RCRA CORRECTIVE ACTION
INTERIM MEASURES WORK PLAN
ELLIOTT DITCH – REACHES 4-6 SOIL
& ISOLATED SEDIMENT REMEDIATION

ARCONIC LAFAYETTE OPERATIONS
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LAFAYETTE, INDIANA 47905

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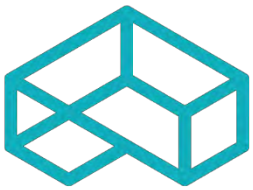

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 GENERAL 1
1.1.1 Facility Description 1
1.1.2 Description of Elliott Ditch 1
1.2 CONSENT DECREE AND RCRA CORRECTIVE ACTION 3
1.3 RISK-BASED REMEDIATION 3
1.4 PCB RELEASE DATE 4

2.0 ELLIOTT DITCH FIELD SAMPLING ASSESSMENT 5
2.1 INVESTIGATION STRATEGY 5
2.2 INVESTIGATIONS SCOPE 6
2.2.1 Sediment Investigation Results Summary 7
2.2.2 Soil Investigation Results Summary 8

3.0 ELLIOTT DITCH REACHES 4 THROUGH 6 SOIL AND ISOLATED SEDIMENT INTERIM MEASURES OVERVIEW 10
3.1 INTRODUCTION 10
3.2 OBJECTIVE 10
3.2.1 Regulations or Guidance to Support the Interim Measures Approach 11
3.3 PERMITTING AND PLANNING REQUIREMENTS 12
3.3.1 Community Relations Plan 12
3.3.2 Private Property Owner Access and Use Agreements 13
3.3.3 USACE Nationwide Permit 38 – Clean Up of Hazardous and Toxic Waste 14
3.3.4 IDEM Section 401 Water Quality Certification 14
3.3.5 IDNR Construction in a Floodway Permit 14
3.3.6 Erosion and Sedimentation Control 15

4.0 ELLIOTT DITCH REACHES 4 THROUGH 6 SOIL AND ISOLATED SEDIMENT INTERIM MEASURES CLEAN UP PLAN 16
4.1 REACHES 4 AND 5 ISOLATED SEDIMENT CLEAN UP PLAN 16
4.2 REACHES 4 THROUGH 6 SOIL CLEAN UP PLAN 20
4.3 DECONTAMINATION OF HEAVY EQUIPMENT 24
4.4 WASTE MANAGEMENT 25
4.4.1 Liquid Waste 25
4.4.2 Solid Waste 25
4.4.2.1 Potential RCRA Subtitle D Facilities 26
4.4.2.2 Potential RCRA Subtitle C Facilities 26
4.4.2.3 Potential TSCA Landfills 26
4.5 POST EXCAVATION CONFIRMATION SAMPLING 26
4.5.1 CONFIRMATION SAMPLING APPROACH 27
4.5.1.1 Soil Excavation Bottoms 27
4.5.1.2 Sediment Bottoms 29
4.5.1.3 Soil and Sediment Sidewalls 30

TABLE OF CONTENTS

4.5.2 SAMPLE PROCESSING AND ANALYSIS 30
4.5.2.1 Incremental Sampling Methodology Samples 30
4.5.2.2 Sediment Bottom Samples 31
4.5.2.3 Soil and Sediment Sidewall Samples 32
4.6 POST CONSTRUCTION REPORT 32

TABLES

Table 1 – Soil Sampling PCB Analytical Results

FIGURES

Figure 1 – Elliott Ditch Vicinity Map
Figure 2 – Elliott Ditch Reaches 4-6 IM Project Area
Figure 3 – Reaches 4-6 Sediment Excavation Overview
Figure 3A – Reaches 4-6 Sediment Excavation Milepost 01.77
Figure 3B – Reaches 4-6 Sediment Excavation Milepost 02.36
Figure 4A – Soil Remediation Areas – Reaches 4/5
Figure 4B – Soil Remediation Areas – Reaches 5/6
Figure 5 – Properties Containing Soil or Sediment for Remediation
Figure 6A – Sediment Excavation and Backfill Profile Reach 4 (Milepost 01.77)
Figure 6B – Sediment Excavation and Backfill Profile Reach 5 (Milepost 02.36)
Figure 7A – Reaches 4/5 Geomorphic Surfaces for Additional Delineation
Figure 7B – Reaches 5/6 Geomorphic Surfaces for Additional Delineation
Figure 8 – Typical Soil Sampling ISM Grid Layout – T4 Terrace at Mile Post 01.70
Figure 9 – TSCA Bottom & Sidewall Confirmation Sampling Schematic

APPENDICES

Elliott Ditch Geomorphic Surface Mapping and Historic Data Review (TetraTech CES) I
Field Sampling Plan - Elliott Ditch (TetraTech CES) II
Community Relations Plan for Reaches 4 thru 6 III

1.0 INTRODUCTION

1.1 GENERAL

Arconic Corporation (Arconic) Lafayette Operation (Facility), located at 3131 East Main Street in Fairfield Township, Tippecanoe County, Lafayette, Indiana is engaged in the production of aluminum extrusions serving an international market. Manufactured materials include tube, aerospace components, and oil and gas drilling products.

The purpose of this Interim Measures Work Plan (IMWP) is to outline the approach for the remediation of polychlorinated biphenyl (PCB) impacted sediment and isolated soil within Reaches 4 through 6 of Elliott Ditch, which extends from the 9th Street Bridge to just downstream of the Old Romney Road Bridge based on geomorphologic mapping. PCB impacts to soil and sediment of Elliott Ditch are believed to be associated with historic discharges from Facility Outfall 001. A risk-based remedial approach, as identified in 40 CFR 761.61(c), is proposed for the sediment and soil targeted for removal as part of this Interim Measures (IM) Project. This IMWP is being submitted to the Indiana Department of Environmental Management (IDEM) and the U.S. Environmental Protection Agency (USEPA), Region 5 to satisfy the notification requirements in 40 CFR 761.61(c). The remedial strategy is to remove the PCB impacted sediment and soil to meet the project-specific, risk-based remedial objective (RBRO). The removed materials will be managed off-site at an appropriately permitted facility.

1.1.1 Facility Description

Lafayette Operation began production at the site in 1937 and currently it includes 2.3-million square feet of operations on 172-acres. The Facility is located within the northwest 1/4 of Section 34, Township 23 North, Range 4 West on the Lafayette East Indiana, USGS 7.5 Minute Topographic Series Map (Latitude: 040° 23' 26", Longitude: 086° 51' 43"). Topographic relief in the area ranges from approximately 650 to 670-feet above mean sea level (MSL). The locations of the Facility and Elliott Ditch are shown on **Figure 1**.

1.1.2 Description of Elliott Ditch

Elliott Ditch is a tributary to Wea Creek, which is a tributary to the Wabash River, just downstream of Lafayette, Indiana. Please refer to **Figure 1** for the location of Elliott Ditch and its associated streams. The ditch is identified as a regulated drain until the 9th Street crossing, slightly more than 1.60 miles downstream of Facility Outfall 001. The Tippecanoe County Drainage Board maintains the regulated drains within the county, subject to Indiana Code (IC) 36-9-27. Regulated drains include an easement that typically extends 75-feet from the top of each bank. These easements are intended to provide access for maintenance activities to support proper functionality of the drain. The easement areas have construction restrictions regarding the types of improvements that can be

made by private property owners without drainage board approval. No additional investigation or remedial activities are planned for the sections of Elliott Ditch within the regulated drain.

Elliott Ditch receives wastewater and storm water discharges from local, industrial sources some of which are monitored under the National Pollution Discharge Elimination System (NPDES). Part of the flow to Elliott Ditch includes receiving water from a NPDES permitted outfall (Outfall 001) of the Facility. Water from Outfall 001 discharges to Elliott Ditch approximately 1-mile south of the Facility. Discharge from the outfall includes treated sanitary and industrial process water, as well as storm water. The distance from Outfall 001 to the Elliott Ditch and Wea Creek confluence is 4.1 miles and to the Wabash River and Wea Creek confluence is 7.5 miles. The geomorphic surface mapping completed for Elliott Ditch by TetraTech CES, as documented in its *Elliott Ditch Geomorphic Surface Mapping and Historic Data Review (Geomorphic Study)* dated July 6, 2015, (see **Appendix I**) suggests that Elliott Ditch has eight distinct reaches (erosional/depositional regimes) downgradient of the Outfall 001, as identified in the following:

- Reach 1: Outfall 001 to downstream of the railroad bridge
- Reach 2: The railroad bridge to the South 18th Street Bridge
- Reach 3: South 18th Street Bridge to upstream of the 9th Street Bridge
- Reach 4: South 9th Street Bridge to north of Brookside Drive
- Reach 5: North of Brookside Drive to downstream of Poland Hill Road
- Reach 6: Downstream of Poland Hill Road to downstream of Old Romney Road Bridge
- Reach 7: Downstream of Old Romney Road Bridge to upstream of US Hwy 231 South Bridge
- Reach 8: Upstream of US Hwy to the Elliott Ditch – Wea Creek confluence

As previously noted, the subject of this IMWP are Reaches 4 through 6. Attached **Figure 2** depicts Reaches 4 – 6 in relation to Outfall 001. These are the first three reaches downstream of the regulated drain portion of Elliott Ditch where anthropogenic characteristics are prevalent. More specifically, Reach 4 is the first naturally occurring portion downstream of Outfall 001 from the Facility. The general geomorphic nature of these three reaches, as documented in the *Geomorphic Study*, are as follows:

- Reach 4 is the first naturally occurring reach of the ditch downstream of Outfall 001, featuring meanders and increased sinuosity compared to upstream reaches. Channel gradient increases to 20-feet/mile. Terraces adjacent to the ditch include T-4 through T-6, indicating steep banks. Deposition in the overbank is still limited to larger flood events.
- Reach 5 is like Reach 4 in that they have similar channel gradients and sinuosity; however, Reach 5 has the T-2 through T-4 terraces preserved adjacent to the ditch. The terrace segments are smaller than upstream, and their development is more affected by the

sinuosity. The terraces on the inside of the meander bends are fairly well preserved, with depositional point bars often found at the apex of the meanders. This reach has more potential for overbank deposition than Reaches 1 through 4 due to the sinuosity of the ditch and the lower elevation terrace development.

- Reach 6 is characterized by an increased gradient relative to upstream reaches at 28-feet/mile. Reach 6 also portrays an increase in valley wall depth. This broader valley allows easier terrace development and promotes overbank deposition as the ditch meanders over time. The terrace sequences ranges from T-1 to T-6 terraces. The lower terraces are subject to overbank deposition.

This IMWP is for PCB impacted soil and isolated sediment within Reaches 4 through 6 of Elliott Ditch, which is located between the 9th Street Bridge and downstream of the Old Romney Road Bridge. The investigation of soil and sediment was performed in general accordance with the regulatory-approved *Field Sampling Plan* (FSP), as prepared by TetraTech CES and dated February 2, 2016. The only deviation included limiting soil sampling to the upper 6-inches. The results of the investigation are summarized in the *Elliott Ditch Reaches 4-6 Geomorphic Assessment Report* (*Geomorphic Assessment Report*) prepared by Civil & Environmental Consultants, Inc. (CEC) and dated November 2022. The *Geomorphic Assessment Report* can be found on the IDEM Virtual File Cabinet (VFC) as document #83393799.

1.2 CONSENT DECREE AND RCRA CORRECTIVE ACTION

Investigations of Elliott Ditch from the early 2000s through 2012 were conducted per the Consent Decree (CD) between Arconic and the USEPA. The CD is associated with Clean Water Act findings and these issues are in the process of being closed. The Facility is subject to Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) and is in the process of implementing a RCRA Facility Investigation (RFI). Arconic has a RCRA CA Agreed Order (Agreed Order) with the IDEM that was executed on September 3, 2020, and can be found on the IDEM Virtual File Cabinet as document #83039064. Arconic has requested and been provided conditional coordinated approval of the Toxic Substances Control Act (TSCA) components of the executed Agreed Order from the USEPA Region 5 per a letter dated October 20, 2022. Outfall 001/Elliott Ditch/Wea Creek are identified as Solid Waste Management Unit (SWMU) 50 in association with RCRA CA due to the suspected release(s) of PCBs. This IM Project is being performed as part of the RCRA CA process.

1.3 RISK-BASED REMEDIATION

The primary constituent of concern (COC) at the Facility and Elliott Ditch are PCBs. There are a few options for remediating PCB impacted sites as outlined in TSCA found in 40 CFR Chapter I, Subchapter R. More specifically, clean up and disposal options for PCB remediation projects are found in 40 CFR 761.61. A risk-based clean up and disposal approach is presented as an option in 40 CFR 761.61(c) and is the remedial approach being implemented by this IM Project. An

entity wishing to perform a remedial project using the risk-based approach is required to request and receive approval from the USEPA prior to conducting the project in this manner.

The RBRO for this IM Project and subsequent soil and sediment remediation projects at Elliott Ditch is 1.0 milligram per kilogram (mg/Kg). This RBRO has been selected based on conversations with the USEPA and the IDEM, including its respective risk assessors, and the use of this objective on other, like projects in the region. The use of this more restrictive RBRO will eliminate the need for further risk assessments in association with remedial efforts and not subject the remediated areas to future activity or use restrictions.

1.4 PCB RELEASE DATE

Arconic has performed a detailed review of historic operations at the Facility to determine the source and release date of the PCB impacts identified in Elliott Ditch. Results of the review concluded that releases of PCBs at and from the Facility occurred prior to 1978. Details regarding the review have been documented in recent documents submitted to IDEM and USEPA and the conclusion regarding the release date of PCBs at and from the Facility is included as a finding of fact in the Agreed Order.

2.0 ELLIOTT DITCH FIELD SAMPLING ASSESSMENT

Arconic is in the process of conducting SWMU and AOC investigations to assess current conditions and potential releases in support of the RCRA CA process. Arconic retained CEC to perform a geomorphic assessment of Elliott Ditch Reaches 4 through 6 (Milepost 01.59 to 3.34) in general accordance with the regulatory-approved *Field Sampling Plan* (*FSP*), as prepared by TetraTech CES (see **Appendix II**) and dated February 2, 2016. The geomorphic assessment was performed in November 2021 and March 2022 and the results are summarized in *Geomorphic Assessment Report*. The scope of the first mobilization included geomorphic surface surveying and shallow soil sampling in the study area. The second mobilization included sediment poling and sample collection, as well as targeted, shallow soil sampling. A summary of the results applicable to this IMWP is provided in the following.

2.1 INVESTIGATION STRATEGY

The *FSP* was designed based on geomorphic principals, which influenced the sampling locations and depth intervals. The strategy for the *FSP* was developed following a stepwise process that included the following:

1. Use of fluvial geomorphology to define the erosional and depositional patterns for Elliott Ditch and its floodplain. This step included a desktop review, field survey to verify the results of the desktop review, and identification of sample transects and sample locations perpendicular to the stream. The sample locations were selected to assess the various geomorphic surfaces and erosional and depositional features of the ditch.
2. The second step of the investigation strategy was to use the geomorphic characteristics of Elliott Ditch to determine the area of investigation. The Elliott Ditch area of investigation includes the channel, the floodplain, and terrace surfaces to the upland boundary. The in-channel area includes the parts of the ditch that have deposits of silt and clay since PCBs tend to absorb to these particle sizes. In the overbank areas, PCBs could be deposited in the floodplain and on historic terraces during and after the time of release.
3. The third step of the investigation strategy was to assess what portion of the channel and overbank could be remediated in a single field season.

The sample locations were selected in depositional areas to assess the materials for the concentration of PCBs. An important part of the sampling strategy was to sample in erosional areas that were not subject to deposition to prove the absence of PCBs. This approach allows for confirmation of the erosional surfaces and a confidence that the fluvial geomorphology model of the stream accurately predicts PCB transport and deposition. Additionally, the sampling strategy was designed to allow for iterative sample locations to be incorporated into the *FSP* based on data obtained during the field work and the analytical results. This aspect was applied during the targeted soil sampling that occurred during the second mobilization of the geomorphic assessment.

The soil sampling interval in the geomorphic assessment was limited to the upper 6-inches. The purpose was to assess for alluvial soil indicative of deposition and perform analytical testing for PCBs. Previous geomorphology-based assessments at Elliott Ditch have targeted deeper soil horizons. Instances of PCB-impacts above 1.0 mg/Kg to soil below the upper 6-inches where the upper 6-inches was below 1.0 mg/Kg has only been observed in areas of anthropogenic activity. Therefore, the use of the upper 6-inches in order to assess for PCB impacts to preserved historic floodplain terraces is appropriate. Sediment samples were collected from distinguishable layers, and if a layer extended more than 1-foot, it was separated into two representative samples. The focus of the investigations was to understand the depositional pattern(s), and this was accomplished by sampling shallow soil on preserved geomorphic surfaces and sediment layers. The shallow soil and sediment layer-based sampling approach provides context of the geomorphic and pedogenic environment and allows for an accurate assessment of PCB distribution and accumulation. The fluvial geomorphology approach is beneficial to better understand where and why PCBs have accumulated in Reaches 4 through 6 of Elliott Ditch. In any investigation, a limited number of sample locations are collected to characterize a large area. It is important to have a scientific method to interpolate or extrapolate data from where it was collected to the other areas of the project.

2.2 INVESTIGATIONS SCOPE

This investigative report was conducted within and along Reaches 4 through 6 (Milepost 01.59 to 03.34) of Elliott Ditch. Provided in the following is a summary of the field activities performed in association with each assessment.

- Geomorphic surface surveying via 18 transects;
- Shallow soil boring installation and sampling at 76 locations;
- Sediment poling and surveying; and,
- Sediment boring installation and sampling at the 13 observed deposits.

There were 76 shallow soil borings installed across the two different mobilizations, 64 during the initial mobilization and 12 during the second. These borings were installed on various geomorphic surfaces, including terraces, the floodplain, and upland locations. There were 76 shallow soil samples and five duplicates collected from Reaches 4 through 6 of Elliott Ditch. These sampling locations were selected to assess for potential depositions of PCBs on the various, preserved geomorphic surfaces.

The sediment poling was conducted following a grid-based approach with spacing based on the apparent size of the sediment deposit and poling measurements extending one grid spacing beyond the apparent boundary of the feature. The grid approach was altered in some instances to account for impediments (mainly shallow rock) that limited advancement of poling equipment. In-channel poling was conducted to assess the volume and extent of the soft sediment deposit within the

channel at each of the 13 identified deposits. Sediment sampling locations were modified based on the poling results such that samples were collected from where the deposit was observed to be thickest. Sediment samples were collected from each of the 13 deposits during the second mobilization, all from Reaches 4 through 6. A total of 28 discrete sediment samples and two duplicates were collected from the 13 locations. Samples were collected of the observed sediment layers at each location following the SOP in the *FSP*. The sampling locations and targeted depths were selected to assess the vertical distribution of PCB impacts in these deposits.

