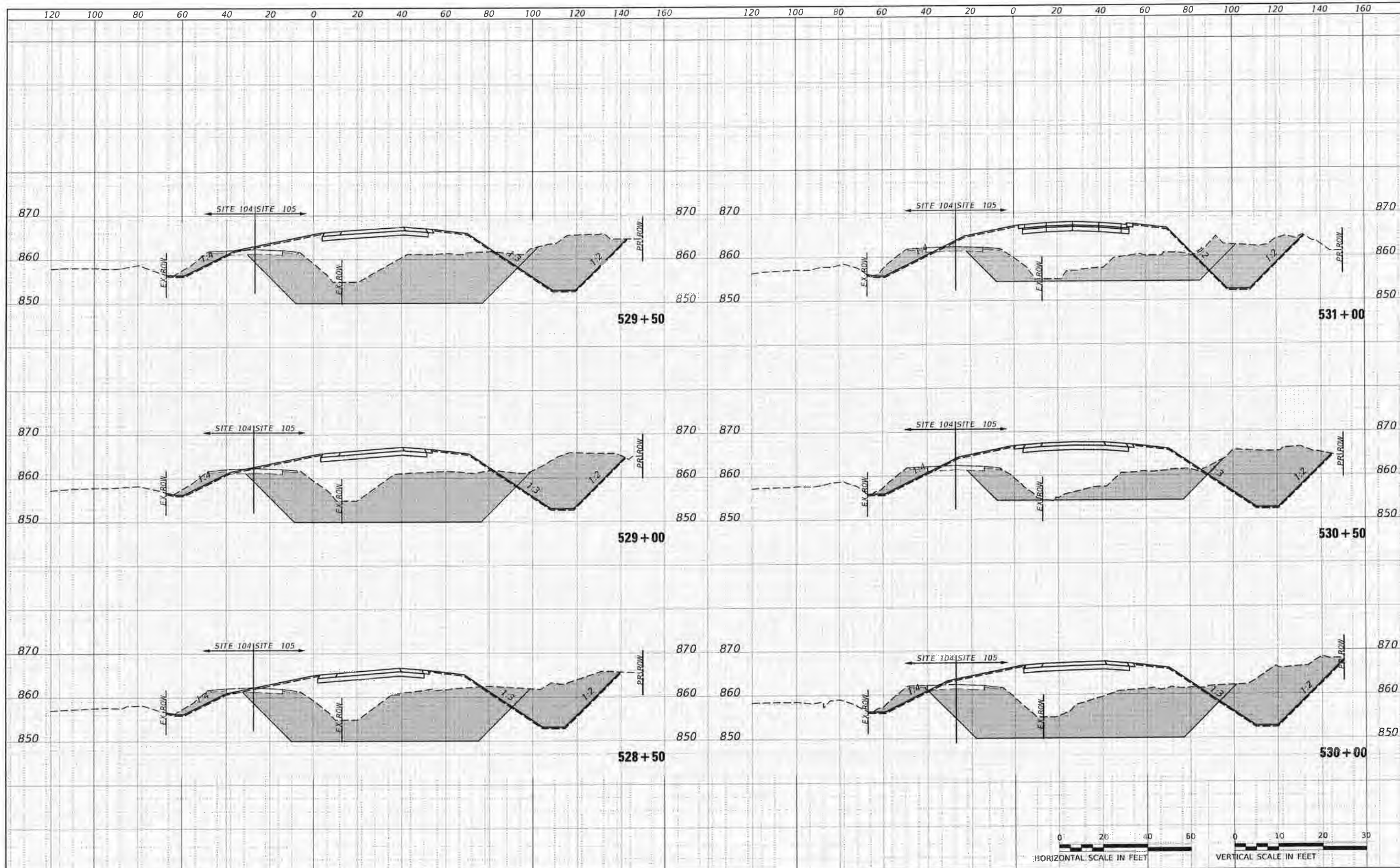
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**  
SCALE: SEE SCALE SHEET 3 OF 12 SHEETS STA 525+50 TO STA 528+00

F A P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X)B-R	MCHENRY	15	5
CONTRACT NO. 62A80			ILLINOIS FED. AID PROJECT	

DATE	
NO.	
FINAL SURVEY	
NOTED	
PLATTED	
TEMPLATE	
NOTE BOOK	
NO.	
FINAL CHECKED	

DATE	
NO.	
ORIGINAL SURVEY	
NOTED	
PLATTED	
TEMPLATE	
NOTE BOOK	
NO.	
FINAL CHECKED	



MODEL: BPODELNAMES  
FILE NAME: SHEETS

USER NAME	= wvrling
DESIGNED	= WEV
DRAWN	= WEV
CHECKED	= JCM
DATE	= JANUARY 9, 2019
REVISION	
REVISION	
REVISION	
REVISION	

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

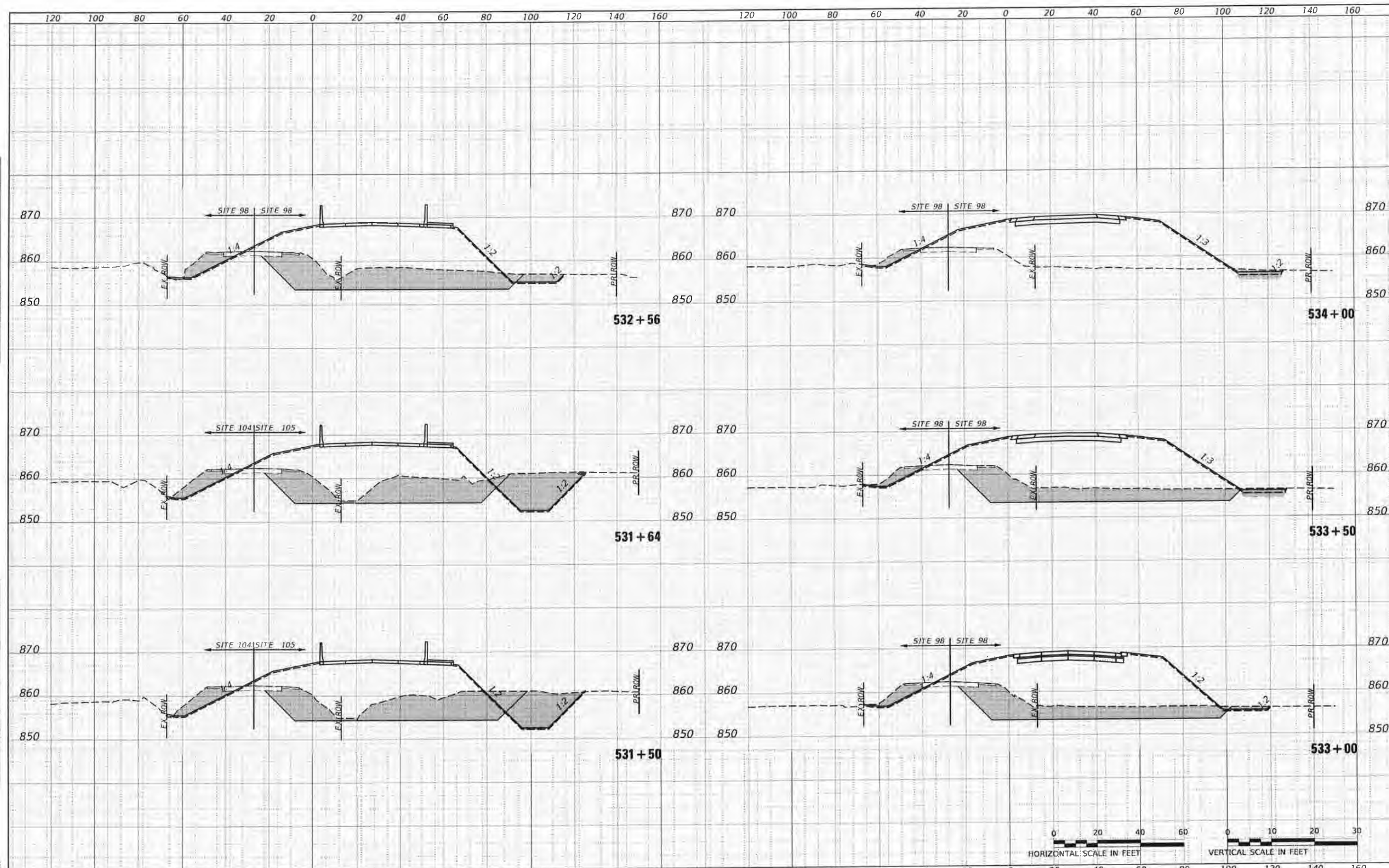
**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**

SCALE: SEE SCALE SHEET 4 OF 12 SHEETS STA 528+50 TO STA 531+00

F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X)B-R	MCHENRY	15	6
				CONTRACT NO. 62A80
				ILLINOIS FED. AID PROJECT

DATE	
BY	
FINAL SURVEY	
PLANNING	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
PLANNING	
NOTE BOOK	
AREAS CHECKED	
NO.	

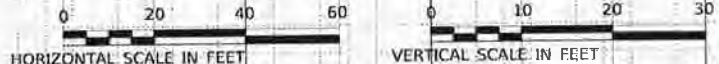
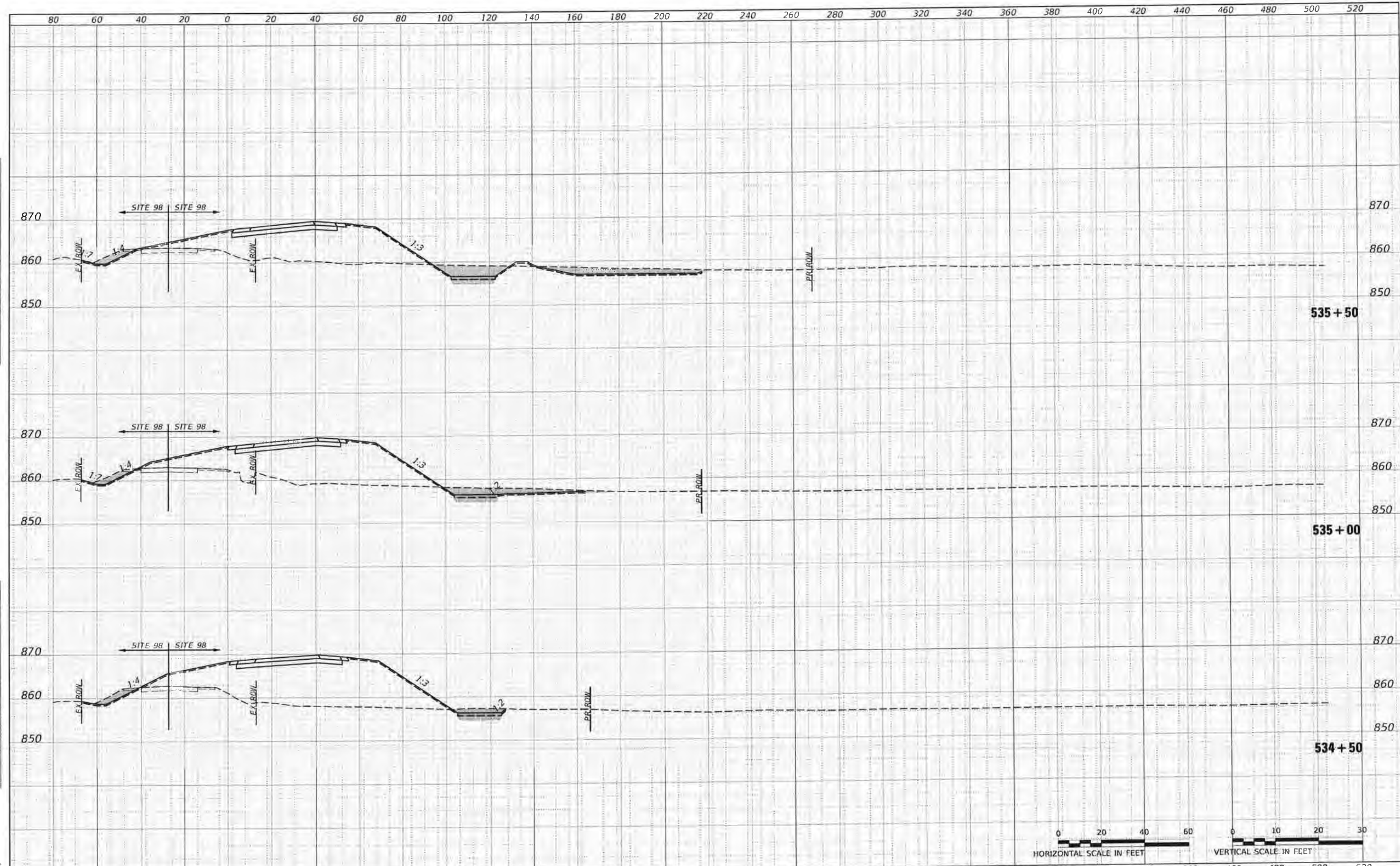


