SESI
CONSULTING ENGINEERS

Geotechnical
Environmental
Site Civil

959 Route 46E, Fl 3, Ste 300
Parsippany, NJ 07054
973.808.9050
www.sesi.org

Supplemental Remedial Investigation Work Plan

For:

Former Ludlow Street Works Site

150 Downing Street, 55 Knowles Street, 151 Ludlow Street, and 1-3 Bridge Street

Yonkers, NY

NYSDEC BCP Site No. C360158

Prepared for:
Ludlow Point Development, LLC
April 2024 (Revised July 2024)

SESI Project No:
10857

TABLE OF CONTENTS

FIGURES

TABLES

LIST OF ACRONYMS

Acronym	Definition
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Plan
DER	Division of Environmental Remediation
DER-10	NYSDEC Technical Guidance for Site Investigation & Remediation Division of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
HASP	Health and Safety Plan
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyls
PFAS	Per and Polyfluoroalkyl Substances
PFOS	Perfluorooctanesulfonic Acid
PFOA	Perfluorooctanoic Acid
PID	Photoionization Detector
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
RRSCOs	Restricted Residential Soil Cleanup Objectives
SCG	Standards, Criteria, and Guidance
SESI	SESI Consulting Engineers, DPC
SRIWP	Supplemental Remedial Investigation Workplan
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
VOCs	Volatile Organic Compounds
WMW	Westchester Metal Works

CERTIFICATIONS

I, Fuad Dahan, certify that I am a professional engineer, and meet the definition of qualified environmental professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10)

24GE05012100	08/07/2024	
NYS Professional Engineer #	Date	Signature

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

1.0 INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) entered into a Brownfield Cleanup Program (BCP) Agreement (BCA) with Ludlow Point Development, LLC (the "Volunteer"), for the approximately 3.02-acre property known as the Former Ludlow Street Works Site (BCP Site No. C360158) ("Site"), located at 150 Downing Street, 58 Knowles Street (aka 151 Ludlow Street), and 1 Bridge Street (aka 1-3 Bridge Street), Westchester County, New York on November 19, 2018. The property located at 55 Knowles Street was added to the BCP Site in an amendment filed with the NYSDEC on November 1, 2021, which increased the BCP Site acreage to 3.46 acres. A Site Location Map is presented as **Figure 1**. A Site Plan is included as **Figure 2**.

SESI Consulting Engineers D.P.C. (SESI) has prepared this Supplemental Remedial Investigation Workplan (SRIWP) on behalf of the Volunteer. This document comprises an SRIWP for supplemental sampling to be conducted at the Site, as part of the Site's remedial investigation in preparation for designing a remedy for the Site. It includes a plan to investigate the Westchester Metal Works (WMW) property, located at 55 Knowles Street, which was not previously investigated during the remedial investigation (RI) of the Site in 2020-2021. All onsite work proposed in this SRIWP will be conducted in accordance with the previously-approved April 2020 Remedial Investigation Work Plan (RIWP), including relevant appendices including the Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), Community Air Monitoring Plan (CAMP), and Emerging Contaminant Sampling Plan.

This SRIWP has been prepared to achieve the following objectives:

- To investigate soil, groundwater, and soil vapor quality on the WMW property;
- To characterize the nature and extent of contamination on the WMW property in a sufficient manner for a planned Track 4 remedy for this portion of the BCP site;

The general objectives of the remedial investigation of the Site are as follows:

- To characterize the full nature and extent of contamination on the Site;
- To identify and delineate any potential source areas of contamination;
- To collect data sufficient to prepare the Qualitative Human Health Exposure Assessment; and

- To collect sufficient data to complete the alternatives analysis and update/finalize the existing Remedial Action Work Plan.

This SRIWP is developed in general accordance with the Department's Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

The results of the sampling proposed in this SRIWP will be presented to the Department in an updated Remedial Investigation Report (RIR).

2.0 SUPPLEMENTAL REMEDIAL INVESTIGATION

The applicable Standards, Criteria, and Guidance (SCGs) for the Site soil are the 6 NYCRR §375-6.8(a) Restricted Residential Soil Cleanup Objectives (RRSCOs) based on an anticipated Track 4 remediation. The applicable SCGs for the Site groundwater are the water quality standards for taste-, color- and odor-producing, toxic and other deleterious substances (cf. Section 703.5) and the Final Ambient Water Quality Guidance Values for Perfluorooctanoic Acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), and 1,4-Dioxane (NYSDEC, May 2023). The principal personnel and subcontractors who will participate in the investigation are listed in the QAPP in Appendix B of the Remedial Investigation Work Plan (RIWP) and the emerging contaminant sampling plan is included in Appendix F of the RIWP.

Additionally, a photoionization detector (PID) will be used to screen on-Site volatile organic compound (VOC) vapors in and around the work zone. PID readings will be collected from the top of borings or drill casing during drilling downtime, as appropriate.

2.1 SUPPLEMENTAL SOIL REMEDIAL INVESTIGATION

Six (6) additional soil borings will be advanced on the WMW lot at the locations shown on **Figure 3** to evaluate and delineate potential soil contamination from the WMW facility. Boring locations were selected to provide additional site coverage beyond where previous borings completed during the pre-BCP investigation of the WMW property were located. The pre-BCP boring locations and Unrestricted Soil Cleanup Objectives/RRSCO exceedances are also shown on **Figure 3**. The data from the pre-BCP investigation will be validated, and a data usability summary report for the data will be included in the updated RIR.

The borings will be advanced using direct-push or other drilling methods as needed. The borings will extend to depths of at least 10 feet into native soils or refusal, whichever occurs first. Native soils will be identified as the first soils observed to be free of any characteristics of fill material, including the presence of brick, concrete, demolition debris, fly ash, asphalt, etc. Should PID, visual, or olfactory observations indicate signs of contamination near the planned terminal depth of the boring, the boring depth will be extended until soils with no signs of contamination are reached. The one exception to this investigation plan is proposed boring WMW-RI1, which is intended to delineate the presence of coal tar/dense non-aqueous phase liquid that was identified immediately to the west of the WMW building. This boring will be advanced to bedrock to determine if any such coal tar is present anywhere in the soil column.