2.2.1 Sediment Investigation Results Summary

Sediment poling activities were implemented at all 13 of the sediment sampling locations in Reaches 4 through 6. The two deposits identified at Mileposts 02.94 and 02.96 are collectively referred to as a single area when totalling the 13 areas. Soft sediment deposits in Reaches 4 through 6 of Elliott Ditch were limited and, when present, tend to exist in the form of minor point bars or inner-berm features. All but one of the soft sediment deposits was small in area, ranging from roughly 100-square feet to up to just under 1,000-square feet. The lone outlier, the two deposits situated at Mileposts 02.94 and 02.96 which are treated as a single area, was 4,980-square feet. Ten of the 13 deposits are less than 2-feet thick. The other three are between 2-feet and 2.60-feet in thickness. The estimated volume of the soft sediment depositional areas ranged from two to 60 cubic yards, the largest of which is the combined deposits at Mileposts 02.94 and 02.96. Figures depicting the sediment poling results have been provided in the *Geomorphic Assessment Report* (IDEM VFC document #83393799).

A total of 28 discrete sediment samples, eight from Reach 4, seven from Reach 5, and 13 from Reach 6, were collected from the observed depositional features found in the cores retrieved from each sampling location. Most of the sediment samples were comprised of brown, single grain (poorly graded), medium sand. There was little to no change in the sediment characteristics with depth. There were a few isolated locations where this sand was more well-graded. There was one location in Reaches 4 through 6 of Elliott Ditch where the sediment characteristics differed from those previously described. The sediment at Milepost 01.77 contained greyish brown, loamy sand with varying gradations.

PCBs were quantified in all 28 samples ranging from 0.11 milligrams per Kilogram (mg/Kg) to 1.76 mg/Kg. PCBs were quantified at concentrations greater than 1.0 mg/Kg in two of the 28 sediment samples. PCB concentrations exceeding 1.0 mg/Kg were found at Mileposts 01.77 and 02.36 in the deepest sample interval from each of these locations. Aside from the two samples that exceeded 1.0 mg/Kg noted previously, no other sediment sample, including the duplicates, exceeded 0.56 mg/Kg. Reported PCB quantifications were for Aroclor 1248 which is consistent with what was predominantly used at the Facility. Please refer to the field sampling sheets and analytical testing results for the sediment in the *Geomorphic Assessment Report* (IDEM VFC document #83393799).

2.2.2 Soil Investigation Results Summary

Shallow soil characteristics found in the upper 6-inches of Reaches 4 through 6 were similar to those found in Reaches 1 through 3. Soils were typically light brown to black in color and had varying degrees of plasticity due to the presence of clays and silts. Root, leaf, and rock content was observed; however, it was typically less than 15-percent. Wood content was not observable. There were no distinguishable odors present in any of the soil samples. The granular structure of the soils was typically fine to very fine, and it consisted predominately of loam with varying amounts of silt and sand. The loamy soil was observed to be loose, poorly graded, and contained organics. The soils sampled on all terraces are dominated primarily by topsoil characteristics of a mature forest, with a minor component of alluvial silts and sands.

One exception to the noted soil characteristics was present on the southern side of Elliott Ditch at Milepost 02.45. It was evident that localized grading had occurred in this area in support of a residential home development. The soil characteristics of the upper 6-inches on the T-3 surface in this area resembled that of local fill. Compared to the loamy soil described previously, this material contained a higher clay content with an increase in well graded sand as the terrace approached Elliott Ditch. The observed soil was also dense likely due to mechanical equipment compaction during property development activities. It is likely that the T-3 surface has been partially disturbed and mixed with local fill.

A total of 76 shallow soil samples were submitted for analytical testing during implementation of the assessments. PCBs were quantified in 63 of the 76 soil samples at concentrations ranging from 0.01 mg/Kg to 28.6 mg/Kg. PCBs were quantified at concentrations greater than 1.0 mg/Kg, the remedial objective, in 35 of the 76 soil samples and at concentrations greater than 10 mg/Kg in 11 of the samples.

The PCB analytical data from the soil sampling was evaluated based on the geomorphic surfaces and Mileposts to assess for similarities. The lone floodplain surface sampled resides at Milepost 02.00 and PCBs were quantified at a concentration of 1.34 mg/Kg. All five of the T-1 surface samples had quantified PCB concentrations, with three being more than 1.0 mg/Kg. The quantified PCB concentrations ranged from 0.29 mg/Kg to 2.74 mg/Kg. There were 16 samples collected from T-2 surfaces with ten exceeding 1.0 mg/Kg. The quantified concentrations of PCBs from the T-2 surfaces ranged from non-detect to 17.9 mg/Kg, and concentrations generally decreased when moving downstream. There were 18 samples collected from T-3 surfaces with 11 containing PCB quantifications above 1.0 mg/Kg and 15 samples from T-4 surfaces with 8 exceeding the threshold. The ranges of PCB quantifications were from non-detect to 20.5 mg/Kg and non-detect to 19.80 mg/Kg on T-3 and T-4 surfaces, respectively. There were five samples collected from T-5 surfaces and four from T-6 surfaces and each had one quantified PCB concentration greater than 1.0 mg/Kg. The quantifications greater than 1.0 mg/Kg on these surfaces exceeded 10 mg/Kg and are in areas that have likely been influenced by anthropogenic activities. PCB concentrations, if

quantified, in the upland soil were typically observed to be less than 0.1 mg/Kg. The lone exceptions come from the upland surfaces at Mileposts 02.23 and 02.29, which had PCBs quantified at concentrations of 0.50 mg/Kg and 0.65 mg/Kg, respectively. Please refer to the *Geomorphic Assessment Report* (IDEM VFC document #83393799) for additional information, including figures and analytical results.

3.0 ELLIOTT DITCH REACHES 4 THROUGH 6 SOIL AND ISOLATED SEDIMENT INTERIM MEASURES OVERVIEW

3.1 INTRODUCTION

Arconic has unilaterally decided to remediate PCB impacted sediment and isolated soil in Reaches 4 through 6 of Elliott Ditch. This IMWP has been prepared to address the safe movement and disposal of these materials, as well as restoration activities. The intent of the IMWP is to demonstrate that the proposed remedial approach will not pose an unreasonable risk to human health or the environment during the remedial actions, or in the manner of disposal. As part of the RCRA CA process, this IMWP is being submitted to the IDEM approval, and subsequently to the USEPA, Region 5 for review and coordinated approval. Subsequent efforts will be conducted to delineate and remediate, if necessary, other PCB impacted media within downstream reaches of Elliott Ditch, which exceed the RBRO of 1.0 mg/Kg.

3.2 OBJECTIVE

The IM objective of this project is to remove PCB impacted soil and isolated sediment from Reaches 4 through 6 of Elliott Ditch that contain concentrations exceeding the RBRO, as determined by the geomorphology-based assessments. The proposed sediment excavation depths and extents have been delineated by the sediment sampling and analytical testing that has been performed to date, as well as the lateral and verticals extent of soft sediment as observed during the poling evaluation. Sediment remediation includes two depositional features: one in Reach 4 (Milepost 01.77) and one in Reach 5 (Milepost 02.36). Please refer to **Figures 3, 3A** and **3B** for the sediment remediation areas.

Soil removal in Reaches 4 through 6 will include the extent of those geomorphic surfaces that have been assessed and determined to be impacted with PCB concentrations exceeding the RBRO. Excavation of the soil impacts will be based on the geomorphic mapping of the surfaces and soil sampling and analytical testing, as performed by CEC and documented in the *Geomorphic Assessment Report*. Please refer to **Figures 4A and 4B** for the soil remediation areas. Additional assessment, including soil sampling and PCB analytical testing, will be performed on a subset the geomorphic surfaces targeted for remediation in order to refine excavation boundaries. Additional assessment will occur around anthropogenic features identified during geomorphic surface mapping that could alter the spatial distribution of PCB-impacted soil targeted for removal. Areas identified for additional investigation are discussed in **Section 4.2** of this IMWP.

The RBRO for both sediment and soil is 1.0 mg/Kg, total PCBs, as reported on a dry weight basis. The excavated sediment and soil will be managed offsite at an Arconic-approved and appropriately permitted landfill. Although not anticipated, sediment and soil exhibiting PCB concentrations greater than or equal to 50 mg/Kg will be disposed at a RCRA Subtitle C facility or TSCA landfill,

as allowed by 40 CFR 761.61(a)(5). Sediment and soil exhibiting PCB concentrations less than 50 mg/Kg but greater than or equal to 1.0 mg/Kg will be disposed at a RCRA Subtitle D facility permitted to accept PCB-containing waste.

3.2.1 Regulations or Guidance to Support the Interim Measures Approach

The USEPA exempts PCB waste from the RCRA waste requirements specified in 40 CFR Parts 261 through 265, parts 268, and 270. PCB wastes are instead regulated under TSCA. The exemption is described in 40 CFR Part 261.8 and includes the notification requirements specified in RCRA. The TSCA regulations governing the manufacturing, processing, distribution in commerce and use prohibitions, including remediation and disposal, are codified in 40 CFR Part 761.

The following outlines the proposed clean-up plan to be performed in accordance with 40 CFR 761.61(c).

1. Clear underground utilities and remove overgrown brush, trees, and other vegetation, as necessary, in support of preparing for sediment and soil removal.
2. Install water management controls, likely cofferdams, and isolate sediment targeted for removal. The intent is to isolate sediment excavation areas, remove the targeted materials, collect confirmation samples to demonstrate successful remediation, and backfill appropriately. There are only two sediment deposits that require remediation, one in Reach 4 and the other in Reach 5. The excavation and confirmation sampling process will be repeated until the remedial objective is achieved.
3. Sediment and soil requiring excavation and offsite disposal will be handled based upon the PCB concentration at which it is found, as outlined in 40 CFR 761.61.
4. Temporary storage of excavated, TSCA regulated sediment and soil is subject to the requirements of 40 CFR 761.65(c)(9). Temporary storage is permitted for a period of 180 days from the accumulation start date. Sediment and soil that is stockpiled within the excavation footprint for truck loading purposes will not be subject to these requirements so long as the stockpile is diminished by the end of the working day.
5. Sediment and soil containing less than or equal to the 1.0 mg/Kg total PCBs will be left in place. Once it is confirmed via sampling that the removal of sediment and soil within Reaches 4 through 6 have achieved the RBRO, the excavations will be backfilled with clean, borrow material, and remediation areas will be restored to pre-project grades with suitable material. This is likely to include Indiana Department of Transportation (INDOT) specified B borrow or an equivalent graded, granular material in the ditch to restore the sediment excavations and cohesive soil and organic topsoil in the overbank excavations. Use of these materials will provide sedimentation and scouring control.
6. Sediment and soil containing greater than 1.0 mg/Kg and less than 50 mg/Kg PCBs will be excavated and disposed offsite at a RCRA Subtitle D facility, as outlined in 40 CFR 761.61(a)(5)(i)(B)(2)(ii) and §761.61(a)(5)(v)(A). However, no soil or sediment will be shipped to RCRA Subtitle D facilities that have PCB concentrations in excess of

the landfill operating permit threshold. The landfill(s) will be notified in writing of the amount and concentration of the waste at least 15 days prior to the first shipment, as outlined in §761.61(a)(5)(i)(B)(2)(iv).

7. Although not expected, sediment and soil containing greater than or equal to 50 mg/Kg PCBs will be excavated and disposed offsite at a RCRA Subtitle C facility or TSCA landfill, as outlined in 40 CFR 761.61(a)(5)(i)(B)(2)(iii). If a RCRA Subtitle C facility is used for disposal, it will be notified in writing of the amount and concentration of the waste at least 15 days prior to the first shipment, as outlined in §761.61(a)(5)(i)(B)(2)(iv).
8. Sediment and soil shipped off-site will be managed in accordance with the storage and disposal requirements defined in 40 CFR 761 Subpart D.
9. Waste disposal records and reports will be maintained for PCB remediation waste shipped off-site in accordance with 40 CFR 761 Subpart K.
10. Equipment used during the interim measure that contacts impacted materials will be decontaminated following the standards and procedures described in 40 CFR 761.79.

3.3 PERMITTING AND PLANNING REQUIREMENTS

Other regulatory and legal requirements were evaluated, other than TSCA, in preparing this IMWP. Provided in this section are those requirements identified as being applicable to this IM Project.

3.3.1 Community Relations Plan

Arconic preemptively updated the Community Relations Plan (CRP) in advance of the Reach 4 through Reach 6 geomorphology assessment. The CRP was originally developed as part of the Levee Soil IM Project and updated in preparation for the Reaches 1 through 3 Sediment and Isolated Soil IM Project. The initial CRP was prepared to cover IM activities within the first three reaches of Elliott Ditch and updates were necessary based upon the overall remediation project progressing downstream. The CRP includes the following content:

- Identifies property owners and property occupants that own or abut the properties that are subject to IM Project activities.
- Lists known or registered neighborhood organizations serving the location of the IM Project, if any.
- Provides a sample of a written notice to be sent to the property owners/property occupants and neighborhood organizations, which shall include:
    - a short description of the IM Project to be performed;
    - information concerning the public comment period, including the time period and procedures for public comment, and the address to which comments are to be directed; and,
    - the location of the record repository where the IMWP has been placed.

- Presents the name(s) and mailing address(es) of all affected local governmental units with jurisdiction within one mile of the property(ies) affected by the proposed IM Project. Arconic will notify the affected local government units about the IM Project and the anticipated remediation. In addition, local government units that are affected by the proposed IM Project will be notified by Arconic of the IMWP at the beginning of the public comment period as soon as an internal review of the document has been completed. These local government units will include those located in Tippecanoe County only since no other counties are within one mile of the project.
- Includes the name(s) and mailing address(es) of two newspapers in which notice of the public comment period will be published.
- Information regarding the public repository where this IMWP can be reviewed. Arconic intends to continue to utilize an electronic repository at, http://elliottditchproject.cecinc.com/.
- In addition, the CRP includes details regarding project signage that:
    - identifies the location as an IM Project site;
    - provides USEPA Region 5 project manager, IDEM OLQ project manager, and Arconic project manager phone numbers;
    - meets the following criteria:
        - be visible/readable from 20-feet;
        - be in English and the language predominantly used in the neighborhood if other than English;
        - place one sign per site access point and no more than three signs total; and,
    - posting starting with the end of the public comment period for the IMWP, before any work begins and remain posted until the project has been completed.

The most recent CRP is included in **Appendix III**.

3.3.2 Private Property Owner Access and Use Agreements

This IM Project requires coordination and *Access and Use Agreements* with private property owners immediately adjacent to Elliott Ditch within Reaches 4 through 6. The private property owners who will need to provide *Access and Use Agreements* in Reaches 4 through 6 are those that:

- Own property where remediation is to occur; and/or,
- Own the property where access is needed to facilitate remediation.

Access and Use Agreements have been provided to each of the private property owners where access is required and the agreements include remediation and restoration as part of the permitted

activities. Based on current plans, Arconic will need access to 37 private properties[1] to perform this IM Project. Of the 37 private properties, there are 20 property owners who own either one or multiple properties. As of the date of this IMWP, access has been granted by 7 of the 20 property owners. Arconic is actively pursuing *Access and Use Agreements* for the remaining 13 properties. If access to other private property(ies) outside of those 37 currently identified is required to support other project functions, the *Access and Use Agreement* used during previous phases of the project will continue to be used to document private property owner approval. Please refer to **Figure 5** for the soil and sediment remediation areas and the private properties' boundaries where the areas are located. These properties, along with some, neighboring properties, will need to be accessed in order to mobilize equipment, materials, and personnel to execute the IM Project.

3.3.3 USACE Nationwide Permit 38 – Clean Up of Hazardous and Toxic Waste

The United States Army Corps of Engineers (USACE) Nationwide Permit 38 (NW38 Permit) applies to this IM Project since it involves the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Regulatory authority of this IM Project resides with IDEM and USEPA Region 5. This permit includes a Pre-Construction Notification (PCN) to the district engineer prior to commencing construction activities and includes general conditions that must be followed. The USACE NW38 will be applied for in lieu of a USACE Section 404 permit since loss of waters to the United States will not be realized as part of the IM Project (i.e., preconstruction contours and elevations will be met after construction).

3.3.4 IDEM Section 401 Water Quality Certification

The IDEM regulates activities in Indiana that have the potential to impact waters of the United States. As such, a Section 401 Water Quality Certification will be necessary as part of the IM Project. Issuance of a Water Quality Certification means that IDEM anticipates that an applicant's project will comply with state water quality standards and other aquatic resource protection requirements under IDEM's authority. The 401 Water Quality Certification will cover both the construction and operation of the proposed IM Project and will supplement the general conditions defined in the NW38 Permit.

3.3.5 IDNR Construction in a Floodway Permit

The Indiana Department of Natural Resources (IDNR) manages construction activities within a floodway. The sediment and soil remediation efforts to be performed as part of this IM Project will require the submittal of a construction in a floodway permit application to the IDNR. It is anticipated that the permit submittal will include a Floodway Habitat Mitigation Plan (Plan) to compensate for clearing and grubbing activities in the riparian corridor (i.e., non-wetland tree

[1] Includes properties where access is needed to mobilize equipment and personnel to the remedial areas.

removal) required in order to access impacted soil and sediment. The Plan will likely propose a 2:1 restoration mitigation ratio for planting immediately adjacent to Elliott Ditch within Reaches 4 through 6. If there is inadequate area for mitigation in these reaches, there is additional area in Reach 1 that can be considered for use. The Plan will be developed in accordance with the *Indiana Natural Resources Commission Information Bulletin #17 (Fourth Amendment): Floodway Habitat Mitigation* dated January 15, 2019 (Bulletin).

3.3.6 Erosion and Sedimentation Control

The area of disturbance associated with the IM Project will exceed the 1.0-acre threshold for requiring a Stormwater Pollution Prevention Plan (SWPPP), including an Erosion and Sediment Control Plan, and coverage under the NPDES Construction Stormwater General Permit (INRA00000). Therefore, a SWPPP will be prepared and implemented in accordance with applicable Indiana Administrative Code (IAC) requirements, specifically outlined in 327 IAC 15-5 and local City of Lafayette (City) regulations. The process will include submitting an Erosion and Sediment Control Plan to the City of Lafayette (City) for review, since it is its own Municipal Separate Storm Sewer System (MS4). Once the City has reviewed and approved the plan, a Notice of Intent (NOI) will then be filed with the City for its review and approval, prior to submittal to the IDEM. A City Inspector may periodically visit the project to review and assess the adequacy of in-place erosion and sedimentation control measures. Sediment control devices will be installed before or concurrently with initial clearing and grubbing, and prior to land disturbing activities. Removal of the devices will not occur until the construction site is stabilized. The Erosion and Sedimentation Control Plan, NOI, and approval letter from the City will be provided to the USEPA Region 5 and the IDEM for informational purposes, upon request.