MODEL: 3000SL/3000S	USER NAME = wjw/rlg	DESIGNED = WEV	REVISIONS	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>		<b>PESA SITE CROSS SECTIONS</b> <b>ILLINOIS ROUTE 47</b>		F.A.P. RTE. 326	SECTION (150XB)B-R	COUNTY McHENRY	TOTAL SHEETS 15	SHEET NO. 7	
FILE NAME: 53150	PLLOT SCALE = 1:40	DRAWN = WEV	REVISIONS			SCALE: SEE SCALE	SHEET 5	OF 12 SHEETS	STA 531+50	TO STA 534+00	CONTRACT NO. 62A80		
	PLLOT DATE = 1/9/2019	CHECKED = JCM	REVISIONS			ILLINOIS FED. AID PROJECT							
		DATE = JANUARY 9, 2019	REVISIONS										



FINAL SURVEY  
 SURVEYED DATE  
 NOTE BOOK NO.  
 AREAS CHECKED

ORIGINAL SURVEY  
 SURVEYED DATE  
 NOTE BOOK NO.  
 AREAS CHECKED



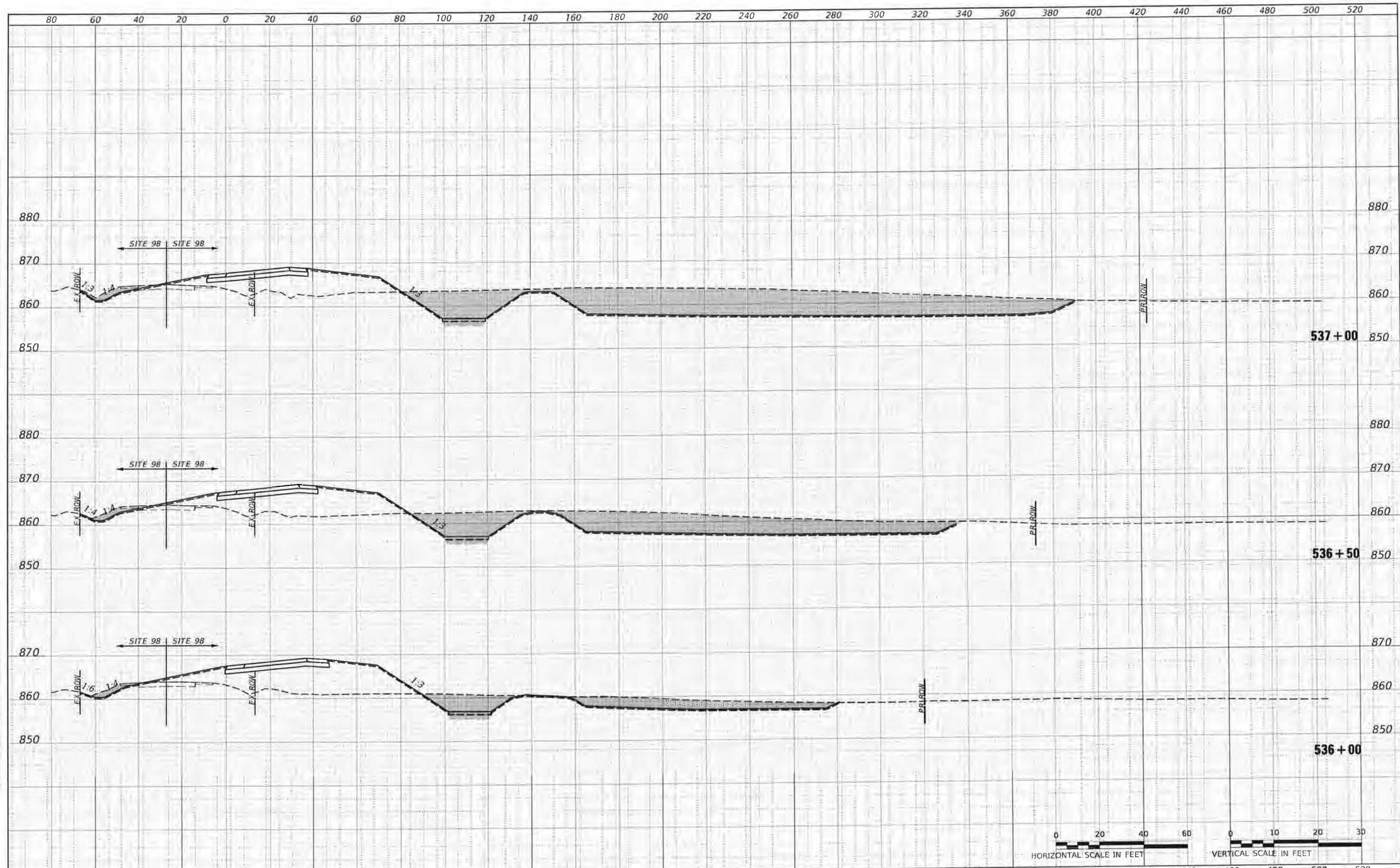
MODEL: SH02DLMAVES  
 FILE NAME: SP12L15

USER NAME = wvlering	DESIGNED = WEV	REVISED =
PLOT SCALE = 1:40	DRAWN = WEV	REVISED =
PLOT DATE = 1/9/2019	CHECKED = JCM	REVISED =
	DATE = JANUARY 9, 2019	REVISED =

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

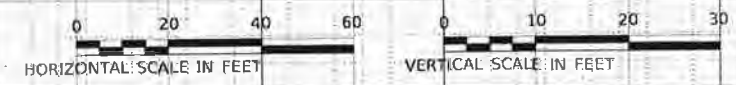
**PESA SITE CROSS SECTIONS  
 ILLINOIS ROUTE 47**  
 SCALE: SEE SCALE SHEET 6 OF 12 SHEETS STA 534+50 TO STA 535+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X8)B-R	MCHENRY	15	B
CONTRACT NO. 62A80				
ILLINOIS FED AID PROJECT				



DATE	
BY	
FINAL SURVEY	
NOTED BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTED BOOK	
AREAS CHECKED	
NO.	



MODEL: PROCELMANES  
P.E. NAME: SHIELDS

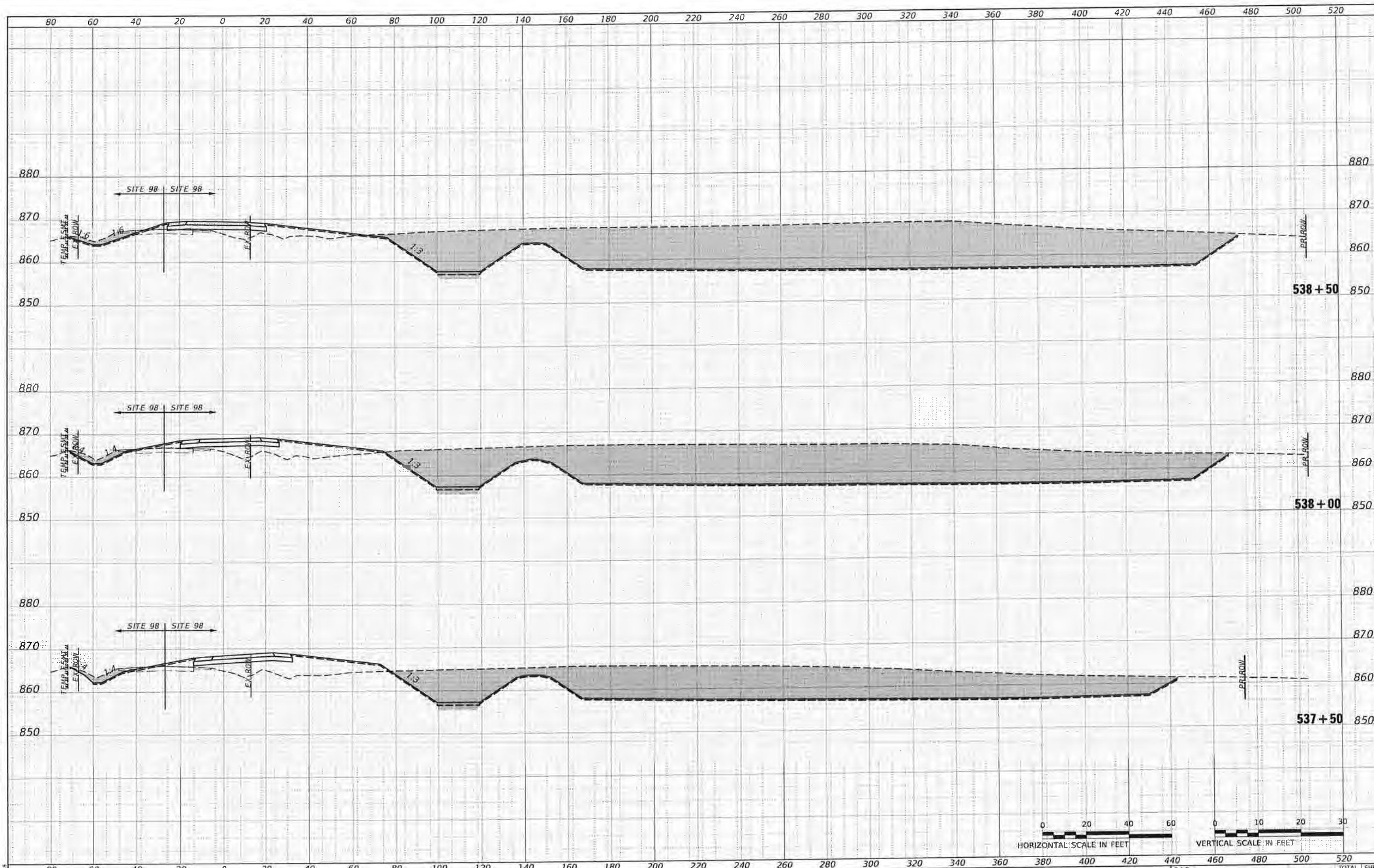
USER NAME = wv1011mg	DESIGNED = WEV	REVISED =
	DRAWN = WEV	REVISED =
PLOT SCALE = 1:40	CHECKED = JCM	REVISED =
PLOT DATE = 1/9/2019	DATE = JANUARY 9, 2019	REVISED =

