

REMEDIAL ACTION WORK PLAN

**Rhode Island Recycled Metals
434 Allens Avenue
Providence, Rhode Island**

August 2025

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LSE Project Number: 09050H10

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- 2 Site Plan Showing Engineered Controls**

1.0 INTRODUCTION

Lake Shore Environmental, Inc. (LSE) prepared this Remedial Action Work Plan (RAWP) in accordance with the Rhode Island Department of Environmental Management's (RIDEM's) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases as amended (February 2004, November 2011, and January 2019 - Remediation Regulations). The objective of the RAWP is to document the preferred remedy for remediating soil containing elevated concentrations of PAHs, TPH, arsenic, and lead at the subject lot. The property that is addressed in this RAWP is referred to herein as the "Site". The boundaries of the Site are described in detail below in Section 1.2. A Site locus map is attached as Figure 1.

1.1 Previous Environmental Investigations

There have been documented historical releases at this Site. In the 1980s and 1990s, EPA was involved in characterizing PCB impacts at the Site resulting from precious metal recovery/recycling operations by former Property owner, Boliden-Metech. Following the characterization and remediation of the Site using a combination of excavation/offsite disposal and onsite engineered controls, institutional controls (i.e. Environmental Land Use Restriction) were implemented to restrict Site use and preclude disturbances to the soil cap.

During a 2016 Phase II Subsurface Investigation of the Site prepared by Coneco, Total Petroleum Hydrocarbons (TPH), lead, arsenic, and benzo(a)pyrene were detected in Site soils at concentrations exceeding the Industrial/Commercial (I/C) Direct Exposure Criteria (DEC). Seven groundwater samples were also collected from on-site monitoring wells and no Volatile Organic Compounds (VOCs), TPH, PCBs, or metals were found to exceed applicable GB Groundwater Objectives (GB-GWO).

LSE conducted Site Investigation activities at the subject Site in the Fall of 2023. The SIR was submitted to the Department on December 12, 2023. A total of 34 soil samples were collected from surficial soil, subsurface soil, and stockpile soils for field screening and laboratory analyses. Analytical results reported DEC exceedances of TPH, polycyclic aromatic hydrocarbons (PAHs), and metals at the subject Site. Groundwater was also sampled for VOCs, PCBs, and TPH analyses and no groundwater sample contained any GB-GWO exceedances.

1.1.1. Supplemental Site Investigation Addendums, Comment Responses

In response to the submission of the SIR, the Department issued a SIR Comment Letter on December 27, 2023, to which LSE submitted a Response to Comments on January 12, 2024. The Department then issued an additional SIR Comment Letter on April 22, 2024 requiring additional sampling after a fire took place at the facility. LSE submitted an SIR Addendum addressing Department concerns and outlining post-fire sampling results on June 17, 2024.

The Department issued a Program Letter on October 8, 2024, concurring that existing contamination had been adequately defined and approving the preferred Site remedy, which consists of encapsulation of jurisdictional soils under a Department-approved cap, in conjunction with the implementation of a Site-wide Environmental Land Use Restriction (ELUR) recorded in the Land Evidence Records for the City of Pawtucket. Following the end of the post-SIR public comment period, the Department issued the Remedial Decision Letter on June 5, 2025.

1.2 Site and Project Description

The 13-acre subject Site is currently improved with an office trailer, a brick storage building, two temporary Quonset-style canopy enclosures, and a weight scale. The Site is mostly unpaved with several areas containing concrete slabs associated with former operations and buildings. The Site is identified on the City of Providence’s Assessors map as Plat 47, Lot 601 and Plat 55, Lot 10. The Site is bordered by Allen’s Avenue to the west and the Providence River to the east.