Should any coal tar be identified in this boring, an additional step-out boring will be advanced to the east.

Borings will be logged continuously from grade to the terminal depth. Up to two (2) soil samples will be collected from each boring, including at least one (1) sample from the shallow fill layer and one (1) sample from native soils. Sample depths may be biased towards intervals exhibiting visual or olfactory impacts or elevated PID readings, if present. Up to 12 soil samples are proposed to be collected.

In addition to the sampling proposed on the WMW lot, SESI will re-collect several remedial endpoint samples from the portion of the 150 Downing Street property where the excavation was previously conducted to achieve a Track 1 cleanup. Sixteen (16) locations are proposed for sample re-collection along the eastern, western, northern, and southern (near the central portion of the Site) perimeters of the Track 1 excavation area as shown on **Figure 3A**. The re-collection of these samples will occur after the removal of sediment that has washed into these previously excavated perimeter areas since the excavation ceased in August 2023. The sediment is derived from the adjoining Track 4 areas or from offsite. Soil samples will be collected from the top six (6) inches of surface soil.

All soil samples will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Soil samples from the WMW lot will be analyzed for the Target Compound List/Target Analyte List suite (TCL+30/TAL), which includes semi-volatile organic compounds (SVOCs) by EPA Method 8270, TAL metals by EPA Methods 6010, 7471, and 9012, VOCs, pesticides, polychlorinated biphenyls (PCBs), and cyanide, as well as per and polyfluoroalkyl substances (PFAS) by EPA Method 1633, and 1-4,dioxane by EPA Method 8270. In addition, soil samples from boring location WMW-RI2 will be analyzed for toxicity characteristic leachate procedure (TCLP) lead (based on a pre-BCP soil lead concentration of 4,520 mg/kg in nearby boring SB-7), and soil samples from locations WMW-RI4 and WMW-RI6 will be analyzed for TCLP mercury based on pre-BCP mercury concentrations of 82.3 mg/kg and 10.8 mg/kg near these respective locations. The additional remedial endpoint samples in the Track 1 area will also be analyzed for TCL+30/TAL, PFAS, and 1,4-dioxane.

Category B deliverables will be requested on each sample chain of custody. In addition, quality assurance/quality control (QA/QC) samples will be collected and analyzed as specified in the QAPP from the RIWP. Specifically, the number of duplicate, spiked and blank samples analyzed will consist of a minimum of one (1) duplicate for every 20 samples. The inclusion and frequency of analysis of field blanks will be on the order of one (1) per every 20 soil samples but not less than one (1) per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks (water matrix) or field blanks (soil, sediment matrix).

2.2 GROUNDWATER REMEDIAL INVESTIGATION

To further investigate groundwater on the WMW lot, three (3) permanent groundwater monitoring wells will be installed and sampled as shown on **Figure 4**. The wells will be installed at least five (5) feet below the encountered water table. Each monitoring well will be constructed with 2-inch diameter well screens. A 10-foot 20-slot well screen will intersect the water table and extend to the bottom of the well boring. The annular space of each well will be filled with No. 2 Morie sand to at least 2 feet above the top of screen and then sealed with hydrated bentonite or cement grout. Finally, each monitoring well will be completed with a flush-mount road-box or stickup as necessary.

The newly installed wells will be surveyed for location and elevation. The survey data will be provided pursuant to the Division of Environmental Remediation (DER) DER-10 requirements in an acceptable format (e.g., North America Datum 83 [NAD83]). The wells will be gauged for groundwater depth to determine the groundwater elevation. The Site-specific groundwater flow direction and gradient will be determined based on the latest elevation data and provided on a figure in the RIR.

One (1) round of sampling will be conducted from the newly installed wells, as well as from existing monitoring well MW-1, which is located on the south-adjoining sidewalk from the WMW site. The data will be analyzed to determine whether groundwater contamination exists at levels that require remediation, and the magnitude and the extent of any potential contaminant plume. In addition to the analytical data, field measurements and chemical analyses will be conducted to characterize the impacted groundwater. SESI's field sampling procedures are described in the QAPP.

All groundwater samples will be analyzed by a NYSDOH ELAP certified laboratory and Category B deliverables will be requested on each sample chain of custody. In addition, QA/QC samples will be collected and analyzed as specified in the QAPP. Specifically, the number of duplicate, spiked and blank samples analyzed will be a minimum of one (1) duplicate for every 20 samples. Aqueous matrix field blanks will be collected at a frequency of one (1) per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks for the water matrix.

The wells will be sampled using the procedures in the USEPA Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30, 1996, Revised September 19, 2017. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. At the initiation of low flow purging a water level is recorded as well as field parameters. Field parameters are then monitored every five (5) minutes during low-flow purging using a flow through cell. When three (3) consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells allow continuous real time readings. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing. If the parameters of a well do not stabilize in a timely manner, the groundwater sample will be collected after emptying three (3) well volumes from the well.

In addition to water samples collected from the monitoring wells, two (2) types of “blanks” will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 ml VOA vials, as follows:

- A trip blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, deionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for TCL volatiles is planned (water matrix only). The trip blank will be analyzed for TCL VOCs as a measure of potential contamination from background sources and their effect on the results.

- In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank will be submitted to the laboratory. This blank will also be analyzed for TCL+30/TAL, PFAS, and 1,4-Dioxane.

The proposed groundwater monitoring wells and the rationale for their locations are presented in on **Table 1** below:

Table 1: Summary of Proposed Groundwater Monitoring Wells

Well Name	Location	Rationale	Estimated Screen Depth (ft-bgs)	Screen Length (ft)	Estimated Well Depth (ft-bgs)	Analysis	Sample Method
SESI-MW-106	Near western boundary of Site outside building	Evaluate groundwater quality near downgradient site boundary	5 feet below encountered water table	10	20	TCL+30/TAL, PFAS and 1,4-Dioxane	Low Flow / Grab
SESI-MW-107	Under building footprint	Evaluate groundwater quality underWMW building	5 feet below encountered water table	10	20	TCL+30/TAL, PFAS and 1,4-Dioxane	Low Flow / Grab
SESI-MW-108	Under building footprint	Evaluate groundwater quality underWMW building	6 feet below encountered water table	10	20	TCL+30/TAL, PFAS and 1,4-Dioxane	Low Flow / Grab

Note: The above depths may vary based on Site conditions.