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**

SCALE: SEE SCALE SHEET 7 OF 12 SHEETS STA 536+00 TO STA 537+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X)B-R	McHENRY	15	9
CONTRACT NO. 62A80				
ILLINOIS FED. AID PROJECT				

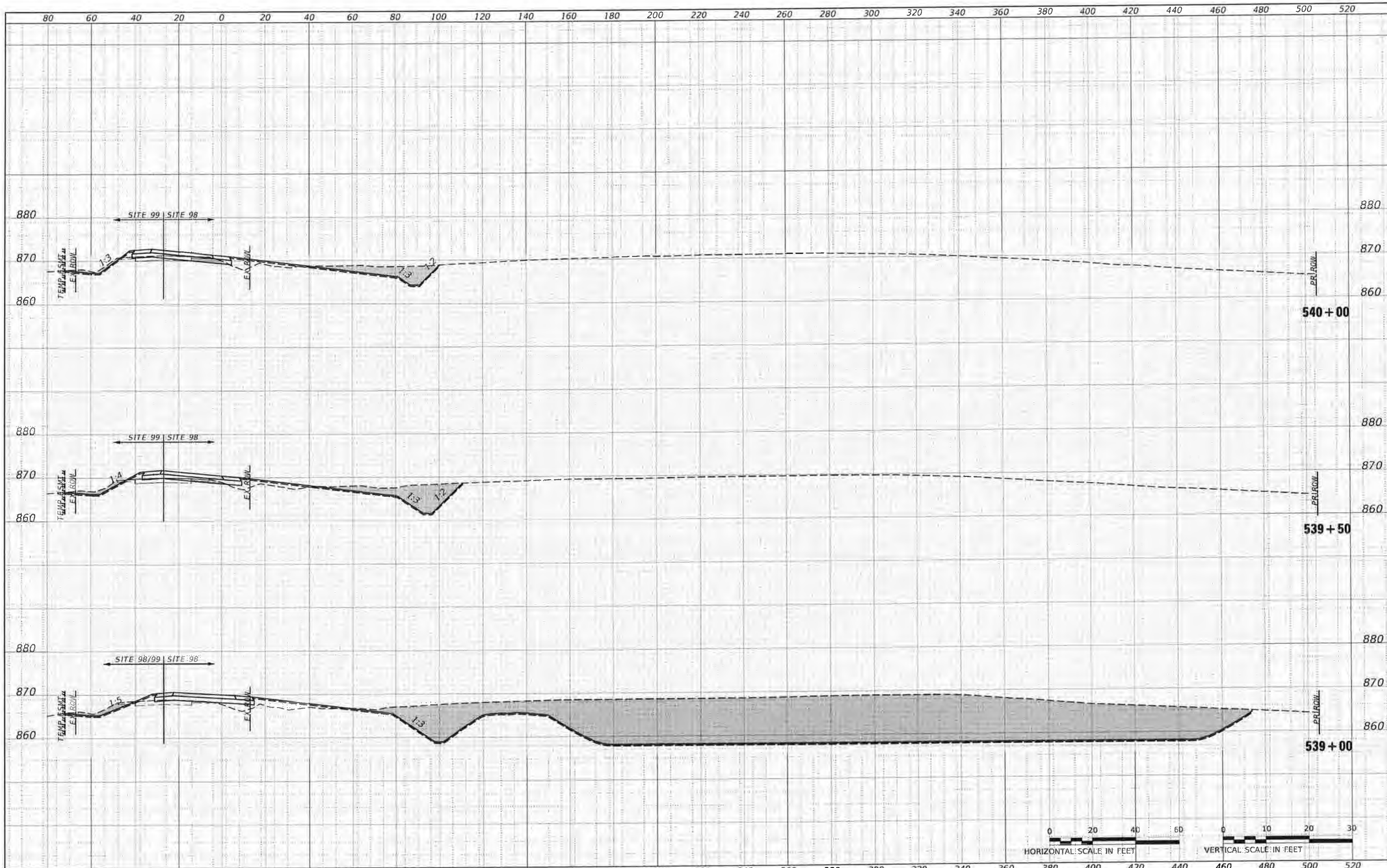


DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	TEMP. ELEVATION
NO.	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	TEMP. ELEVATION
NO.	AREAS CHECKED



MODEL: SPODELEMANES FILE NAME: 111111	USER NAME = wvlering DESIGNED - WEV DRAWN - WEV CHECKED - JCM DATE - JANUARY 9, 2019	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITE CROSS SECTIONS</b> <b>ILLINOIS ROUTE 47</b> SCALE: SEE SCALE SHEET 8 OF 12 SHEETS STA 537+50 TO STA 538+50	<table border="1"> <tr> <th>F A P RTE</th> <th>SECTION</th> <th>COUNTY</th> <th>TOTAL SHEETS</th> <th>SHEET NO</th> </tr> <tr> <td>326</td> <td>(150X8)B-R</td> <td>McHENRY</td> <td>15</td> <td>10</td> </tr> </table> CONTRACT NO. 62AB0 ILLINOIS FED AID PROJECT	F A P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO	326	(150X8)B-R	McHENRY	15	10
F A P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO											
326	(150X8)B-R	McHENRY	15	10											

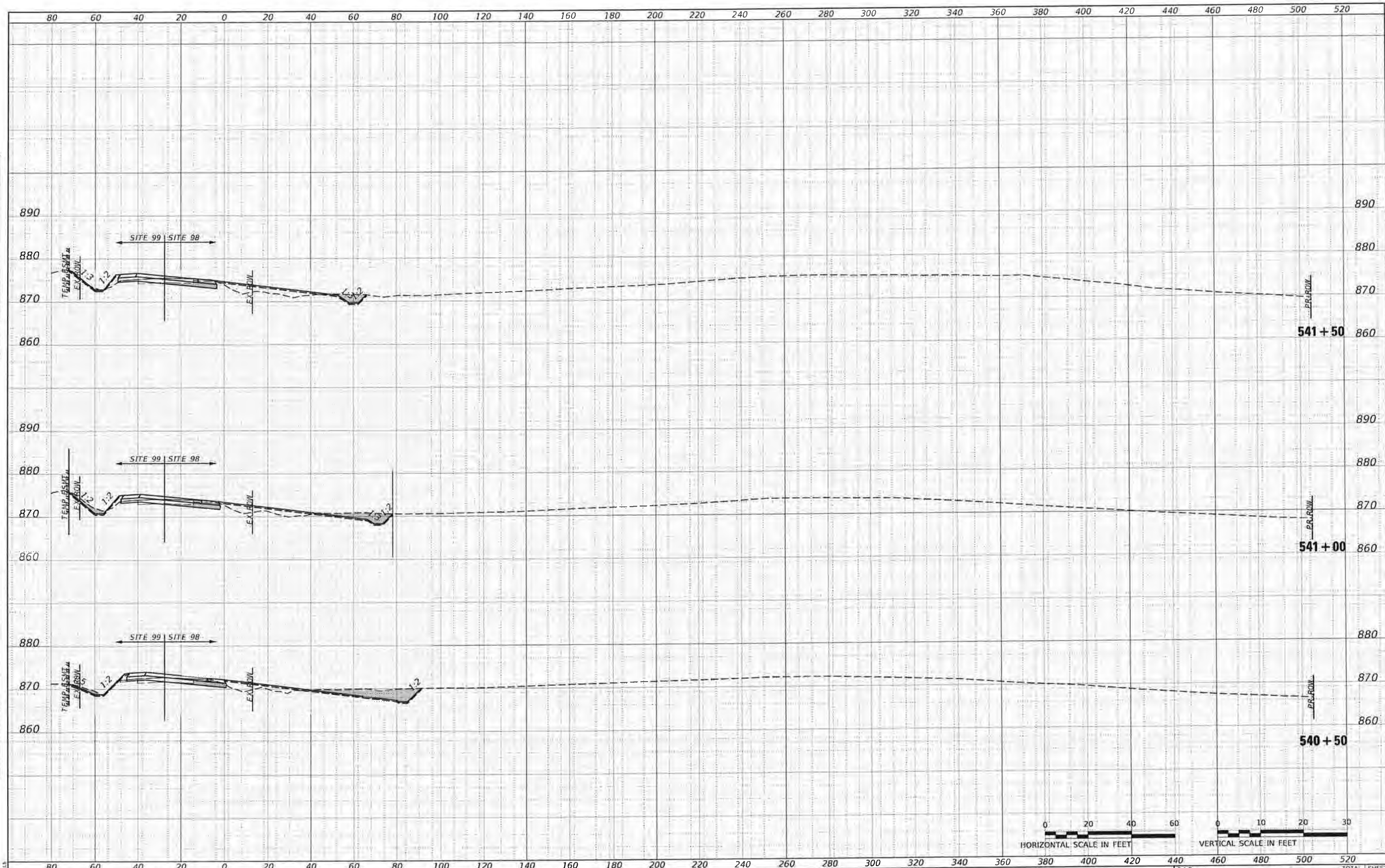


DATE	
BY	
FINAL SURVEY	SURVEYED
NOTED	PLOTTED
NO.	TEMP. ASPH.
	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTED	PLOTTED
NO.	TEMP. ASPH.
	AREAS CHECKED