Properties adjacent to the Site are listed in the following table:

Location	Description	Direction from Subject Site	
Plat 47 Lot 799	386 Allen’s Avenue	Municipal – telephone line	North
Plat 55 Lot 16	520 Allen’s Avenue	Industrial	Southeast
Plat 55 Lot 9	520 Allen’s Avenue	Commercial	South
Plat 55 Lot 432	460 Allen’s Avenue	Commercial	South
Plat 55 Lot 426	15 Thurber’s Avenue	Commercial	West
Plat 55 Lot 434	14 Lehigh Street	Commercial	West
Plat 47 Lot 822	1 Warren Way	Municipal – health center	Northwest

2.0 **REMEDIAL ALTERNATIVES**

The preferred remedies include the encapsulation of jurisdictional soil at the Site through the use of Department-approved engineered controls, as well as the implementation of an ELUR. The specifications for the engineered controls shall at a minimum, be compliant with Department approved Presumptive Remedies and be impervious. The Site-specific remedies shall be developed in consultation with a Rhode Island registered Professional Engineer specializing in stormwater management and structural engineering. The caps must be sufficient to withstand the machinery, loads, and daily traffic associated with current metal salvage operations for as many years as practicable. Furthermore, the erosion due to the coastal location of the Property must be considered as part of the cap design.

3.0 **REMEDIAL ACTION WORK PLAN**

LSE prepared this RAWP to address requirements of Section 1.10 of the Remediation Regulations. Each of the following sections addresses a specific section of the Remediation Regulations, noting the relevant section in parentheses.

3.1 Remedial Objectives (Section 1.10.2)

In response to the identified metals, TPH, and PAHs in soil, the Performing Party intends to perform remedial activities as required in order to bring the site into compliance with the Remedial Regulations. In addition, there is a concurrent requirement to design/install stormwater controls across the Site. Based on a pending stormwater design, stormwater runoff from this facility will

flow overland towards the lined Stormwater Basin outfitted with a sediment forebay to provide water quality. Flows will then discharge through a Clara Gravity Separator that will pump flow to the aboveground Aquip Media Filtration System and discharge directly to the Providence River.

The soil remedy selected to address both stormwater and contaminants in soil is on-site encapsulation utilizing engineered controls to mitigate the potential for direct exposure to jurisdictional soils. Engineered controls will consist of hard asphalt and/or concrete, depending on the planned traffic at that portion of the Site, including one or more of the following:

1. Heavy Duty asphalt paving;
2. Heavy Duty Concrete paving; and/or,
3. Building foundations.

Recycled metal stockpile areas are planned to be on concrete slabs. The vehicle traffic areas will be capped with heavy duty asphalt paving. No soil caps are planned for the Site. The waterfront of the Property will be secured through construction of a bulkhead in the areas shown in [Figure 2](#). Institutional controls in the form of an ELUR will be recorded to maintain future Site conditions/engineered controls and restrict activities that might otherwise result in human exposure to elevated COCs.

3.1.1. Groundwater Objectives (Section 1.10.2-A.1)

Groundwater at the Site is classified as GB and no GB Groundwater Objectives have been exceeded. Given groundwater sampling analytical results as part of the SIR for the Site, groundwater does not need to be remediated.

3.1.2. Surface Water and Sediment Objectives (Section 1.10.2-A.2)

The Site abuts the Providence River to the west. Based on the Site's current stormwater design, all of the Site will be covered with impervious surfaces and stormwater will be directed overland to a lined stormwater basin providing storage capacity prior to stormwater passing through a Clara Gravity Separator that will pump flow to the aboveground Aquip Media Filtration System. The cap will be constructed such that runoff will not directly enter the Providence River until after it has been treated as described above.

3.1.3. Soil Objectives (Section 1.10.2-A.3)

The contaminants present at the Site represent a direct exposure risk. Therefore, compliance with the Remediation Regulations is the remedial objective for soil, which will be achieved by constructing and maintaining engineered controls to prevent potential current or future direct contact with the impacted soils. Although no exceedances of GB Leachability Criteria were detected, impervious engineered controls will preclude water from infiltrating through impacted soils at the Site.

3.1.4. Air Objectives (Section 1.10.2-A.4)

The subject Site is currently unpaved and employs continuous dust monitoring along the Property line to monitor dust concentrations in ambient air. Dust concentrations are measured throughout the day, and thus far have not recorded any exceedances of EPA standards of the daily average

concentrations due to Site activities. Furthermore, the encapsulation of the subject Site will mitigate the fugitive dust typically generated at the Site through vehicle traffic over unpaved areas of the Site.