4.0 ELLIOTT DITCH REACHES 4 THROUGH 6 SOIL AND ISOLATED SEDIMENT INTERIM MEASURES CLEAN UP PLAN

The following outlines the clean-up plan that is proposed to address sediment and isolated soil impacts in Reaches 4 through 6 of Elliott Ditch. The proposed plan has been developed based on the regulatory requirements identified previously and PCB remediation waste requirements specified in 40 CFR 761.61(c).

There are two distinct clean-up approaches described in the following: one for isolated sediment removal and the other for soil removal. The two approaches will use mechanical excavation equipment to remove the targeted sediment and soil materials. However, the sediment remedial efforts have the added complexity of isolating the remediation areas from Elliott Ditch surface water flow such that the targeted materials can be removed. Provided in the following is additional detail regarding the two different clean-up approaches.

4.1 REACHES 4 AND 5 ISOLATED SEDIMENT CLEAN UP PLAN

The remediation process will include the removal of PCB impacted sediment in Reaches 4 and 5 from targeted, depositional features with PCB concentrations exceeding the RBRO. The excavation extents of targeted depositional features in Reaches 4 and 5 will be based on the geomorphic principals used in the assessment, poling data, and the sediment sampling analytical results. Please refer to **Figures 3A** and **3B** for the proposed excavation extents of the targeted sediment. The following outlined steps describe the conceptual approach to sediment removal as part of this IM Project.

1. Mobilization – Transport materials, equipment, and personnel to the site.
2. Benchmarks – Field benchmarks will be established by the selected remedial contractor and maintained during remediation. The number of benchmarks to be established at each excavation area will be determined by a State of Indiana Professional Land Surveyor and used for delineating the excavation extents.
    a. Benchmark locations will be recorded with horizontal and vertical data on Project Record Documents. The datum used will be a known coordinate system, such as Indiana State Plane. The use of a local coordinate system will not occur.
    b. Where the actual location or elevation of layout points cannot be marked, temporary reference points will be provided as necessary to locate the extents of sediment removal activities.
    c. Temporary reference points will be removed when no longer needed.
3. Project Stakeout – Prior to starting excavation, improvement features will be field located, including: entrance(s), access road(s), erosion and sedimentation controls, temporary structures (likely cofferdams), sediment dewatering impoundments (if used), support

area(s), and excavation footprints. These features will be located either by the contractor or a subcontracted surveyor, so long as survey grade equipment is used.

4. Site preparation – Furnish and install silt fence or straw wattles, stabilized construction entrance, access road(s), heavy equipment decontamination area and other sedimentation control devices as applicable. Sediment remediation in Reaches 4 and 5 will require new access features to be constructed. Access features on private property will also include other controls, such as construction fencing, to secure the travel path and sensitive improvements. These additional controls will be based on discussions with the private property owners and potential activity in and around the remediation areas.

5. Clearing, grubbing, and disposal of vegetative waste – Trees, shrubs, and plants will be designated for removal using boundary markers, survey tape, or spray paint. The IM Project will try and maintain vegetation outside of the access path and remediation area, to the extent practicable. Vegetation along the Elliott Ditch bank slopes that will impact sediment removal operations will be cut off above ground and the root balls left intact. This will allow equipment to operate with adequate sight lines from the top of the banks and reduce the potential for the bank failure. Vegetation within the remedial footprint is expected to be limited and will be cut off approximately 2-inches above the ground surface and the stump and roots removed during excavation of PCB impacted soil. Grubbed materials (vegetative material only) from below surface grades that are in contact with PCB impacted material will be transported offsite for disposal along with the sediment removed from the areas. Cleared materials from above surface grades will be transported offsite for disposal at a RCRA Subtitle D (non-hazardous, municipal solid waste) facility or chipped and used for erosion and sedimentation control.

6. Installation of water control devices – Flow in Elliott Ditch will need to be managed in support of sediment removal activities. Sediment remediation in Reaches 4 and 5 is targeted to depositional features that will not require full damming of the ditch and rerouting of the flow. Cofferdams or another capable structure will be installed around these depositional features to isolate the areas from flow. Residual water remaining in the isolated, remediation areas will be pumped into Elliott Ditch to allow the sediment to dry in support mechanical removal. The exact construction of the cofferdams or other capable structure will be dependent on observed streambed conditions and access restrictions. Water control devices will be removed after the targeted sediment has been excavated, confirmation samples demonstrate the RBRO has been achieved, and the area has been successfully backfilled.

7. Installation of sediment dewatering impoundment(s) – The water control devices will promote sediment drying in the ditch; however, additional drying may be needed in an impoundment once the sediment is removed. Bermed sediment staging pad(s) will be constructed with a 40-mil polyethylene liner overlain with 1-foot of sand at locations to be selected by the contractor based on its sediment removal approach and sequencing. The pads will be sloped to drain such that decant water can be removed and managed as discussed in **Section 4.3**. Sediment will be stockpiled to allow water to drain from sediment pore space. If necessary, mixing with a drying agent (lime, lime kiln dust, cement kiln dust, super absorbent polymer, etc.) will occur in the impoundment to reduce the potential for water displacement during loading and transport. The sediment temperature will be monitored during the mixing process to assess for temperature increases that could

volatilize constituents of concern. The sand that will be placed between the liner and the sediment will assist in the decant process and also provide a buffer between the mechanical equipment and the liner. Stockpiled sediment within the impoundments will be covered with poly-sheeting to protect from exposure to wind and precipitation, as necessary. The poly-sheeting will be weighted down with sandbags to secure when sediment is not being actively loaded/unloaded. The contractor will monitor impoundment areas when in use to assure proper functionality. Erosion control measures will be deployed to reduce the potential for sedimentation from the impoundment areas.

8. Removal of targeted materials – The excavation plans will be used to direct remediation. Sediment accumulation in the two features targeted for remediation occur in distinct depositional areas with thicknesses varying from roughly 1.4 to 2.1-feet thick. The excavation process will be performed with mechanical equipment either situated on the bank or directly within the dewatered streambed, if capable of supporting the equipment load. Sediment will be removed and directly placed into dewatering impoundments, transported to a stockpile load out area, or placed directly into lined trucks for offsite transport and disposal. Ultimately how the sediment is managed upon removal will be dependent on the water content. The intent is to excavate and manage sediment efficiently; for example, if excavated materials are dry enough, the preference will be to direct load into lined trucks instead of stockpiling. Alternate means of removal will be considered if proposed by the contractor, so long as it does not present more risk to human health or the environment.

   In general, the removed sediment will be managed offsite as follows:

   a. Sediment containing greater than 1.0 mg/Kg and less than 50 mg/Kg total PCBs will be excavated, loaded, and hauled off-site to an approved RCRA Subtitle D landfill.

   b. Although not expected, sediment containing greater than or equal to 50 mg/Kg total PCBs will be excavated, loaded, and hauled off-site to an approved RCRA Subtitle C or TSCA landfill.

9. Water management – Water that accumulates within the sediment remediation areas after water control devices are installed and prior to disturbance will be pumped through a sedimentation bag(s) prior to discharge back into Elliott Ditch. Water that collects within an open excavation footprint and is in contact with disturbed sediment potentially containing PCBs will be treated the same as the decontamination wastewater as discussed in **Section 4.3**.

10. Excavation equipment management – To the extent practical, equipment will remain either within or outside of the disturbed excavation footprint during sediment removal efforts. This will protect against mobilizing potentially impacted materials into other areas. Haul trucks will remain out of the excavation footprint or on clean materials placed within to protect against mobilizing impacted materials. Equipment that has been in contact with impacted materials will be decontaminated in the appropriate area prior to being mobilized to another area of the site. Decontamination procedures are described in more detail in **Section 4.3**.

11. Confirmation sample collection – Confirmation samples will be collected from the bottom and side walls, if present, of the sediment excavation area to confirm the removal of

materials containing total PCBs greater than 1.0 mg/Kg. See Post Excavation Confirmation Sampling, **Section 4.5**, for additional detail.

12. Retrieve B Borrow material or approved equivalent from the offsite source(s) – Borrow material will be excavated and placed into dump trucks and transported to the sediment remediation areas for use in backfilling the excavations. Excavation areas will be backfilled immediately following receipt of confirmatory sampling results that indicate that RBRO has been achieved. The fill material will be directly dumped into the excavation footprint or temporarily stockpiled locally for use in the backfilling process. If temporary stockpiles for the borrow material are created, erosion and sedimentation controls will be installed as necessary.

13. Backfilling of sediment excavation areas – Sediment removal areas will be backfilled using a B Borrow material per the Indiana Department of Transportation (INDOT) specification 211 – B Borrow and Structure Backfill or approved equivalent. Excavations will be restored to an elevation that is consistent with existing conditions of the reach where the remediation occurs. Compaction of the fill material will be performed with mechanical tamps, vibratory equipment, and/or the equipment used during placement, where appropriate. Additionally, the longitudinal gradient of Elliott Ditch, as documented in *Elliott Ditch Geomorphic Surface Mapping and Historic Data Review*, prepared by TetraTech CES, and dated July 6, 2015, will be restored. Per this report, the gradient in Reaches 4 and 5 is 20-feet/mile. The backfilling process will restore the channel to a similar gradient. Please refer to **Figures 6A** and **6B** that provide typical cross-sections for how backfilling will occur.

    The vendor(s) of the offsite fill materials will provide certification statements or documentation (i.e. analytical testing reports) indicating the fill is free of contamination. If no certification statement is provided or the source of the borrow material is suspect, environmental samples will be collected to confirm it is free of contamination prior to use. Confirmation sampling will be performed at a rate of roughly one sample per 500 cubic yards (cys) of fill material.

14. Backfill equipment management – Equipment will take special precautions to not track PCB impacted soil across clean areas. If equipment is suspected of coming into contact with impacted materials, it will be properly decontaminated, as discussed in **Section 4.3**, prior to mobilization into clean areas.

15. Removal of access road(s), sump(s), sediment dewatering impoundments, and temporary stockpile areas – Any project support features, i.e. sump(s), temporary stockpile areas, etc. will be removed, unless specifically requested to be left in place by the private property(ies) owner or identified as being needed for subsequent remedial efforts, after successful execution of this IM Project. If improvements are requested to remain on private property after this IM Project and have had the potential to be exposed to impacted materials, samples will be collected to assess for PCBs. Should samples indicate PCB impacts above the RBRO, the features will be removed, and if impacts are not discovered above the RBRO, the features will remain.

16. Post excavation and post backfill topographic surveys – Periodic topographic surveys will be conducted after successful excavation of PCB impacted sediment to the RBRO. The surveys will collect information regarding the depth and extent of the completed excavation

and be used to estimate the volume of material removed during the IM Project. The periodic surveys will be conducted by onsite staff trained to use survey-grade GPS equipment. A State of Indiana Professional Land Surveyor will perform the post backfill topographic survey to document completed conditions are similar to pre-project conditions and maintain the gradient of the reach in which remediation occurred. The survey elevations will be recorded it in a known coordinate system, such as Indiana State Plane, and North American Vertical Datum 1988 (NAVD88).

17. Vegetative planting – Areas, such as the top of banks, along access roads, sediment dewatering impoundments, etc., disturbed by the sediment remediation portion of the IM Project will receive at least a single, loose 3-inch lift of topsoil and be subject to vegetative planting. The topsoil will be pH of 5.5 to 7.0 and contain a minimum of 3-percent organic matter and no stones larger than 1-inch in any dimension. Phosphorus free fertilizer (12 – 0 – 12) will be applied at a rate of 23-pounds per 1,000-square feet to assist in germination and growth. The selected seed mixture and application rate will be determined based on the completion date of the IM Project and soil conditions. Erosion and sedimentation controls will not be removed until adequate vegetative coverage has been established and the Notice of Termination (NOT) for the NPDES General Permit has been submitted.

4.2 REACHES 4 THROUGH 6 SOIL CLEAN UP PLAN

The remediation process will include the removal of PCB impacted soil from various geomorphic surfaces in Reaches 4 through 6 of Elliott Ditch that exceed the RBRO. The excavation extents will be based on the geomorphic principals used in the assessment of this reach of Elliott Ditch and the soil sampling analytical results that confirm the use of this approach. Please refer to **Figures 4A** and **4B,** for the proposed excavation extents of the targeted geomorphic surfaces by terrace type. Additionally, in advance of remedial excavation activities, Arconic intends to perform additional shallow soil sampling to delineate the vertical and lateral extents of PCB impacts along several Elliott Ditch terraces in an effort to refine the total area of disturbance. The following outlined steps describe the conceptual approach to isolated soil removal as part of this IM Project.

1. Additional PCB delineation sampling – Additional delineation of PCB impacts is required near the following Mileposts in advance of remedial activities:

Milepost	Terrace(s)
01.69	T4
01.78	T6
02.00	T3
02.23	T3/T4
02.29	T3
02.45	T3/T4/T5
02.97	T2

These terraces are also identified on **Figures 7A** and **7B**. The PCB impacts quantified in these areas require further assessment to delineate the vertical and horizontal extents of impacts subject to remediation. These surfaces are targeted for additional assessment due to apparent anthropogenic activities, such as a utility crossing within Elliott Ditch and local grading, as well as changes in depositional environment. These factors could influence the depth and distribution of PCB impacts warranting additional sampling preceding implementation of this IM Project. The additional delineation will be performed via soil borings and laboratory analytical testing in general accordance with the approved *FSP*, as prepared by TetraTech CES. Results from the additional delineation will be used to update the remedial excavation plan(s) for these surfaces and the associated decision unit(s). The results of the additional delineation and any updates to remedial excavation plans will be shared with the IDEM and USEPA, Region 5 prior to execution. It is anticipated that this additional delineation will occur in early 2023.

2. Mobilization – Transport materials, equipment, and personnel to the site.
3. Benchmarks – Field benchmarks will be established by the selected remedial contractor and maintained during remediation. The number of benchmarks to be established at each excavation area will be determined by a State of Indiana Professional Land Surveyor and used for delineating the excavation extents.
    a. Benchmark locations will be recorded with horizontal and vertical data on Project Record Documents. The datum used will be a known coordinate system, such as Indiana State Plane. The use of a local coordinate system will not occur.
    b. Where the actual location or elevation of layout points cannot be marked, temporary reference points will be provided as necessary to locate the extents of soil removal activities.
    c. Temporary reference points will be removed when no longer needed.
4. Project Stakeout – Prior to starting excavation, improvement features will be field located, including: entrance(s), access road(s), erosion and sedimentation controls, support area(s), and excavation footprints.
5. Site preparation – Furnish and install silt fence, stabilized construction entrance, access road(s), heavy equipment decontamination area and other sedimentation control devices as applicable. Soil remediation areas on private, residential property will also include other controls, such as construction fencing, to secure the excavation area and sensitive improvements. These additional controls will be based on discussions with the private property owner and potential activity in and around the remediation area.
6. Clearing, grubbing, and disposal of vegetative waste – Trees, shrubs, and plants will be designated for removal using boundary markers or spray paint. The IM Project will try and maintain vegetation outside of the access paths and remediation areas, to the extent practicable. Vegetation within the remedial footprint will be cut off approximately 2-inches above the ground surface and the stump and roots removed during excavation of PCB impacted soil. Grubbed materials (vegetative material only) from below surface grades that are in contact with PCB impacted material will be transported offsite for disposal along with the soil removed from the areas. Cleared materials from above surface

grades will be transported offsite for disposal at a RCRA Subtitle D (non-hazardous, municipal solid waste) facility or reused/recycled, if possible.

7. Removal of targeted materials – The excavation plans will be used to direct remediation. The excavation process will be conducted to efficiently handle removed materials; for example, excavated materials may be direct loaded into lined trucks instead of stockpiling, if capable. Smaller mechanical equipment will be considered for use on private, residential property to limit the ground disturbance while still being able to successfully remove the targeted materials. In general, the removed soil will be managed as follows:
    a. Soil containing greater than 1.0 mg/Kg and less than 50 mg/Kg total PCBs will be excavated, loaded, and hauled off-site to an approved RCRA Subtitle D landfill.
    b. Although not expected, soil containing greater than or equal to 50 mg/Kg total PCBs will be excavated, loaded, and hauled off-site to an approved RCRA Subtitle C or TSCA landfill.
8. Precipitation accumulation management – Rainwater that collects within the open excavation footprint, does not naturally evaporate or infiltrate, and is in contact with soil potentially containing PCBs will be treated the same as the decontamination wastewater as discussed in **Section 4.3**.
9. Excavation equipment management – To the extent practical, equipment will remain either within or outside of the disturbed excavation footprint during soil removal efforts. This will protect against mobilizing potentially impacted materials into other areas. Haul trucks will remain out of the excavation footprint or on clean materials placed within to protect against mobilizing impacted materials.
10. Confirmation sample collection – Confirmation samples will be collected from the bottom and side walls of the excavation to confirm the removal of materials containing total PCBs greater than 1.0 mg/Kg. See Post Excavation Confirmation Sampling, **Section 4.5**, for additional detail.
11. Borrow soil specification and confirmation sample collection – An offsite borrow source(s) will be needed to backfill and restore the excavation areas back to grade. Borrow soil will be subject to the following requirements:
    a. Consist of clean, well-graded, natural soil classified as SW, SM, SM-SC, SC, ML, CL-ML, or CL (ASTM D 2488) containing no topsoil or other deleterious material.
    b. Stones or rock fragments will not exceed one quarter the maximum lift thickness (9-inches) as compacted in any dimension. Isolated rocks will be a maximum of 6-inches in any dimension and removed if observed.
    c. Fill materials will have a 10-percent maximum loss on ignition (ASTM D 2974).

    The excavation areas will be restored to grade such that drainage patterns are similar both before and after the IM Project. The vendor(s) of the offsite source will provide certification statements or documentation (i.e. analytical testing reports) indicating the soil is free of contamination. If no certification statement is provided or the source of the borrow material is suspect, environmental samples will be collected to confirm it is free of contamination prior to use. Confirmation sampling will be performed at a rate of roughly one sample per 500 cubic yards of fill material. Additionally, geotechnical samples will

be collected by the selected contractor to establish the Standard Proctor curve for the material if it is not provided by the vendor.

12. Retrieve borrow soil from the offsite source(s) – Borrow soil will be excavated and placed into dump trucks and transported to the soil remediation areas for use in backfilling the excavations. Excavation areas will be backfilled immediately following receipt of confirmatory sampling results that indicate that RBRO has been achieved. The fill material will be directly dumped into the excavation footprint or temporarily stockpiled locally for use in the backfilling process. If temporary stockpiles for the borrow material are created, erosion and sedimentation controls will be installed as necessary.