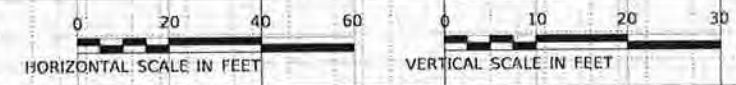


MODEL: SPODEMANIES FILE: NAME: SHEETS	<table border="1"> <tr><td>USER NAME</td><td>= wvlering</td></tr> <tr><td>DESIGNED</td><td>= WEV</td></tr> <tr><td>DRAWN</td><td>= WEV</td></tr> <tr><td>CHECKED</td><td>= JCM</td></tr> <tr><td>DATE</td><td>= JANUARY 9, 2019</td></tr> <tr><td>PLOT SCALE</td><td>= 1:40</td></tr> <tr><td>PLOT DATE</td><td>= 1/9/2019</td></tr> </table>	USER NAME	= wvlering	DESIGNED	= WEV	DRAWN	= WEV	CHECKED	= JCM	DATE	= JANUARY 9, 2019	PLOT SCALE	= 1:40	PLOT DATE	= 1/9/2019	<table border="1"> <tr><td>DESIGNED</td><td>= WEV</td></tr> <tr><td>REVISOR</td><td>=</td></tr> <tr><td>REVISION</td><td>=</td></tr> <tr><td>REVISION</td><td>=</td></tr> <tr><td>REVISION</td><td>=</td></tr> <tr><td>REVISION</td><td>=</td></tr> </table>	DESIGNED	= WEV	REVISOR	=	REVISION	=	REVISION	=	REVISION	=	REVISION	=	<p align="center"><b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b></p>	<p align="center"><b>PESA SITE CROSS SECTIONS ILLINOIS ROUTE 47</b></p>	<table border="1"> <tr><td>F.A.P. RTE</td><td>326</td><td>SECTION</td><td>(150XB)B-R</td><td>COUNTY</td><td>MCHENRY</td><td>TOTAL SHEETS</td><td>15</td><td>SHEET NO.</td><td>11</td></tr> <tr><td colspan="6"></td><td>CONTRACT NO.</td><td colspan="3">62A80</td></tr> <tr><td colspan="10">ILLINOIS FED. AID PROJECT</td></tr> </table>	F.A.P. RTE	326	SECTION	(150XB)B-R	COUNTY	MCHENRY	TOTAL SHEETS	15	SHEET NO.	11							CONTRACT NO.	62A80			ILLINOIS FED. AID PROJECT									
USER NAME	= wvlering																																																												
DESIGNED	= WEV																																																												
DRAWN	= WEV																																																												
CHECKED	= JCM																																																												
DATE	= JANUARY 9, 2019																																																												
PLOT SCALE	= 1:40																																																												
PLOT DATE	= 1/9/2019																																																												
DESIGNED	= WEV																																																												
REVISOR	=																																																												
REVISION	=																																																												
REVISION	=																																																												
REVISION	=																																																												
REVISION	=																																																												
F.A.P. RTE	326	SECTION	(150XB)B-R	COUNTY	MCHENRY	TOTAL SHEETS	15	SHEET NO.	11																																																				
						CONTRACT NO.	62A80																																																						
ILLINOIS FED. AID PROJECT																																																													
SCALE: SEE SCALE				SHEET 9 OF 12 SHEETS		STA 539+00 TO STA 540+00																																																							



FINAL SURVEY	DATE
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL SURVEY	DATE
NOTE BOOK	
AREAS CHECKED	
NO.	



MODEL: SMODELNAME  
FILE NAME: 111111

USER NAME = wvterling	DESIGNED = WEV	REVISED =
PLOT SCALE = 1:40	DRAWN = WEV	REVISED =
PLOT DATE = 1/9/2019	CHECKED = JCM	REVISED =
	DATE = JANUARY 9, 2019	REVISED =

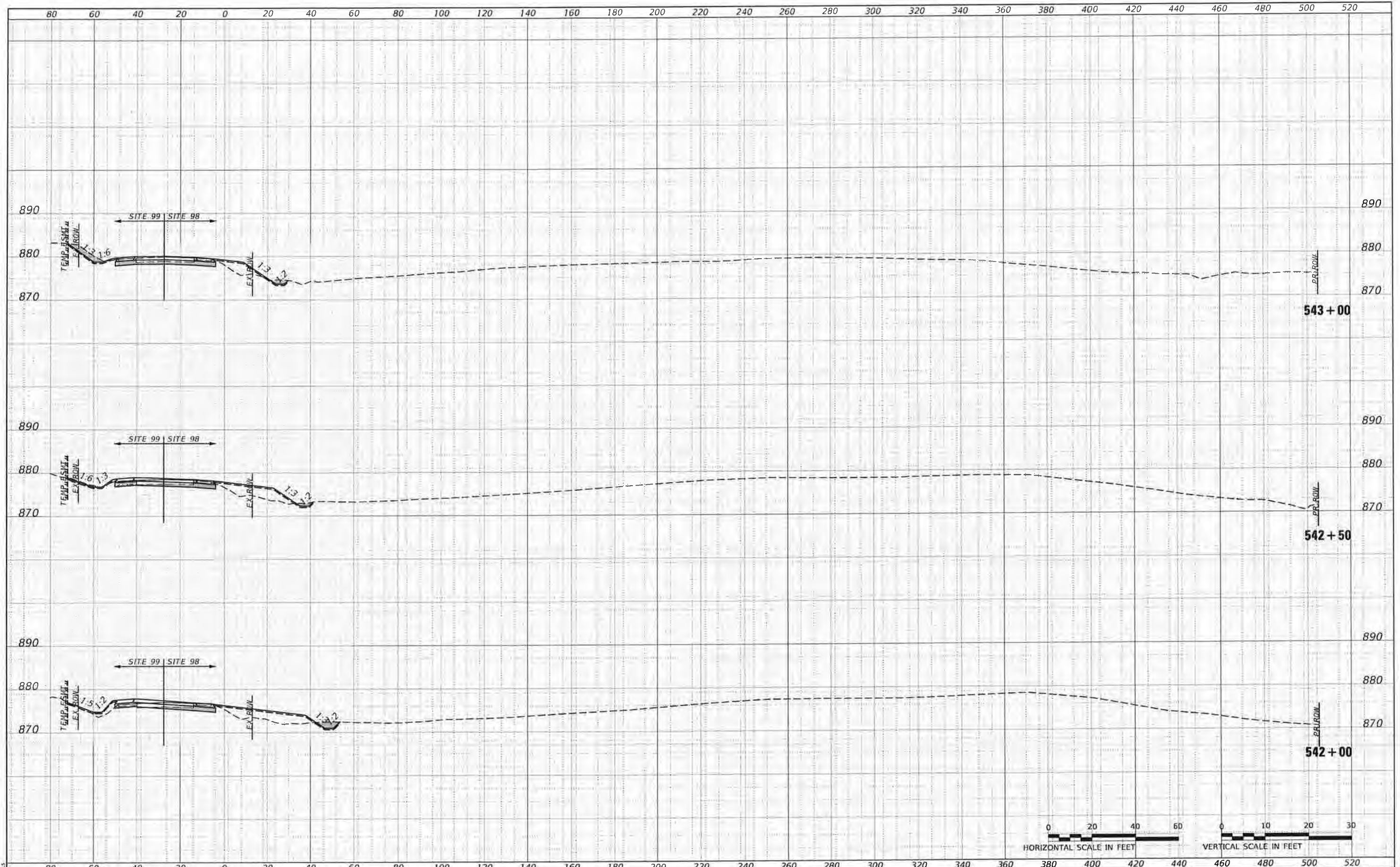
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**  
SCALE: SEE SCALE SHEET 10 OF 12 SHEETS STA 540+50 TO STA 541+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X8)B-R	MCHEMRY	15	12
CONTRACT NO. 62AB0				
ILLINOIS FED. AID PROJECT				

DATE	
NO.	
FINAL SURVEY	SUBMITTED
NOTE BOOK	TEMPLATE
AREAS CHECKED	AREAS CHECKED
NO.	

DATE	
NO.	
ORIGINAL SURVEY	SUBMITTED
NOTE BOOK	TEMPLATE
AREAS CHECKED	AREAS CHECKED
NO.	

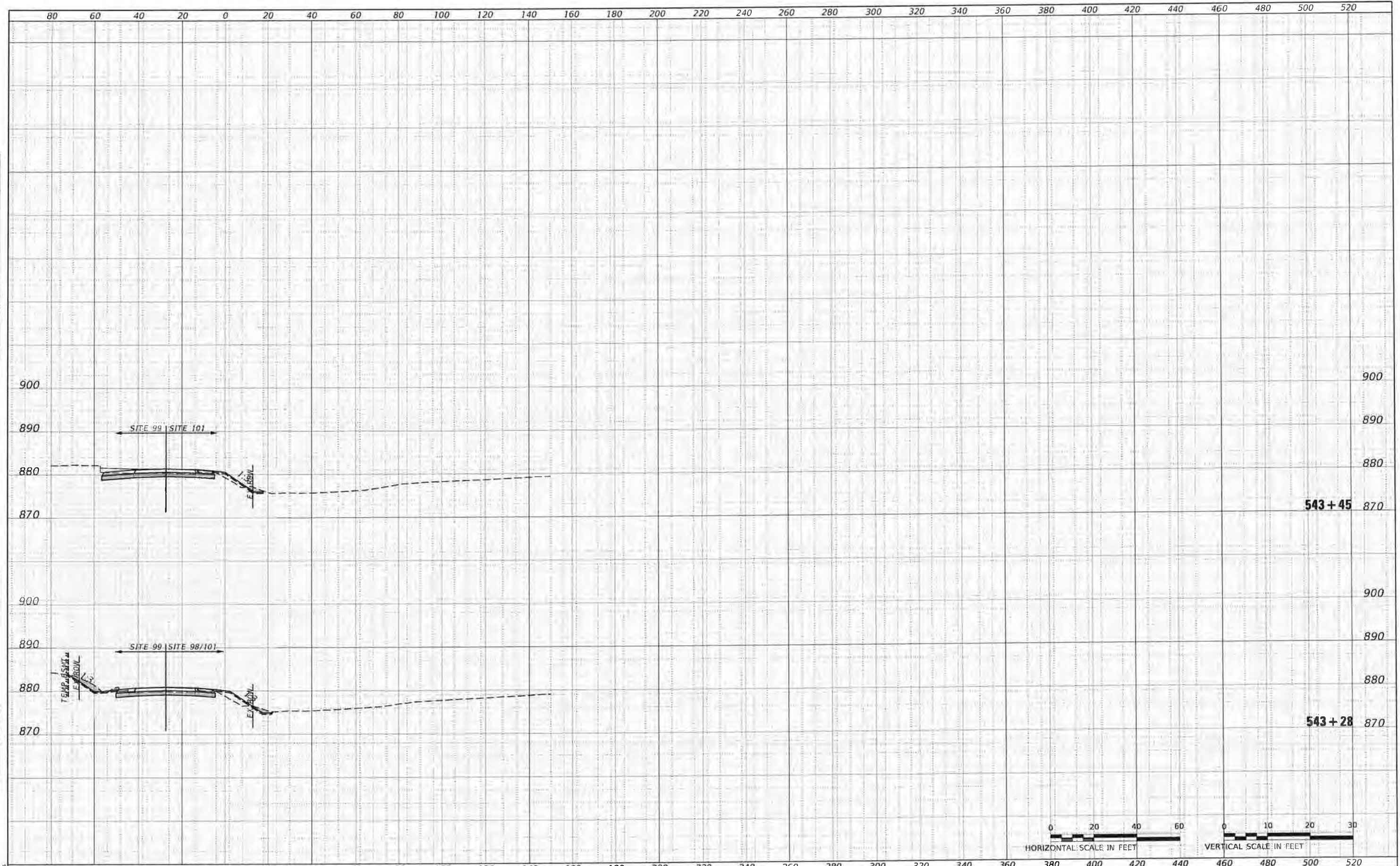


MODEL: BMDLNAME	USER NAME = wvterling	DESIGNED = WEV	REVISED =	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITE CROSS SECTIONS</b> <b>ILLINOIS ROUTE 47</b>	F A P	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
FILE NAME: BFILE	PLLOT SCALE = 1:40	DRAWN = WEV	REVISED =			326	(150X8)B-R	MCHEMRY	15	13	
	PLLOT DATE = 1/9/2019	CHECKED = JCM	REVISED =			CONTRACT NO. 62A80					
		DATE = JANUARY 9, 2019	REVISED =			ILLINOIS FED. AID PROJECT					