3.2 Proposed Remedy (Section 1.10.3)

Constituents in soil were detected at levels exceeding corresponding RIDEM DEC. Therefore, potential human exposure to the elevated contaminants must be mitigated.

The most feasible remedy for jurisdictional Site soil involves the use of engineered controls to encapsulate Site soils under a Department-approved cap. Any excess jurisdictional soil that cannot be reused and encapsulated on-site will require off-site disposal at a licensed facility.

This alternative also requires the use of institutional controls (i.e. ELUR) to maintain Site conditions and restrict future activities that might otherwise result in human exposure to the contaminants. An advantage of this alternative is that the jurisdictional constituents are remedied on the Site and not merely transported to another location. Another obvious advantage is the lower cost of this approach relative to off-site soil disposal. Disadvantages are that restrictions on the uses of the Property will always remain in place unless all impacted soil is removed and annual ELUR inspection reports will be required for the foreseeable future. This alternative may also impact future perception of the property value associated with this parcel and potentially impact future sales/marketing efforts. Nonetheless, this remedy of engineered and institutional controls is the preferred remedial alternative for soil at this Site.

3.3 Remediation of Impacted Groundwater (Section 1.10.4)

N/A

3.4 Limited Design Investigation (Section 1.10.5)

A geotechnical evaluation of the Site's soils was completed by DiPrete Engineering in order to assess the soil's bearing capacity for supporting heavy equipment loads at the Site and well as the requirements for achieving longevity of the engineered barriers. DiPrete's geotechnical design was approved by a licensed Professional Engineer and is the basis of the Site-wide can design.

No other design investigations beyond the SIR are necessary to implement the proposed remedial alternative. The proposed implementation of these engineered controls offers protection for potential receptors that might otherwise come into contact with impacted soil.

This RAWP adequately describes the proposed remedial alternative, and no further studies will be conducted prior to implementation of the remedial alternative. Therefore, an additional Limited Design Investigation is not applicable.

3.5 Points of Compliance (Section 1.10.6)

Specific points of compliance are described below.

3.5.1 Points of Compliance in Soil

The points of compliance for the Site shall include all soils within the subject site. The direct exposure criteria (DEC) are applicable to all soil within 2 feet of grade.

3.5.2 Points of Compliance in Groundwater

N/A

3.6 Proposed Schedule for Construction and Remediation (Section 1.10.7)

There is currently no confirmed schedule for the implementation of the remedy, as the encapsulation of the Site will be occurring concurrently with the implementation of stormwater controls at the Site. However, RIRM operations will be ongoing throughout cap construction so the construction of engineered controls/stormwater controls will be completed in phases over time. Once the Responsible Party has submitted a final stormwater plan for the Site and it receives approval from the Department, the Responsible Party will move forward with initial phases of construction/remediation.

All areas of the Site will eventually be encapsulated with Department-approved caps including existing building foundations/slabs, and heavy-duty asphalt and concrete caps. The draft ELUR and SMP will be submitted to the Department for review/approval prior to recording it in municipal land evidence records. The recorded ELUR/SMP will be provided to the Department as a final deliverable for this remedy. A Remedial Closure Report will be submitted to the Department following remedy implementation, documenting the cap installation work. Photographs depicting engineered barriers shall be included as part of the Remedial Closure Report.

3.7 Contractors/Consultants (Section 1.10.8)

Contacts for this project are as follows:

Representative of
Responsible Party:

Mr. Jared Sevinor
AARE, LLC
505 Paradise Road, Unit 162
Swampscott, MA 01907

Site Engineer:

Len Bradley, DiPrete Engineering
Dana Nisbet, DiPrete Engineering
2 Stafford Court
Cranston, RI 02920

Environmental Consultant:

Lake Shore Environmental, Inc.
359 Putnam Pike, Suite 105
Smithfield, RI 02917
Contact: Mr. David Hazebrouck, P.G., LSP, LEP
Phone: (401) 658-1880

3.8 Site Plan (Section 1.10.9)

A Site Locus map is attached as Figure 1. A Site Plan showing pertinent site features and engineered controls is presented in Figure 2.