13. Place, grade, and compact the backfill soil – Soil backfill materials are to be placed in loose lifts not to exceed 9-inches in depth for material compaction by heavy equipment. Placement will occur in a manner such that equipment is not in direct contact to the completed excavation bottom. Backfill materials are to be compacted to not less than 90-percent of maximum dry unit weight according to ASTM D-698 (Standard Proctor Test) using mechanical equipment. Compacted fill will be placed to at least pre-project elevations such that positive drainage is maintained.

14. Backfill equipment management – Equipment will take special precautions to not track PCB impacted soil across clean areas. If equipment is suspected of coming into contact with impacted materials, it will be properly decontaminated, as discussed in **Section 4.3**, prior to mobilization into clean areas.

15. Removal of access road(s), sump(s), and temporary stockpile areas – Any project support features, i.e. sump(s), temporary stockpile areas, etc. will be removed, unless specifically requested to be left in place by the private property(ies) owner or identified as being needed for subsequent remedial efforts, after successful execution of this IM Project. If improvements are requested to remain on private property after this IM Project and have had the potential to be exposed to impacted materials, samples will be collected to assess for PCBs. Should samples indicate PCB impacts above the RBRO, the features will be removed, and if impacts are not discovered above the RBRO, the features will remain.

16. Post excavation and post backfill topographic surveys – Periodic topographic surveys will be conducted after successful excavation of PCB impacted soil to the RBRO. The surveys will collect information regarding the depth and extent of the completed excavation and be used to estimate the volume of material removed during the IM Project. The periodic surveys will be conducted by onsite staff trained to use survey-grade GPS equipment. A State of Indiana Professional Land Surveyor will perform the post backfill topographic survey to document completed conditions meet or exceed pre-project conditions and record it in a known coordinate system, such as Indiana State Plane, and NAVD88.

17. Vegetative planting – Areas disturbed by the IM Project will receive at least a single, loose 3-inch lift of topsoil and be subject to vegetative planting. The topsoil will be pH of 5.5 to 7.0 and contain a minimum of 3-percent organic matter and no stones larger than 1-inch in any dimension. Phosphorus free fertilizer (12 – 0 – 12) will be applied at a rate of 23-pounds per 1,000-square feet to assist in germination and growth. The selected seed mixture and application rate will be determined based on the completion date of the project and soil conditions. Erosion and sedimentation controls will not be removed until adequate

vegetative coverage has been established and the Notice of Termination for the NPDES General Permit has been submitted.

4.3 DECONTAMINATION OF HEAVY EQUIPMENT

Decontamination areas will be constructed and maintained at the equipment exits from the remediation excavations. The locations for these areas will be selected by the contractor and approved by Arconic. Clean gravel will cover the areas to prevent potential recontamination of vehicles after being decontaminated. The decontamination area will be lined with construction-grade plastic to prevent infiltration of fluids into the subsurface and sloped to drain to a collection sump, preferably away from Elliott Ditch. Dry soil and sediment removal from heavy equipment will occur by using disposable brushes, trowels, and hand tools. Removed dry soil and sediment will be returned to the appropriate staging area or live loaded for offsite management. The remaining soil and sediment removal from heavy equipment will be in accordance with 40 CFR 761.79 *Decontamination Standards and Procedures.* The process is likely to include using a pressure washer followed by cleaning with environmentally friendly detergent/water and rinsing with potable water, or wiping down equipment areas that were in contact with impacted sediment or soil with a solvent (e.g. hexane, acetone, diesel fuel, or others) dampened rag.

Residual sediment present in the pressure washer run-off will be collected in the decontamination sump. Once the sediment accumulation in the sump is at least half of the sump depth, it will be sampled and analyzed for PCBs. Excavation and offsite management of the sediments will be per the PCB analytical results. Sediment containing greater than or equal to 50 mg/Kg PCBs, although not expected, will be removed and disposed of offsite at a RCRA Subtitle C facility or TSCA landfill. Sediment containing concentrations of PCBs less than 50 mg/Kg will be removed and disposed of offsite at a RCRA Subtitle D facility.

Sediment to be hauled offsite for disposal must first pass the "paint filter test". If necessary, the sediment will be amended with drying agents such as lime, lime kiln dust, cement kiln dust, super absorbent polymer, etc., so long as the selected disposal facility approves the use. Amending will occur in the sediment dewatering impoundments or an approved alternate.

Wastewater and, if used, spent solvent containing rags will be managed along with soil or sediment remediation waste. The volume of wastewater is not anticipated to be significant, and it will be sprayed onto stockpiles and used for dust suppression purposes. The wastewater will be subsequently disposed of with these remediation wastes. Similarly, the spent solvent containing rags will be placed into shipments along with the soil and sediment remediation wastes for offsite disposal. The rags will be identified on the waste profile(s) developed for this IM Project.

4.4 WASTE MANAGEMENT

4.4.1 Liquid Waste

Management of the wastewater generated during the decontamination of heavy equipment will be handled as described previously. It is anticipated that only a limited amount of wastewater will be generated from the decontamination of equipment.

4.4.2 Solid Waste

The proposed IM Project includes the excavation and offsite disposal of impacted sediment and soil with PCB concentrations greater than 1.0 mg/Kg. It is anticipated that 50 cys of sediment will be excavated for offsite disposal. Of the 50 cys, it is anticipated that 30 cys will come from the deposit at Milepost 01.77 and 20 cys from the deposit at Milepost 02.36. Based on analytical testing performed to date, the sediment has total PCBs concentrations less than 50 mg/Kg and will be disposed of at a RCRA Subtitle D facility. Following removal of this material, confirmation samples will be collected for laboratory analysis of PCBs, as described in **Section 4.5**. If confirmation sampling identifies remaining material exceeding the RBRO, this material will be excavated and disposed at a RCRA Subtitle D facility. Excavation will continue until confirmation sampling demonstrates successful remediation of each decision unit.

It is anticipated that 20,000 cys of soil with an estimated mass of 34,000 tons will be removed as part of the IM Project. Based on analytical testing performed to date, the soil has a total PCBs concentrations less than 50 mg/Kg and will be disposed of at a RCRA Subtitle D facility. Following removal of this material, confirmation samples will be collected for laboratory analysis of PCBs, as described in **Section 4.5**. If confirmation sampling identifies remaining material exceeding the RBRO, this material will be excavated and disposed at a RCRA Subtitle D facility. Excavation will continue until confirmation sampling demonstrates successful remediation of each decision unit. The management of solid waste includes the management of sediment that has accumulated in the heavy equipment decontamination pad run-off collection sump (as described in **Section 4.3** above).

During the implementation of this IM Project, Arconic will work with the disposal facilities to profile each waste stream such that it complies with the permits for the respective disposal facility prior to transportation. The mode of transportation will be by covered, on road dump truck. Also, Arconic will comply with applicable USEPA and Department of Transportation (DOT) regulations for either transportation method. In support of this IM Project, Arconic has identified the following potential disposal facilities. Other disposal facilities will be considered so long as it is Arconic approved and permitted to accept the identified waste streams. If RCRA Subtitle C or D facilities are used for PCB waste disposal, notification to the facility will be made at least 15 days prior to the date of the first shipment of material.

4.4.2.1 Potential RCRA Subtitle D Facilities

Soil and sediment containing greater than 1.0 mg/Kg and less than 50 mg/Kg PCBs can be sent to:

- Waste Management – Liberty Landfill (White County, Indiana)
- Waste Management – Oak Ridge Recycling and Disposal (Cass County, Indiana)
- Republic – Walnut Creek Landfill (Frankfort, Indiana)

4.4.2.2 Potential RCRA Subtitle C Facilities

Although not anticipated to be needed for this IM Project, soil and sediment containing greater than 50 mg/Kg PCBs can be sent to:

- Heritage – Heritage Landfill (Roachdale, Indiana)
- US Ecology – US Ecology Alabama (Sulligent, Alabama)
- Clean Harbors – Lone Mountain Landfill (Waynoka, Oklahoma)

4.4.2.3 Potential TSCA Landfills

Although not anticipated to be needed for this IM Project, soil and sediment containing greater than 50 mg/Kg PCBs can be sent to:

- US Ecology – US Ecology Michigan (Belleville, Michigan)
- Clean Harbors – Grassy Mountain Landfill (Grantsville, Utah)
- Chemical Waste Management – Hazardous Waste Facility (Emelle, Alabama)

Upon selection of the appropriate disposal facilities, Arconic will conduct additional sampling, if necessary, to complete profile development for the solid waste streams.

4.5 POST EXCAVATION CONFIRMATION SAMPLING

Confirmation sampling will occur from within the remedial excavation areas to document the successful excavation of PCB impacted soil and sediment containing concentrations greater than the RBRO of 1.0 mg/Kg. The confirmation sampling approach will vary dependent about the sample media, soil or sediment. For the soil excavation bottoms, confirmation sampling will follow the Incremental Sampling Methodology (ISM), and for the sediment bottoms and soil and sediment sidewalls, if present, sampling will be performed as specified in 40 CFR 761.61(a)(6).

Samples will be collected following guidance from the IDEM's July 9, 2012 *Conceptual Site Model (CSM) Development: Sampling* document and the July 1992 USEPA *Preparation of Soil Sampling Protocols: Sampling Techniques and Strategies*. The collected soil and sediment samples will be placed into appropriate laboratory-supplied container(s) while wearing a new pair of chemical resistance gloves, such as nitrile. The samples will be sealed, labelled, and placed in a cooler on ice for shipment to the laboratory under proper chain-of-custody control. Reusable

sampling equipment will be properly decontaminated before collecting samples and between incremental sample locations (excavation bottoms) and composite sample locations (sidewalls) as described in the guidance referenced above.

Additional detail regarding the two confirmation sampling approaches is provided in the following.

4.5.1 CONFIRMATION SAMPLING APPROACH

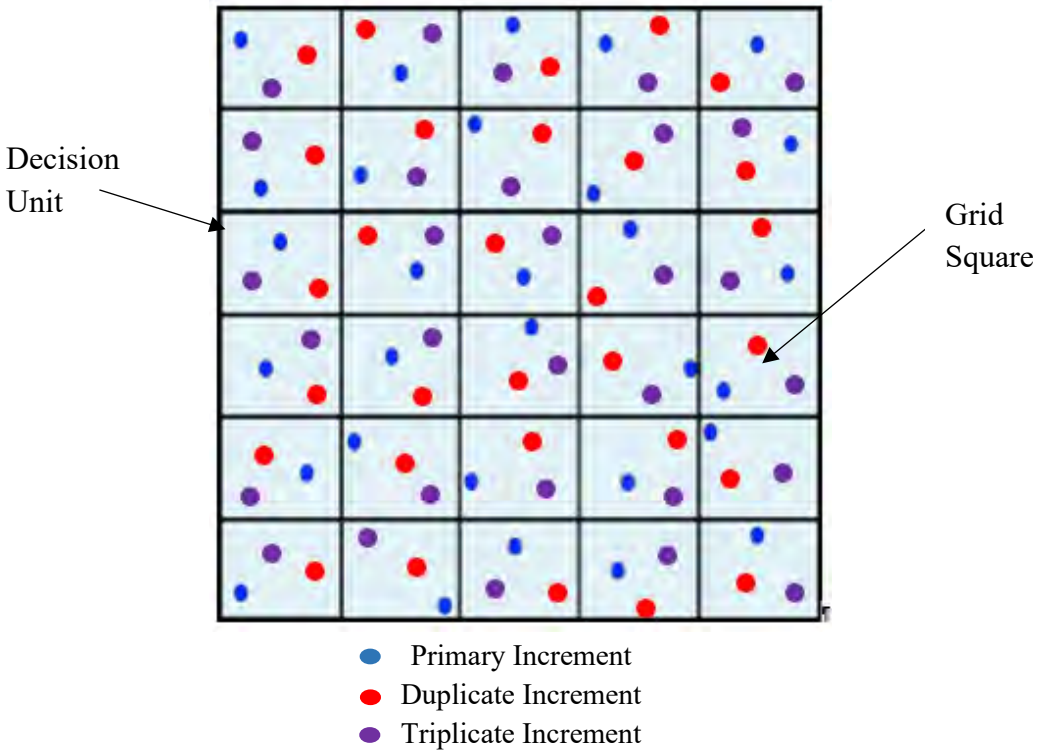
4.5.1.1 Soil Excavation Bottoms

Confirmation sampling of the soil excavation bottoms will be conducted in accordance with the Interstate Technology Regulatory Council (ITRC) document *Incremental Sampling Methodology* (ISM) dated February 2012, and updated in 2020. Incremental sampling utilizes a normalized composite sampling and processing approach to reduce variability. The use of ISM in this confirmation sampling application, including how the increments will be processed, will provide a slightly enriched representation (overestimate) of the constituent concentration in the sampled material over the assessed area by biasing the analyzed portion of the increment to the finer soil grain sizes. PCBs tend to absorb to these size particles more readily. This approach leads to more consistent, reproducible results that are representative and protective of human health and the environment. Use of this sampling approach is appropriate given the exposure pathways that exist in and around Elliott Ditch. However, in areas where anthropogenic activity is evident or observed during remedial activities (i.e., near bridge crossings, recent grading, etc.), Arconic may implement sampling in accordance with 40 CFR 761.61(a)(6) in an effort to reduce potential contractor delays and private property disruption as a result of the laboratory analytical turn-around time (i.e., 5-days for ISM sample processing and analysis, 24-hours for traditional TSCA confirmation sampling methodology). This alternative sampling approach is only intended to target discrete areas within a defined Decision Unit (DU). For example, if a DU is located near a bridge crossing and extends laterally away from the area where previous bridge construction activities were performed, ISM would be implemented across the entirety of the DU with the exception of the anthropogenically delineated area near the bridge crossing. Based upon previous remedial experience along Elliott Ditch, areas subjected to anthropogenic activities tend to contain heterogeneous soil mixtures or fill that is often not observed during field assessments. This results in numerous over-excavations and resampling events to achieve the RBRO. Sampling in accordance with 40 CFR 761.61(a)(6) will allow receipt of sample results within 24-hours. Sampling in accordance with 40 CFR 761.61(a)(6) is discussed in 4.5.1.2.

The DUs are subject to the same decision criteria, which is the RBRO of 1.0 mg/Kg. The other DUs are based on the size and shape of the geomorphic features that are targeted for remediation. As noted previously, the soil excavation areas at the Mileposts identified in **Section 4.2** are subject to change based on the results of additional assessment that is likely to occur. For this IM Project, there will be an estimated 35 soil excavation areas divided into approximately 500 cubic yard DUs (i.e., the assumed excavated volume that the remedial contractor can excavate and dispose of in

one working day). In general, the soil excavation areas are based upon the mapped geomorphic terraces. To determine the number of composite points, or increments, per DU, the coefficient of variation (CV) was calculated using the data in **Table 1**. Per the ISM, 20-31 increments and ≥ 3 replicates (i.e., primary, duplicate, and triplicate samples) are required for the soil DUs associated with this IMWP. Please refer to **Figure 8** depicting how DUs and increments will be established across an example T4 geomorphic terrace footprint. The sampling method within each DU will be random sampling within grids, where the number of grid squares is equal to the number of increments. Each grid will be approximately the same square footage, but not necessarily the same shape due to the irregularities of the geomorphic surfaces. The sample, duplicate, and triplicate increments will be collected from within a grid location at random while maintaining at least 3-feet of separation from one another. Please refer to the illustration in the following depicting the layout of the primary, duplicate, and triplicate increments within the DUs.

Illustration – Example Primary, Duplicate, & Triplicate Incremental Samples Increment Collection Locations in Grids Using Random Sampling Approach



The perimeter of the grids making up each DU will be located and marked using a real-time kinetic (RTK) GPS unit or similar. Increments will be collected using a 1-inch diameter barrel sampler, or similar, advanced to 3-inches below the bottom of the excavation with manually pressure or a slide hammer, such that the recovered increment volume is consistent between locations. Should refusal be encountered without reaching 3-inches in depth, the increment location will be offset and sample collection retried. This procedure will be followed until adequate soil recovery is retrieved in the sampler. The soil from the individual increments obtained from each of the grids will be placed into bulk, laboratory provided glassware and appropriately labelled while wearing

nitrile gloves. Processing of the individual increments and compositing into the incremental sample will be performed by the laboratory following the procedure described in **Section 4.5.2.1**. Each DU will include primary, duplicate, and triplicate incremental samples, i.e. three unique samples made up of different increments from each of the grids. Based on an estimated density of the targeted soil and sediment between 1.0-1.2 grams per cubic centimeter (g/cm^3), individual soil increments will weigh approximately 40-50 grams, with the final incremental samples weighing approximately 800-1,550 grams. Upon collection, the increments will be placed into laboratory provided containers, labelled, and stored in a cooler on ice for shipment to the laboratory under proper chain-of-custody control.

Reusable sampling equipment will be grossly decontaminated between each increment by removing solids and rinsing with distilled water. The sampling equipment will also be decontaminated using brushes, Alconox and distilled water mixture, and rinsed with clean distilled water upon collection of the final increment of an incremental sample. Decontamination solids and fluids will be containerized in matrix specific, 55-gallon drums near the ditch. Management of these materials will be based on the analytical testing results.

The criteria to demonstrate that a DU has achieved the remedial objective will be a comparison of the highest incremental sample (primary, duplicate, or triplicate) result to the RBRO of 1.0 mg/Kg total PCBs. If 1.0 mg/Kg is exceeded, an additional 6 to 12-inches of material will be excavated from the DU and hauled offsite for disposal. The DU will then be subjected to the confirmation sampling procedure a second time, i.e. all three incremental samples will be collected again. The process will continue until each of the three incremental samples from the same depth interval achieves the remedial objective.

4.5.1.2 Sediment Bottoms

The bottom confirmation samples from the two sediment excavation areas will be based on the application of a 5-foot by 5-foot grid cell (approximately 25-square feet) as the DU. The excavation bottom confirmation samples will be collected at the approximate center of each 5-foot by 5-foot grid cell arranged within a 15-foot by 15-foot grid block (**Figure 9**), resulting in nine discrete samples collected from a grid block. If the bottom of the excavation cannot be evenly divided into 15-foot by 15-foot grid blocks, the smaller areas along the perimeter of the excavation boundaries will be grouped together in a manner that maximizes the number of full-sized grid cells. If the remaining space between the side of a full-sized 5-foot by 5-foot grid cell and the vertical wall of the excavation is less than 2.5-feet, then no additional samples will be collected from that area. If the remaining space between the side of a full-sized 5-foot by 5-foot grid cell and the vertical wall of the excavation is greater than 2.5-feet, then that space will become a 5-foot long by 2.5-foot (or more up to 5-feet) grid cell for the purpose of sampling. Sampling will be coordinated first to collect the discrete samples from each of the nine grid cells within a 15-foot by 15-foot grid block. The nine discrete samples will be used to produce the composite sample

for that grid block. Then the composite samples for the remaining grid blocks will be collected in a similar manner until each of the grid blocks have been sampled. Following this methodology will maximize the number of composite samples that consist of nine discrete samples. However, the possibility does exist that a composite sample may be comprised of less than nine discrete samples. Similar to the ISM approach, the same RBRO will apply. If 1.0 mg/Kg is exceeded, an additional 6 to 12-inches of material will be excavated and hauled offsite for disposal. The DU will then be subjected to another iteration of confirmation sampling.