SCALE: SEE SCALE SHEET 11 OF 12 SHEETS STA 542+00 TO STA 543+00

FINAL SURVEY NOTE BOOK NO.	DATE
SURVEYED AREAS CHECKED	BY

ORIGINAL SURVEY NOTE BOOK NO.	DATE
SURVEYED AREAS CHECKED	BY



MODEL: SHODENAMES  
FILE NAME: P11LES

USER NAME = wvlering	DESIGNED = WEV	REVISED =
PLOT SCALE = 1:40	DRAWN = WEV	REVISED =
PLOT DATE = 1/9/2019	CHECKED = JCM	REVISED =
	DATE = JANUARY 9, 2019	REVISED =

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

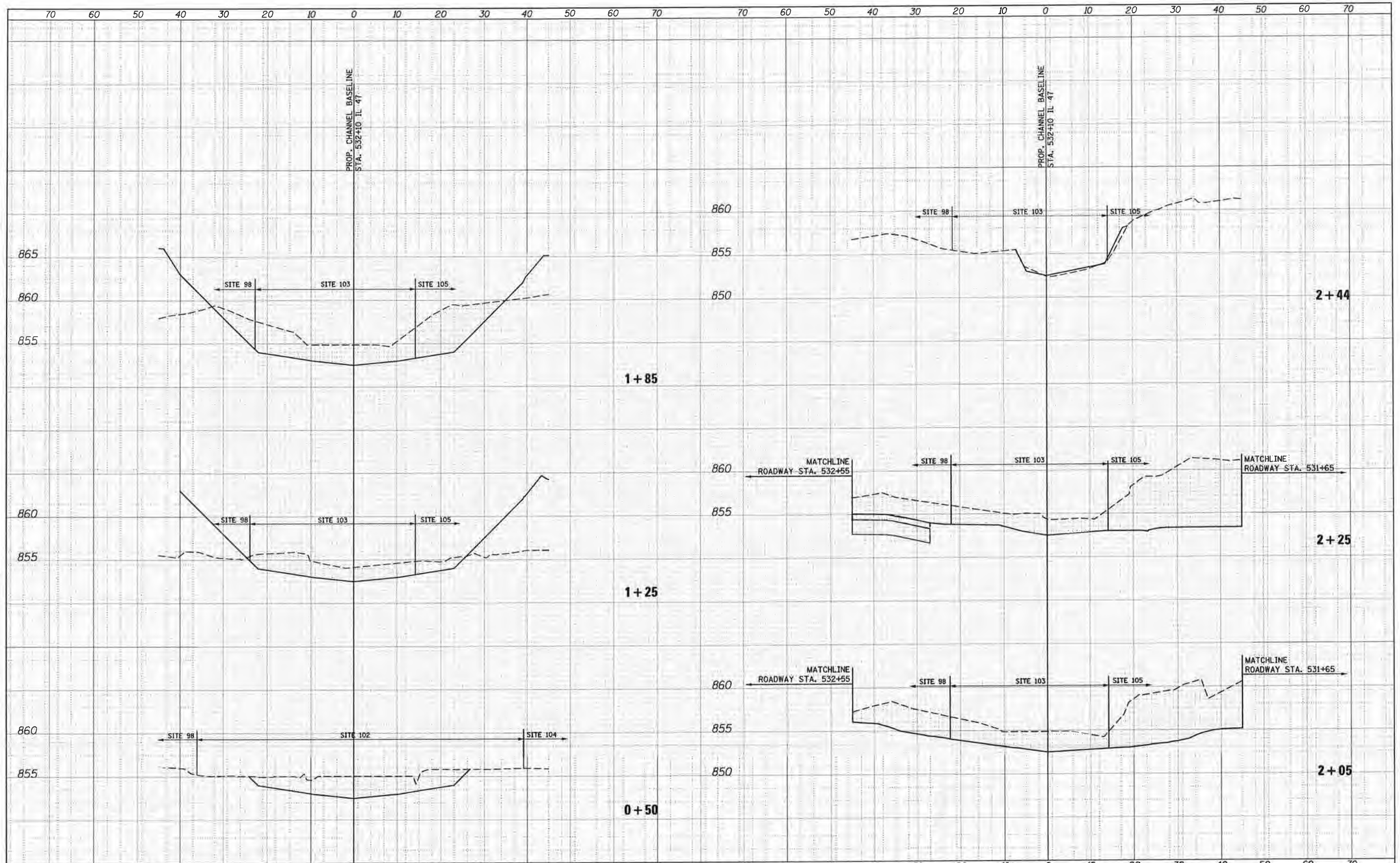
**PESA SITE CROSS SECTIONS  
ILLINOIS ROUTE 47**

SCALE: SEE SCALE SHEET 12 OF 12 SHEETS STA 543+28 TO STA 543+45

F A P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(150X)B-R	McHENRY	15	14
CONTRACT NO. 62AB0			ILLINOIS FED AID PROJECT	

DATE	
TIME	
FINAL SURVEY	SCIPED
NOTE BOOK	TEMP AT
NO.	APR 15 2019

DATE	
TIME	
ORIGINAL SURVEY	SCIPED
NOTE BOOK	TEMP AT
NO.	APR 15 2019



FILE NAME	USER NAME: kve-ling	DESIGNED: WEV	REVISIONS:	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PESA SITE CROSS SECTIONS</b> <b>KISHWAUKEE RIVER</b>	F.A.P. RTE. 326	SECTION (105XB)B-R	COUNTY MCHENRY	TOTAL SHEETS 15	SHEET NO. 15
SCALE: 1"=20'	P.L.D. SCALE 1:20	DRAWN: WEV	REVISIONS:			CONTRACT NO. 62A80				
P.L.D. DATE 1/9/2019	DATE: JANUARY 9, 2019	CHECKED: JCM	REVISIONS:			ILLINOIS FED. AID PROJECT				
		DATE: JANUARY 9, 2019	REVISIONS:							



# KNIGHT

IL 47 PESA

62A80

PROJECT DESCRIPTION

JOB/FILE NO

PESA Excavation Calculation

1 of 1

SUBJECT

PAGE TOTAL

Engineers & Architects

WEV

1/9/2019

JCM

1/9/2019

CALC'D BY

CALC DATE

CHECKED

CHECKED DATE

## Temporary Pavement Excavation for PESA Response

			From Sta	To Sta	Length (ft)	Avg Depth (ft)	Avg Width (ft)	Total Exc. (CY)
Site	98	RT	544+45	547+00	255	1.50	2.99	42
Site	99	LT	543+45	550+12	667	1.50	5.62	208
Site	101	RT	543+45	544+45	100	1.50	9.73	54
Site	104	LT	511+75	519+72	797	1.50	14.93	661
Site	104	RT	513+81	518+24	443	1.50	4.80	118
Site	106	RT	518+95	519+72	77	1.50	13.01	56

# KNIGHT

IL 47 PESA

62A80

PROJECT DESCRIPTION

JOB/FILE NO

PSEA Excavation Calculation

1 of 1

SUBJECT

PAGE TOTAL

Engineers & Architects

WEV

1/8/2019

JCM

1/9/2019

CALCD BY

CALC DATE

CHECKED

CHECKED DATE

## Wildlife Cross Culvert

Invert of unsuitable material = 854.00' (from Unsuitable Material cut calcs)

Site 104 End area at Sta. 531+28 from elev. 854.00' to existing ground = 346.0 SF

Site 105 End area at Sta. 531+28 from elev. 854.00' to existing ground = 755.8 SF

Start station 531+24 -2.67 531+21

Stop Station 531+37

Length 15.84

Site 104 volume = 203 CY

Site 105 volume = 443 CY

SUMMARY TABLE: EARTHWORK FOR PESA  
 FAP 326 Illinois Route 47  
 Union Road/Foster Road to Hawthorne Way

ISGS SITE NUMBER 1789V2-	EXCAVATION LOCATION	VOLUME OF EXCAV [CU YD]	TOTAL EXCAV [CU YD]
98	IL 47 (West Side)	851	31113
	IL 47 (East Side)	8272	
	Channel Excavation	135	
	Compensatory Storage Basin	21855	
99	IL 47 (West Side)	338	338
101	IL 47 (East Side)	4	4
102	Channel Excavation	130	130
103	Channel Excavation	407	407
104	IL 47 (West Side)	4628	4628
	Channel Excavation	0	
105	IL 47 (East Side)	19939	20337
	Channel Excavation	398	
106	IL 47 (East Side)	10933	10933

PESA XSECTIONS IL RTE 47 WEST					
ROADWAY REALIGNMENT					
	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
104	519+72	325	9021	334	
	520+00	324	16225	601	
	520+50	325	16300	604	
	521+00	327	16450	609	
	521+50	331	16625	616	
	522+00	334	8500	315	
	522+50	6	350	13	
	523+00	8	425	16	
	523+50	9	675	25	
	524+00	18	1400	52	
	524+50	38	2650	98	
	525+00	68	3025	112	
	525+50	53	2425	90	
	526+00	44	2375	88	
	526+50	51	1275	47	
	527+00	0	1225	45	
	527+50	49	2575	95	
	528+00	54	2675	99	
	528+50	53	2600	96	
	529+00	51	2525	94	
529+50	50	3775	140		
530+00	101	4050	150		
530+50	61	3150	117		
531+00	65	3500	130		
531+50	75	1140	42		
531+65	77	0	0	4628	

PESA XSECTIONS IL RTE 47 WEST					
ROADWAY REALIGNMENT					
	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
98	532+55	65	2700	100	
	533+00	55	2425	90	
	533+50	42	1950	72	
	534+00	36	1575	58	
	534+50	27	1325	49	
	535+00	26	1375	51	
	535+50	29	1350	50	
	536+00	25	1400	52	
	536+50	31	1600	59	
	537+00	33	1775	66	
	537+50	38	1850	69	
	538+00	36	1900	70	
	538+50	40	1750	65	
	539+00	30	0	0	851
99	539+00	30	1375	51	
	539+50	25	1100	41	
	540+00	19	775	29	
	540+50	12	775	29	
	541+00	19	700	26	
	541+50	9	350	13	
	542+00	5	675	25	
	542+50	22	1625	60	
	543+00	43	1733	64	
	543+45	34			338

PESA XSECTIONS IL RTE 47 EAST					
ROADWAY REALIGNMENT					
ISGS SITE NUMBER 1789V2-	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
106	519+72	22	612	23	
	520+00	22	1150	43	
	520+50	24	1200	44	
	521+00	24	1250	46	
	521+50	26	1175	44	
	522+00	21	11950	443	
	522+50	457	22700	841	
	523+00	451	24125	894	
	523+50	514	25900	959	
	524+00	522	24750	917	
	524+50	468	25075	929	
	525+00	535	32475	1203	
	525+50	764	38950	1443	
	526+00	794	41150	1524	
526+50	852	42650	1580		
527+00	854				10933
105	527+00	854	44400	1644	
	527+50	922	55150	2043	
	528+00	1284	67125	2486	
	528+50	1401	71125	2634	
	529+00	1444	71550	2650	
	529+50	1418	73900	2737	
	530+00	1538	62175	2303	
	530+50	949	43575	1614	
	531+00	794	38300	1419	
	531+50	738	11033	409	
531+65	733				19939