3.9 Design Standards and Technical Specification (Section 1.10.10)

The current concrete slabs and building slabs/foundations will serve as a cap for portions of the Site. The remainder of the Site will be newly encapsulated with either a heavy-duty concrete cap in the planned salvaged metal stockpile areas or a heavy-duty asphalt cap in the vehicle traffic areas. Additional details are provided below in Section 3.9.3.

3.9.1 Air Specifications

The potential for exposure to airborne contaminants at the Site is currently limited to dust since the Site is not yet paved although dust monitoring has determined that dust/particulate concentrations have not exceeded EPA standards. Dust may also be generated during earthwork for construction of the caps and therefore, dust suppression techniques will be employed during construction and earthwork. Accordingly, continuous dust monitoring will be conducted throughout remedy implementation. Once, all site-wide caps have been installed, there will be no potential for exposure to contaminants in Site soils through a dust pathway.

3.9.2 Groundwater Specifications

N/A

3.9.3 Soil Specifications

The engineered barriers selected for this Site consist of one or more of the following.

- Current concrete slabs/building foundations (minimum 4-inches of concrete over 6 inches of sub-base aggregate),
- Heavy Duty asphalt paving, consisting of 16 inches of imported gravel borrow, 3 inches of Class 19 bituminous concrete binder course, and then topped with 1.5 inches of Class 9.5 bituminous concrete wearing course over tack coat;
- Heavy Duty Concrete paving, consisting of 8 inches of imported bank run gravel borrow topped with 6 inches of 4,000 PSI concrete with air entrainment of 4 6%;

The above engineered controls exceed Department Presumptive Remedies for engineered controls and are considered an adequate barrier to direct contact with underlying soil. Maintenance of the various barriers will be conducted as necessary and in accordance with the soil management plan.

3.10 Set-Up Plans (Section 1.10.11)

In order to provide proper pitch for overland flow of stormwater towards the planned stormwater basin, the Site will be graded section-by-section prior to the installation of the planned engineered barriers. All soil currently at the Site will be reused for grading in addition to imported material in

order to raise the grade in the northern and western portions of the entire Site and direct stormwater towards the stormwater basin in the southeastern portion of the Site.

Based on DiPrete's stormwater plan, all stormwater runoff from the facility will flow overland towards a structural best management practice (BMP). BMPs will be maintained in effective operating condition. If site inspections identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of the stormwater controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished within fourteen (14) calendar days. In the case of non-structural BMPs, the effectiveness of the BMP must be maintained by appropriate means. The following structural BMPs are used at this facility:

- Sediment Forebay
- Stormwater Basin
- TSS & Oil Removal System (Clara)
- Media Filtration System (Aquip)

As shown in [Figure 2](#), the entire Site will either be paved or will consist of another hard surface. Stormwater from the site is designed to sheet flow towards the stormwater system located in the southeastern corner of the Property. Proper site grading and the use of a bituminous berm will be employed to direct stormwater first to the sediment forebay and the stormwater basin. From here stormwater will flow into a gravity separator (Clara) to remove TSS, Oil & Grease and settleable metals. The Clara is equipped with a pump chamber to pump stormwater into an Aquip Media Filtration system designed to treat Heavy Metals. The treated stormwater will be discharged to a rip rap protected pipe outlet on the coastline adjacent to the Providence River. The stormwater system has been designed to hold and treat up to the 10-year storm event. Larger storms will bypass the treatment units via a rip rap spillway from the basin directly to the river.

3.11 Effluent Disposal (Section 1.10.12)

In the event that excess soil is generated during Site redevelopment that cannot be reused onsite, unsuitable, jurisdictional soil will be stockpiled on polyethylene sheeting, covered, characterized, and transported to Rhode Island Resource Recovery Corporation located in Johnston, RI for use as alternative daily cover.

In the event that dewatering is required during the installation of the stormwater basin, groundwater will be pumped to frack tanks for temporary storage prior to pretreatment before discharge to surface water. Discharge of treated groundwater would be completed under a RIPDES General Remediation Permit or similar authorization.