4.5.1.3 Soil and Sediment Sidewalls

Confirmation samples of the soil and sediment sidewalls, if present, will be collected at the approximate center from each 5-foot wide by excavation depth tall grid cell aligned along the excavation sidewall. The basic sidewall sampling block is based on a pattern of one grid cell in height and nine grid cells (45-feet) in length. This pattern results in nine discrete samples from an area that is the excavation depth tall by 45-feet long (refer to **Figure 9**). All sidewall sampling grid cells will be 5-feet wide at the top of the excavation (with the exception of the last sidewall grid cell necessary to complete full length of the excavation sidewall). Sampling will be coordinated to collect one discrete sample from each sampling grid cell. Nine discrete samples will be used to produce one composite sample. If there are fewer than nine sampling grid cells available to produce the composite, then the composite sample will be produced from the remaining grid cell discrete samples. For an excavation with sloped walls, the corner of the excavation will be recognized as a grid cell and one discrete sample will be collected from the corner of the sloped wall excavation as part of the sampling process (refer to **Figure 9**).

4.5.2 SAMPLE PROCESSING AND ANALYSIS

4.5.2.1 Incremental Sampling Methodology Samples

The collected increments will be processed in the analytical testing laboratory to prepare the primary, duplicate, and triplicate incremental samples. The processing procedure for compositing the increments into an incremental sample are provided in the following:

1. Initial sample screening – The increments will be subjected to the removal of rocks, vegetative debris (roots, sticks, leaves, etc.), and water decanted prior to processing.
2. Sample conditioning – The increments will be oven dried at 103 degrees Celsius (°C), or an acceptable alternate temperature so long as it is below the boiling temperature for PCBs, to remove moisture. No percent moisture analysis will be performed since water will be removed from the increments during this step and prior to analytical testing for PCBs.
3. Particle size reduction and selection – The increments will be subjected to particle size reduction using grinding, mortar/pestle, dish and puck, pulveriser, or another approved technique. The increment will then be passed through the #60 sieve [250 micrometer (µm)]. Material that does not pass will be subjected to further particle size reduction and again attempted to pass through the #60 sieve. ‘

4. This process will continue until as much of the increment can be passed through the sieve as practicable. The retained volume will be used for subsequent processing.
5. Sample mixing – Each of the increments will then be mixed by tumbling in a container with adequate headspace. This will homogenize the increments prior to splitting and subsampling.
6. Splitting and subsampling – The increments will then be split, including compositing, using a riffle splitter or 2-dimensional slab cake. A subsample will then be selected after splitting and subjected to further splitting and the process repeated until approximately 30 grams of the incremental sample remains, at which point it will be subjected to analytical testing.

PCBs are the COCs for Elliott Ditch and the targeted soil and sediment. Therefore, the laboratory analysis of the incremental soil and sediment samples will be for PCBs by USEPA Method 8082, following sample preparation Method 3540/3541 Soxhlet extraction. Under current USEPA and IDEM guidelines, a trip blank is only appropriate for aqueous VOC samples. Aqueous VOC samples will not occur as part of the IM Project, thus trip blanks are not appropriate. Soil samples are typically heterogeneous and field duplicate soil samples frequently do not have good reproducibility due to that heterogeneity. The use of the incremental sampling approach and the associated laboratory processing (drying and sieving) should provide more reproducible results than discrete or field compositing sampling techniques. The confirmation sampling process from the bottoms of the soil excavation areas will include the collection of the sample, a duplicate, and a triplicate for ISM processing and PCB analysis. The highest results from the three samples will be compared to the RBRO, and if it is exceeded, the DU will be subjected to additional excavation and resampling, as discussed previously.

One matrix spike/matrix spike duplicate (MS/MSD) sample for every 20 incremental samples will also be collected to assess for matrix interferences. Additionally, aqueous equipment blank sample(s) will be collected periodically by running distilled water over decontaminated sampling equipment and collecting the water in laboratory provided containers. These blank samples will be subjected to laboratory analysis for PCBs by USEPA Method 8082 and the results reviewed to assess the potential for cross-contamination.

4.5.2.2 Sediment Bottom Samples

Laboratory analysis of the sediment bottom samples will be for PCBs by USEPA Method 8082 following sample preparation Method 3540/3541 Soxhlet extraction. As described previously, a trip blank is only appropriate for aqueous VOC samples and will not occur as part of the IM Project. Field duplicates will occur at a rate of one per every 20 sediment bottom samples to assess the level of heterogeneity present in the soil. Additionally, one matrix spike/matrix spike duplicate (MS/MSD) sample for every 20 sediment bottom samples will also be collected. Additionally, equipment blank sample(s) will be collected and submitted for laboratory analysis as recommended in the guidance documents referenced above and described in the previous section.

4.5.2.3 Soil and Sediment Sidewall Samples

Laboratory analysis of soil and sediment sidewall samples will be for PCBs by USEPA Method 8082 following sample preparation Method 3540/3541 Soxhlet extraction. As described previously, a trip blank is only appropriate for aqueous VOC samples and will not occur as part of the IM Project. Field duplicates will occur at a rate of one per every 20 sidewall samples to assess the level of heterogeneity present in the soil. Additionally, one matrix spike/matrix spike duplicate (MS/MSD) sample for every 20 sidewall samples will also be collected. Additionally, equipment blank sample(s) will be collected and submitted for laboratory analysis as recommended in the guidance documents referenced above and described in the previous section.

4.6 POST CONSTRUCTION REPORT

A Post Construction Report will be developed and submitted to the IDEM and the USEPA Region 5 within 120 days after completion of the IM Project and successful closeout of any associated permits. The following activities will be documented in the Post Construction Report.

a. Summary of IM Project activities, including:
    1. Discussion of IM Project sequencing and execution.
    2. Results from additional delineation sampling of the geomorphic surfaces at Mileposts 01.69, 01.78, 02.00, 02.23, 02.29, 02.45, and 02.97.
    3. Types (TSCA and non-TSCA) and volumes of soil and sediment materials removed – volumes will be included showing the type and number of tons hauled for off-site disposal.
    4. Method of solid and liquid waste management including discussion regarding the processes and copies of disposal documents (weight tickets, manifests, and certificates of disposal).
    5. Post excavation confirmation sampling locations, results, and analytical reports.
    6. Photos documenting completion of the IM Project according to the IMWP.
b. Copies of permits obtained in support of the execution of this IM Project.
c. Copies of the Erosion and Sedimentation Control Plan, NOI, approval letter from the City, and the Notice of Termination (NOT). If the disturbed areas have not achieved the required vegetative coverage for NPDES Permit closure and the Post Construction Report has been prepared, it will be submitted without the NOT. The NOT will be provided upon filing.
d. Final surveying as-built drawing showing: the completed excavation extents and grades, as well as the completed backfill grades. The as-built drawing(s) will be prepared in AutoCAD and labelled to include: the project name, date, owner's name, name of the engineer, surveyors signed seal, name of the construction manager, and the contractor.
e. Engineer certification statement.

TABLES

Table 1. Sediment Sampling PCB Analytical Results
Elliott Ditch Reaches 4-6 Geomorphic Assessment Report
Lafayette, Tippecanoe County, Indiana
November 2022

Boring/Sample ID	PCB Aroclor									Total PCBs (mg/Kg)
	1016	1221	1232	1242	1248	1254	1260	1262	1268	
ED-01.67-SD01										
0 - 0.90'	ND	ND	ND	ND	0.41	ND	ND	ND	ND	0.41
0.90 - 1.2'	ND	ND	ND	ND	0.32	ND	ND	ND	ND	0.32
1.2 - 2.0'	ND	ND	ND	ND	0.14	ND	ND	ND	ND	0.14
ED-01.77-SD01										
0 - 0.50'	ND	ND	ND	ND	0.46	ND	ND	ND	ND	0.46
0.50 - 1.3'	ND	ND	ND	ND	0.56	ND	ND	ND	ND	0.56
1.3 - 2.1'	ND	ND	ND	ND	1.76	ND	ND	ND	ND	1.76
ED-DUP02										
	ND	ND	ND	ND	0.33	ND	ND	ND	ND	0.33
ED-01.88-SD01										
0 - 0.50'	ND	ND	ND	ND	0.53	ND	ND	ND	ND	0.53
0.50 - 1.0'	ND	ND	ND	ND	0.51	ND	ND	ND	ND	0.51
ED-02.17-SD01										
0 - 0.90'	ND	ND	ND	ND	0.48	ND	ND	ND	ND	0.48
ED-02.36-SD01										
0 - 0.70'	ND	ND	ND	ND	0.41	ND	ND	ND	ND	0.41
0.70 - 1.4'	ND	ND	ND	ND	1.17	ND	ND	ND	ND	1.17
ED-02.48-SD01										
0 - 0.70'	ND	ND	ND	ND	0.14	ND	ND	ND	ND	0.14
0.70 - 1.4'	ND	ND	ND	ND	0.13	ND	ND	ND	ND	0.13
ED-02.59-SD01										
0 - 0.80'	ND	ND	ND	ND	0.27	ND	ND	ND	ND	0.27
ED-02.63-SD01										
0 - 0.75'	ND	ND	ND	ND	0.46	ND	ND	ND	ND	0.46
ED-02.74-SD01										
0 - 0.85'	ND	ND	ND	ND	0.55	ND	ND	ND	ND	0.55
ED-02.88-SD01										
0 - 0.85'	ND	ND	ND	ND	0.33	ND	ND	ND	ND	0.33
0.85 - 1.7'	ND	ND	ND	ND	0.22	ND	ND	ND	ND	0.22
1.7 - 2.6'	ND	ND	ND	ND	0.16	ND	ND	ND	ND	0.16
ED-02.94-SD01										
0 - 0.8'	ND	ND	ND	ND	0.16	ND	ND	ND	ND	0.16
0.8 - 1.6'	ND	ND	ND	ND	0.23	ND	ND	ND	ND	0.23
ED-02.96-SD01										
0 - 0.7'	ND	ND	ND	ND	0.31	ND	ND	ND	ND	0.31
0.7 - 1.4'	ND	ND	ND	ND	0.14	ND	ND	ND	ND	0.14
ED-DUP01										
	ND	ND	ND	ND	0.70	ND	ND	ND	ND	0.70
ED-03.10-SD01										
0 - 0.9'	ND	ND	ND	ND	0.39	ND	ND	ND	ND	0.39
0.9 - 1.1'	ND	ND	ND	ND	0.25	ND	ND	ND	ND	0.25
1.1 - 1.4'	ND	ND	ND	ND	0.32	ND	ND	ND	ND	0.32
ED-03.28-SD01										
0 - 0.7'	ND	ND	ND	ND	0.21	ND	ND	ND	ND	0.21
0.7 - 1.4'	ND	ND	ND	ND	0.11	ND	ND	ND	ND	0.11
ED-Equipment Blank - 03032022										
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

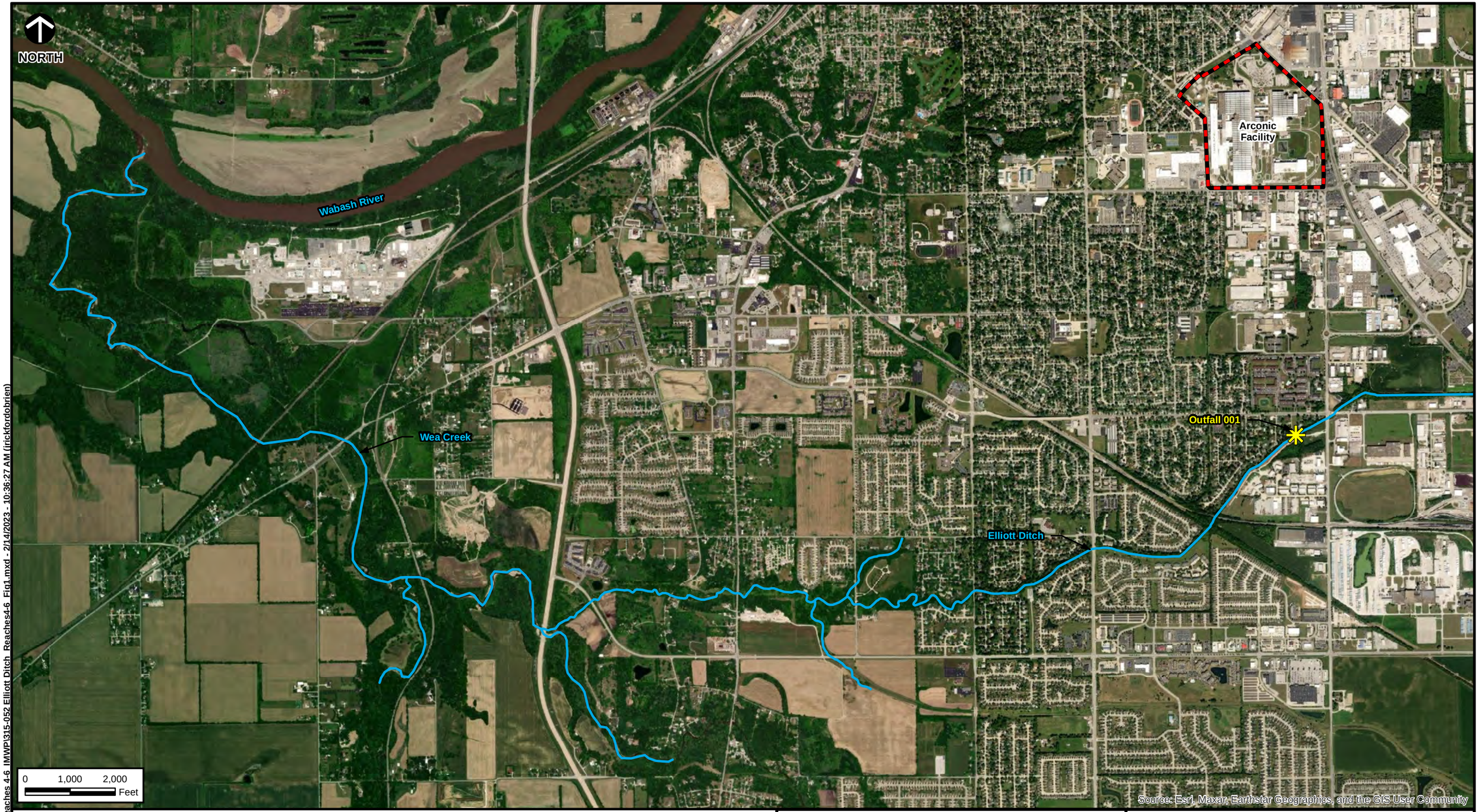
NOTES

"ND" = constituent was not detected above the laboratory method detection limit

"DUP" = indicates a dupliecate sample of the immediately preceding location

"EB" = equipment blank sample

FIGURES



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LEGEND

- Outfall 001
- Arconic Facility
- Elliott Ditch

REFERENCE

ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY
ACCESSED 2/14/2023

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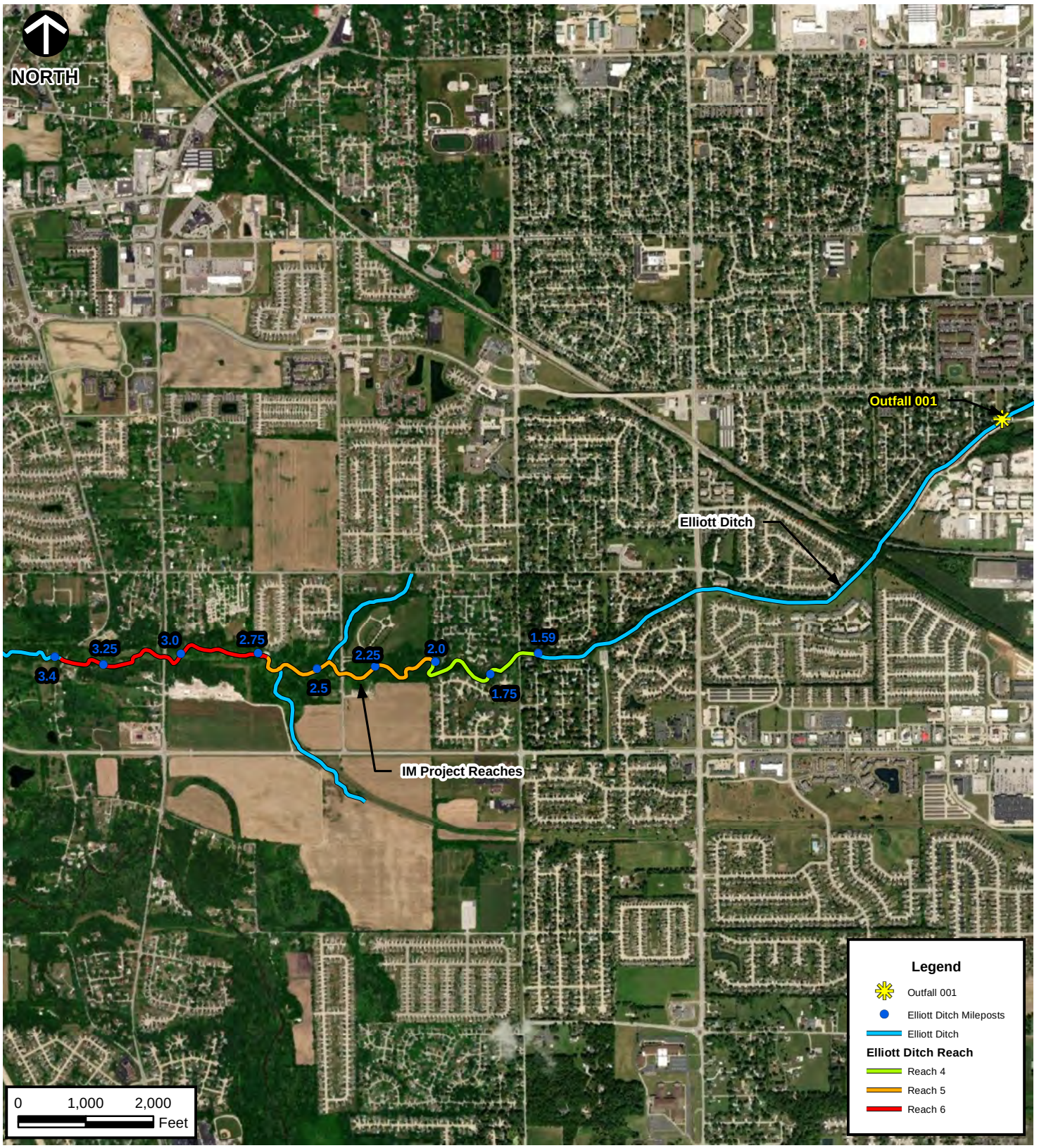
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