PESA XSECTIONS IL RTE 47 EAST					
ROADWAY REALIGNMENT					
ISGS SITE NUMBER 1789V2-	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
98	532+55	584	23265	862	
	533+00	450	23700	878	
	533+50	498	13525	501	
	534+00	43	2475	92	
	534+50	56	3150	117	
	535+00	70	4450	165	
	535+50	108	6825	253	
	536+00	165	10400	385	
	536+50	251	13675	506	
	537+00	296	16625	616	
	537+50	369	20550	761	
	538+00	453	23650	876	
	538+50	493	20025	742	
	539+00	308	12525	464	
	539+50	193	8400	311	
	540+00	143	6375	236	
	540+50	112	4625	171	
	541+00	73	3050	113	
	541+50	49	2125	79	
	542+00	36	1575	58	
542+50	27	1450	54		
543+00	31	866	32		
	543+28	30			8272
101	543+28	30	510	19	
	543+45	30			4

PESA XSECTIONS IL RTE 47 EAST					
COMPENSATORY STORAGE BASIN					
ISGS SITE NUMBER 1789V2-	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
98	535+00	53	4125	153	
	535+50	112	9525	353	
	536+00	269	24800	919	
	536+50	723	50525	1871	
	537+00	1298	81925	3034	
	537+50	1979	116600	4319	
	538+00	2685	145350	5383	
	538+50	3129	157225	5823	
	539+00	3160	0	0	21855



PESA XSECTIONS KISHWAUKEE RIVER BASELINE					
SITE	STATION	EXCAVATION END-AREA (SQ FT)	EXCAVATION VOLUME (CU FT)	EXCAVATION VOLUME (CU YD)	TOTAL SITE VOLUME (CU YD)
98	0+50	0.0	6	0	
	1+25	0.2	528	20	
	1+85	17.4	736	27	
	2+05	56.2	1496	55	
	2+25	93.4	887	33	
	2+44	0.0			135
102	0+50	92.7	3523	130	
	0+88	92.7			130
104	0+50	0.0	0	0	
	0+88	0.0			0
103	0+88	63.3	2434	90	
	1+25	68.3	4797	178	
	1+85	91.6	1677	62	
	2+05	76.1	1418	53	
	2+25	65.7	636	24	
	2+44	1.2			407
105	0+88	12.6	465	17	
	1+25	12.6	2548	94	
	1+85	72.4	2305	85	
	2+05	158.1	3570	132	
	2+25	198.9	1890	70	
	2+44	0.0			398



May 28, 2019

James Curtis  
Chief, Geologic & Special Waste Unit  
Environment Section, Bureau of Design and Environment  
Illinois Department of Transportation  
2300 Dirksen Parkway, Rm. 330  
Springfield, IL 62764

Dear Mr. Curtis,

Information in this letter pertains to the following project:

Project name:	FAP 326 (IL 47) over the Kishwaukee River
County:	McHenry
Sequence #:	22136A
Job No.:	D91-023-14
ISGS Project:	3751
Survey Target Date:	July 26, 2019
Design Date:	December 8, 2017

This *Site Inspection Letter Report* (SILR) is submitted in response to your request, received by the ISGS on April 26, 2019 to conduct such an assessment for improvements to IL 47 over the Kishwaukee River, unincorporated Grafton Township, McHenry County (Attachment 1). **This letter contains the findings of the site inspection and records search as noted, and will constitute the Final Report for this project. A site inspection has been conducted, and regulatory databases have been checked as noted, but no historical research, interviews, or regulatory file reviews were conducted.** Acquisition of additional ROW or easements, in-stream work, and excavation or subsurface utility relocation are expected. No railroad ROW involvement is anticipated for this project. Stationing information was provided by IDOT in feet for IL 47 only, and is presented as such in this report. All stationing information is approximate, and refers to the approximate midpoint of each site along the ROW. All measurements are approximate and taken from the centerlines of the roads.

### **Project Sites**

Project sites will be described from north to south along IL 47 below. Attachment 1 contains a project location map. Attachment 2 contains a map of all sites discussed in this report. Fieldwork for this project was conducted on May 20, 2019.

This project intersects previous ISGS PESAs and PSIs as follows:

ISGS PESA #	Date submitted to IDOT	Intersects
1789	February 3, 2009	Along IL 47
1789A	June 6, 2011	Along IL 47
1789V	October 28, 2013	Along IL 47
1789V2	August 17, 2016	Along IL 47

**Site 3751-1 (1789A-8, 1789V-91, 1789V2-99). Residences, 11605 Hawthorne Way, and 6414-6518 Suttondale Road, unincorporated Grafton Township (northwest and southwest corners of IL 47 and Hawthorne Way; approximate station 550+00 LT; Attachment 2).** This site is occupied by five residences. A pole-mounted transformer was observed in the Suttondale Road ROW, west of the residence at 6414 Suttondale Road. This site did not appear on any of the regulatory lists checked for this project.

**Site 3751-2 (1789A-7, 1789A-10, 1789A-12, 1789V-90 [partial], 1789V2-98 [partial], 1789V2-104 [partial]). Agricultural land, 7000-8300 blocks of IL 47, unincorporated Grafton Township (northwest, northeast, and southwest quadrants of IL 47 and the Kishwaukee River; approximate stations 514+00 LT, 525+00 LT, 535+00 LT, 539+00 RT, and 549+00 RT; Attachment 2).** This site is occupied by agricultural land. This site did not appear on any of the regulatory lists checked for this project.

**Site 3751-3 (1789A-9, 1789V-93, 1789V2-101). Vacant land, 6600 block of IL 47, unincorporated Grafton Township (east of the IL 47 and Hawthorne Way intersection; approximate station 544+00 RT; Attachment 2).** This site is occupied by vacant grass and tree-covered land. A dirt road extended onto the site from IL 47. Because of a chain extending across the dirt road and no trespassing signs, a complete site inspection was not performed. This site did not appear on any of the regulatory lists checked for this project.

**Site 3751-4 (1789A-6, 1789V-94, 1789V2-102). Kishwaukee River, 6800 block of IL 47, unincorporated Grafton Township (east and west sides of IL 47 between Hawthorne Way and Union/Foster Roads; approximate station 532+00 LT and RT; Attachment 2).** This site is occupied by a river.

This site appears in IEPA's Water Quality Report.

**Site 3751-5 (1789V2-103). Bridge, 6800 block of IL 47, unincorporated Grafton Township (IL 47 over the Kishwaukee River; approximate station 532+00 LT and RT; Attachment 2).** This site is occupied by a painted bridge (S.N. 056-0025) carrying IL 47 over the Kishwaukee River. This site did not appear on any of the regulatory lists checked for this project.

**Site 3751-6 (1789-I, 1789A-5, 1789V-95, 1789V2-105). Brady Trucking, 10960 Foster Road, unincorporated Grafton Township (northeast quadrant of IL 47 and Foster Road; approximate station 530+00 RT; Attachment 2).** This site is occupied by a trucking company. Site features included two sheds and an office building located on the east end of the site. Employee-only signs and a gated entrance prevented access to the remainder of the site and those

site areas were inspected from the IL 47 and Foster Road ROW only.

Under the name "Zimmerman" and the address "Rte 47" in Huntley, this site appears on the BOL list (IEPA #1110350003).

Under the name "IEPA OER" and the address "1096 Foster Rd", this site appears on the BOL list (IEPA #1110353001).

Under the name "Ozinga" and the address "10960 Foster Rd Yd 14" in Huntley, this site appears on the BOL list (IEPA #1114350020).

Under the name "Unk. Costics" and the address "1096 Foster Rd", this site appears on the IEMA non-LUST list (IEMA #910641).

**Site 3751-7 (1789A-4, 1789V-96, 1789V2-106). Residence and pond, 7090 IL 47, unincorporated Grafton Township (northeast corner of IL 47 and Foster Road; approximate station 522+00 RT; Attachment 2).** This site is occupied by a residence, several small storage buildings, and a large pond.

**Site 3751-8 (1789V-98 [partial], 1789V2-108). Beverly Materials, 11217 Foster Road, unincorporated Grafton Township (southeast corner of IL 47 and Foster Road; approximate station 514+00 RT; Attachment 2).** This site is occupied by a gravel and sand pit. Site features included a small scale house at the entrance to the pit and the office building which was on a trailer. A diesel AST was located near the center of this site, approximately 460 m (1,500 ft) east of IL 47 and approximately 220 m (725 ft) south of Foster Road. Several piles of stone, sand, and dirt associated with normal gravel pit operations were located around the site. Employee-only signs and a gated entrance prevented access to the remainder of the site and those site areas were inspected from the IL 47 and Foster Road ROW only.

Under the name "Foster Road Quarry" and the address "11217 Foster Rd", this site appears on the BOL list (IEPA #1114350031).

This letter serves as the final Site Inspection Letter Report for ISGS #3751.