3.12 Contingency Plan (Section 1.10.13)

A contingency plan is not required for this proposed site work as it is a simple remedy that will be implemented during the installation of the stormwater management system, and the risk of a new release posing an immediate threat to human health or the environment is considered very low. The Property owner and construction workers will be informed that if any unexpected conditions are encountered during construction/remedy implementation that are possibly indicative of a separate or

new release, LSE should be immediately notified. Following an assessment of the unexpected condition, LSE will contact the Department prior to modifying the proposed remedy before proceeding.

3.13 Operating Log (Section 1.10.14)

A detailed operating log including a chronology of remedy implementation will be included in the Remedial Closure Report.

3.14 Security Procedures (Section 1.10.15)

There is no need of additional security procedures on Site since the Site is currently fenced in and gates are locked when contractors are not onsite. In addition, a surveillance system is in active operation at the Site providing enhanced security.

3.15 Shut-Down, Closure and Post-Closure Requirements (Section 1.10.16)

RIDEM will be notified if Site construction activities are to be suspended/shut down for more than two weeks. No active remedy or future construction will be required once this planned remedy is fully implemented. As such, the only closure documentation to be provided to the Department in the Remedial Closure Report will be a chronology of remedy implementation, photographic documentation of existing and new engineered controls and a copy of the date-stamped ELUR/SMP.

3.16 Institutional Controls and Notices (Section 1.10.17)

A draft ELUR and Post Construction Soil Management Plan (SMP) for the Site will be submitted to the Department under separate cover for review and approval. The SMP will be recorded with the ELUR in the City's land evidence records. The ELUR will restrict potable use of Site groundwater and require that the engineered barriers be properly maintained with the proper implementation of a Department-approved SMP should disturbances or repairs beneath the caps be required. An annual ELUR compliance inspection shall be submitted to the Department by the Owner or a qualified environmental professional.

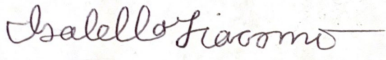
3.17 Compliance Determination (Section 1.10.18)

Compliance with the Remediation Regulations will be achieved once the proposed remedy has been fully implemented, the Department-approved ELUR is recorded, and the Remedial Closure Report is submitted to the Department. Regulatory approval of remedy implementation will be in the form of a Letter of Compliance for the Site.

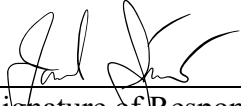
As noted above, upon completion of remedy implementation, the Property owner or an environmental professional will annually certify that the proposed remedies are being maintained in accordance with this RAWP.

3.18 Certification Requirements (Section 1.10.19)

I hereby certify the accuracy of the information presented within this RAWP to the best of my knowledge and that it conforms to requirements outline in Section 1.10 of the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases, as amended February 2004, November 2011, and January 2019.

 _____	<u>Environmental Scientist</u>	<u>8/4/2025</u>
Signature of Consultant Isabella Giacomo	Title	Date

I hereby certify that the RAWP is complete and accurate representation of the contaminated site and the release and contains all available facts surrounding the release to the best of my knowledge.