The analytical methods to be used for groundwater sample analysis and the respective sample holding times are listed in **Table 2** below:

Table 2: Groundwater Analytical Methods

Parameter and Analytical Method	Holding Time
VOCs – USEPA 8260C	14 days
SVOCs (BNAs) and 1,4-Dioxane – USEPA 8270D	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081B	7 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	7 days (until extraction) 40 days (extracted)
TAL Metals – Method 6010D, 7470A for mercury	180 days Mercury: 28 days
Cyanide – USEPA 9012, SM 4500-CN-E	14 days
PFAS Compounds – USEPA Method 1633	14 days

Further details regarding groundwater sample containerization and analysis are provided in the QAPP.

2.3 SUPPLEMENTAL SOIL VAPOR INVESTIGATION

Two (2) soil vapor samples were previously collected on the WMW lot during the pre-BCP investigation. To further investigate soil vapor on the WMW lot, two (2) additional soil vapor samples from soil vapor points will be collected as shown on **Figure 5**. The purpose of the soil vapor points is to provide additional sub-slab soil vapor data in other areas of the Site to determine any potential sources of soil vapor contamination. The soil vapor points will be installed immediately beneath the asphalt or concrete slabs that are present.

The soil gas samples will be collected in accordance with the procedures of the NYS Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006, revised March 2024). Specifically, the soil vapor probes will be advanced using direct push sampling equipment, and samples will be collected by installing temporary vapor implants. A sacrificial vapor point connected to flexible tubing will be inserted into the borehole. The annular space of the borehole will be filled with sand and the surface will be sealed with bentonite to seal the surface. Prior to sampling, the tubing system will be purged of ambient air with a low-flow pump. As stated in the guidance, if regulated VOCs are detected in soil, groundwater, or soil vapor, soil vapor intrusion sampling including concurrent sub-slab vapor and indoor air samples may be warranted to evaluate the potential for soil vapor intrusion prior to occupancy of the on-Site building.

The soil vapor samples will be collected into laboratory-supplied 2.7-liter or 6-liter, stainless-steel summa canisters. The summa canisters will be equipped with a manometer to verify the canister is under vacuum, and a flow controller set to a flow rate not to exceed 200 ml/min. A sample log sheet will be maintained summarizing sample identification, date and time of sample collection, sampling depth, identity of samplers, sampling methods and devices, soil vapor purge volumes, volume of the soil vapor extracted, vacuum of canisters before and after the samples are collected, apparent moisture content of the sampling zone, and chain of custody protocols. The vapor samples will be sent to a certified laboratory for analysis of VOCs in accordance with EPA Method TO-15.

As part of the vapor sampling, a tracer gas will be used to serve as a QA/QC device to verify the integrity of the soil vapor probe seal. Helium will be used as the tracer gas and a box will serve to keep it in contact with the probe during testing. A portable monitoring device will be used to

analyze a sample of soil vapor for the tracer prior to sampling. If the tracer sample results show a significant presence of the tracer, the probe seals will be adjusted to prevent infiltration. At the conclusion of the sampling round, tracer monitoring will be performed a second time to confirm the integrity of the probe seals. SESI's field sampling procedures are described in the QAPP presented in Appendix B of the RIWP. In addition to the soil vapor, one (1) ambient air sample will be collected with a 2.7- or 6-liter summa canister set to a flow rate not to exceed 200 ml/min. The proposed soil vapor sample points are presented in **Table 3** below.

Table 3: Summary of Proposed Soil Vapor Sampling

Location Name	Installation Method	Proposed Sampling Depth (ft)	Sample Rationale	Sample Media	Sample Type	Analysis	Holding Time
WMW-SV3	Geoprobe Soil Boring	0.5 (Sub-slab)	Further assess SV conditions under existing building	Soil Vapor	Grab / (200 mL/min)	TO-15	30 days
WMW-SV4	Geoprobe Soil Boring	0.5 (Sub-slab)	Assess SV conditions in SE corner of WMW lot	Soil Vapor	Grab / (200 mL/min)	TO-15	30 days

3.0 DECONTAMINATION AND INVESTIGATION DERIVED WASTE

Equipment utilized for ground intrusive activities (i.e. borings and wells) will be decontaminated between each boring. Equipment utilized for sample collection (i.e. spoons, trowels) will be decontaminated between each sample unless disposable equipment is utilized, where the equipment will be disposed after each sample is collected. Appropriate decontamination areas will be established to support work being conducted in each area of the Site.

Investigative derived waste including soil cuttings and purged groundwater will be containerized, sampled, and properly disposed of pursuant to federal, state, and local regulations. Disposable sampling equipment, including macro core liners, spoons, gloves, bags, paper towels, and personal protective equipment etc. that come in contact with environmental media will be double bagged and disposed of as municipal trash in a facility trash dumpster as non-hazardous refuse.

4.0 SURVEY

After the Supplemental Remedial Investigation sampling scope is completed, a survey will be completed, which includes the locations and elevations of all the monitoring wells.

5.0 REPORTING

Weekly reports will be submitted upon request of the NYSDEC and NYSDOH case managers shortly after work is completed, and will include:

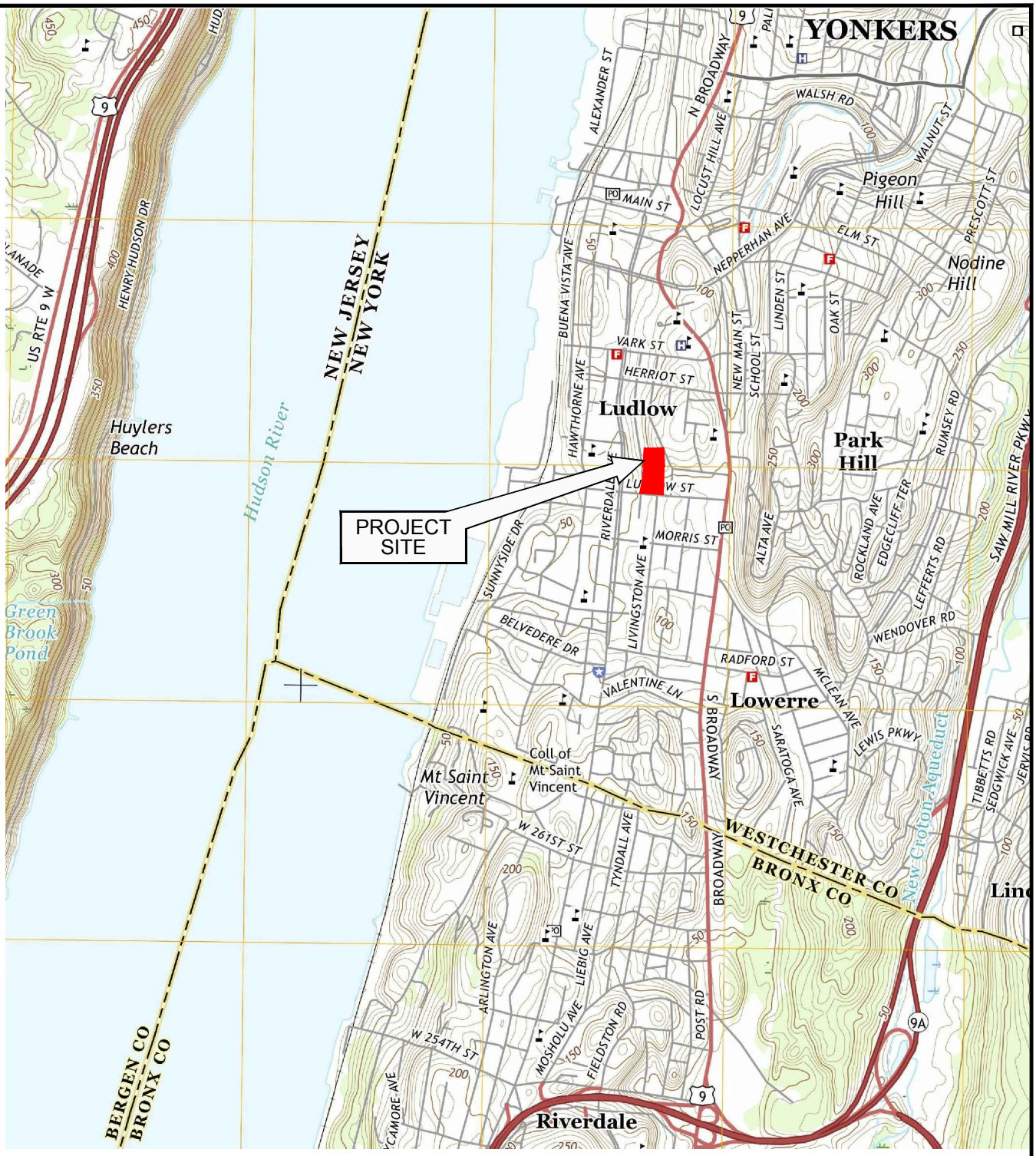
- Activities relative to the Site during the work activities, including a quantitative presentation of work performed (i.e. number of borings or wells completed, samples collected, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review, as applicable;
- Information regarding any complaints made; and
- Community Air Monitoring CAMP data downloaded from the air monitoring instruments and a summary of the data. The CAMP is included Appendix E of the RIWP.

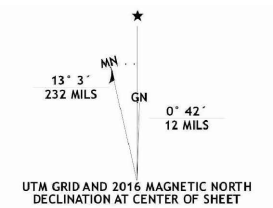
6.0 GREEN REMEDIATION BEST MANAGEMENT PRACTICES

In accordance with the USEPA *Green Remediation Best Management Practices* and DER-31, SESI will incorporate the below best management practices for project planning and field activities into the scope of the proposed investigation. The following practices have been selected based on their relevance to the proposed investigation and the specifics of the Site:

- Select service providers, product suppliers and analytical laboratories from the local area and consolidate the service and delivery schedules
- Establish electronic networks for data transfers, team decisions and document preparation
- Reduce travel through increased teleconferencing
- Use of portable vapor/gas detection systems using photoionization or flame ionization for screening purposes
- Soil gas surveys involving instruments such as Summa canisters to determine the presence, composition and distribution of VOCs in the vadose zone and water table
- Use of ground penetrating radar, magnetometers, and other geophysical survey instrumentation to locate metal objects and delineate disposal areas
- Use plastic sheeting or portable wash pads to contain and collect decontamination fluids and prevent their entrance into storm drains or groundwater
- Treat potentially contaminated purge water through use of technologies such as activated carbon filtration prior to discharge to storm drains or waterways and
- Use minimally invasive drilling techniques such as direct-push or sonic technology whenever feasible to reduce drilling duration, avoid or minimize use of water, and prevent or reduce generation of cuttings and associated disposal of investigation-derived waste.

Figures





Scale 1"=2000'