Sincerely,



Craig Decker  
Environmental Site Assessments Section



**Approved:**

\_\_\_\_\_  
Anne Ellison, P.G., State of Illinois  
License #196-000546

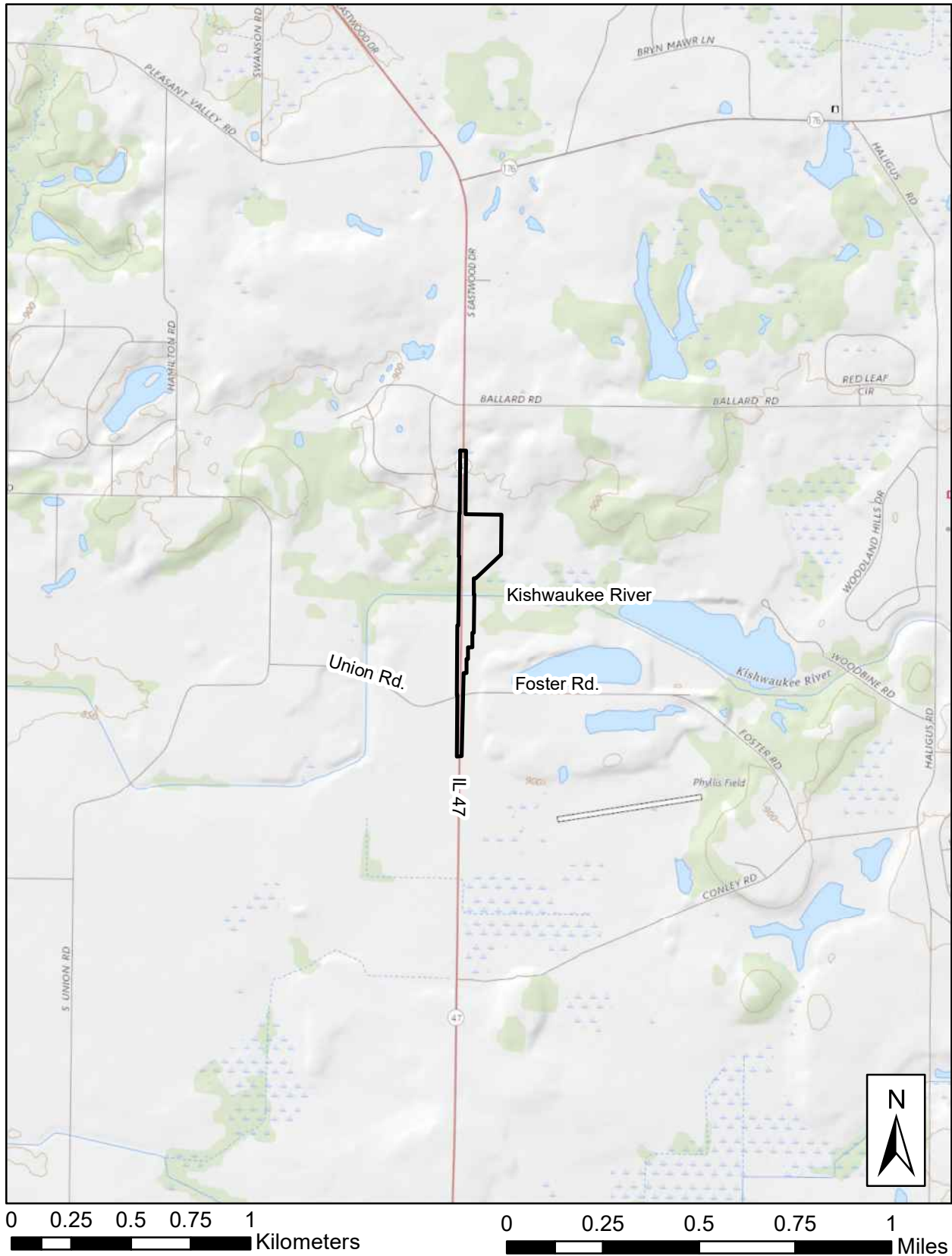
**Date:** 05/28/19



**List of Attachments**

1. Project location map, ISGS #3751.
2. Site location map.

Attachment 1. Project location map, ISGS #3751.  
Project area indicated by heavy black lines.



Attachment 2. Site location map, Sites 3751-1 through 3751-8.  
All site boundaries are approximate and should not be used as actual parcel boundaries.





**APPENDIX B**  
**BORING LOGS**



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-101-01

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/5/19</u> <b>COMPLETED</b> <u>9/5/19</u>	<b>GROUND ELEVATION</b> <u>880 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>AHK</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/5/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/5/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/5/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
1		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; trace Silty and Clay; light brown, moist	1	S-1 (0-1.5)	0.0	2	

: End of boring at 1.5' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample collected
--	---------------------



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-01

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 855 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: TOPSOIL; black, moist					
		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; brown, moist	1	S-1 (0-5)	0.0	3	
		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; black, moist					
2.5		: No Recovery					
		S-2: SAND (SW), well-graded; fine to coarse; with Clay, trace Gravel; brown, moist		S-2 (5-10)		3	
		: Silty CLAY (CL-ML), low plasticity; black, moist					
5.0		: No Recovery					
		S-2: SAND (SW), well-graded; fine to coarse; with Clay, trace Gravel; brown, moist					
		: Silty CLAY (CL-ML), low plasticity; black, moist					
7.5		: No Recovery					
		S-2: SAND (SW), well-graded; fine to coarse; with Clay, trace Gravel; brown, moist					
		: Silty CLAY (CL-ML), low plasticity; black, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-02

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>855 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-5)	0.1	3	
		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2.5							
		: Silty CLAY (CL-ML), low plasticity; black, moist					
5.0							
		S-2: Silty CLAY (CL-ML), low plasticity; with Gravel, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	5	
		: Sandy CLAY (CLS), fine to coarse; gray, moist					
7.5							
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

<b>REMARKS</b>	<ol style="list-style-type: none"> <li>Sample collected</li> <li>Sample and DUP-04 collected</li> </ol>
----------------	---

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-03

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>855 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-5)	0.1	3	
		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2.5							
		: Silty CLAY (CL-ML), low plasticity; black, moist					
5.0							
		S-2: Silty CLAY (CL-ML), low plasticity; with Gravel, fine to coarse; brown, moist	2	S-2 (5-10)	0.1	3	
		: Sandy CLAY (CLS), fine to coarse; gray, moist					
7.5							
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-04

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>856 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-5)	0.2	5	
		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2.5							
		: Silty CLAY (CL-ML), low plasticity; black, moist					
5.0							
		S-2: Silty CLAY (CL-ML), low plasticity; with Gravel, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	2	
		: Sandy CLAY (CLS), fine to coarse; gray, moist					
7.5							
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-05

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>857 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
0.0 - 2.5		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-5)	0.0	3	
2.5 - 5.0		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
5.0 - 7.5		: No Recovery					
7.5 - 10.0		S-2: Silty CLAY (CL-ML), low plasticity; black, moist	2	S-2 (5-10)	0.0	4	
10.0 - 10.0		: Sandy CLAY (CLS), fine to coarse; brown, moist					
10.0 - 10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-104-06

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>897 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-5)	0.0	5	
		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2.5							
		: Silty CLAY (CL-ML), low plasticity; black, moist					
5.0		S-2: Silty CLAY (CL-ML), low plasticity; black, moist	2	S-2 (5-10)	0.0	4	
		: Sandy CLAY (CLS), fine to coarse; brown, moist					
7.5							
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	<ol style="list-style-type: none"> <li>Sample collected</li> <li>Sample and DUP-03 collected</li> </ol>
--	---

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ





Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-105-01

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 859 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

**LOGGED BY** AHK **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	3	
		: No Recovery					
5.0		S-2: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; black, moist	2	S-2 (5-10)	0.0	4	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; brown to gray, moist					
		: No Recovery					
10.0		S-3: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; gray, moist	3	S-3 (10-13.5)	0.0	4	
12.5							

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected
3. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-105-02

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 895 +/- 2 **HOLE SIZE** 2 inches  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**  
**LOGGED BY** AHK **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	3	
5.0		: No Recovery					
7.5		S-2: No Recovery		S-2 (5-10)		0	
10.0		S-3: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; gray, moist	2	S-3 (10-13.5)	0.0	3	
12.5		: No Recovery					

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-105-03

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 884 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	4	
5.0		: No Recovery					
7.5		S-2: Sandy CLAY (CLS), low plasticity; trace Sand, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	4	
10.0		: No Recovery					
12.5		S-3: Silty CLAY (CL-ML), low plasticity; trace Sand, fine to coarse; gray, moist	3	S-3 (10-13.5)	0.0	3	
		: No Recovery					

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample collected 2. Sample collected 3. Sample and DUP-07 collected
--	--

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-105-04

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 882 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

DATE	TIME	DEPTH	CASING	STAB

**LOGGED BY** AHK **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	3	
5.0		: No Recovery					
7.5		S-2: Sandy CLAY (CLS), low plasticity; trace Sand, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	4	
10.0		: No Recovery					
12.5		S-3: Silty CLAY (CL-ML), low plasticity; trace Sand, fine to coarse; gray, moist	3	S-3 (10-13.5)	0.1	3	
		: No Recovery					

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected
3. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-105-05

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/4/19</u> <b>COMPLETED</b> <u>9/4/19</u>	<b>GROUND ELEVATION</b> <u>891 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>AHK</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB															
DATE	TIME	DEPTH	CASING	STAB																	
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: Sandy CLAY (CLS), low plasticity; trace Sand, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	1	
7.5		: No Recovery					
10.0		S-3: Silty CLAY (CL-ML), low plasticity; trace Sand, fine to coarse; gray, moist	3	S-3 (10-13.5)	0.0	3	
12.5		: No Recovery					

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected  
 3. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

**BORING NUMBER 1789V2-106-01**

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 858 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		Surface: TOPSOIL; black, moist					
1		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; brown, black @ 1ft, moist	1	S-1 (0-1.5)	0.0	2	

: End of boring at 1.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-106-02

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 860 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: ASPHALT and Gravel, fine to coarse; black, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay fill; brown to black, moist	1	S-1 (0-5)	0.4	4	
5.0		S-2: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay fill; brown to black, moist	2	S-2 (5-10)	0.0	4	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

**BORING NUMBER 1789V2-106-03**

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 857 +/- 2 **HOLE SIZE** 2 inches  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**  
**LOGGED BY** AHK **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; black to brown, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; black to brown, moist	2	S-2 (5-10)	0.0	4	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample and DUP-05 collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ





Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-106-04

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 859 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

**LOGGED BY** AHK **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; black to brown, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; dark brown, moist	2	S-2 (5-10)	0.0	4	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-106-05

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19 **COMPLETED** 9/4/19 **GROUND ELEVATION** 863 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

**LOGGED BY** AHK **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; black to brown, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; dark brown, moist	2	S-2 (5-10)	0.0	2	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-106-06

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 861 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; black to brown, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; dark brown, moist	2	S-2 (5-10)	0.0	2	
7.5		: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown, moist					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-106-07

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 862 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; black to brown, moist	2	S-2 (5-10)	0.0	2	
7.5		: No Recovery					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	<ol style="list-style-type: none"> <li>1. Sample and DUP-06 collected</li> <li>2. Sample collected</li> </ol>
--	---

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-01

**CLIENT** Illinois Department of Transportation, District One  
**PROJECT NUMBER** 81.0220509.48  
**DATE STARTED** 9/3/19 **COMPLETED** 9/3/19  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push  
**LOGGED BY** JMC **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

**PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**GROUND ELEVATION** 886 +/- 2 **HOLE SIZE** 2 inches

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-4.5)	0.2	5	
1 to 3		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
3 to 5		: No Recovery					

: End of boring at 5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample and DUP-02 collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-02

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>862 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 - 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-4.5)	0.2	3	
1 - 3		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
3 - 5		: No Recovery					

: End of boring at 5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-03

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/3/19      **COMPLETED** 9/3/19      **GROUND ELEVATION** 864 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** JMC      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-4.5)	0.1	4	
1 to 4		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
4 to 5		: No Recovery					

: End of boring at 5' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample and DUP-01 collected
--	--------------------------------

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

**BORING NUMBER 1789V2-98-04**

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/3/19 **COMPLETED** 9/3/19 **GROUND ELEVATION** 865 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** JMC **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-4.5)	0.0	3	
1 to 3		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
3 to 5		: No Recovery					

: End of boring at 5' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample and collected
--	-------------------------

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ





Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-05

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**DATE STARTED** 9/5/19      **COMPLETED** 9/5/19      **GROUND ELEVATION** 879 +/- 2      **HOLE SIZE** 2 inches  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**  
**LOGGED BY** AHK      **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		: TOPSOIL; and Gravel; trace Clay and Sand; tan to brown, moist					
		S-1: TOPSOIL; and Gravel; trace Clay and Sand; tan to brown, moist	1	S-1 (0-5)	0.0	3	
2.5		: SAND (SW), fine to coarse; and Gravel; some silty Clay; brown, moist					
		: No Recovery					
5.0		S-2: SAND (SW), fine to coarse; and Gravel; some silty Clay; brown, moist	2	S-2 (5-10)	0.0	4	
		: Silty CLAY (CL-ML), low plasticity; trace Topsoil; black to brown, moist					
7.5		: SAND (SW), well-graded, fine to coarse; and Gravel; trace Clay; tan, moist					
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-06