 _____	<u>Advisor</u>	<u>8/4/25</u>
Signature of Responsible Party Jared Sevinor	Title	Date

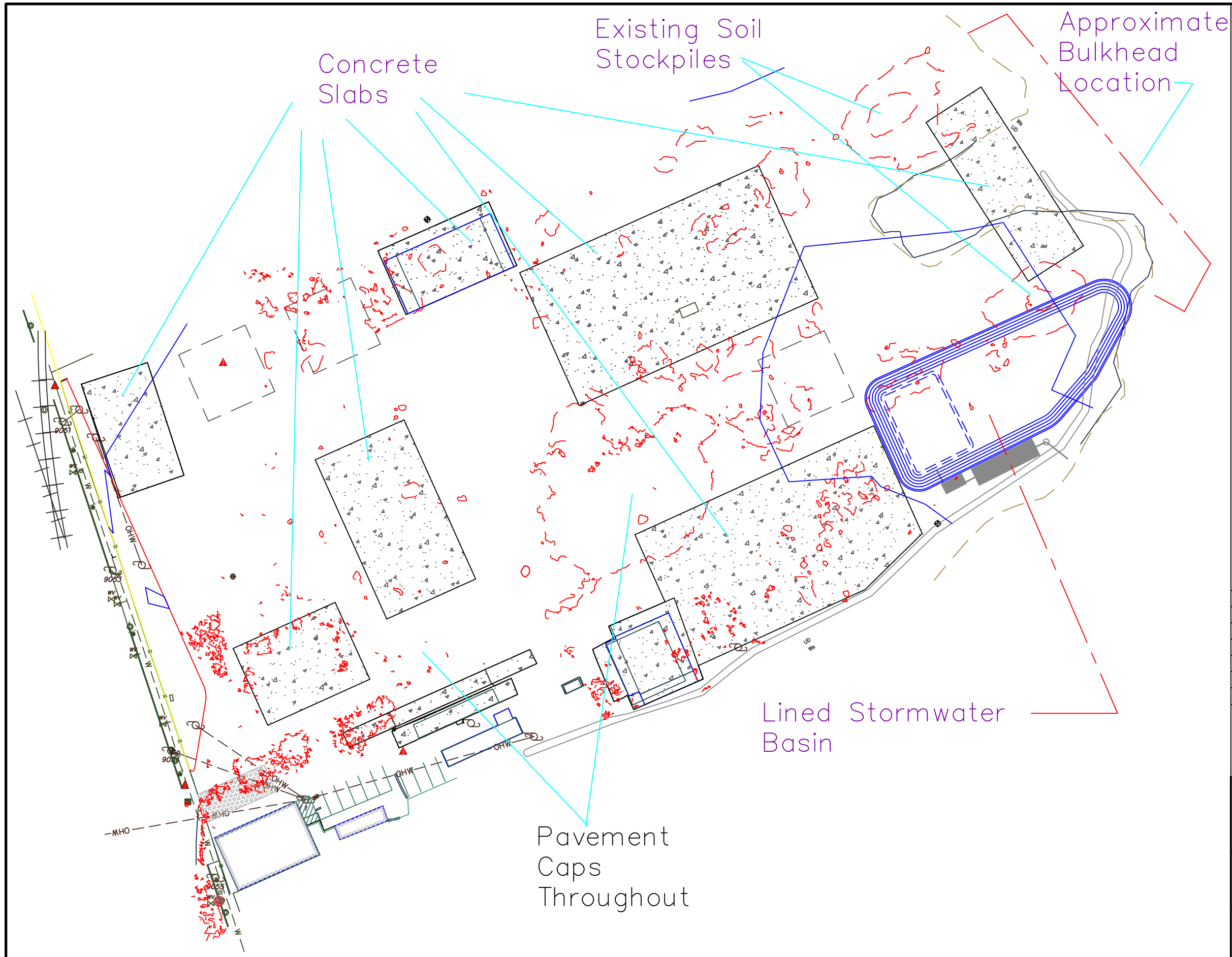
FIGURES



QUADRANGLE LOCATION

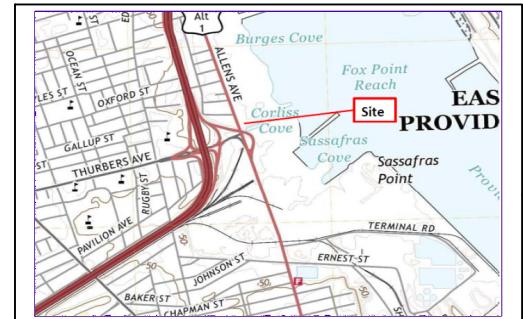
Figure No.	1		
Drawing Title:	Site Locus 434 Allens Avenue Providence, RI		
Date Prepared:	11/27/2023	Prepared By:	IG
Approximate Scale:	NTS		
LSE Proj. No. 23075A10			

Source: Map taken from USGS 7.5 minute topographic Providence Quad 2021



Notes:

* Base map & Stormwater details provided by Diprete Engineering



Locus

Legend:

SCALE:	As Shown
DATE:	8/4/25
PROJNO.	09050H10
CLIENT:	RIRM
SITE:	434 Allens Avenue, Providence, RI
DRAWNBY:	DJH
CHECKEDBY:	



TITLE: Site Plan Showing Engineered Controls

DRAWINGNO.	FIGURE 2	REV.	A
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