0 2000 4000

FIG-1

RIWP
LUDLOW POINT
150 DOWNING STREET
YONKERS, NEW YORK

SITE LOCATION MAP

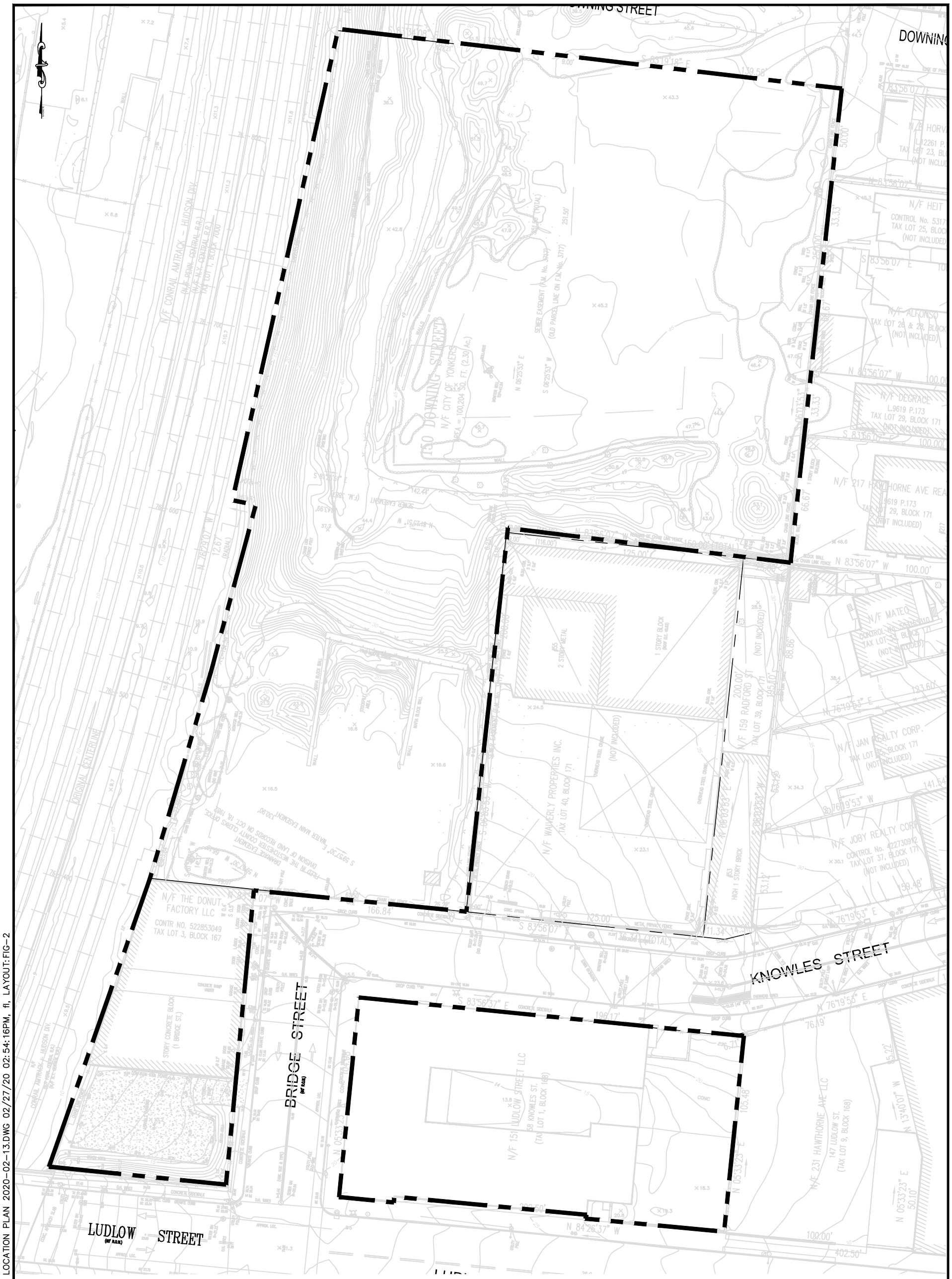
SESI CONSULTING ENGINEERS D.P.C.

SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL

12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

DRAWN BY: yy
CHECKED BY: JAM
SCALE: AS NOTED
DATE: 12/20/19
JOB NO.: 10857

N:\ACAD\10857\RIWP REPORT\FIG-1 SITE LOCATION MAP.DWG 12/20/19 03:31:49PM, jenny, LAYOUT:FIG-1



REFERENCE
SITE INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PROPERTY" PREPARED BY CONTRACTORS' LINE & GRADE SOUTH LLC. DATED JULY 27, 2017.

SCALE: 1"=50'

0 50 100

RIWP
LUDLOW POINT
150 DOWNING STREET
YONKERS, NEW YORK

SITE PLAN

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

FIG-2
DRAWN BY: yy
CHECKED BY: JAM
SCALE: AS NOTED
DATE: 02/13/2020
JOB NO.: 10857

N:\ACAD\10857\RIWP REPORT\10857 RIWP SAMPLE LOCATION PLAN 2020-02-13.dwg, 2/27/2020 2:54:11 PM, DWG To PDF.pc3
N:\ACAD\10857\RIWP REPORT\10857 RIWP SAMPLE LOCATION PLAN 2020-02-13.DWG 02/27/20 02:54:16PM, fl, LAYOUT:FIG-2

UNITS ON THIS PLAN ARE IN MG/KG (PPM)

	B-9 (7-7.5)
	2/26/2020
Benzo(a)anthracene	1.6
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.6
Chrysene	1.7
Indeno(1,2,3-cd)pyrene	0.79
Mercury, Total	0.755
Zinc, Total	561

	B-7 (6-6.5)
	2/26/2019
Barium, Total	490
Lead, Total	4520
Zinc, Total	639

	B-3 (8.5-9.0)
	2/25/2020
Arsenic, Total	19.2
Copper, Total	73.4
Lead, Total	513
Mercury, Total	2.2
Zinc, Total	358

	B-3A (14.5-15.0)
	2/25/2020
Mercury, Total	0.25

	B-6 (12-12.5)
	2/26/2020
Benzo(a)anthracene	2.7
Benzo(a)pyrene	2.1
Benzo(b)fluoranthene	2.9
Chrysene	2.2
Indeno(1,2,3-cd)pyrene	1.2
Arsenic, Total	20.7
Copper, Total	309
Lead, Total	316
Mercury, Total	10.8
Zinc, Total	250

	B-4 (3.5-4.0)
	2/25/2020
Benzo(b)fluoranthene	1.7
Indeno(1,2,3-cd)pyrene	1.6

	B-5 (6.5-7.0)
	2/25/2020
Benzo(a)anthracene	1
Benzo(a)pyrene	1.2
Benzo(b)fluoranthene	4.7
Benzo(k)fluoranthene	1.7
Chrysene	1.1
Dibenzo(a,h)anthracene	0.56
Indeno(1,2,3-cd)pyrene	7.7

	B-2 (5.5-6.0)
	2/25/2020
Indeno(1,2,3-cd)pyrene	0.82

	B-1 (4.5-5.0)
	2/25/2020
Benzo(a)anthracene	1.2
Benzo(a)pyrene	1.2
Benzo(b)fluoranthene	1.5
Chrysene	1.3
Indeno(1,2,3-cd)pyrene	0.69
Arsenic, Total	53.5
Copper, Total	484
Lead, Total	494
Mercury, Total	82.3
Selenium, Total	23.7
Zinc, Total	156