ELLIOTT DITCH VICINITY MAP

DRAWN BY:	JRO	CHECKED BY:	JMB	APPROVED BY:	JMB*	FIGURE NO:	1
DATE:	FEBRUARY 14, 2023	SCALE:	1 " = 2,000 '	PROJECT NO:	315-052.0007		

Signature on File *



SOURCE: ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY. LAST ACCESSED: 12/19/2022
IMAGE DATE: 03/12/2011

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ARCONIC CORP. - ELLIOTT DITCH REACHES 4-6 INTERIM MEASURES LAFAYETTE, INDIANA

ELLIOTT DITCH REACHES 4-6 IM PROJECT AREA

DRAWN BY:	JRO	CHECKED BY:	JMB	APPROVED BY:	JMB*	FIGURE NO:	2
DATE:	DECEMBER 19, 2022	DWG SCALE:	1 " = 2,000 '	PROJECT NO:	315-052.0007		

Signature on File *

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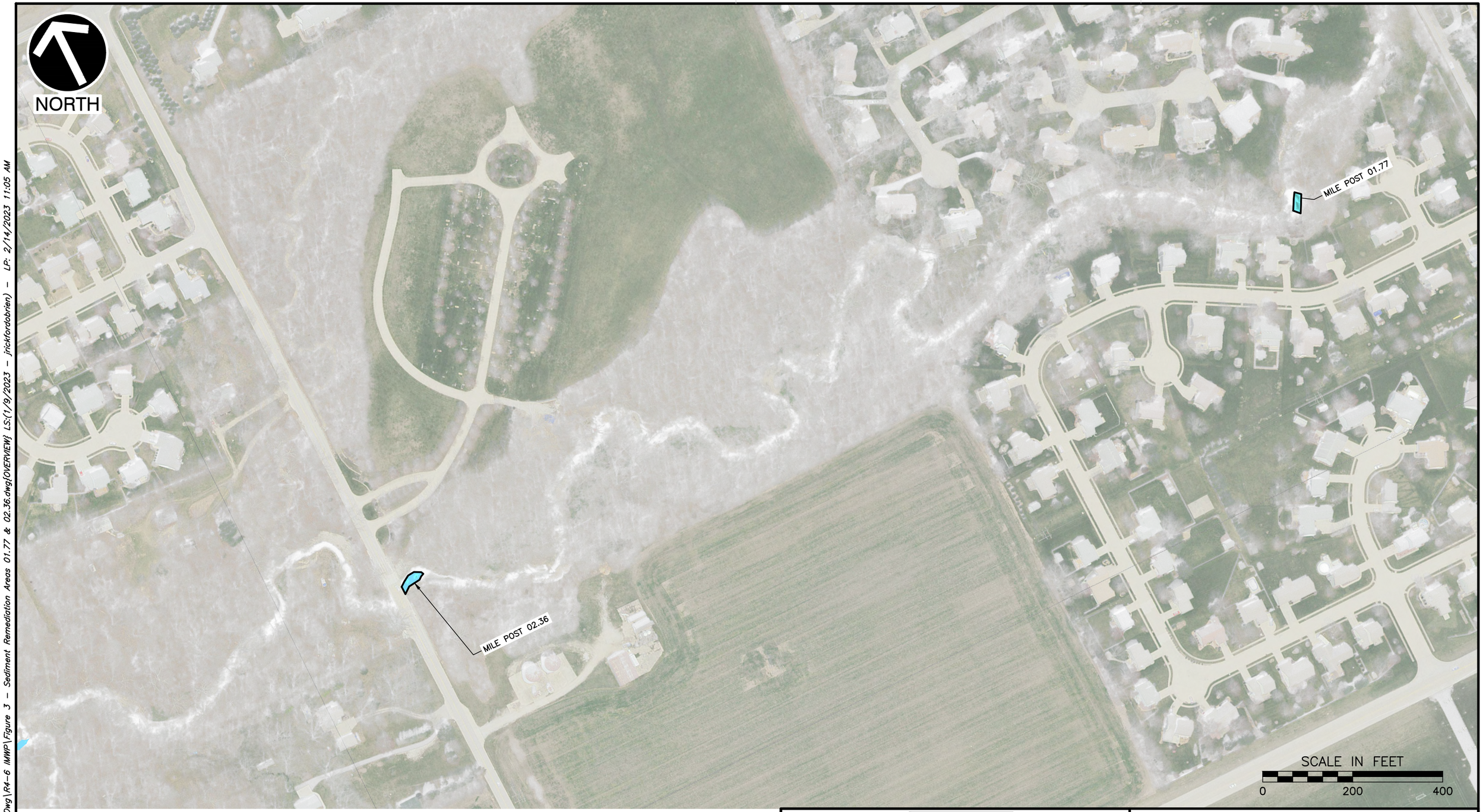

REFERENCE

1. THE EXCAVATION EXTENT IS BASED ON POLING AND SAMPLING ACTIVITIES CONDUCTED IN FEB. & MAR. 2022.
2. EXISTING TOPOGRAPHY BASED ON EXISTING CONDITIONS TOPOGRAPHY GENERATED FROM THE 2016–2020 INDIANA STATEWIDE 3DEP LIDAR DATA PRODUCTS FOR TIPPECANOE COUNTY, ACESSED VIA INDIANAMAP.
3. IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE 2016–2018 INDIANA ORTHOPHOTOGRAPHY REFRESH PROGRAM. LAFAYETTE COUNTY IMAGERY DATED 2018, DOWNLOADED 12/7/2021.

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ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

REACHES 4-6
SEDIMENT EXCAVATION OVERVIEW

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB*	FIGURE NO.:	3
DATE:	JANUARY 4, 2023	DWG SCALE:	1"=200'	PROJECT NO:	315-052.0007		

Sediment Thickness			
Number	Minimum Thickness	Maximum Thickness	Color
1	0.0	0.5	
2	0.5	1.0	
3	1.0	1.5	
4	1.5	2.0	
5	2.0	2.5	
6	2.5	3.0	

SCALE IN FEET

0 20 40

LEGEND

APPROXIMATE EXCAVATION EXTENT

REFERENCE

1. THE EXCAVATION EXTENT IS BASED ON POLING AND SAMPLING ACTIVITIES CONDUCTED IN FEB. & MAR. 2022.
2. EXISTING TOPOGRAPHY BASED ON EXISTING CONDITIONS TOPOGRAPHY GENERATED FROM THE 2016–2020 INDIANA STATEWIDE 3DEP LIDAR DATA PRODUCTS FOR TIPPECANOE COUNTY, ACESSED VIA INDIANAMAP.
3. IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE 2016–2018 INDIANA ORTHOPHOTOGRAPHY REFRESH PROGRAM. LAFAYETTE COUNTY IMAGERY DATED 2018, DOWNLOADED 12/7/2021.

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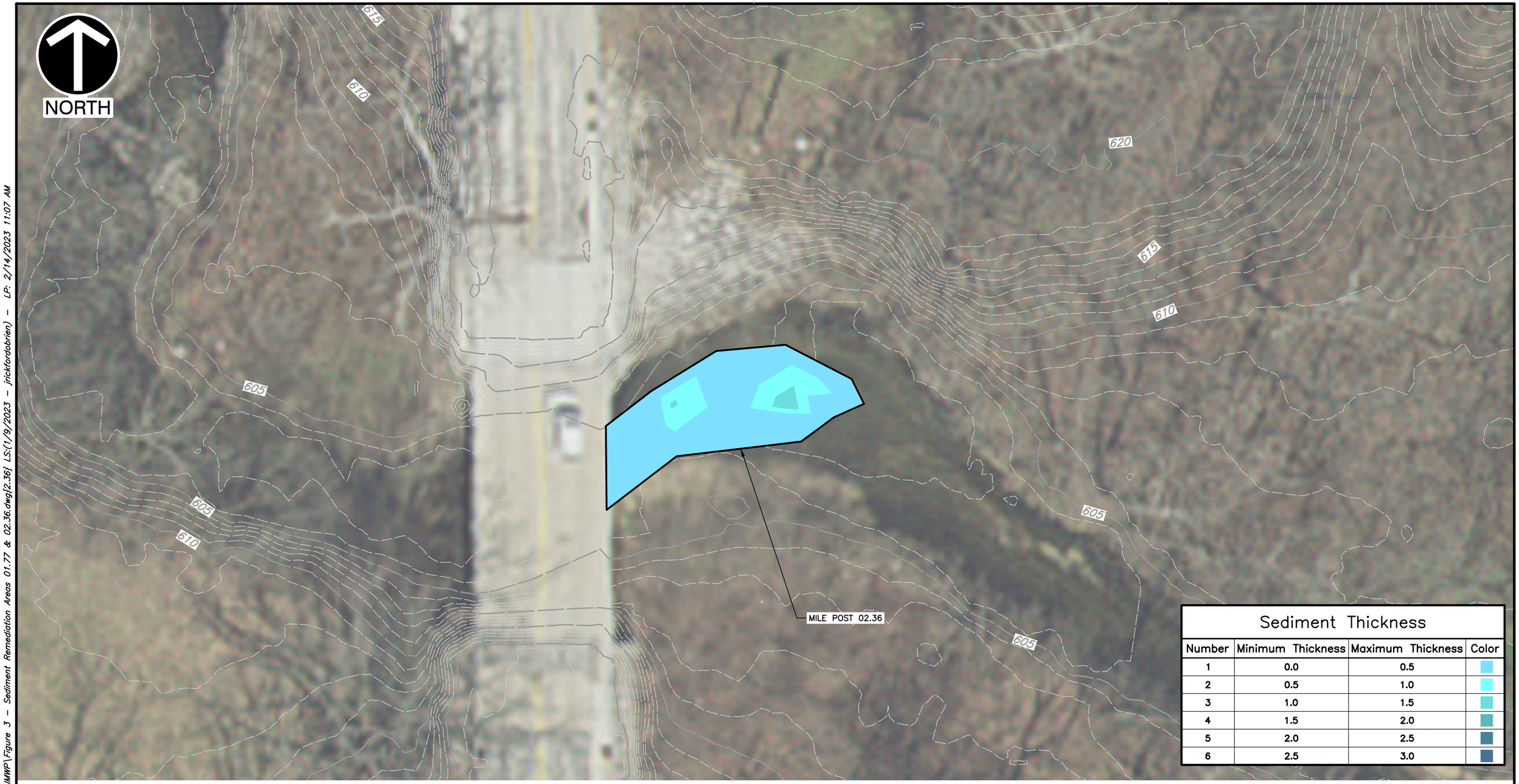
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

REACHES 4-6 SEDIMENT EXCAVATION
MILEPOST 01.77

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB*	FIGURE NO.:	3A
DATE:	JANUARY 4, 2023	DWG SCALE:	1"=20'	PROJECT NO:	315-052.0007		

P:\310-000\315-052\-CADD\Dwg\R4-6 IMWP\Figure 3 - Sediment Remediation Areas 01.77 & 02.36.dwg[1.77] LS:(1/9/2023 - jrickfordobrien) - LP: 2/14/2023 11:06 AM



Sediment Thickness			
Number	Minimum Thickness	Maximum Thickness	Color
1	0.0	0.5	
2	0.5	1.0	
3	1.0	1.5	
4	1.5	2.0	
5	2.0	2.5	
6	2.5	3.0	

SCALE IN FEET

0 20 40

LEGEND

APPROXIMATE EXCAVATION EXTENT

REFERENCE

1. THE EXCAVATION EXTENT IS BASED ON POLING AND SAMPLING ACTIVITIES CONDUCTED IN FEB. & MAR. 2022.
2. EXISTING TOPOGRAPHY BASED ON EXISTING CONDITIONS TOPOGRAPHY GENERATED FROM THE 2016–2020 INDIANA STATEWIDE 3DEP LIDAR DATA PRODUCTS FOR TIPPECANOE COUNTY, ACESSED VIA INDIANAMAP.
3. IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE 2016–2018 INDIANA ORTHOPHOTOGRAPHY REFRESH PROGRAM. LAFAYETTE COUNTY IMAGERY DATED 2018, DOWNLOADED 12/7/2021.

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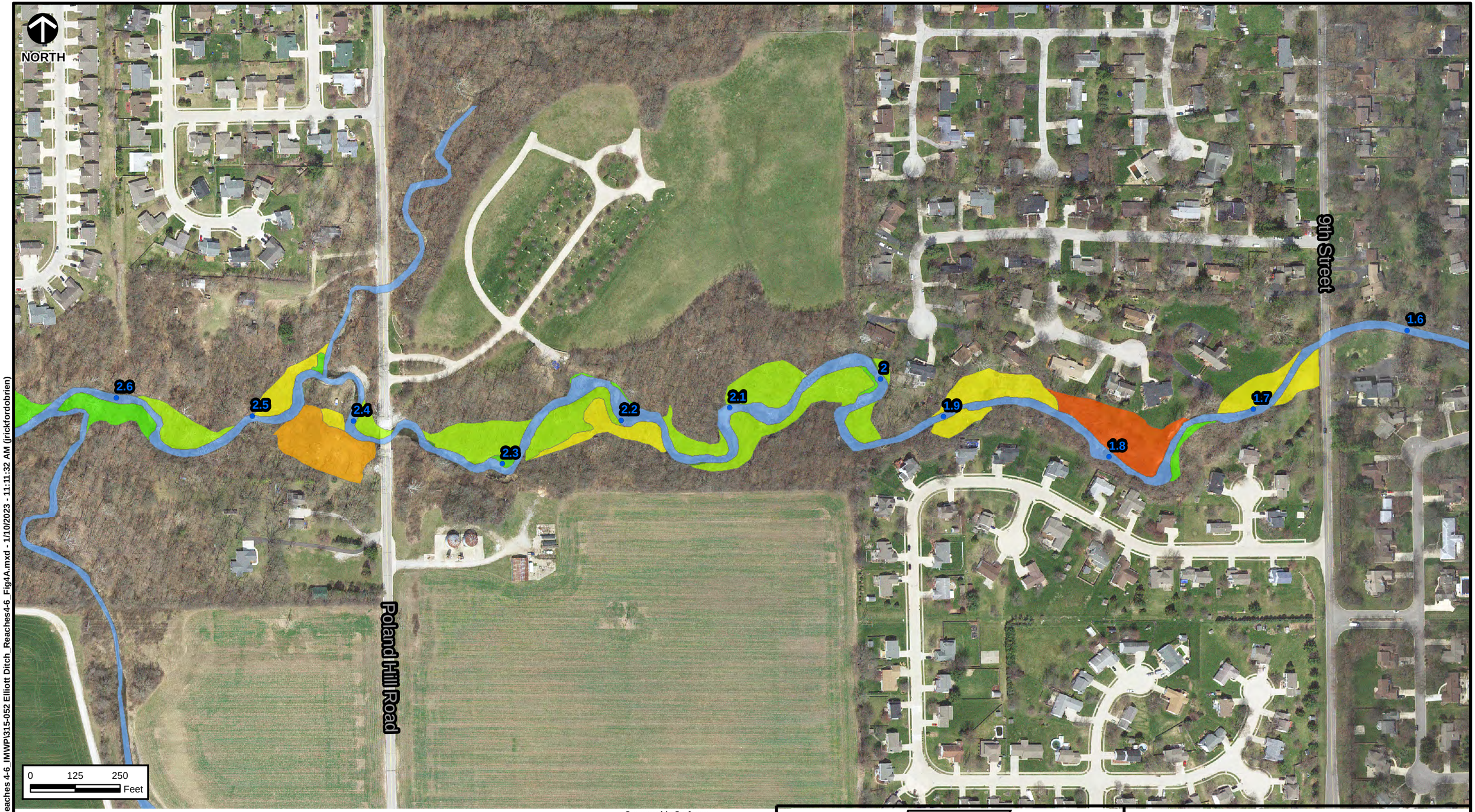
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

REACHES 4-6 SEDIMENT EXCAVATION
MILEPOST 02.36

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB*	FIGURE NO.:	3B
DATE:	JANUARY 4, 2023	DWG SCALE:	1"=20'	PROJECT NO:	315-052.0007		

P:\310-000\315-052\-CADD\Dwg\R4-6 IMWP\Figure 3 - Sediment Remediation Areas 01.77 & 02.36.dwg[2.36] LS:(1/9/2023 - jrickfordobrien) - LP: 2/14/2023 11:07 AM



REFERENCE

AERIAL IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE ORTHOPHOTOGRAPHY PROGRAM, PHOTO DATE 2018. OBTAINED FROM THE INDIANA UNIVERSITY INDIANA SPATIAL DATA PORTAL, 1/11/2022.

PRESENTED GEOMORPHIC SURFACES REVISED BASED UPON DESKTOP REVIEW AND FIELD VERIFICATION BY A CEC,INC. GEOMORPHOLOGIST. ORIGINAL SURFACES MAPPED BY TETRATECH

GEOMORPHIC SURFACES TARGETED FOR REMEDIATION ARE BASED ON THE SOIL SAMPLING RESULTS DOCUMENTED IN THE ELLIOTT DITCH REACHES 4-6 GEOMORPHIC ASSESSMENT REPORT, DATED NOVEMBER 2022, AND PREPARED BY CEC, INC. AREAS ARE SUBJECT TO CHANGE IF ADDITIONAL SAMPLING IS PERFORMED.