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/5/19      **COMPLETED** 9/5/19      **GROUND ELEVATION** 873 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		: TOPSOIL; trace silty Sand; brown, moist					
		S-1: TOPSOIL; trace silty Sand; brown, moist	1	S-1 (0-5)	0.0	2	
2.5		: No Recovery					
		S-2: SAND (SW), fine to coarse; trace silty Clay and Gravel; tan, moist	2	S-2 (5-10)	0.0	2	
7.5		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample and DUP-08 collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-07

**CLIENT** Illinois Department of Transportation, District One  
**PROJECT NUMBER** 81.0220509.48  
**DATE STARTED** 9/5/19 **COMPLETED** 9/5/19  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push  
**LOGGED BY** AHK **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

**PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**GROUND ELEVATION** 868 +/- 2 **HOLE SIZE** 2 inches

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

**GROUND WATER LEVELS (ft, bgs):**

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		: TOPSOIL; and silty Sand; with Gravel; brown, moist					
1.0		S-1: TOPSOIL; and silty Sand; with Gravel; brown, moist	1	S-1 (0-5)	0.0	2	
2.5		: No Recovery					
5.0		S-2: Silty CLAY (CL-ML), low plasticity; black to tan, moist	2	S-2 (5-10)	0.0	5	
7.5		: Silty CLAY (CL-ML), low plasticity; tan to gray, moist					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-08

**CLIENT** Illinois Department of Transportation, District One  
**PROJECT NUMBER** 81.0220509.48  
**DATE STARTED** 9/5/19 **COMPLETED** 9/5/19  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push  
**LOGGED BY** AHK **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

**PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**GROUND ELEVATION** 865 +/- 2 **HOLE SIZE** 2 inches

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		: TOPSOIL; and Sand; with Gravel; brown, moist					
		S-1: Silty CLAY (CL-ML), low plasticity; and Topsoil; black, moist	1	S-1 (0-5)	0.0	3	
2.5		: Silty CLAY (CL-ML), low plasticity; and Topsoil; brown, moist					
		: No Recovery					
5.0		S-2: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; light brown and gray, moist	2	S-2 (5-10)	0.0	5	
7.5		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-09

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/4/19</u> <b>COMPLETED</b> <u>9/4/19</u>	<b>GROUND ELEVATION</b> <u>863 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>AHK</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/4/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/4/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/4/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; little Silt; brown, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: Silty CLAY (CL-ML), low plasticity; trace Sand and Gravel, fine to coarse; dark brown to gray, moist	2	S-2 (5-10)	0.0	4	
7.5		: No Recovery					
10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**  
 1. Sample collected  
 2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-10

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/4/19      **COMPLETED** 9/4/19      **GROUND ELEVATION** 862 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/4/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		Surface: GRAVEL (GW), well-graded, fine to coarse; and Sand; brown, moist					
2.5		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; with Clay; brown to black, moist	1	S-1 (0-5)	0.0	4	
5.0		S-2: Sandy CLAY (CLS), low plasticity; trace Sand, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	4	
7.5		: No Recovery					
10.0		: No Recovery					

: End of boring at 13.5' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-11

**CLIENT** Illinois Department of Transportation, District One **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48 **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/5/19 **COMPLETED** 9/5/19 **GROUND ELEVATION** 862 +/- 2 **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push **GROUND WATER LEVELS (ft, bgs):**

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

**LOGGED BY** AHK **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
0.0 - 2.5		: TOPSOIL; and Clay; dark brown, moist					
2.5 - 5.0		S-1: SAND (SW), well-graded, fine to coarse; and Gravel; little Silt; brown, moist	1	S-1 (0-5)	0.4	5	
5.0 - 7.5		: Silty CLAY (CL-ML), low plasticity; dark brown, moist					
7.5 - 10.0		S-2: Sandy CLAY (CLS), fine to coarse; some Silt; light gray to light tan, moist	2	S-2 (5-10)	0.0	3	
7.5 - 10.0		: SAND (SW) well-graded; trace Silt and Clay, fine to coarse; light tan, moist					
7.5 - 10.0		: No Recovery					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-12

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/5/19      **COMPLETED** 9/5/19      **GROUND ELEVATION** 869 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		: TOPSOIL; and Clay; brown, moist					
		S-1: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; brown, moist	1	S-1 (0-5)	0.0	5	
2.5							
		S-2: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; brown, moist	2	S-2 (5-10)	0.0	5	
5.0							
		: SAND (SW), well-graded, fine to coarse; and Silt; brown, moist					
7.5							
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ





Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-13

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/5/19</u> <b>COMPLETED</b> <u>9/5/19</u>	<b>GROUND ELEVATION</b> <u>868 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>AHK</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/5/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/5/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/5/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		: TOPSOIL; and Clay; brown, moist					
2.5		S-1: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; brown, moist	1	S-1 (0-5)	0.0	5	
5.0		S-2: Silty CLAY (CL-ML), low plasticity; brown, moist	2	S-2 (5-10)	0.0	5	
7.5							
10.0		: SAND (SW), well-graded, fine to coarse; trace Gravel and Silt; light brown, moist					

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

<b>REMARKS</b>	1. Sample collected 2. Sample collected
----------------	--

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-14

**CLIENT** Illinois Department of Transportation, District One  
**PROJECT NUMBER** 81.0220509.48  
**DATE STARTED** 9/5/19 **COMPLETED** 9/5/19  
**DRILLING CONTRACTOR** GSG Consultants, Inc.  
**DRILLING METHOD** Direct Push  
**LOGGED BY** AHK **CHECKED BY** JJR  
**DRILL RIG** 7822DT Track Geoprobe

**PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI  
**PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL  
**GROUND ELEVATION** 868 +/- 2 **HOLE SIZE** 2 inches

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP181.0220042.06\_BORING LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		: TOPSOIL; and Clay; dark brown, moist					
		S-1: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; brown, moist	1	S-1 (0-5)	0.0	3	
		: SAND (SW), fine to coarse; with Silt; some Gravel; tan, moist					
2.5							
		: No Recovery					
5.0		S-2: SAND (SW), fine to coarse; with Silt; some Gravel; tan, moist	2	S-2 (5-10)	0.0	3	
		: Silty CLAY (CL-ML), low plasticity; gray, moist					
7.5							
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

- REMARKS**
1. Sample collected
  2. Sample collected



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-98-15

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/5/19      **COMPLETED** 9/5/19      **GROUND ELEVATION** 869 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** AHK      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/5/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0							
		: TOPSOIL; and Clay; light brown, moist					
2.5		S-1: Silty CLAY (CL-ML), low plasticity; light brown to tan, moist	1	S-1 (0-5)	1.0	5	
5.0		: SAND (SW), fine to coarse; trace Silt; tan, moist					
		S-2: Silty CLAY (CL-ML), low plasticity; brown, moist	2	S-2 (5-10)	0.2	2	
7.5		: SAND (SW), fine to medium; trace Silt; tan, moist					
		: No Recovery					
10.0							

: End of boring at 10' BGS. Boring immediately backfilled with remaining soil

**REMARKS**

1. Sample collected
2. Sample collected

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06 - BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-99-01

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/3/19      **COMPLETED** 9/3/19      **GROUND ELEVATION** 867 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** JMC      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-1)	0.1	2	
1 to 2		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2		: End of boring at 2' BGS. Boring immediately backfilled with remaining soil					
<b>REMARKS</b>		1. Sample collected					

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-99-02

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/3/19      **COMPLETED** 9/3/19      **GROUND ELEVATION** 872 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** JMC      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-1)	0.2	2	
1 to 2		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					

: End of boring at 2' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample collected
--	---------------------

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

**BORING NUMBER 1789V2-99-03**

**CLIENT** Illinois Department of Transportation, District One      **PROJECT NAME** IL-47 Union to Hawthorne, Huntley, PSI

**PROJECT NUMBER** 81.0220509.48      **PROJECT LOCATION** Huntley/Woodstock, McHenry County, IL

**DATE STARTED** 9/3/19      **COMPLETED** 9/3/19      **GROUND ELEVATION** 874 +/- 2      **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** GSG Consultants, Inc.

**DRILLING METHOD** Direct Push      **GROUND WATER LEVELS (ft, bgs):**

**LOGGED BY** JMC      **CHECKED BY** JJR

**DRILL RIG** 7822DT Track Geoprobe

DATE	TIME	DEPTH	CASING	STAB
9/3/2019	DD	DRY		

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-1)	0.2	2	
1 to 2		: Silty CLAY (CL-ML), low plasticity; with Rocks and Gravel, fine to coarse; brown, moist					
2		: End of boring at 2' BGS. Boring immediately backfilled with remaining soil					

<b>R E M A R K S</b>	1. Sample collected
--	---------------------

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ



Huff & Huff, Inc.  
 915 Harger Road, Suite 330  
 Oak Brook, IL 60523  
 (630)-984-9100

# BORING NUMBER 1789V2-99-04

<b>CLIENT</b> <u>Illinois Department of Transportation, District One</u>	<b>PROJECT NAME</b> <u>IL-47 Union to Hawthorne, Huntley, PSI</u>																				
<b>PROJECT NUMBER</b> <u>81.0220509.48</u>	<b>PROJECT LOCATION</b> <u>Huntley/Woodstock, McHenry County, IL</u>																				
<b>DATE STARTED</b> <u>9/3/19</u> <b>COMPLETED</b> <u>9/3/19</u>	<b>GROUND ELEVATION</b> <u>879 +/- 2</u> <b>HOLE SIZE</b> <u>2 inches</u>																				
<b>DRILLING CONTRACTOR</b> <u>GSG Consultants, Inc.</u>																					
<b>DRILLING METHOD</b> <u>Direct Push</u>	<b>GROUND WATER LEVELS (ft, bgs):</b>																				
<b>LOGGED BY</b> <u>JMC</u> <b>CHECKED BY</b> <u>JJR</u>	<table border="1"> <thead> <tr> <th>DATE</th> <th>TIME</th> <th>DEPTH</th> <th>CASING</th> <th>STAB</th> </tr> </thead> <tbody> <tr> <td>9/3/2019</td> <td>DD</td> <td>DRY</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	TIME	DEPTH	CASING	STAB	9/3/2019	DD	DRY												
DATE	TIME	DEPTH	CASING	STAB																	
9/3/2019	DD	DRY																			
<b>DRILL RIG</b> <u>7822DT Track Geoprobe</u>																					

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0							
0 to 1		S-1: TOPSOIL & Vegetation; black, moist	1	S-1 (0-1)	0.0	2	
1 to 2		: Silty CLAY (CL-ML), low plasticity; trace Gravel, fine to coarse; brown, moist					

: End of boring at 2' BGS. Boring immediately backfilled with remaining soil

<b>R E M A R K S</b>	1. Sample collected
--	---------------------

ENVIRONMENTAL BH COLUMN W/ REMARKS - GINT STD US LAB.GDT - 9/18/19 09:16 - C:\USERS\CHRISTINE.CANOIDES\KTOP\81.0220042.06\_BORING LOGS.GPJ