	USCO	RRSCO
Benzo(a)anthracene	1	1
Benzo(a)pyrene	1	1
Benzo(b)fluoranthene	1	1
Benzo(k)fluoranthene	1	3.9
Chrysene	1	3.9
Indeno(1,2,3-cd)pyrene	0.5	0.5
Dibenzo(a,h)anthracene	0.33	0.33
Arsenic, Total	13	16
Barium, Total	350	400
Copper, Total	50	270
Lead, Total	63	400
Mercury, Total	0.18	0.81
Selenium, Total	3.9	180
Zinc, Total	109	10000

NOTE:
THIS PLAN IS FOR LOCATING BORINGS ONLY.
OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:

- PROPERTY LINE
- SB-1 - 2020 BORING NUMBER & APPROX. LOCATION
- WMW-RI1 - PROPOSED RI BORING NUMBER & APPROX. LOCATION
- 484 - EXCEEDS NY-RRSCO
- 23.7 - EXCEEDS NY-USCO
- **NY-RRSCO** - NYCRR PART 375 RESTRICTED-RESIDENTIAL SOIL CRITERIA, DECEMBER 14, 2006
- **NY-USCO** - NYCRR PART 375 NEW YORK UNRESTRICTED USE CRITERIA, EFFECTIVE DECEMBER 14, 2006

REFERENCE
SITE INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PROPERTY"
PREPARED BY CONTRACTORS' LINE & GRADE SOUTH LLC. DATED JULY 27, 2017.

Scale 1"=40'
0 40 80

dwg by: AW
chk by: JL
scale: AS NOTED
date: 04/23/2024

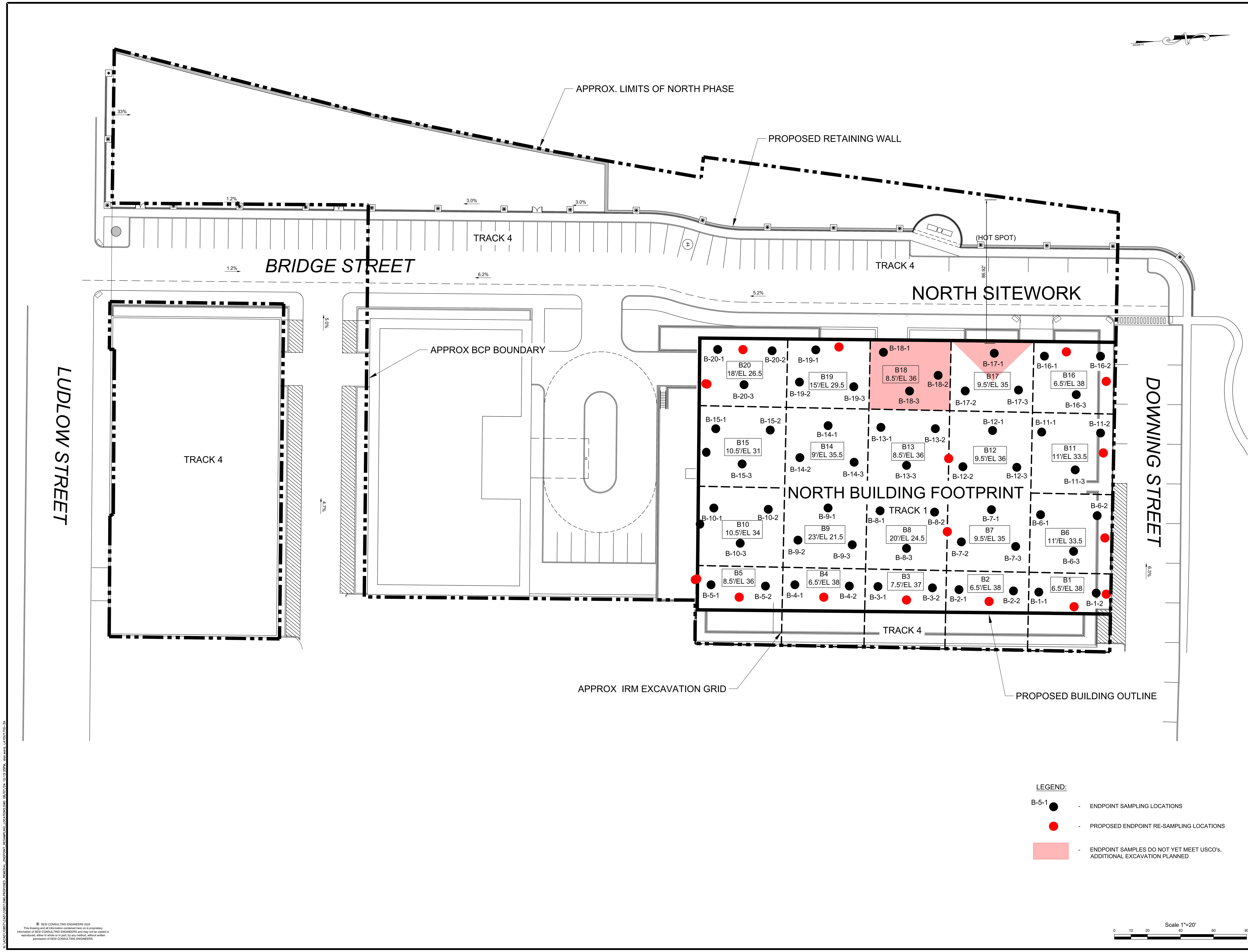
Cert of Auth #24GA27934700
SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

project: WESTCHESTER METAL WORKS
55 KNOWLES STREET
YONKERS, NEW YORK

title: PROPOSED SUPPLEMENTAL SOIL SAMPLING LOCATIONS

job no: 10857
drawing no: FIG-3

N:\ACAD\10857\PHASE II ESA\10857 - FIG-3 - PROPOSED SUPP SOIL SAMP LOCATIONS - SESI 2024.DWG 04/25/24 03:49:46PM, alan.ward, LAYOUT:FIG-3