Legend

- Elliott Ditch Mile Posts

Geomorphic Surfaces

- Stream
- F
- T-1
- T-2
- T-3
- T-4
- T-5
- T-6
- Anthropogenic
- Oxbow

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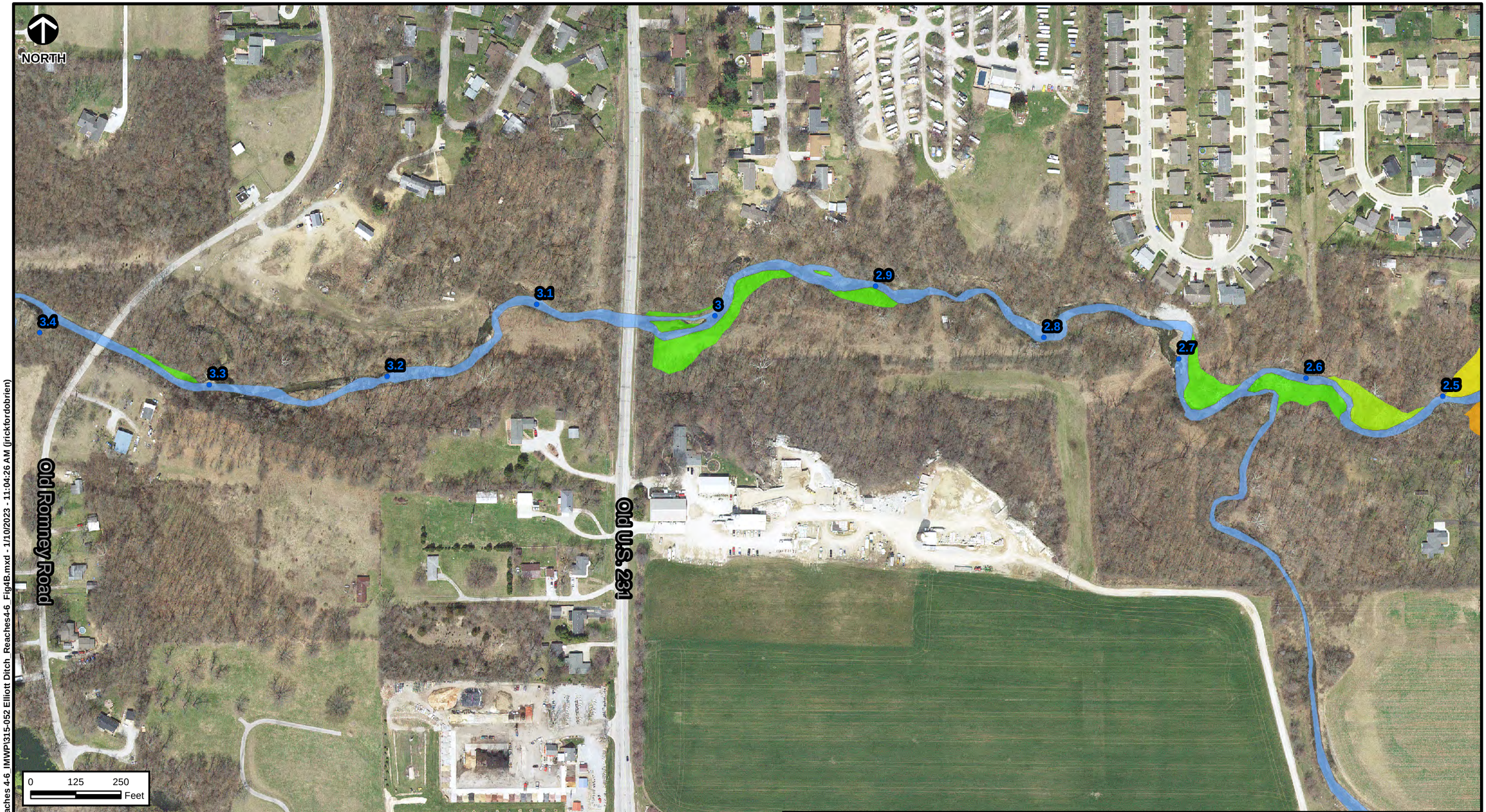
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

SOIL REMEDIATION AREAS - REACHES 4/5

DRAWN BY:	JRO/JLM	CHECKED BY:	JMB	APPROVED BY:	JMB*	FIGURE NO:	4A
DATE:	JANUARY 10, 2023	SCALE:	1" = 250	PROJECT NO:	315-052.0007		

P:\310-000\315-052\-GIS\Maps\Reaches 4-6_IMWP\315-052 Elliott Ditch_Reaches4-6_Fig4A.mxd - 1/10/2023 - 11:11:32 AM (jrickfordobrien)



P:\310-000\315-052\-GIS\Maps\Reaches 4-6_IMWP\315-052 Elliott Ditch_Reaches4-6_Fig4B.mxd - 1/10/2023 - 11:04:26 AM (jrickfordobrien)

REFERENCE

AERIAL IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE ORTHOPHOTOGRAPHY PROGRAM, PHOTO DATE 2018. OBTAINED FROM THE INDIANA UNIVERSITY INDIANA SPATIAL DATA PORTAL, 1/11/2022.

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Legend

- Elliott Ditch Mile Posts

Geomorphic Surfaces

- Stream
- F
- T-1
- T-2
- T-3
- T-4
- T-5
- T-6
- Anthropogenic
- Oxbow

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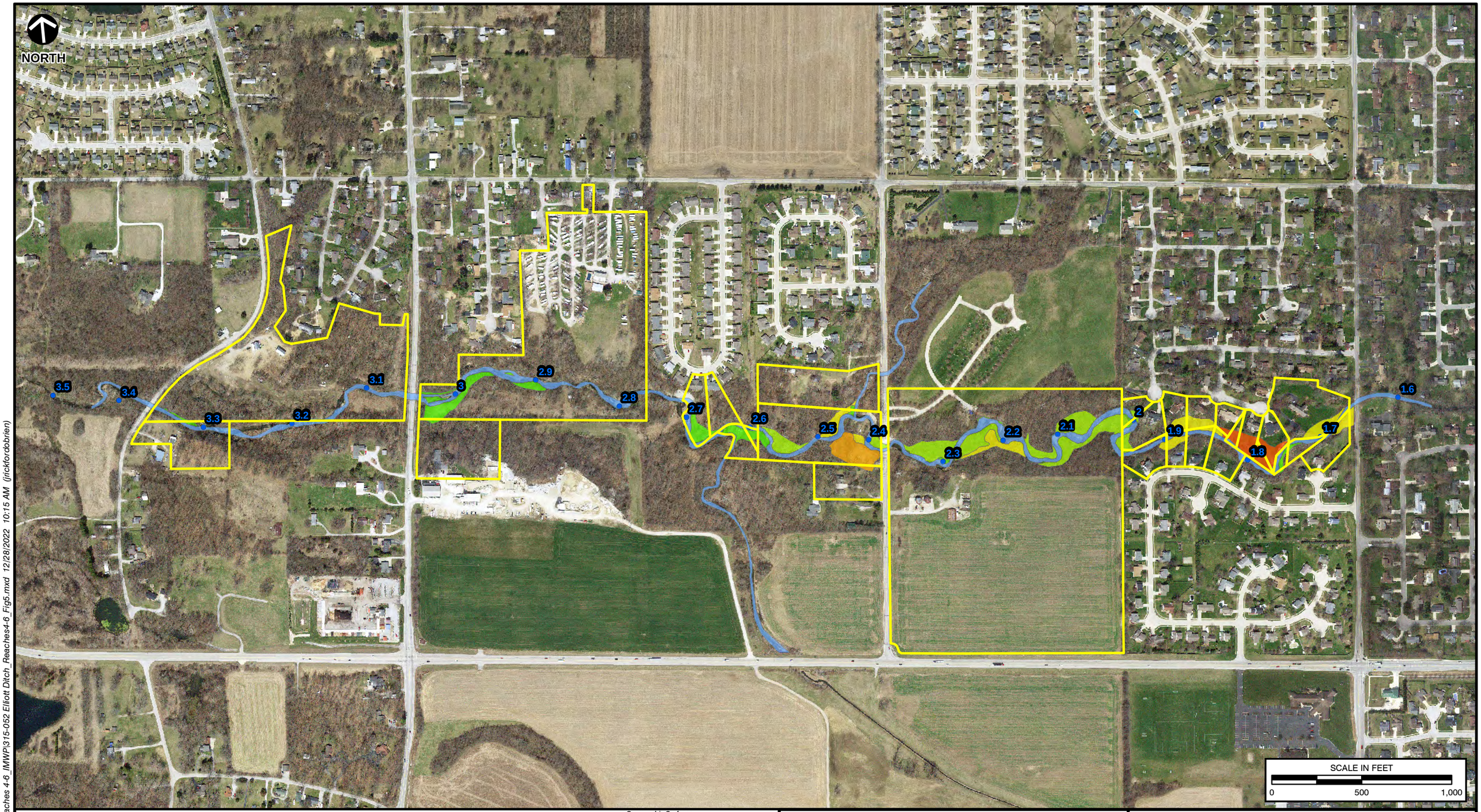
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

SOIL REMEDIATION AREAS - REACHES 5/6

DRAWN BY:	JRO/JLM	CHECKED BY:	JMB	APPROVED BY:	JMB*	FIGURE NO:	4B
DATE:	JANUARY 10, 2023	SCALE:	1" = 250	PROJECT NO:	315-052.0007		



REFERENCE

AERIAL IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE ORTHOPHOTOGRAPHY PROGRAM, PHOTO DATE 2018. OBTAINED FROM THE INDIANA UNIVERSITY INDIANA SPATIAL DATA PORTAL, 1/11/2022.

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PROPERTY BOUNDARY DATA PROVIDED BY TIPPECANOE COUNTY MITS DEPARTMENT, OBTAINED ON 1/3/2022.

LEGEND

- Property Boundary
- Elliott Ditch Mileposts

Geomorphic Surfaces

- Stream
- F
- T-1
- T-2
- T-3
- T-4
- T-5
- T-6
- Anthropogenic
- Oxbow

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ARCONIC CORP. - ELLIOTT DITCH REACHES 4-6 IMWP LAFAYETTE, INDIANA

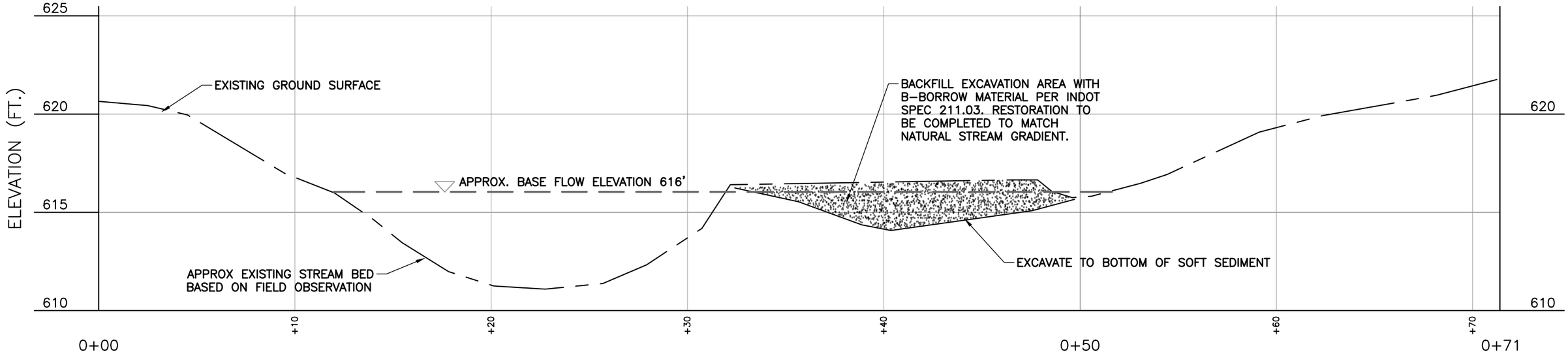
PROPERTIES CONTAINING SOIL OR SEDIMENT FOR REMEDIATION

DRAWN BY:	KAM	CHECKED BY:	GAW	APPROVED BY:	* Hand signature on file JMB*	FIGURE NO:	5
DATE:	12/28/2022	SCALE:	1 " = 500 '	PROJECT NO:	315-052.0007		

P:\310-000\315-052\-GIS\Maps\Reaches 4-6_IMWP\315-052 Elliott Ditch_Reaches4-6_Fig5.mxd 12/28/2022 10:15 AM (jrickfordobrien)

NORTHWEST

SOUTHEAST



REACH 4 TYPICAL PROFILE

SCALE H:1"=5'; V:1"=5'

REFERENCE

1. EXISTING TOPOGRAPHY BASED ON FIELD OBSERVATION AND EXISTING CONDITIONS TOPOGRAPHY FROM THE 2016–2020 INDIANA STATEWIDE 3DEP LIDAR DATA PRODUCTS FOR TIPPECANOE COUNTY, ACCESSED VIA INDIANAMAP.
2. SOFT SEDIMENT THICKNESS AND ELEVATION DETERMINED BY SEDIMENT POLING PERFORMED BY CEC IN FEB. AND MAR. 2022. SEDIMENT THICKNESS DATA WERE COLLECTED IN ACCORDANCE WITH THE STANDARD OPERATING PROCEDURE FOR POLING MEASUREMENTS TO ESTIMATE SOFT SEDIMENT THICKNESS AS INCLUDED IN ATTACHMENT A OF THE ELLIOTT DITCH FIELD SAMPLING PLAN, PREPARED BY TETRA TECH, INC. AND DATED 2/2/2016.

NOTES

1. SEDIMENT REMOVAL AREAS WILL BE BACKFILLED USING B–BORROW MATERIAL PER INDOT SPECIFICATION 211.03, OR SIMILAR. EXCAVATIONS WILL BE RESTORED TO AN ELEVATION THAT IS CONSISTENT WITH THE EXISTING CONDITIONS OF THE REACH WHERE WORK IS BEING PERFORMED (I.E. THE TARGET ELEVATION) AND THE OVERALL LONGITUDINAL GRADIENT OF THE REACH AS IDENTIFIED IN THE ELLIOTT DITCH GEOMORPHIC SURFACE MAPPING AND HISTORIC DATA REVIEW, PREPARED BY TETRA TECH CES, DATED 7/6/2015.
2. DURING STREAM CHANNEL RESTORATION, UPGRADIENT AND DOWNGRADIENT LIMITS OF TARGETED SEDIMENT REMOVAL AREAS WILL BE GRADED INTO THE EXISTING ADJACENT CHANNEL BOTTOM.
3. APPROXIMATE BASE FLOW ELEVATION BASED UPON FIELD MEASUREMENTS DURING SEDIMENT POLING ACTIVITIES.

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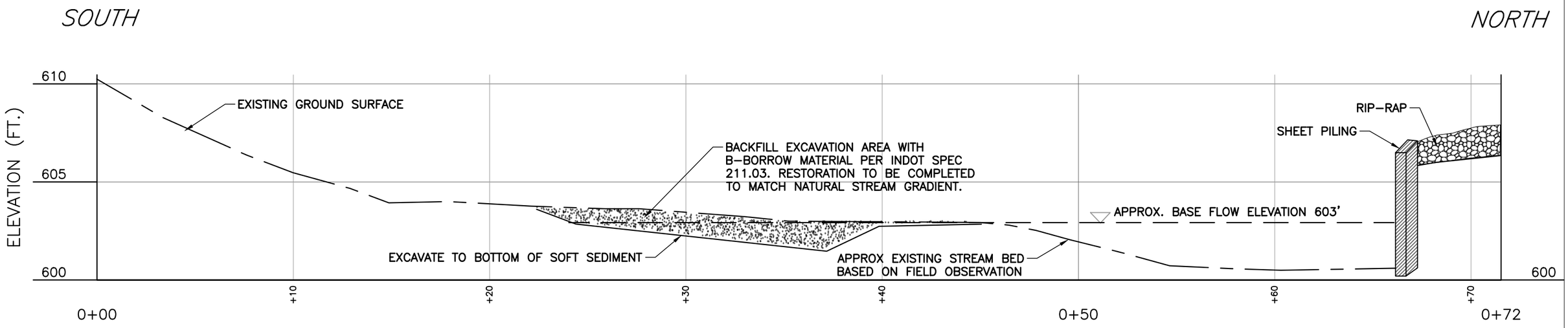
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

SEDIMENT EXCAVATION AND BACKFILL PROFILE
REACH 4 (MILEPOST 01.77)

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB	FIGURE NO.: 6A
DATE:	JAN. 2023	DWG SCALE:	AS SHOWN	PROJECT NO:	315-052.0007	



REACH 5 TYPICAL PROFILE

SCALE H:1"=5'; V:1"=5'

REFERENCE

1. EXISTING TOPOGRAPHY BASED ON FIELD OBSERVATIONS AND EXISTING CONDITIONS TOPOGRAPHY FROM THE 2016–2020 INDIANA STATEWIDE 3DEP LIDAR DATA PRODUCTS FOR TIPPECANOE COUNTY, ACCESSED VIA INDIANAMAP.
2. SOFT SEDIMENT THICKNESS AND ELEVATION DETERMINED BY SEDIMENT POLING PERFORMED BY CEC IN FEB. AND MAR. 2022. SEDIMENT THICKNESS DATA WERE COLLECTED IN ACCORDANCE WITH THE STANDARD OPERATING PROCEDURE FOR POLING MEASUREMENTS TO ESTIMATE SOFT SEDIMENT THICKNESS AS INCLUDED IN ATTACHMENT A OF THE ELLIOTT DITCH FIELD SAMPLING PLAN, PREPARED BY TETRA TECH, INC. AND DATED 2/2/2016.

NOTES

1. SEDIMENT REMOVAL AREAS WILL BE BACKFILLED USING B–BORROW MATERIAL PER INDOT SPECIFICATION 211.03, OR SIMILAR. EXCAVATIONS WILL BE RESTORED TO AN ELEVATION THAT IS CONSISTENT WITH THE EXISTING CONDITIONS OF THE REACH WHERE WORK IS BEING PERFORMED (I.E. THE TARGET ELEVATION) AND THE OVERALL LONGITUDINAL GRADIENT OF THE REACH AS IDENTIFIED IN THE ELLIOTT DITCH GEOMORPHIC SURFACE MAPPING AND HISTORIC DATA REVIEW, PREPARED BY TETRA TECH CES, DATED 7/6/2015.
2. DURING STREAM CHANNEL RESTORATION, UPGRADIENT AND DOWNGRADIENT LIMITS OF TARGETED SEDIMENT REMOVAL AREAS WILL BE GRADED INTO THE EXISTING ADJACENT CHANNEL BOTTOM.
3. APPROXIMATE BASE FLOW ELEVATION BASED UPON FIELD MEASUREMENTS DURING SEDIMENT POLING ACTIVITIES.