APPROX. LIMITS OF NORTH PHASE
PROPOSED RETAINING WALL
TRACK 4
BRIDGE STREET
(HOT SPOT)
NORTH SITEWORK
LUDLOW STREET
DOWNING STREET
APPROX BCP BOUNDARY
NORTH BUILDING FOOTPRINT
TRACK 1
B20 18'/EL 26.5
B19 15'/EL 29.5
B18 8.5'/EL 36
B17 9.5'/EL 35
B16 6.5'/EL 38
B15 10.5'/EL 31
B14 9'/EL 35.5
B13 8.5'/EL 36
B12 9.5'/EL 36
B11 11'/EL 33.5
B10 10.5'/EL 34
B9 23'/EL 21.5
B8 20'/EL 24.5
B7 9.5'/EL 35
B6 11'/EL 33.5
B5 8.5'/EL 36
B4 6.5'/EL 38
B3 7.5'/EL 37
B2 6.5'/EL 38
B1 6.5'/EL 38
APPROX IRM EXCAVATION GRID
PROPOSED BUILDING OUTLINE
LEGEND:
B-5-1 - ENDPOINT SAMPLING LOCATIONS
- PROPOSED ENDPOINT RE-SAMPLING LOCATIONS
- ENDPOINT SAMPLES DO NOT YET MEET USCO's. ADDITIONAL EXCAVATION PLANNED
Scale 1"=20'
0 10 20 40 60 80

SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 route 46e, 3rd floor, parsippany, nj 07054 ph: 973.808.9050

drawn by: PDM
checked by: AC
scale: AS NOTED
date: 05/25/2023

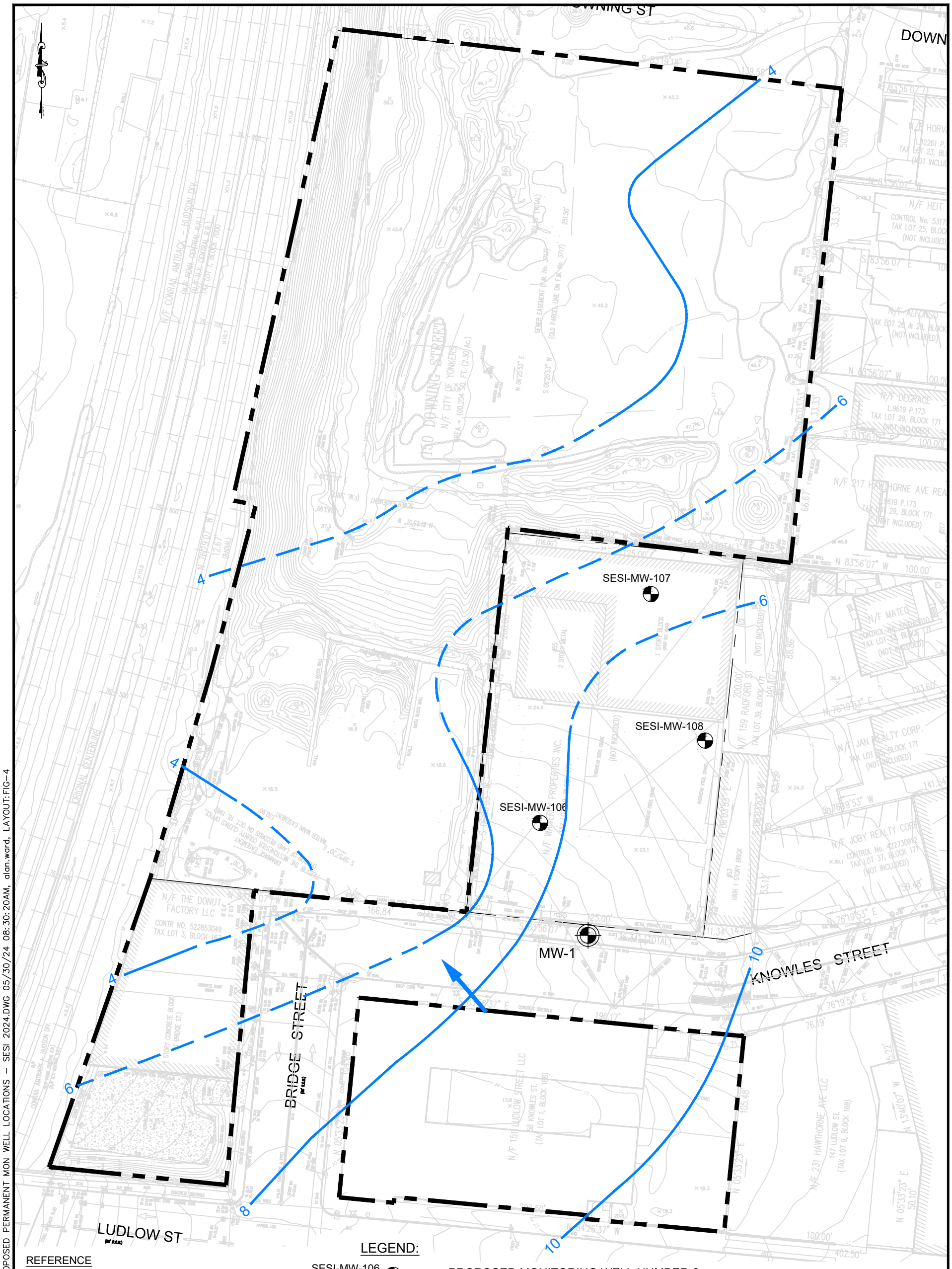
ANTHONY CASTILLO, P.E.
PROFESSIONAL ENGINEER
N.J. LIC. NO. 43112

BRIDGEWATER
150 DOWNING STREET
CITY OF YONKERS, WESTCHESTER COUNTY, NY

title: PROPOSED REMEDIAL ENDPOINT RESAMPLING LOCATIONS

job no. 10857
drawing no.

FIG-3A



REFERENCE
SITE INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PROPERTY" PREPARED BY CONTRACTORS' LINE & GRADE SOUTH LLC. DATED JULY 27, 2017.

LEGEND:

- SESI-MW-106 - PROPOSED MONITORING WELL NUMBER & APPROX. LOCATION
- MW-1 - EXISTING MW TO BE SAMPLED NUMBER & APPROX. LOCATION
- INFERRED GROUNDWATER CONTOURS 2020 RI
- INFERRED GROUNDWATER FLOW DIRECTION

SCALE: 1"=50'
0 50 100

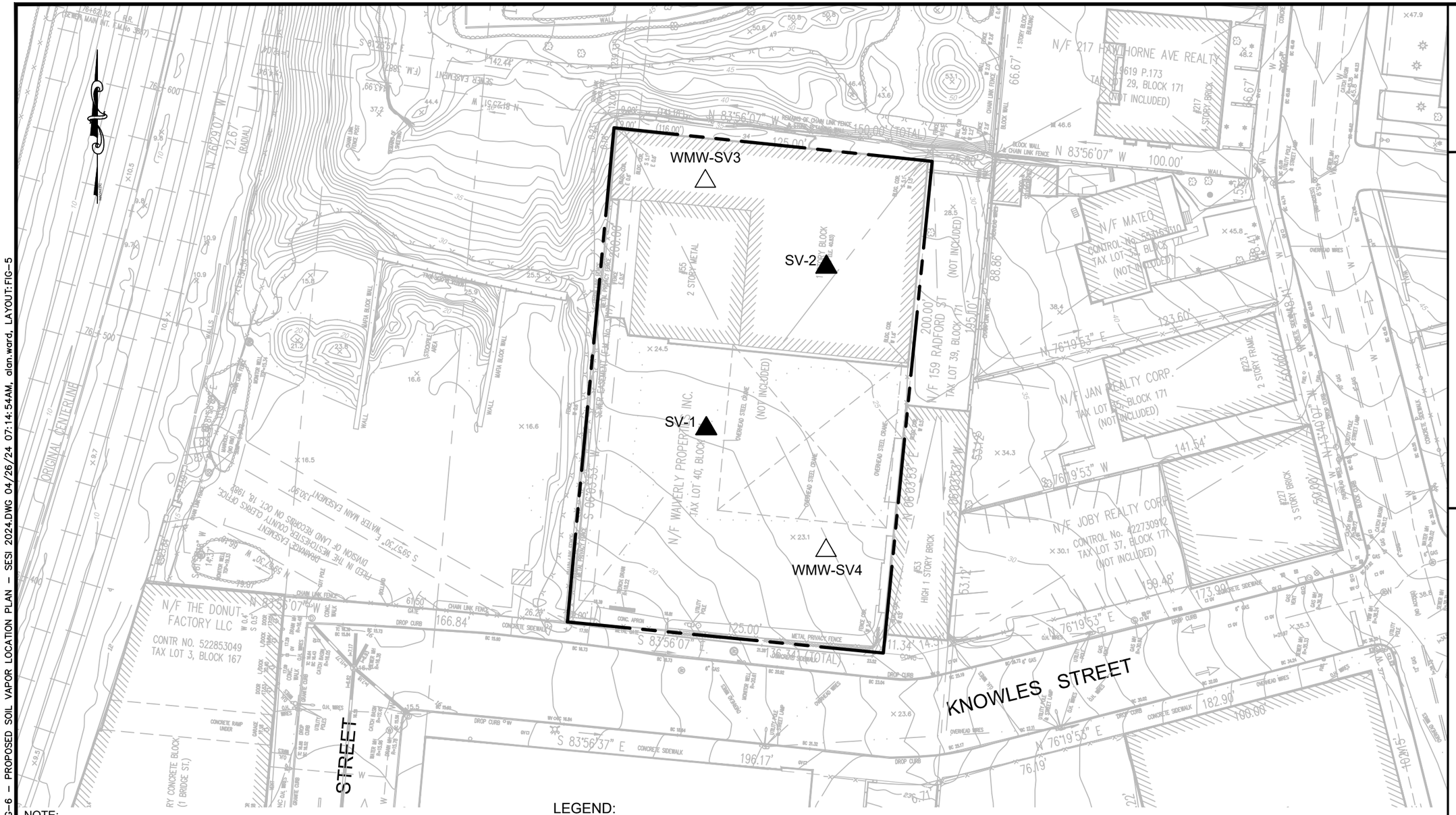
WESTCHESTER METAL WORKS, KNOWLES & BRIDGE STREETS
55 KNOWLES STREET
YONKERS, NEW YORK

PROPOSED PERMANENT MONITORING WELL LOCATIONS

Cert of Auth #24GA27934700
SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

FIG-4
DRAWN BY: AW
CHECKED BY: JL
SCALE: AS NOTED
DATE: 04/23/2024
JOB NO.: 10857

N:\ACAD\10857\PHASE II ESA\10857 - FIG-5 - PROPOSED PERMANENT MON WELL LOCATIONS - SESI 2024.DWG 05/30/24 08:30:20AM, alan.ward, LAYOUT:FIG-4



NOTE:
THIS PLAN IS FOR LOCATING SOIL VAPOR POINTS ONLY.
OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

LEGEND:

- PROPERTY LINE
- SV-1 ▲ - 2020 SOIL VAPOR SAMPLE NUMBER & APPROX. LOCATION
- WMW-SV3 △ - SOIL VAPOR SAMPLE NUMBER & APPROX. LOCATION

REFERENCE
SITE INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PROPERTY"
PREPARED BY CONTRACTORS' LINE & GRADE SOUTH LLC. DATED JULY 27, 2017.

Scale 1"=40'
0 40 80

Cert of Auth #24GA27934700
SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 ROUTE 46E, 3RD FLOOR, PARSIPPANY, NJ 07054 PH: 973.808.9050

dwg by: AW
chk by: JL
scale: AS NOTED
date: 04/23/2024

project: WESTCHESTER METAL WORKS
55 KNOWLES STREET
YONKERS, NEW YORK

title: PROPOSED SOIL VAPOR LOCATIONS

job no: 10857
drawing no: FIG-5

N:\ACAD\10857\PHASE II ESA\10857 - FIG-6 - PROPOSED SOIL VAPOR LOCATION PLAN - SESI 2024.DWG 04/26/24 07:14:54AM, alan.ward, LAYOUT:FIG-5