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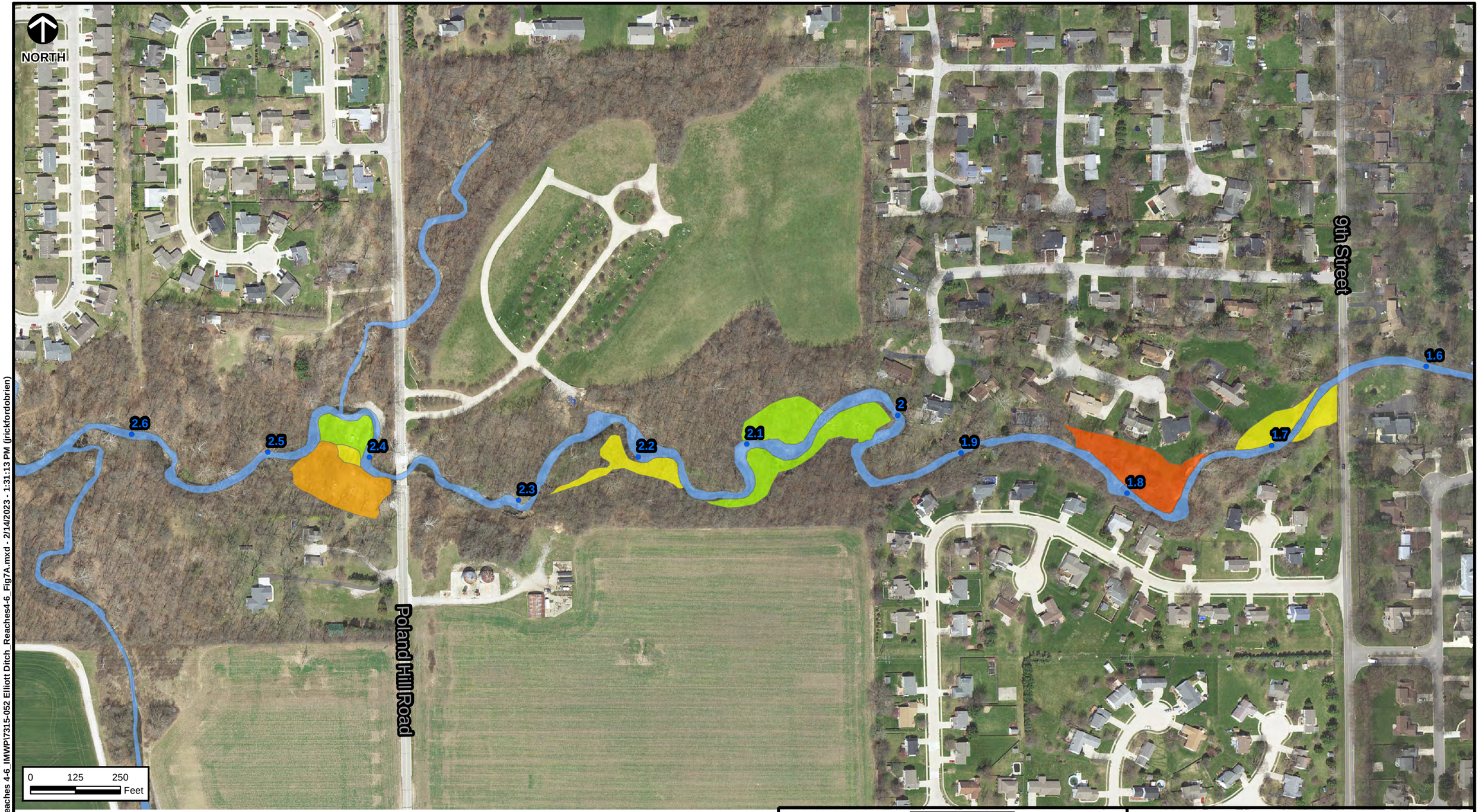
DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB	FIGURE NO.:	6B
DATE:	JAN. 2023	DWG SCALE:	AS SHOWN	PROJECT NO:	315-052.0007		

ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

SEDIMENT EXCAVATION AND BACKFILL PROFILE
REACH 5 (MILEPOST 02.36)



REFERENCE

AERIAL IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE ORTHOPHOTOGRAPHY PROGRAM, PHOTO DATE 2018. OBTAINED FROM THE INDIANA UNIVERSITY INDIANA SPATIAL DATA PORTAL, 1/11/2022.

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Legend

- Elliott Ditch Mile Posts

Geomorphic Surfaces

- Stream
- F
- T-1
- T-2
- T-3
- T-4
- T-5
- T-6
- Anthropogenic
- Oxbow

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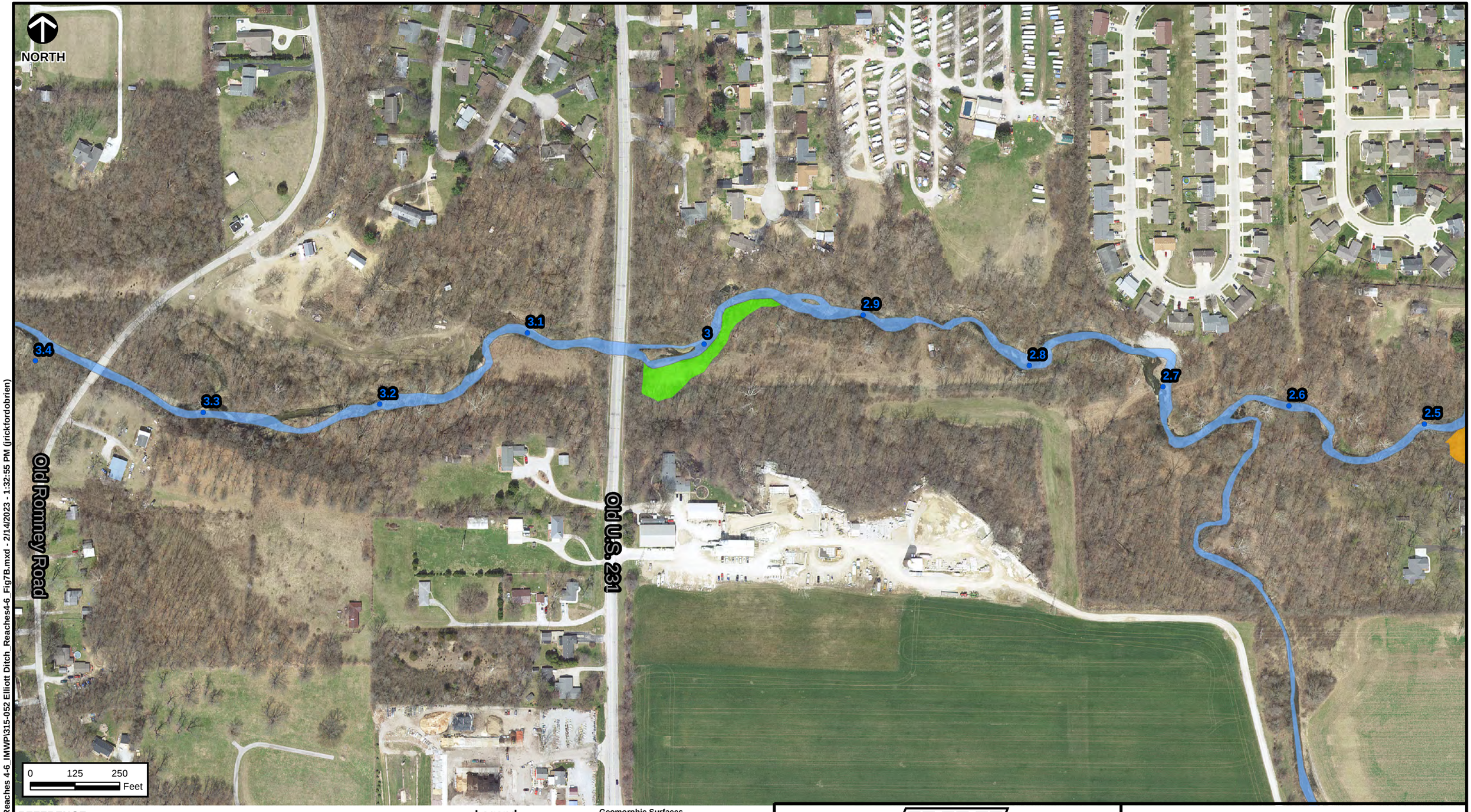
ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

REACHES 4/5 GEOMORPHIC SURFACES FOR ADDITIONAL DELINEATION

DRAWN BY:	JRO/JLM	CHECKED BY:	GAW	APPROVED BY:	JMB*	FIGURE NO:	7A
DATE:	FEBRUARY 14, 2023	SCALE:	1" = 250	PROJECT NO:	315-052.0007		

P:\310-000\315-052\-GIS\Maps\Reaches 4-6_IMWP\7315-052 Elliott Ditch_Reaches4-6_Fig7A.mxd - 2/14/2023 - 1:31:13 PM (jrickfordobrien)



P:\310-000\315-052\-GIS\Maps\Reaches 4-6_IMWP\315-052 Elliott Ditch_Reaches4-6_Fig7B.mxd - 2/14/2023 - 1:32:55 PM (jrickfordobrien)

REFERENCE

AERIAL IMAGERY PROVIDED BY THE INDIANA GEOGRAPHIC INFORMATION OFFICE ORTHOPHOTOGRAPHY PROGRAM, PHOTO DATE 2018. OBTAINED FROM THE INDIANA UNIVERSITY INDIANA SPATIAL DATA PORTAL, 1/11/2022.

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Legend

- Elliott Ditch Mile Posts

Geomorphic Surfaces

- Stream
- F
- T-1
- T-2
- T-3
- T-4
- T-5
- T-6
- Anthropogenic
- Oxbow

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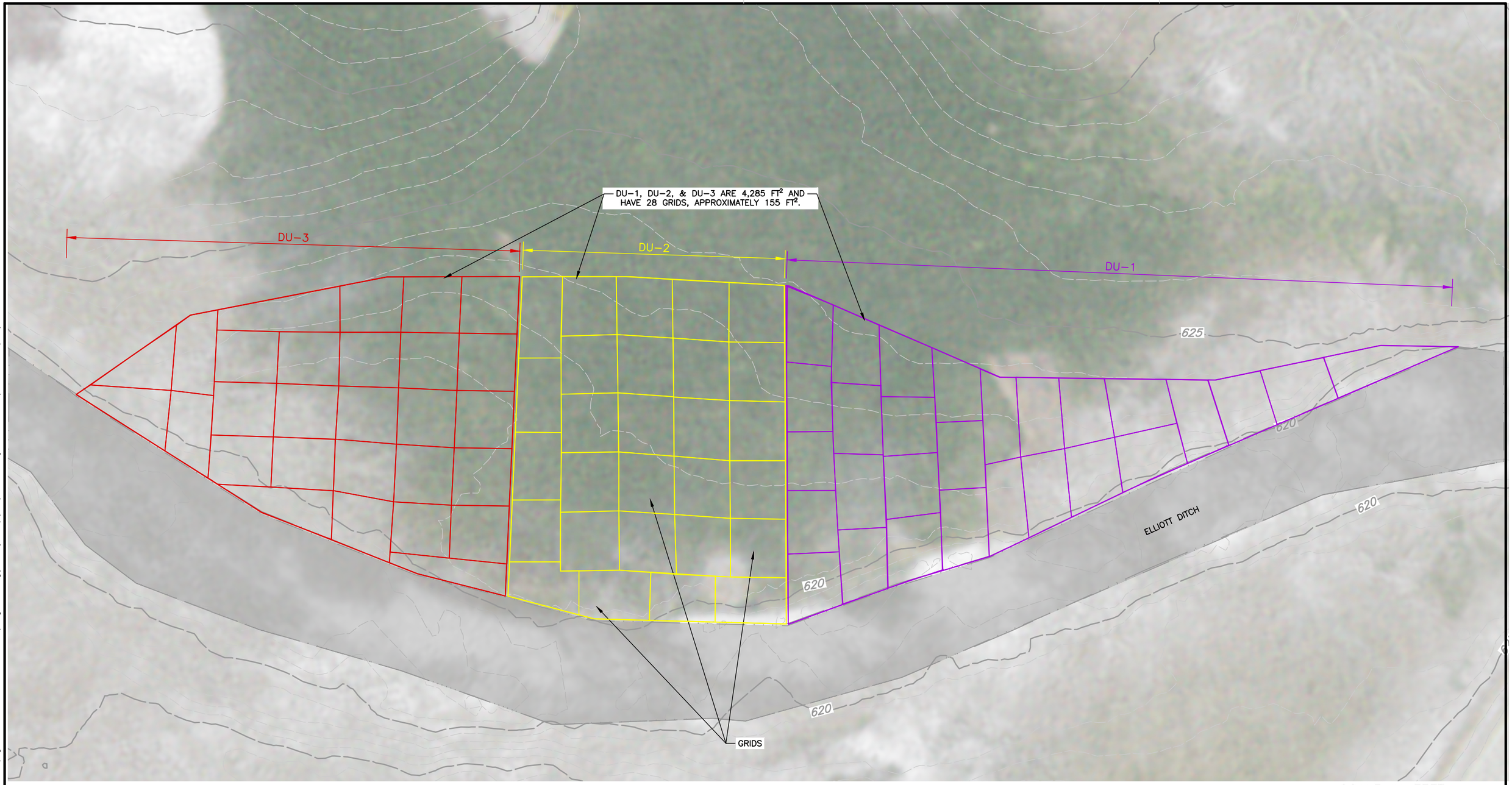
ARCONIC CORP. - ELLIOTT DITCH REACHES 4-6 IMWP LAFAYETTE, INDIANA

REACHES 5/6 GEOMORPHIC SURFACES FOR ADDITIONAL DELINEATION

DRAWN BY:	JRO/JLM	CHECKED BY:	GAW	APPROVED BY:	JMB*
DATE:	FEBRUARY 14, 2023	SCALE:	1" = 250	PROJECT NO:	315-052.0007

FIGURE NO: **7B**



REFERENCE

1. CONFIRMATION SAMPLING WILL BE CONDUCTED IN GENERAL ACCORDANCE WITH THE INTERSTATE TECHNOLOGY REGULATORY COUNCIL (ITRC) INCREMENTAL SAMPLING METHODOLOGY (ISM) DOCUMENTS (2012 & 2020) AND THE SPECIFIC PROTOCOLS OUTLINED IN THE INTERIM MEASURES WORK PLAN (IMWP).
2. EACH DECISION UNIT IS APPROXIMATELY 500 CUBIC YARDS (THE ASSUMED EXCAVATED VOLUME THAT THE REMEDIAL CONTRACTOR CAN EXCAVATE AND DISPOSE OF IN ONE WORKING DAY).
3. DECISION UNIT AREAS DESIGNED TO EACH CONTAIN 20 TO 31 APPROXIMATELY EQUALLY SIZED GRIDS. THE SAMPLING METHOD WITHIN EACH DECISION UNIT WILL BE RANDOM SAMPLING WITHIN THE GRIDS, WHERE THE NUMBER OF GRID SQUARES IS EQUAL TO THE NUMBER OF INCREMENTS. EACH INCREMENT WILL BE COLLECTED FROM THE TOP 3 INCHES OF SOIL.
4. A PRIMARY, DUPLICATE, AND TRIPLICATE SAMPLE WILL BE COLLECTED FROM EACH OF THE DECISION UNITS FOLLOWING THE RANDOM SAMPLING WITHIN GRID METHOD. THE SAMPLE LOCATIONS WITHIN THE GRID WILL BE AT LEAST 3 FEET FROM EACH OTHER.

SCALE IN FEET
0 20 40

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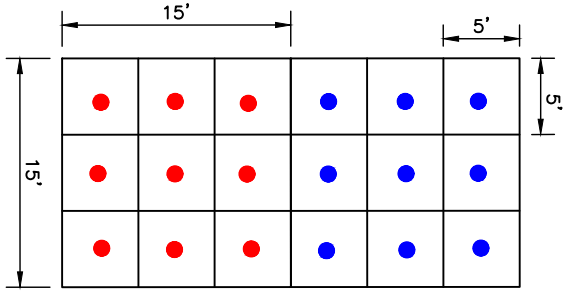
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

TYPICAL SOIL SAMPLING ISM GRID LAYOUT - T4 TERRACE AT MILE POST 01.70

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB	FIGURE NO.:	8
DATE:	FEB. 2023	DWG SCALE:	1"=20'	PROJECT NO:	315-052.0007		

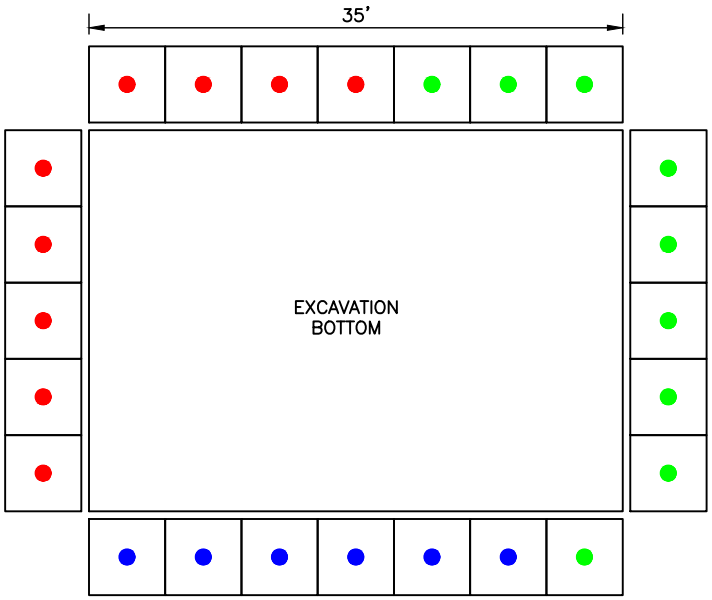
P:\310-000\315-052\-CADD\Dwg\R4-6 IMWP\Figure 8 - Confirmation Sampling ISM.dwg[FIG 8] LS:(2/14/2023 - jrickfordobrien) - LP: 2/14/2023 3:59 PM

EXCAVATION BOTTOM



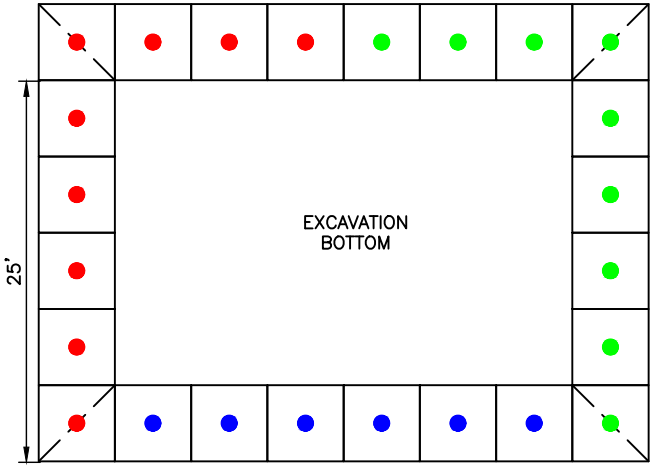
9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE
9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE

VERTICAL SIDEWALL



9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE
9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE
6 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE

SLOPED SIDEWALL



9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE
9 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE
6 DISCRETE SAMPLES = 1 COMPOSITE SAMPLE

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ARCONIC CORP. - ELLIOTT DITCH
REACHES 4-6 IMWP
LAFAYETTE, INDIANA

TSCA BOTTOM & SIDEWALL
CONFIRMATION SAMPLING SCHEMATIC

DRAWN BY:	JRO	CHECKED BY:	GAW	APPROVED BY:	JMB	FIGURE NO.:	9
DATE:	FEB. 2023	DWG SCALE:	AS SHOWN	PROJECT NO:	315-052.0007		